

sum_rec_nbr	basin	nbr	suffix	NOI Filed	Same Management	shallow_mtr_amt	surface_mtr_amt	status	use	total_al_lw_div	total_acres	acct_year	TOTAL DIV SW+GW	% DIV	Total Acre-ft	total used	percent over	OVER OR OK	DIFFERNE CE (acre-ft)
86256	LRG	00374		NOI		52.308	0.604	PMT	IRR	3	19.63	2012	52.912	1763.73	107.97	52.91	49.01	OK	-55.05
140089	LRG	00857		NOI		68.451	13.684	ADJ	IRR	74.115	16.47	2012	82.135	110.82	90.59	82.14	90.67	OK	-8.45
140264	LRG	01233		NOI		13.425	2.706	ADJ	IRR	14.535	3.23	2012	16.131	110.98	17.77	16.13	90.80	OK	-1.63
83459	LRG	01176	A	NOI		16.205	3.284	PMT	IRR	17.505	3.89	2012	19.489	111.33	21.40	19.49	91.09	OK	-1.91
140328	LRG	01291		NOI		10.512	2.1	PMT	IRR	11.295	2.51	2012	12.612	111.66	13.81	12.61	91.36	OK	-1.19
237537	LRG	01213	2	NOI		15.641	3.033	HS	IRR	16.65	3.7	2012	18.674	112.16	20.35	18.67	91.76	OK	-1.68
140345	LRG	01450		NOI		8.963	1.75	ADJ	IRR	9.54	2.12	2012	10.713	112.30	11.66	10.71	91.88	OK	-0.95
84187	LRG	00832		NOI	Same Management	99.607	19.482	PMT	IRR	105.44	23.43	2012	119.089	112.95	128.87	119.09	92.41	OK	-9.78
82448	LRG	00020		NOI		1103.496	212.684	ADJ	IRR	1151	255.78	2012	1316.18	114.35	1406.79	1316.18	93.56	OK	-90.61
220850	LRG	01729	1	NOI		3.403	0.618	HS	IRR	3.51	0.78	2012	4.021	114.56	4.29	4.02	93.73	OK	-0.27
140992	LRG	01258		NOI		17.456	3.372	ADJ	IRR	18.18	4.04	2012	20.828	114.57	22.22	20.83	93.74	OK	-1.39
140707	LRG	01760		NOI		3.004	0.657	PMT	IRR	3.195	0.71	2012	3.661	114.59	3.91	3.66	93.75	OK	-0.24
84610	LRG	00457		NOI		551.18	0	PMT	IRR	480.69	106.82	2012	551.18	114.66	587.51	551.18	93.82	OK	-36.33
82587	LRG	01169		NOI		29.584	5.663	ADJ	IRR	30.555	6.79	2012	35.247	115.36	37.35	35.25	94.38	OK	-2.10
83442	LRG	01070	A	NOI	Same Management	43.344	8.356	PMT	IRR	44.595	9.91	2012	51.7	115.93	54.51	51.70	94.85	OK	-2.81
85422	LRG	00009		NOI		1867.983	355.373	HS	IRR	1917.1	426.02	2012	2223.356	115.98	2343.11	2223.36	94.89	OK	-119.75
88052	LRG	01176		NOI		30.575	5.833	PMT	IRR	31.32	6.96	2012	36.408	116.25	38.28	36.41	95.11	OK	-1.87
141918	LRG	01559		NOI		12.08	2.217	DCL	IRR	12.29	2.731	2012	14.297	116.33	15.02	14.30	95.18	OK	-0.72
140805	LRG	01875		NOI		1.756	0.35	PMT	IRR	1.8	0.4	2012	2.106	117.00	2.20	2.11	95.73	OK	-0.09
88404	LRG	00746		NOI		233.201	43.75	HS	IRR	236.7	52.6	2012	276.951	117.01	289.30	276.95	95.73	OK	-12.35
86684	LRG	00571		NOI		316.896	59.322	PMT	IRR	321.53	71.45	2012	376.218	117.01	392.98	376.22	95.74	OK	-16.76
217062	LRG	00940	A	NOI		107.981	20.183	ADJ	IRR	108.99	24.22	2012	128.164	117.59	133.21	128.16	96.21	OK	-5.05
140425	LRG	01673		NOI		9.937	1.867	PMT	IRR	10.035	2.23	2012	11.804	117.63	12.27	11.80	96.24	OK	-0.46
85050	LRG	00855		NOI		197.18	36.556	DCL	IRR	198.47	44.104	2012	233.736	117.77	242.57	233.74	96.36	OK	-8.84
140482	LRG	01493		NOI		22.016	0	ADJ	IRR	18.675	4.15	2012	22.016	117.89	22.83	22.02	96.46	OK	-0.81
83269	LRG	00750		NOI	Same Management	280.819	52.15	ADJ	IRR	282.33	62.74	2012	332.969	117.94	345.07	332.97	96.49	OK	-12.10
140340	LRG	01298		NOI		26.825	5.035	PMT	IRR	27	6	2012	31.86	118.00	33.00	31.86	96.55	OK	-1.14
140602	LRG	01619		NOI		15.988	0	DCL	IRR	13.5	3	2012	15.988	118.43	16.50	15.99	96.90	OK	-0.51
88230	LRG	00735		NOI		372.968	68.516	PMT	IRR	371.39	82.53	2012	441.484	118.88	453.92	441.48	97.26	OK	-12.43
84068	LRG	01070		NOI	Same Management	92.523	17.086	ADJ	IRR	92.16	20.48	2012	109.609	118.93	112.64	109.61	97.31	OK	-3.03
84159	LRG	00930		NOI		180.95	33.054	DCL	IRR	179.64	39.92	2012	214.004	119.13	219.56	214.00	97.47	OK	-5.56
255637	LRG	01604	1	NOI		22.773	4.2	ADJ	IRR	22.5	5	2012	26.973	119.88	27.50	26.97	98.08	OK	-0.53

sum_rec_nbr	basin	nbr	suffix	NOI Filed	Same Management	shallow_mtr_amt	surface_mtr_amt	status	use	total_al_lw_div	total_a_cres	acct_year	TOTAL DIV SW+GW	% DIV	Total Acre-ft	total used	percent over	OVER OR OK	DIFFERNE CE (acre-ft)
84555	LRG	00823		NOI		428.269	77.71	DCL	IRR	422.01	93.78	2012	505.979	119.90	515.79	505.98	98.10	OK	-9.81
149279	LRG	00930	A	NOI		355.807	64.556	ADJ	IRR	348.84	77.52	2012	420.363	120.50	426.36	420.36	98.59	OK	-6.00
255623	LRG	01603	1	NOI		32.311	5.876	ADJ	IRR	31.68	7.04	2012	38.187	120.54	38.72	38.19	98.62	OK	-0.53
242220	LRG	00950	1	NOI		1040.221	0	LIC	IRR	855	190	2012	1040.221	121.66	1045.00	1040.22	99.54	OK	-4.78
140706	LRG	01759		NOI		80.437	14.447	DCL	IRR	77.85	17.3	2012	94.884	121.88	95.15	94.88	99.72	OK	-0.27
82364	LRG	04535		NOI		367.628	64.512	PMT	IRR	348.53	77.45	2012	432.14	123.99	425.98	432.14	101.45	OVER	6.16
88448	LRG	01993		NOI		13.464	2.319	ADJ	IRR	12.6	2.8	2012	15.783	125.26	15.40	15.78	102.49	OVER	0.38
87848	LRG	05156		NOI		277.87	47.717	ADJ	IRR	258.03	57.34	2012	325.587	126.18	315.37	325.59	103.24	OVER	10.22
150584	LRG	10388		NOI		898.086	151.479	DCL	IRR	822.2	182.71	2012	1049.565	127.65	1004.91	1049.57	104.44	OVER	44.66
144509	LRG	03308		NOI		10.504	0	ADJ	IRR	8.145	1.81	2012	10.504	128.96	9.96	10.50	105.51	OVER	0.55
202967	LRG	10200	6	NOI		430.302	69.784	PMT	IRR	376.97	83.77	2012	500.086	132.66	460.74	500.09	108.54	OVER	39.35
83358	LRG	08447		NOI		350.66	57.295	PMT	IRR	306.45	68.1	2012	407.955	133.12	374.55	407.96	108.92	OVER	33.41
205309	LRG	08495	1	NOI		327.447	52.098	PMT	IRR	283.14	62.92	2012	379.545	134.05	346.06	379.55	109.68	OVER	33.49
213643	LRG	06312	2	NOI		118.514	18.94	ADJ	IRR	102.38	22.75	2012	137.454	134.27	125.13	137.45	109.85	OVER	12.33
86261	LRG	04567		NOI		60.843	9.727	ADJ	IRR	52.56	11.68	2012	70.57	134.27	64.24	70.57	109.85	OVER	6.33
82885	LRG	05158		NOI		98.666	15.773	ADJ	IRR	85.23	18.94	2012	114.439	134.27	104.17	114.44	109.86	OVER	10.27
213632	LRG	06312	1	NOI		105.693	16.796	DCL	IRR	90.585	20.13	2012	122.489	135.22	110.72	122.49	110.63	OVER	11.77
87377	LRG	03696		NOI		14.541	2.408	PMT	IRR	12.51	2.78	2012	16.949	135.48	15.29	16.95	110.85	OVER	1.66
141304	LRG	03359		NOI		8.381	1.329	PMT	IRR	7.155	1.59	2012	9.71	135.71	8.75	9.71	111.03	OVER	0.97
83077	LRG	04110		NOI	Same Management	29.117	4.597	PMT	IRR	24.525	5.45	2012	33.714	137.47	29.98	33.71	112.47	OVER	3.74
84993	LRG	01992		NOI		2.22	0.363	PMT	IRR	1.845	0.41	2012	2.583	140.00	2.26	2.58	114.55	OVER	0.33
202954	LRG	10200	3	NOI		260.713	39.2	PMT	IRR	211.95	47.1	2012	299.913	141.50	259.05	299.91	115.77	OVER	40.86
202957	LRG	10200	4	NOI		234.114	34.533	DCL	IRR	187.12	41.583	2012	268.647	143.57	228.71	268.65	117.46	OVER	39.94
238773	LRG	06312	1A	NOI		66.785	9.848	PMT	IRR	52.695	11.71	2012	76.633	145.43	64.41	76.63	118.99	OVER	12.23
184235	LRG	12044		NOI		322.968	46.785	ADJ	IRR	252.72	56.16	2012	369.753	146.31	308.88	369.75	119.71	OVER	60.87
180870	LRG	11899		NOI		347.468	0	DCL	IRR	237.11	52.692	2012	347.468	146.54	289.81	347.47	119.90	OVER	57.66
190350	LRG	12187		NOI		368.64	53.409	PMT	IRR	288	64	2012	422.049	146.54	352.00	422.05	119.90	OVER	70.05
202963	LRG	10200	5	NOI		204.275	29.114	DCL	IRR	157.5	35	2012	233.389	148.18	192.50	233.39	121.24	OVER	40.89
212954	LRG	03801	1	NOI		10.9	0.933	DCL	IRR	7.875	1.75	2012	11.833	150.26	9.63	11.83	122.94	OVER	2.21
181284	LRG	11918		NOI		231.578	31.002	ADJ	IRR	167.49	37.22	2012	262.58	156.77	204.71	262.58	128.27	OVER	57.87
86248	LRG	04742		NOI		29.663	3.94	DCL	IRR	21.281	4.729	2012	33.603	157.90	26.01	33.60	129.20	OVER	7.59
86470	LRG	03698		NOI		7.071	0	HS	IRR	4.365	0.97	2012	7.071	161.99	5.34	7.07	132.54	OVER	1.74
86255	LRG	04547		NOI		19.985	2.45	PMT	IRR	13.23	2.94	2012	22.435	169.58	16.17	22.44	138.74	OVER	6.27
238487	LRG	10307	2	NOI		142.961	0	PMT	IRR	83.34	18.52	2012	142.961	171.54	101.86	142.96	140.35	OVER	41.10

sum_rec_nbr	basin	nbr	suffix	NOI Filed	Same Management	shallow_mtr_amt	surface_mtr_amt	status	use	total_al_lw_div	total_a_cres	acct_year	TOTAL DIV SW+GW	% DIV	Total Acre-ft	total used	percent over	OVER OR OK	DIFFERNE CE (acre-ft)
202951	LRG	10200	2	NOI		118.926	14.183	PMT	IRR	76.545	17.01	2012	133.109	173.90	93.56	133.11	142.28	OVER	39.55
211684	LRG	03923	1	NOI		9.361	0	ADJ	IRR	5.355	1.19	2012	9.361	174.81	6.55	9.36	143.03	OVER	2.82
89489	LRG	09172		NOI		103.346	12.133	ADJ	IRR	65.475	14.55	2012	115.479	176.37	80.03	115.48	144.30	OVER	35.45
88024	LRG	07513		NOI		81.65	9.632	DCL	IRR	51.75	11.5	2012	91.282	176.39	63.25	91.28	144.32	OVER	28.03
164442	LRG	11329		NOI		153.941	0	ADJ	IRR	84.78	18.84	2012	153.941	181.58	103.62	153.94	148.56	OVER	50.32
88737	LRG	03943		NOI		8.907	0	ADJ	IRR	4.905	1.09	2012	8.907	181.59	6.00	8.91	148.57	OVER	2.91
213195	LRG	12726	2	NOI		296.462	33.09	HS	IRR	178.65	39.7	2012	329.552	184.47	218.35	329.55	150.93	OVER	111.20
180196	LRG	11864		NOI		148.945	16.567	PMT	IRR	89.685	19.93	2012	165.512	184.55	109.62	165.51	150.99	OVER	55.90
84963	LRG	07859		NOI		73.945	7.809	ADJ	IRR	42.3	9.4	2012	81.754	193.27	51.70	81.75	158.13	OVER	30.05
181331	LRG	11922		NOI		134.352	13.634	ADJ	IRR	73.665	16.37	2012	147.986	200.89	90.04	147.99	164.36	OVER	57.95
143034	LRG	09587		NOI		85.75	8.318	PMT	IRR	45.315	10.07	2012	94.068	207.59	55.39	94.07	169.84	OVER	38.68
87805	LRG	06803		NOI		55.841	0	PMT	IRR	26.699	5.933	2012	55.841	209.15	32.63	55.84	171.13	OVER	23.21
213176	LRG	11871	1	NOI		114.017	10.267	DCL	IRR	55.26	12.28	2012	124.284	224.91	67.54	124.28	184.02	OVER	56.74
213177	LRG	11871	2	NOI		111.959	9.741	ADJ	IRR	52.695	11.71	2012	121.7	230.95	64.41	121.70	188.96	OVER	57.30
83829	LRG	03953		NOI		5.27	0.467	PMT	IRR	2.25	0.5	2012	5.737	254.98	2.75	5.74	208.62	OVER	2.99
88498	LRG	04840		NOI		15.894	1.283	DCL	IRR	6.66	1.48	2012	17.177	257.91	8.14	17.18	211.02	OVER	9.04
82607	LRG	06603		NOI		30.529	1.983	DCL	IRR	10.53	2.34	2012	32.512	308.76	12.87	32.51	252.62	OVER	19.64
203263	LRG	10200	7	NOI		62.839	3.967	DCL	IRR	21.24	4.72	2012	66.806	314.53	25.96	66.81	257.34	OVER	40.85
202949	LRG	10200	1	NOI		62.29	3.85	DCL	IRR	20.925	4.65	2012	66.14	316.08	25.58	66.14	258.61	OVER	40.57
238486	LRG	10307	1	NOI		62.48	3.462	ADJ	IRR	18.45	4.1	2012	65.942	357.41	22.55	65.94	292.43	OVER	43.39
205799	LRG	12723		NOI		139.602	0	ADJ	IRR	26.55	5.9	2012	139.602	525.81	32.45	139.60	430.21	OVER	107.15
202973	LRG	12726	1	NOI		130.397	0	DCL	IRR	18	4	2012	130.397	724.43	22.00	130.40	592.71	OVER	108.40
238490	LRG	10307	3	NOI		50.349	1.329	DCL	IRR	6.975	1.55	2012	51.678	740.90	8.53	51.68	606.19	OVER	43.15
223330	LRG	03334	1	NOI		0.817	0	DCL	IRR	0	0	2012	0.817	#DIV/0!	0.00	0.82	#DIV/0!	#DIV/0!	0.82

CITY OF LAS CRUCES 40-YEAR WATER DEVELOPMENT PLAN



by

Annie M. McCoy, CPG

John W. Shomaker, PhD, CPG

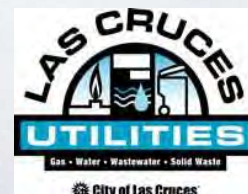
JOHN SHOMAKER & ASSOCIATES, INC.
Water-Resource and Environmental Consultants
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505-345-3407

prepared for

Las Cruces Utilities
City of Las Cruces



April 2017



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EXECUTIVE SUMMARY

The City of Las Cruces is in the Mesilla Basin along the Rio Grande, and extends into the West Mesa area on the edge of the Mesilla Basin, and into the East Mesa area in the southern part of the Jornada del Muerto Basin (Fig. 1). The Mesilla Basin and Jornada del Muerto Basin represent two sub-basins within the Lower Rio Grande Basin. The City relies on groundwater from its Valley and West Mesa Well Fields in the Mesilla Basin, and East Mesa Well Field in the Jornada del Muerto Basin, for its potable water supply (Fig. 2). The groundwater supply is produced from the Quaternary-age river valley alluvium, and the thick, unconsolidated Quaternary- to Tertiary-age Upper and Middle Santa Fe Group basin-fill sediments (Fig. 3).

Wastewater is treated at the City's Jacob A. Hands wastewater treatment facility, East Mesa water reclamation facility, and West Mesa wastewater treatment plant (Fig. 2). The Jacob A. Hands wastewater treatment facility also receives wastewater from other water systems in the Mesilla and Jornada del Muerto Basins, and the East Mesa water reclamation facility also receives wastewater from other water systems in the Jornada del Muerto Basin. Treated effluent from the Jacob A. Hands wastewater treatment facility is discharged as return flow to the Rio Grande. The East Mesa water reclamation facility produces very high quality reclaimed (Class A) water for landscape irrigation, and the West Mesa wastewater treatment plant produces reclaimed water used for sprinkler-irrigation of native vegetation in the West Mesa Industrial Park.

Groundwater diversions for Las Cruces Utilities water supply represent only 6.5 percent of total metered groundwater diversions in the Lower Rio Grande Basin (Fig. 4; NMOSE, 2016a; NMOSE, 2016b; 2011 to 2015 average). The majority of groundwater diversions are for irrigated agriculture, at about 84 percent of total metered groundwater diversions. In terms of both groundwater and surface water demand, groundwater diversions for Las Cruces water supply represent only 4.5 percent of the total water demand in the Lower Rio Grande water planning region (NMISC, 2016; 2010 data). If Las Cruces' return flow to the Rio Grande is considered, then Las Cruces water supply represents only 2.6 percent of the total regional water demand.

Moreover, the City's priority date of 1905 for its LRG-430 *et al.* water rights is both pre-Project and pre-Rio Grande Compact, thus providing it with the right to affect surface flows of the Rio Grande.

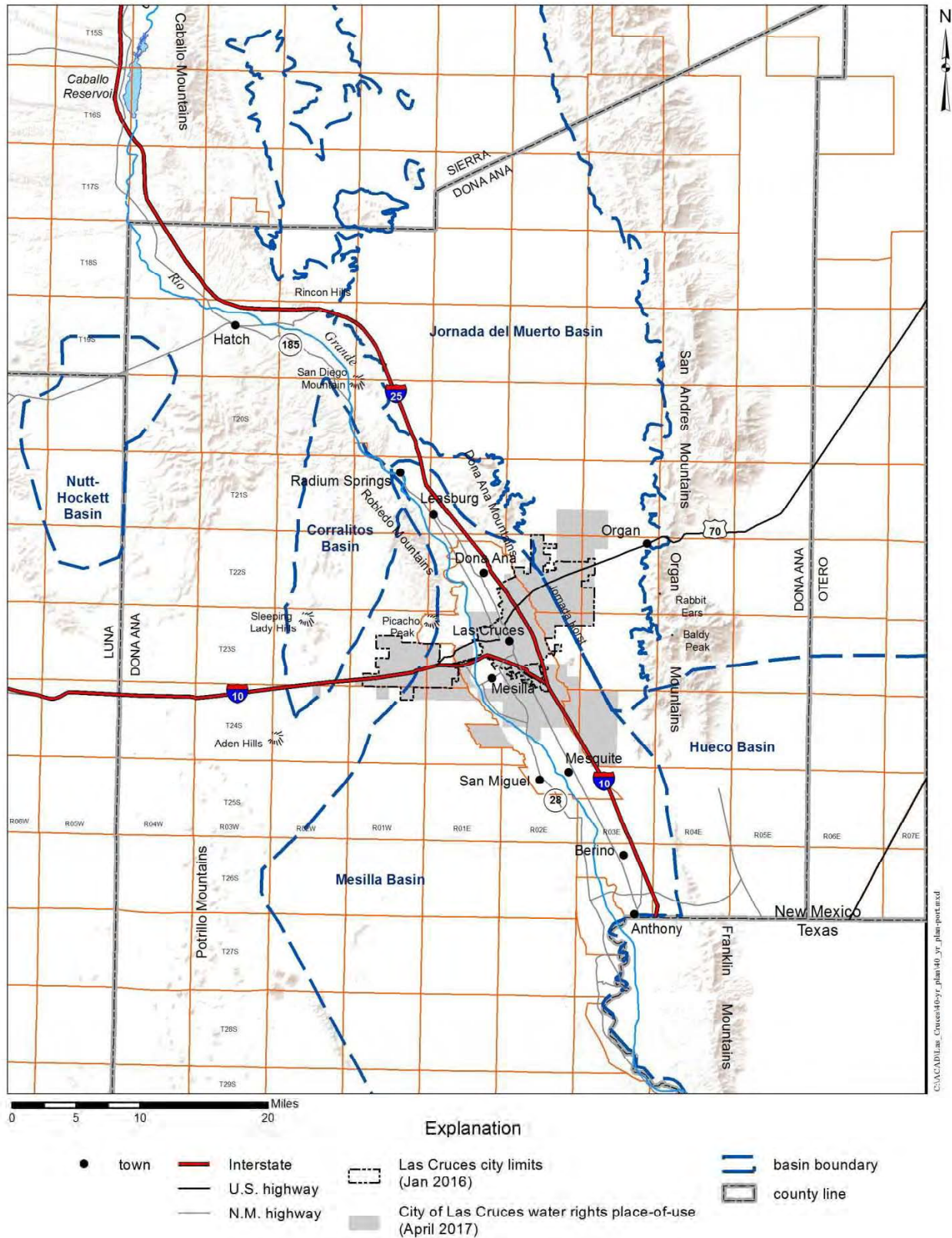


Figure 1. Map of the Mesilla Basin and southern part of the Jornada del Muerto Basin showing City of Las Cruces.

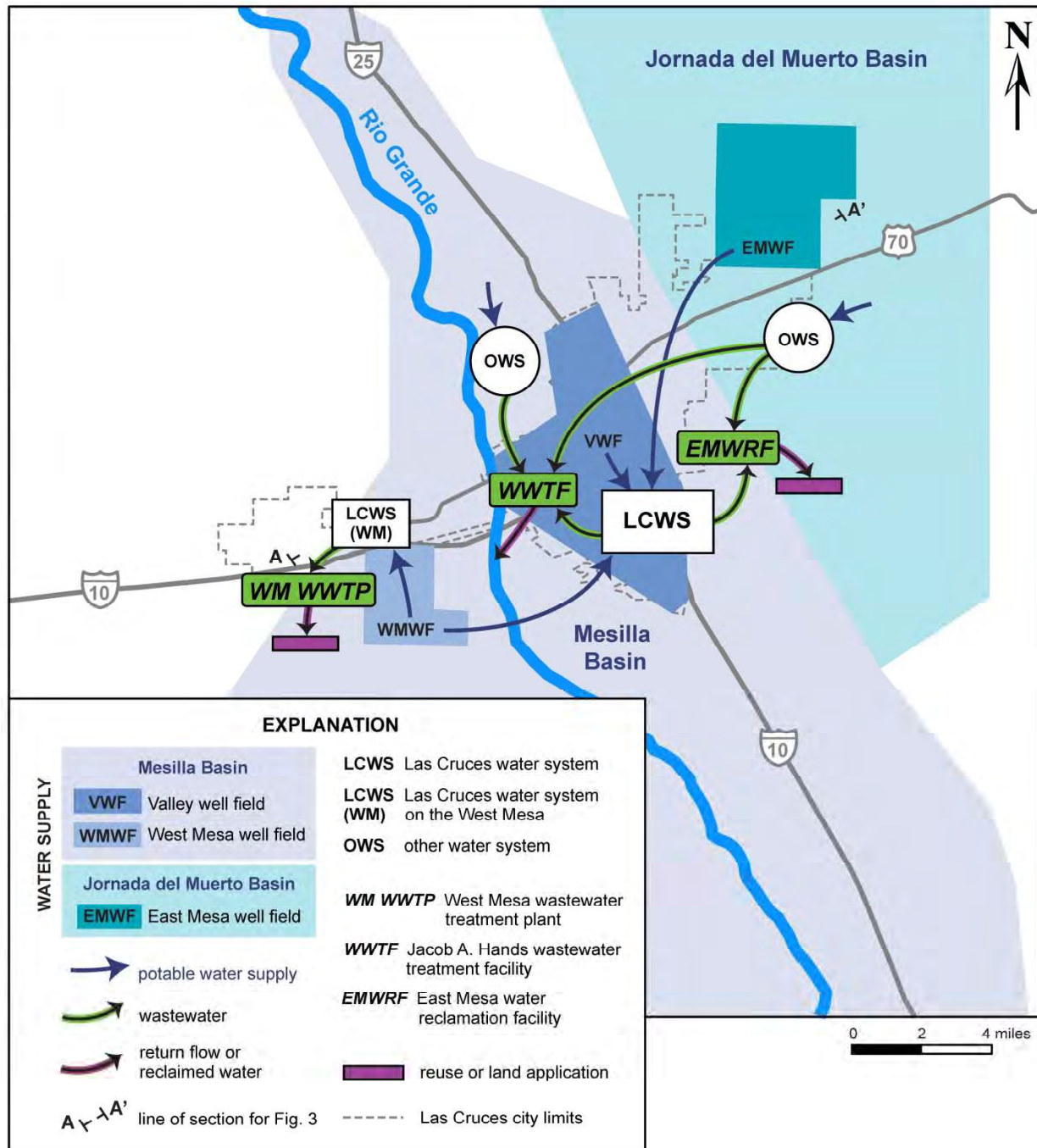


Figure 2. Schematic illustration of City of Las Cruces water supply, and water and wastewater system.

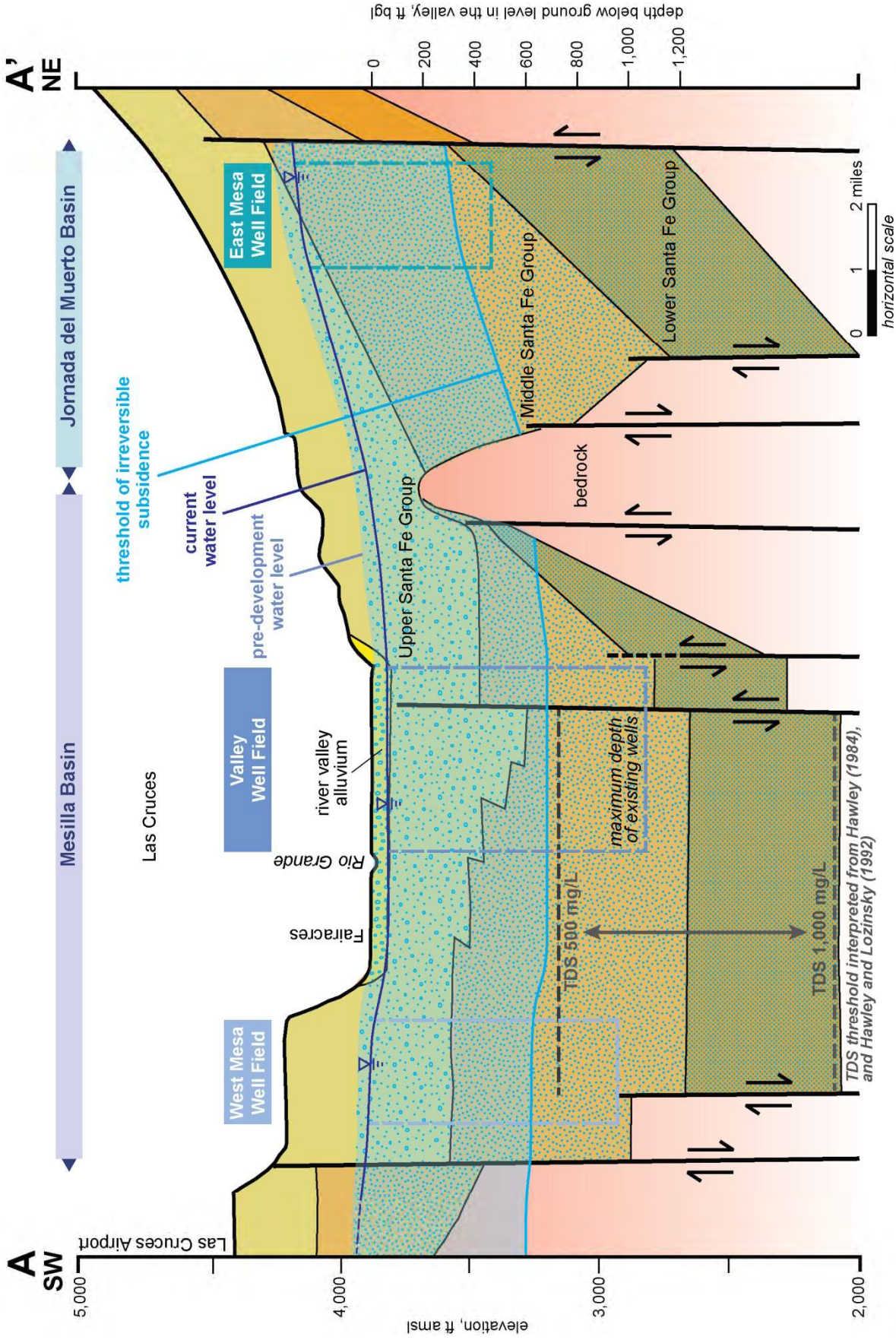


Figure 3. Schematic southwest-to-northeast hydrogeologic cross-section of City of Las Cruces area, after Hawley and Kennedy (2004).

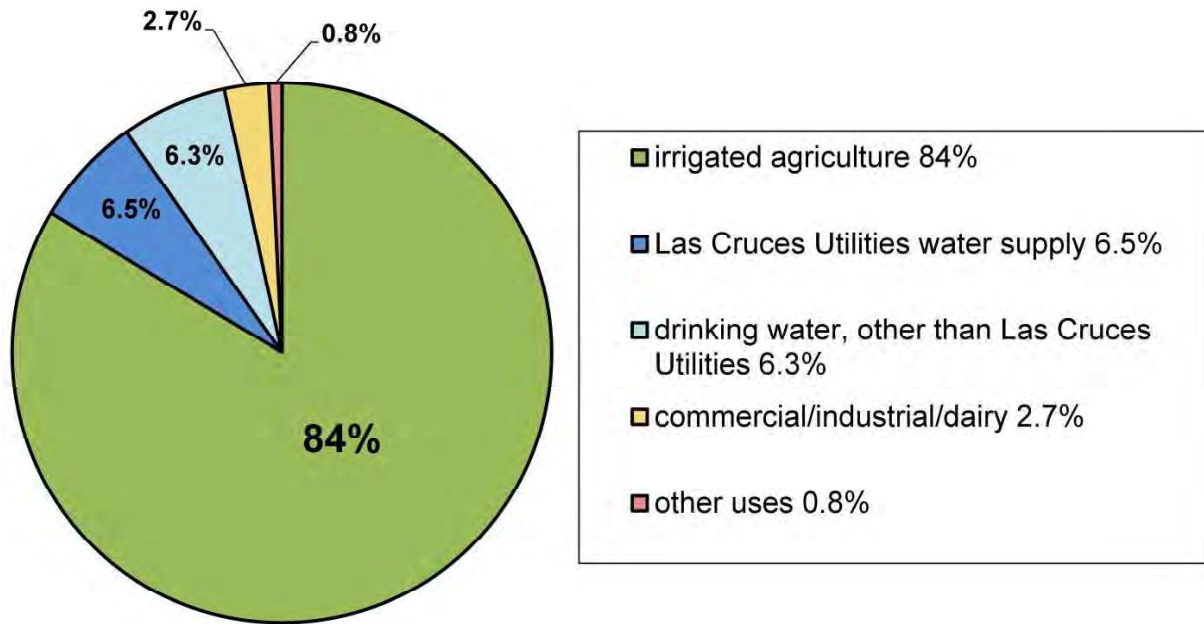


Figure 4. Chart summarizing groundwater diversions in the Lower Rio Grande Basin, 2011 to 2015.

Implementation of the City’s water development plan will benefit the people of Las Cruces by providing a safe and reliable water supply while limiting water waste, optimizing efficiency of water use, preventing pollution of water supply, and remediating contaminated groundwater. The City’s water development plan is consistent with the following principles defined by consensus by the National Groundwater Association (NGWA):

- “Groundwater sustainability: The development and use of groundwater resources to meet current and future beneficial uses without causing unacceptable environmental or socioeconomic consequences.”
- “Resilience: The capacity of a groundwater (or water-resources) system to withstand either short-term “shocks” (e.g., drought) or long-term change (e.g., climate change). When discussing resilience, the timeframe under consideration should be defined. Resilience applies to both water quantity and quality and may be an important concept as part of groundwater sustainability.”
- “Adaptive management: A staged decision-making approach to long-term groundwater (water-resources) management with an aim to reducing uncertainty over time via system monitoring.”

Las Cruces Utilities (LCU) will develop and maintain a sustainable water supply for City of Las Cruces over the next 40 years by:

- Using existing groundwater rights and permits in the Mesilla Basin and Jornada del Muerto Basin
- Developing thresholds for water quality and quantity, beyond which alternate water supply must be developed
- Developing an alternate water supply
- Practicing proactive conservation
- Monitoring water resources

Las Cruces' principal goal is to continue to beneficially use its existing water rights from its LRG-430 et al. well field and to perfect and beneficially use the water rights from its East Mesa and West Mesa well fields and to protect its right to do so in court proceedings and in its interaction with other water users in the Lower Rio Grande Water Users' Organization.

Development of an alternate supply is necessary due to water-level declines, and the transition to groundwater pumping from storage. Groundwater pumping from storage, also referred to as groundwater mining, is occurring in the shallow part of the aquifer in the Mesilla Basin due to a shortage of surface water and increased pumping for irrigated agriculture. A shortage of surface water also has implications for the City's ability to use return flow to meet streamflow offset requirements associated with groundwater permits, due to conditions on the use of return flow associated with the City's LRG-430 et al. water right. Thus, development of an alternate water supply is generally based on physical limitations, as opposed to deficiency in the amount of existing water rights and permits.

Water-level trends in the Mesilla Basin and the southern Jornada del Muerto Basin are being monitored under the City's water-level monitoring program. Water-level declines must be managed in order to avoid eventual irreversible subsidence and compaction of the aquifer, which would result in diminished capacity for aquifer recharge. Water-level declines may also be accompanied by a decrease in groundwater quality. Thus, the timing of development and implementation of alternate supply will be based on the threshold of irreversible subsidence, water quality thresholds, and appropriate warning indicators, within and beyond the 40-year planning timeframe. Figure 3 illustrates the threshold of irreversible subsidence as defined for the Mesilla Basin and Jornada del Muerto Basin. The need to consider alternate supplies may also be triggered by legal constraints arising from *Texas v. New Mexico & Colorado*, Original No. 141.

Importation of groundwater, aquifer storage and recovery with reclaimed water, and development of deep brackish-water wells and desalination, have been identified as potential sources for alternate supply. Sources for importation evaluated for potential implementation within the 40-year planning period include groundwater from the Corralitos Basin, Nutt-Hockett Basin, Mimbres Basin, or Salt Basin. These potential sources of alternate supply are considered in this Plan, and would need to be reviewed by the New Mexico Office of the State Engineer prior to determination of a policy direction from the LCU Board.

PROJECTED GROWTH

Las Cruces' low- and medium-growth population projections are referenced from City planning documents; the high-growth projection of 2.4-percent annual growth reflects historical average growth. Planning according to the historical average rate will allow LCU to perfect the water rights in the place-of-use area. However, LCU recognizes that there is some overlap with areas served by other utilities and place-of-use of water rights from other utilities, such as Moongate Water Company. Considering high growth and water conservation, the demand served by LCU would increase to 44,207 acre-feet per year (ac-ft/yr) by 2055.

WATER CONSERVATION GOALS

Las Cruces has and continues to refine the implementation and practice of its Water Conservation Program. Las Cruces is implementing its Water Conservation Program proactively and systematically, and in a manner appropriate to the conditions and needs of the community. The City is utilizing the highest and best technology available and economically feasible for the intended use to ensure conservation of water to the maximum extent practical. It may not be possible to meet the City's water demands by conservation alone, in the case that current and future activities in the Lower Rio Grande Basin pose challenges to using existing rights and permits to meet demand.

Las Cruces' goals for gallons per capita day (GPCD) water use will be met by the continued practice of the Water Conservation Program. Las Cruces has the goal of reducing total GPCD water use to 140 GPCD by 2055, by reducing single-family residential GPCD, working with industrial, commercial, and institutional customers, conservation at City facilities, and by reducing non-revenue water to 9 percent of diversions. It should be noted that this GPCD goal does not yet apply to customers of the former Jornada Water Company, recently acquired by LCU; water use data for the former Jornada Water Company are currently inadequate to determine a realistic GPCD goal for these customers.

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APPENDICES**(follow text)**

- Appendix A. LRG-430 Subfile Order
- Appendix B. LRG-3283 through LRG-3285 and LRG-3288 through LRG-3296
East Mesa Permits
- Appendix C. LRG-3275 et al. West Mesa Permit
- Appendix D. Background on Surface-Water Resources
- Appendix E. Background Hydrogeology of the Mesilla Basin
- Appendix F. Background Hydrogeology of the Jornada del Muerto Basin
- Appendix G. Existing Wells
- Appendix H. Return Flow Plan
- Appendix I. LRG-389 and LRG-399 Permit Approval and Water Rights Transfers
- Appendix J. LRG-5818 et al. Permit, Southwest Environmental Center Water Use
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- Appendix K. LRG-5039 et al. Permit
- Appendix L. NMOSE GPCD Calculator Spreadsheet, version 2-05, with Las Cruces
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- Appendix O. Drought and Water Emergency Response Plan
- Appendix P. Water Conservation Ordinance, water rates, and Water Conservation Plan
- Appendix Q. LRG-47 et al., LRG-48 et al., LRG-50 et al., LRG-1882 et al., and
LRG-4278 Permits

**CITY OF LAS CRUCES
40-YEAR WATER DEVELOPMENT PLAN**

1.0 WATER-SUPPLY DEVELOPMENT PLAN

1.1 Introduction

The City of Las Cruces is in the Mesilla Basin along the Rio Grande, and extends into the West Mesa area on the edge of the Mesilla Basin, and into the East Mesa area in the southern part of the Jornada del Muerto Basin. The City relies on groundwater from its Valley and West Mesa Well Fields in the Mesilla Basin, and well fields on the East Mesa in the Jornada del Muerto Basin, for its potable water supply. Figure 5 shows the City’s existing wells. Wastewater is treated at the City’s Jacob A. Hands wastewater treatment facility, East Mesa water reclamation facility, and West Mesa wastewater treatment plant. Treated effluent from the Jacob A. Hands wastewater treatment facility is discharged as return flow to the Rio Grande.

Groundwater diversions for Las Cruces water supply represent only 6.5 percent of total metered groundwater diversions in the Lower Rio Grande Basin (see Fig. 4; NMOSE, 2016a; NMOSE, 2016b; 2011 to 2015 average). In terms of both groundwater and surface water demand, groundwater diversions for Las Cruces water supply represents only 4.5 percent of the total water demand in the Lower Rio Grande water planning region (NMISC, 2016; 2010 data). If Las Cruces’ return flow to the Rio Grande is considered, then Las Cruces water supply represents only 2.6 percent of the total regional water demand. Moreover, the City’s priority date of 1905 for its LRG-430 *et al.* water rights is both pre-Project and pre-Rio Grande Compact, thus providing it with the right to affect surface flows of the Rio Grande.

Las Cruces 40-year water development plan has been prepared by John Shomaker & Associates, Inc. (JSAI) under the supervision of Las Cruces Utilities (LCU), and Utilities Director, Dr. Jorge Garcia. Implementation of the water development plan will benefit the people of Las Cruces by providing a safe and reliable water supply for residential, institutional, commercial, industrial, and recreational uses, and firefighting. The plan also aims to limit water waste, optimize efficiency of water use, prevent pollution of water supplies, and remediate contaminated groundwater.

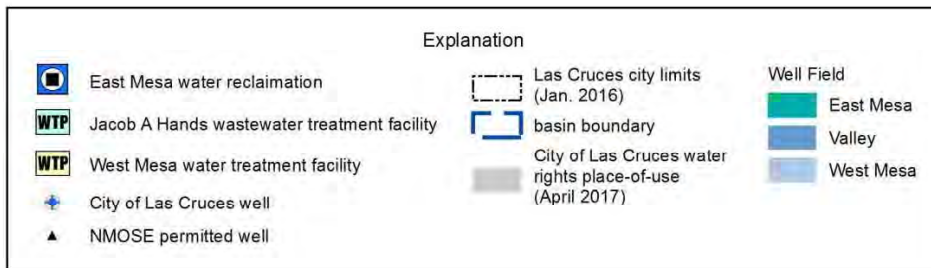
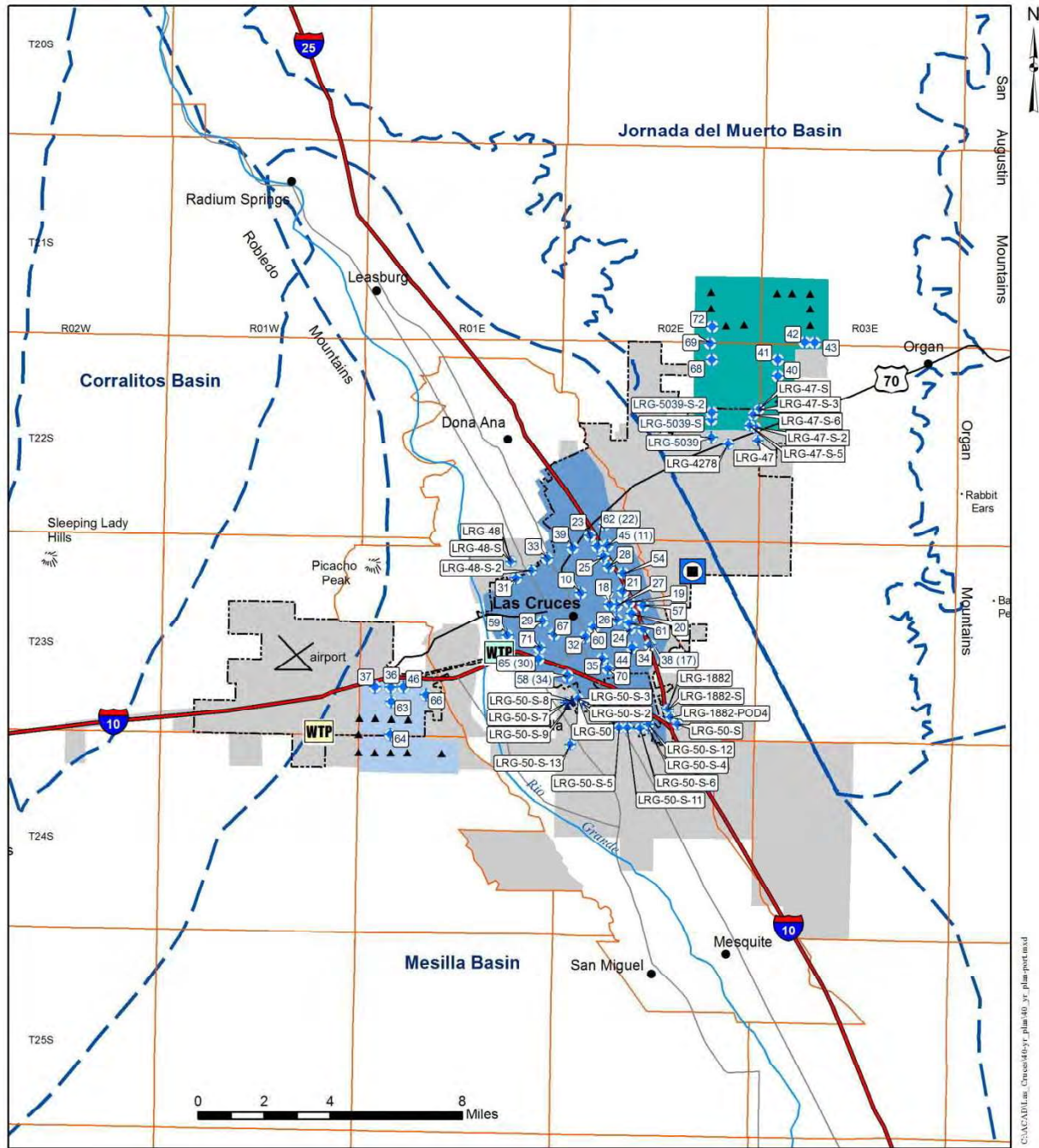


Figure 5. Map of City of Las Cruces area showing the East Mesa, West Mesa, and Valley Well Fields, and existing wells and permitted well locations.

1.2 Develop Alternate Supply

Las Cruces Utilities (LCU) will develop and maintain a sustainable water supply for the City of Las Cruces over the next 40 years by developing an alternate water supply in addition to using existing groundwater rights and permits. Development of an alternate water supply is generally based on physical limitations and potential legal/administrative constraints, as opposed to deficiency in the amount of existing water rights and permits. Potential legal/administrative constraints may arise from the general stream system adjudication or *Texas v. New Mexico and Colorado*, Original No. 141. Development of an alternate supply is necessary due to water-level declines in the Mesilla and Jornada del Muerto Basins, and the transition to groundwater pumping from storage. Groundwater pumping from storage, also referred to as groundwater mining, is occurring in the shallow part of the aquifer in the Mesilla Basin due to a shortage of surface water and increased pumping for irrigated agriculture.

A shortage of surface water also has implications for the City's ability to use return flow to meet streamflow offset requirements associated with groundwater permits, due to conditions on the use of return flow associated with the City's LRG-430 et al. water right. Return flow associated with LRG-430 et al. cannot be consumptively used, or used to fulfill offset requirements associated with other permits, when Elephant Butte Irrigation District's (EBID's) surface-water irrigation allotment is less than 2 acre-feet per acre. The City's existing portfolio of groundwater rights and permits is intended to be used in combination, with depletions from pumping under the West Mesa permit offset by return flows associated with the LRG-430 et al. right and the East Mesa permits (Appendices A, B, and C). If return flows from LRG-430 et al. cannot be used for offsets, or if LRG-430 et al. and East Mesa pumping must be curtailed due to water-level declines, this poses challenges to using existing rights and permits to meet demand.

Water-level trends in the Mesilla Basin and the southern Jornada del Muerto Basin are being monitored under the City's water-level monitoring program, and declines must be managed in order to avoid eventual irreversible subsidence and aquifer compaction, which would result in diminished capacity for aquifer recharge. Water-level declines may also be accompanied by a decrease in groundwater quality. There is evidence for accelerating water-level declines in the Jornada del Muerto Basin, as can be expected as a result of pumping and low-permeability boundaries within the aquifer. In the Mesilla Basin, inactive City supply wells monitored by the City, and observation wells monitored by the USGS, also show declines. Some of these declines

in the Mesilla Basin appear to be accelerating in response to increased pumping for irrigated agriculture and diminished short-term recharge. Farmers will likely deepen wells in the Mesilla Basin in years to come, thereby accelerating declines in the deeper part of the aquifer in which City wells are completed. The New Mexico Universities Working Group on Water Supply Vulnerabilities (2015) indicates that “the Mesilla Valley aquifer may no longer have the capacity to provide a reliable, supplemental supply during extended drought conditions and with the current levels of intensive use of groundwater.” This statement refers to extended drought conditions such as those experienced in Las Cruces area in the 1960s, and 2009 through 2014; periods with consecutive years of below-average annual precipitation. The “current levels of intensive use of groundwater” refers to the increased pumping for irrigated agriculture in the shallow part of the aquifer in the Mesilla Basin.

1.3 Rio Grande Surface Water Will Not Be Pursued for Alternate Supply

Due to current and projected availability of surface water in the Rio Grande, LCU will not pursue efforts to develop this source as an alternate water supply at this time; any future consideration of developing this source would be contingent on a number of factors. The Upper Rio Grande Impact Assessment (BOR, 2013) indicates that supplies from all native water sources to the Rio Grande are projected to decrease by an average of about one third overall. Projections show increased variability in flows on a monthly and annual basis in the future. Climate change modeling for the region indicates earlier snowmelt runoffs and warmer average temperatures, leading to increased variability in the magnitude, timing, and spatial distribution of streamflow.

The New Mexico Universities Working Group on Water Supply Vulnerabilities (2015) indicates that the Rio Grande has in recent years exhibited earlier peak flows and diminished streamflow efficiency, defined as the volume of downstream snowmelt runoff per unit of winter precipitation. They recommend that water managers consider the full range of NRCS (Natural Resources Conservation Service) predicted flows, “in this regard we note the dismal 10% of average at the low end of the range of projected flows at San Marcial.” Appendix D provides a description of surface-water resources.

The volume of water stored in Elephant Butte Reservoir upstream of Las Cruces decreased precipitously between 2000 and 2004, is now about one-quarter of what it was between 1985 and 1999, and is projected to continue to decrease (BOR, 2013).

1.4 Potential Sources for Alternate Supply

Importation of groundwater from nearby basins, aquifer storage and recovery with reclaimed water, and development of deep brackish wells and desalination, have been identified as potential sources for alternate supply. Sources for importation evaluated for potential implementation within the 40-year planning period include groundwater from the Corralitos Basin, Nutt-Hockett Basin, Mimbres Basin, or Salt Basin (Fig. 6). The NMOSE has declared the Lower Rio Grande, Nutt-Hockett, Mimbres, and Salt Underground Water Basins; the Corralitos Basin is part of the Lower Rio Grande Underground Water Basin. Sources for alternate supply in the Corralitos Basin, Nutt-Hockett Basin, and Mimbres Basin would likely take the form of a transfer of leased or purchased water rights, whereas the source for alternate supply in the Salt Basin may take the form of a new appropriation. The New Mexico Office of the State Engineer (NMOSE) has not forbidden transfers across basin boundaries, and there are many instances in which this practice of groundwater importation is occurring. Currently, there are several pending applications before the NMOSE for major interbasin transfers.

In the sections below, potential sources for alternate supply are discussed in broad, qualitative terms of institutional constraints, technical feasibility, capital and operating costs, environmental impacts, and potential amounts of water available. This discussion is not intended to be a rigorous analysis of feasibility, but is intended to provide useful information for initial prioritization of potential sources.

1.4.1 Importation of Groundwater from the Corralitos, Nutt-Hockett, or Mimbres Basins

The Corralitos, Nutt-Hockett, and Mimbres Basins lie to the west of Las Cruces (Fig. 6). Importation of groundwater from these basins holds potential in the case that groundwater becomes available for lease or purchase within the 40-year planning period.

The Corralitos Basin is within 4 miles of Las Cruces Airport, and would therefore not require a major extension of LCU infrastructure. The Corralitos Basin contains unconsolidated sediments of the Quaternary-to-Tertiary-age Santa Fe Group, up to about 300 ft thick (JSAI, 2004). Water columns in wells typically range from 50 to 150 ft. Well yields up to 1,000 gallons per minute (gpm) have been reported. Little water quality data are available for groundwater in the Corralitos Basin; based on available data, total dissolved solids (TDS) concentrations may exceed the secondary (aesthetic-related) drinking water standard of 500 milligrams per liter (mg/L) in some wells. The Corralitos Basin is a sub-basin of the Lower Rio Grande, and groundwater flows across low-permeability boundaries of the sub-basin.

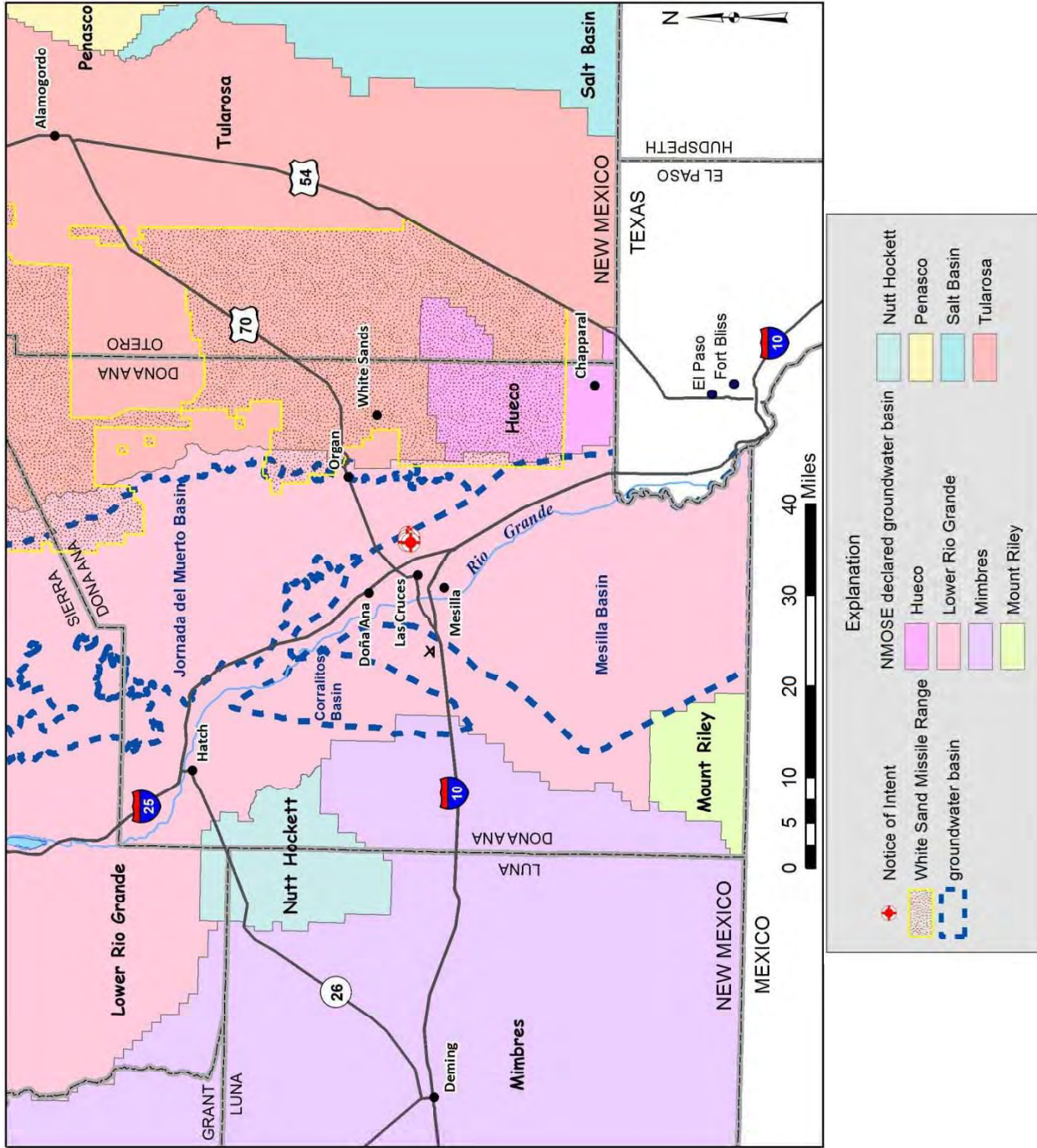


Figure 6. Map of southern New Mexico showing potential sources for alternate supply for the City of Las Cruces.

The Nutt-Hockett Basin is located about 14 miles northwest of the Corralitos Basin, and contains up to 500 ft of unconsolidated sediments of the Quaternary-to-Tertiary-age Santa Fe Group and Tertiary-age volcanic rocks (JSAI, 2004). Well yields up to 3,000 gpm have been reported. Groundwater quality is relatively good, although arsenic concentrations may be elevated above the primary drinking water standard of 0.010 mg/L in some wells. Groundwater in the Nutt-Hockett Basin generally flows to the northeast towards the Rio Grande.

The Mimbres Basin lies west of the Corralitos Basin. The basin area covers more than 4,000 square miles. Deming, New Mexico, in the central part of the Mimbres Basin, is about 50 miles west of Las Cruces. The Mimbres Basin is filled with up to 2,400 ft of poorly-consolidated sediments of the Quaternary-to-Tertiary-age Gila Conglomerate; the thickest deposits are near Deming (JSAI, 2006b). Wells for municipal use and irrigated agriculture in the Deming area yield hundreds of gpm to 1,000 gpm. Groundwater in the Gila Conglomerate aquifer in the Mimbres Basin is generally of good quality, although brackish groundwater does occur in the southeastern part of the basin, southeast of the Deming area (Hanson et al., 1994).

1.4.1.1 Institutional Constraints

As mentioned above, the NMOSE has not forbidden transfers across basin boundaries, and groundwater importation remains feasible from a water-rights permitting standpoint. Water rights permit applications for the Corralitos, Nutt-Hockett, or Mimbres Basin would likely take the form of transfer of existing groundwater rights. In the case of the Corralitos and Nutt-Hockett Basins, existing groundwater rights associated with irrigated agriculture may become available for lease or purchase, and in the case of the Mimbres Basin, existing groundwater rights associated with irrigated agriculture or mining-related industrial use may become available for lease or purchase. If groundwater rights associated with irrigated agriculture are transferred, the amount available for transfer is limited to the consumptive use (irrigated acreage multiplied by the consumptive irrigation requirement (CIR)).

From the infrastructure and right-of-way (ROW) standpoint, pipeline infrastructure would primarily cross BLM lands and State lands in the parts of the basins in Doña Ana County. There are significant areas of private lands in the parts of the Nutt-Hockett and Mimbres Basins in Luna County, to the west of Doña Ana County. The SunZia Southwest Transmission Project appears to have successfully negotiated ROW for above-ground transmission lines on BLM and

State lands, and minor areas of private lands, in Luna County in 2015. Interstate highway ROW along Interstate-10 between Las Cruces and Deming, or railroad ROW between Las Cruces and Deming and between Deming and Hatch, could potentially be utilized for pipelines from the Mimbres and Nutt-Hockett Basins.

1.4.1.2 Technical Feasibility

Insight on technical feasibility of groundwater importation via pipeline may be gained by reviewing the Eastern New Mexico Rural Water System (also referred to as the Ute Pipeline Project), a 151-mile-long proposed pipeline project designed to provide municipal and industrial water supply to several communities and Cannon Air Force Base in eastern New Mexico, a combined population of 73,000 (Widdison, 2015). Construction of this project began recently due to depletion of potable groundwater resources in the region, and it represents an example of an existing project for comparison.

Particularly applicable may be a phase of the Ute Pipeline Project referred to as the Interim Groundwater Pipeline (IGWP), designed to provide interim water supply by leasing or purchasing agricultural water rights until the project extends to Ute Reservoir, the ultimate water source for the Ute Pipeline Project. Construction of the IGWP began in 2015 with an estimated 10-year construction timeframe to supply 4,849 ac-ft/yr via a 97.5-mile pipeline, whereas the total project is to be constructed within a 25-year timeframe and supply 16,450 ac-ft/yr (ENMWUA, 2015).

Building pipeline infrastructure to the Corralitos Basin is likely the most technically feasible because the Corralitos Basin is within 4 miles of Las Cruces Airport. Building pipeline infrastructure to the Nutt-Hockett Basin would be similarly technically feasible; the Nutt-Hockett Basin is located about 14 miles northwest of the Corralitos Basin. In the case of the Corralitos Basin and Nutt-Hockett Basin, insight on technical feasibility may be gained by reviewing the development of infrastructure to convey groundwater from Las Cruces' East Mesa Well Field for municipal water supply.

1.4.1.3 Capital and Operating Costs

Insight on capital costs may be gained by reviewing the Ute Pipeline Project's IGWP. The IGWP includes about 97.5 miles of pipeline to be constructed within a 10-year timeframe to supply 4,849 ac-ft/yr. Capital costs to build the IGWP are estimated at \$105.1 million (2015 dollars; ENMWUA, 2015), or about \$1.1 million per mile when divided by 97.5 miles.

Capital costs could be significantly higher for a pipeline project that involves booster pump stations and other infrastructure considerations required by large elevation differences. The IGWP includes at least three booster pump stations across an area with relatively moderate elevation change of 600 ft. Capital costs could vary significantly depending on whether pipeline may be installed by trenching, ripping, or blasting.

Capital costs for a well field and pipeline project in the Corralitos, Nutt-Hockett, and Mimbres Basins would also include services related to well field development (in the case that well rehabilitation or replacement is needed), permitting, and system engineering and design.

Operating expenses would include energy, chemicals, labor, routine maintenance and repairs, and debt payment for capital costs of construction; other expenses such as replacements, expansions, and new technology would be minimal in the early years of project operation. Operating expenses associated with energy may be reduced in the case that renewable energy resources are developed in combination with the project, as is becoming increasingly common with new water projects.

1.4.1.4 Environmental Impacts

An Environmental Assessment would be required for a project involving federal lands, influence, funding, or agency actions, and would need to consider the impacts of the proposed action and alternatives. The Environmental Assessment would evaluate impacts on the affected environment and resources, which could include water resources, soils and geologic resources, land cover and vegetation, grazing, wildlife, cultural resources, socioeconomic resources, environmental justice, land use, energy requirements, transportation, air quality, climate change, and visual resources.

Environmental Assessment, Biological Assessment, and issuance of “Finding of No Significant Impacts” was a 3-year process in the case of the Ute Pipeline Project (Widdison, 2015). Environmental Assessment was an approximately 5-year process in the case of the SunZia Southwest Transmission Project (Scoping Report dated April 2010, U.S. Bureau of Land Management (BLM) Record of Decision (ROD) dated January 2015), and an 8-year process in the case of the Alamogordo Regional Water Supply Project (Scoping Report dated April 2005, BLM ROD dated August 2012).

1.4.1.5 Potential Amounts of Water Available

In the case of the Corralitos Basin, irrigation of 635 acres with 1,905 ac-ft/yr has been declared under NMOSE File No. LRG-468 et al. in the southeastern part of the Corralitos Basin. Relatively high transmissivities have been interpreted for the LRG-468 et al. wells, but the aquifer to the north and south of this zone appears to have lower transmissivity, indicating that high transmissivity may be localized in the basin (JSAI, 2004). Although a CIR of 1.92 ac-ft/ac was established for the water right in the 1993 temporary transfer LRG-468-A, the Rio Grande Adjudication has established a CIR of 2.6 ac-ft/ac for future transfers to non-irrigation purposes of use that shall apply to all irrigated acreage in the Lower Rio Grande. Thus, the maximum transfer associated with the water right would likely be 1,651 ac-ft/yr. It should be noted that a 2002 application to transfer 1,000 ac-ft/yr was withdrawn, possibly due to a letter from the State Land Office claiming that the water rights were appurtenant to State Trust Lands, and the applicant did not have the State Land Commissioner's consent to sever the water rights from Trust Lands.

In the case of the Nutt-Hockett Basin, the potential amounts of water available would likely be limited based on the quantity of agricultural groundwater rights that may become available for lease or purchase. Pumping for irrigated agriculture in the Nutt-Hockett Basin was estimated by the NMOSE to be 17,185 ac-ft/yr in 2010 (NMOSE, 2013), of which 13,493 ac-ft/yr was consumptively used (net pumping). The actual quantity of agricultural groundwater rights that may become available for lease or purchase would likely be significantly less than the net pumping associated with agricultural rights, as the area has a strong tradition of growing high-value crops such as chile, which will likely be preserved and continue.

In the case of the Mimbres Basin, the potential amounts of water available would likely be limited based on the quantity of agricultural groundwater rights that may become available for lease or purchase primarily in the area near Deming. Net pumping for irrigated agriculture in the Mimbres Basin in Luna County was estimated by the NMOSE to be 24,879 ac-ft/yr in 2010 (NMOSE, 2013), although a portion of that likely occurred near the New Mexico-Mexico border. The NMOSE estimated an additional 29,553 ac-ft/yr of surface water from the Mimbres River consumptively used for irrigation in Luna County in 2010.

JSAI has estimated net pumping for irrigated agriculture in the Deming area of the Mimbres Basin to range from 12,000 to 18,000 ac-ft/yr between 2006 and 2015 based on irrigated acreage evident in historical aerial photographs and a CIR of 1.80 ac-ft per acre.

In the Mimbres Basin, groundwater rights associated with mining-related industrial use may also become available for lease or purchase primarily in the area northwest of Deming, in Grant County. Pumping for mining use in Grant County was estimated by the NMOSE to be 7,882 ac-ft/yr in 2010 (NMOSE, 2013).

1.4.2 Importation of Groundwater from the Salt Basin

The Salt Basin lies to the east of Las Cruces (Fig. 6). Importation of groundwater from the Salt Basin holds potential as a joint project based on geography and major facilities in the area; the Salt Basin boundary is 35 to 40 miles from White Sands Missile Range (WSMR) Post Headquarters, which is in turn about 20 miles from Las Cruces.

The Salt Basin is one of the few remaining groundwater basins in New Mexico that contains large undeveloped areas, and groundwater recharge to the basin has been estimated at about 60,000 ac-ft/yr (JSAI, 2010). The Salt Basin spans about 5,095 square miles and straddles the New Mexico-Texas border, with about 43 percent of the basin area in New Mexico and 57 percent of the basin area in Texas. The Salt Basin aquifer is composed of carbonate rocks and alluvium-filled structural basins. The alluvium and fractured and karstified carbonate rocks have high permeability, and are surrounded by lower permeability bedrock. The majority of pumping in the basin has occurred close to the New Mexico-Texas border near Dell City, Texas. The New Mexico State Engineer declared the Salt Underground Water Basin in 2002 in an effort to regulate development by investors planning to import water from the Salt Basin to the El Paso metropolitan area.

1.4.2.1 Institutional Constraints

As mentioned above, the NMOSE has not forbidden transfers across basin boundaries, and groundwater importation remains feasible from a water rights permitting standpoint. Water rights permit applications for the Salt Basin may take the form of a new appropriation of groundwater. The New Mexico Interstate Stream Commission (NMISC) has filed applications to appropriate 90,000 ac-ft/yr based on the NMISC's interest in reserving the groundwater resource for potential future development for meeting interstate compact obligations on the Rio Grande and the Pecos River, or for use by New Mexico communities (Widdison, 2013). Importation of groundwater from the Salt Basin by Las Cruces would potentially be aligned with the NMISC's

interests and the intent of their existing application, as Las Cruces' treated effluent is discharged as return flow to the Rio Grande, and Las Cruces' water sources in the Lower Rio Grande would be replaced with the Salt Basin source.

From the infrastructure and ROW standpoint, pipeline infrastructure would primarily cross federal lands, and would involve cooperation from agencies including WSMR (U.S. Army). An example of a similar ROW project is the SunZia Southwest Transmission Project, the 2015 approval of which was contingent on burial of segments of transmission lines in order to mitigate impacts to military operations at WSMR.

1.4.2.2 Technical Feasibility

Insight on technical feasibility of groundwater importation via pipeline may be gained by reviewing the Ute Pipeline Project's Interim Groundwater Pipeline (IGWP), as discussed above in Section 1.4.1.2. Construction of the IGWP began in 2015 due to depletion of potable groundwater resources in the region, and it represents an example of an existing project for comparison.

1.4.2.3 Capital and Operating Costs

Insight on capital costs may be gained by reviewing the Ute Pipeline Project's IGWP, as discussed above in Section 1.4.1.3. Capital costs for a Salt Basin well field and pipeline project would also include services related to well field development, permitting, and system engineering and design.

Operating expenses would include energy, chemicals, labor, routine maintenance and repairs, and debt payment for capital costs of construction; other expenses such as replacements, expansions, and new technology would be minimal in the early years of project operation. Operating expenses associated with energy may be reduced in the case that renewable energy resources are developed in combination with the project, as is becoming increasingly common with new water projects.

1.4.2.4 Environmental Impacts

As discussed above in Section 1.4.1.4, an Environmental Assessment would be required for a project involving federal lands, influence, funding, or agency actions, and would need to consider the impacts of the proposed action and alternatives. Environmental Assessment, Biological Assessment, and issuance of "Finding of No Significant Impacts" for this type of project would likely be a three- to 8-year process.

1.4.2.5 Potential Amounts of Water Available

Groundwater recharge to the Salt Basin has been estimated at 60,000 ac-ft/yr, with about 87 percent of recharge in the New Mexico part of the basin and about 13 percent of recharge in Texas (JSAI, 2010). Recharge to the Salt Basin occurs by direct infiltration of precipitation in areas at higher elevations and areas of fractured rock, and infiltration of storm-water runoff into drainage channels, including the Sacramento River drainage, and alluvial fans. This estimate of 60,000 ac-ft/yr is in general agreement with a number of studies that present estimates ranging from about 55,000 to 100,000 ac-ft/yr (Bjorklund, 1957; Ashworth, 1995; Mayer, 1995; JSAI, 2002; Hutchison, 2008; DBSA, 2010). A recent study presents a much lower estimate of 6,000 to 12,000 ac-ft/yr based on environmental tracers (Sigstedt et al., 2016), but the discrepancy between this estimate and earlier estimates is unclear and the study does not include a discussion of their estimate in the context of the hydrogeologic conceptual model and basin water balance established by previous studies, or water-level trends. The range of water-availability estimates are bracketed on the high end by the estimated maximum sustainable yield of 150,000 ac-ft/yr (Livingston Associates, 2002).

The majority of pumping in the basin has occurred in the Texas part of the basin near Dell City, Texas. Net pumping was estimated at 89,000 ac-ft/yr, on average, between 1948 and 2009 (JSAI, 2010; this estimate is considered to be somewhat high). Net pumping in the New Mexico part of the basin has been estimated by the NMOSE to range from 1,580 and 10,130 ac-ft/yr between 1980 and 2010 (NMOSE *New Mexico water use by categories* series technical reports, e.g., NMOSE, 2013). The NMISC has applied to the NMOSE to appropriate a total of 90,000 ac-ft/yr from three applications (Widdison, 2013). The applications remain pending, and have received protests.

1.4.3 Aquifer Storage and Recovery with Reclaimed Water

The East Mesa water reclamation facility is used to collect wastewater from interceptors serving the East Mesa, High Range, and Sonoma Ranch areas, and produces very high quality reclaimed water for landscape irrigation, dust suppression, and supply to purple hydrants for fire suppression (Fig. 5). Important customers include the Sonoma Ranch Golf Course, Veteran's Park, Sagecrest Park, the closed Foothills Landfill, the City compost operation, Las Cruces Dam Environmental Restoration Project, and Centennial High School. Peak summer demand from the facility is about 700,000 gallons per day; however, the facility must ramp down in winter when there is very little demand for the water. The City has permits to discharge to a nearby arroyo, but that has been found to be unpopular with the public and is therefore not considered a practicable

option. Ramping down the facility each year poses operational issues, as the treatment system functions best with relatively consistent flow, as opposed to large seasonal fluctuations. Thus, reclaimed water produced from the East Mesa water reclamation facility during the winter represents a source that is not fully utilized and is a potential source for alternate supply.

LCU would like to utilize this source for alternate supply through an aquifer storage and recovery (ASR) project with well injection. Several City wells are located in close proximity to the reclaimed water pipeline, and could potentially be converted to injection wells. However, the current regulatory environment poses major challenges that may prohibit such a project. Treating the water to be injected to drinking-water quality, as would probably be required, is cost-prohibitive for LCU at this time. LCU is open to exploring other levels of treatment, with cooperation and support from regulatory agencies; for example, treatment that would decrease nitrate concentrations might be sufficient. LCU may also explore options for permitting disposal wells that would allow for injection, and applying to the NMOSE for potential return flow credit.

1.4.3.1 Institutional Constraints

New Mexico State agencies have regulatory processes for ASR and injection wells, and several ASR projects are in progress in New Mexico. Although the current regulatory environment poses permitting challenges, as ASR projects gain momentum in New Mexico and elsewhere in the U.S., regulations may be reviewed and modified for a more streamlined process and variances based on hydrogeologic conditions.

1.4.3.2 Technical Feasibility

The technical feasibility of ASR depends on aquifer characteristics, and the capacity of the aquifer to store water at the proposed ASR project site. In general, the technical feasibility of ASR using injection wells in appropriate areas has been demonstrated by projects in the U.S. and abroad. The Mesilla Basin and Jornada del Muerto Basins have been recognized as having excellent potential for ASR (Hawley, 2016).

1.4.3.3 Capital and Operating Costs

Capital costs may include modification of existing wells or completion of new wells as injection wells. Capital costs would also include services related to permitting, and system engineering, design, and testing. The capital costs of an ASR project with reclaimed water may be the lowest overall capital costs among the potential sources for alternate supply discussed in Section 1.4 of this Plan. Factors increasing capital costs of an ASR project would include the need to complete new wells, and the need to treat water to be injected, to drinking-water quality.

1.4.3.4 Environmental Impacts

In the case of ASR and injection wells, the primary focus of environmental impacts assessment would likely be assessment of impacts on groundwater in the project area. Disturbance of the landscape would be minimal compared to the groundwater importation and pipeline projects discussed in the sections above, and the project may be executed wholly on City-owned lands.

1.4.3.5 Potential Amounts of Water Available

The East Mesa water reclamation facility has a capacity of 1,000,000 gallons per day (about 1,121 ac-ft/yr). Average water reuse diversions for the winter months November through March represent about 58 percent of average water reuse diversions for the summer months April through October (2011 to 2015 data), and reflect the lack of demand for reclaimed water during the winter months. Under-utilization of the facility in the winter months equates to about 340 ac-ft/yr, based on data from 2011 to 2015. Thus, the potential amounts of water from an ASR project based on current capacity of the East Mesa water reclamation facility are relatively small compared to potential amounts of water available from groundwater importation projects discussed in the sections above.

1.4.4 Deep Brackish Wells and Desalination

Deep brackish groundwater resources where the top of the aquifer is more than 2,500 ft deep and the water has total dissolved solids (TDS) concentrations in excess of 1,000 milligrams per liter, represent a potential source for alternate supply (JSAI, 2008). Las Cruces filed Notice of Intent (NOI) for an estimated 5,000 ac-ft/yr of production from selected locations on City-owned lands on the East Mesa prior to passage of legislation in 2009 in which NMSA 72-12-25 was amended to give the State Engineer jurisdiction over these resources for municipal supply (Fig. 6). A technical memorandum prepared by Daniel B. Stephens & Associates, Inc. (DBSA, 2015) evaluates desalination, the process of physically removing dissolved solids from water for potable consumption, in Las Cruces.

Major limitations to developing deep brackish wells and a desalination project include the costs to drill and complete deep wells, to pump water from great depth, and to build, operate, and maintain a desalination treatment plant, and dispose of brine concentrate. The cost of constructing a deep well may be more than \$500 per foot. Operation and maintenance for a desalination plant would potentially increase the cost to produce drinking water by three to five times (DBSA, 2015).

Concerns unique to inland desalination projects include uncertainty regarding the magnitude of the resource, issues relating to water treatment for constituents in groundwater such as silica, and disposal of brine concentrate (Thomson, 2016). If brine concentrate is to be disposed of via deep well injection instead of evaporation ponds, there are major costs associated with permitting, construction, testing, and operation of injection well(s), and construction of infrastructure to convey concentrate to the injection well(s). Pipeline construction materials costs alone would be significant, as materials must be able to withstand highly-corrosive brine concentrate. It is possible that the water treatment cost component could decrease in the future, if membrane technology becomes cheaper, but significant costs related to permitting, construction, materials, and operation and maintenance would remain.

Due to the significant costs associated with developing deep brackish-water wells and a desalination project, this alternative is ranked as the last potential source for alternate supply within the 40-year planning period, after groundwater importation.

1.4.4.1 Institutional Constraints

In order to minimize the potential for institutional constraints, the City filed NOIs for locations on City-owned lands prior to passage of legislation in 2009 in which NMSA 72-12-25 was amended to give the State Engineer jurisdiction over these resources for municipal supply.

1.4.4.2 Technical Feasibility

The technical feasibility of deep brackish wells and desalination in appropriate areas has generally been demonstrated by projects in the U.S. and abroad. Within relatively close proximity to Las Cruces, the joint desalination facility operated by El Paso Water Utilities and Fort Bliss represents the world's largest inland desalination plant.

Technical feasibility is particularly complex for inland desalination projects in which the magnitude of the resource is uncertain, water treatment must address constituents in groundwater such as silica, and disposal of concentrate is a major issue.

1.4.4.3 Water Quality

TDS concentrations for the target deep aquifer may range from 1,500 to 7,500 mg/L due to water-rock interactions (JSAI, 2008). Sulfate concentrations may be high due to dissolution of gypsum, and concentrations of dissolved metals may be high due to high heat flow, volcanic rocks, and mineralization in the area. As mentioned above, water treatment for silica in groundwater is another concern unique to inland desalination projects.

1.4.4.4 Capital and Operating Costs

Capital costs would include completion of new deep brackish wells and possibly injection wells depending on the method chosen for disposal of brine concentrate, and construction of a desalination treatment plant. Las Cruces' NOI on the East Mesa considers five wells, each completed to a depth of 5,000 to 6,000 ft. As mentioned above, the cost of constructing a deep well may be more than \$500 per foot, and possibly as high as \$1,000 per foot. Capital costs would also include services related to permitting, and system engineering, design, and testing.

Operating costs associated with deep brackish wells and desalination would likely represent the highest operating costs among the potential sources for alternate supply discussed in Section 1.4 of this Plan. Operating costs would include costs to pump water from great depth, operate and maintain a desalination treatment plant, and dispose of brine concentrate, in addition to operating costs common to other groundwater projects, such as energy, chemicals, labor, routine maintenance and repairs, and debt payment for capital costs of construction.

1.4.4.5 Environmental Impacts

In the case of deep brackish wells and desalination, the primary focus of environmental impacts assessment would likely be assessment of impacts on groundwater and surface water in the region. The lateral extent of disturbance of the landscape would be less than the disturbance created by the groundwater importation and pipeline projects discussed in the sections above, and the project may be executed wholly on City-owned lands. If evaporation ponds are the method chosen for disposal of brine concentrate, environmental impacts assessment associated with air quality, wildlife, and the potential for contamination of the vadose zone, groundwater, and the land surface, would be significant.

1.4.4.6 Potential Amounts of Water Available

Las Cruces' NOI on the East Mesa includes an estimate of total production of 5,000 ac-ft/yr. The joint desalination facility operated by El Paso Water Utilities and Fort Bliss has the capacity to produce up to 27.5 million gallons of fresh water per day (about 30,825 ac-ft/yr), which likely represents the current upper limit on capacity of a state-of-the-art inland desalination facility.

1.5 Timeline for Implementation of Alternate Supply

The timeline for implementation of an alternate supply will likely be based on a threshold related to physical supply, such as a drawdown threshold not to be exceeded due to potential for irreversible subsidence and aquifer compaction. A water quality threshold would also need to be considered; as water-level declines may be accompanied by a decrease in groundwater quality, to the point that water treatment may be necessary for the existing supply. There is also a possibility that the threshold may take the form of a water-resources management threshold, as discussed in Section 2.11.

1.5.1 Drawdown Threshold

The maximum drawdown threshold, or threshold of irreversible subsidence, has been established for Las Cruces based on the method presented by Heywood (1992), which is based on the difference between present elevations in the Rio Grande Valley and bordering mesa areas. This difference is representative of the net overburden removed by the cycle of erosion and re-aggradation between the mid-Pleistocene and Holocene. The change in effective stress is estimated to occur at a calculated freshwater hydraulic head decline of [1.2 times the thickness of eroded overburden]. At Las Cruces, this thickness is based on the elevation change between the airport on the West Mesa at an elevation of about 4,450 ft above mean sea level (amsl), and Fairacres (North Fairacres Road) at an elevation of about 3,900 ft amsl, or about 550 ft. Multiplied by 1.2, the change in effective stress would occur at a decline of 660 ft from pre-development heads for Las Cruces water supply wells in the Valley of the Mesilla Basin (Fig. 3).

The change in effective stress could occur at a significantly lower decline on the East and West Mesas, as Heywood (1992) notes, “the preconsolidation stress threshold for overlying late Pleistocene or Holocene fluvial sediments and Bolson sediments outside the Rio Grande Valley may be significantly lower as it is for analogous sediments elsewhere (Holzer, 1981).”

1.5.2 Drawdown Warning Indicator

A drawdown warning indicator should be developed in order to ensure protection of the aquifer in the case that the drawdown threshold is approached, and to trigger actions towards alternate supply. Las Cruces’ water-level monitoring program, described in Section 2.9, will

provide the data to indicate whether the drawdown threshold is being approached. A drawdown warning indicator could be defined based on trends or changes observed in the water-level monitoring dataset, such as:

- Increase in 5- or 10-year running average water-level decline rate, such that the decline rate, if sustained, would lead to water-level declines approaching the drawdown threshold near the end of the 40-year planning period.
- Acceleration of the rate of water-level decline, such that the acceleration rate, if sustained, would lead to water-level declines approaching the drawdown threshold near the end of the 40-year planning period.

The drawdown warning indicator may require a certain level of statistical significance or confidence to avoid a false indication due to variance or noise in the dataset. The drawdown warning indicator may require that trends or changes be observed in a certain number of wells, or a specific set of wells designated as sentinel wells or representative of a substantial part of the total water supply.

The period of record for Las Cruces' water-level monitoring program is now long enough that long-term water-level trends are emerging for the majority of wells included in the program (JSAI, 2016); however, another 5 or 10 years of continued monitoring may be required to achieve the statistical significance required for a drawdown warning indicator.

1.5.3 Water Quality Threshold

Groundwater-level declines approaching the drawdown threshold may be accompanied by a decrease in groundwater quality. At the point that the quality of the existing supply has deteriorated to the point that treatment is needed, it may become more practical to implement an alternate supply. In terms of total dissolved solids (TDS), although the secondary (aesthetic-related) drinking water standard is 500 mg/L, the threshold would likely be closer to 1,000 mg/L. Existing Las Cruces water-supply wells typically produce water with TDS concentrations ranging from 300 to 500 mg/L, with occasional TDS results as high as 900 mg/L. TDS concentration of 1,000 mg/L typically represents the lower limit of waters defined as "brackish." The drawdown threshold will likely be reached prior to the TDS threshold in Las Cruces area of the Mesilla Basin (see Fig. 3); therefore it may be more reasonable to tie the water-quality threshold to a constituent other than TDS.

The TDS threshold is a major issue of discussion in the Mesilla Basin south of Las Cruces, near the border with Texas and Mexico. By some estimates, a TDS threshold may be reached within 10 to 15 years in that area. Other estimates indicate that there is enough fresh water to meet demand for the next two decades in that area (Albuquerque Journal Editorial Board, 2016). Due to the TDS threshold issue in the region, it is important to consider development of alternate supply with deep brackish wells and desalination for long-range planning, even though such a project may currently have a low ranking in terms of potential alternate supply due to associated costs (see Section 1.4.4, above). In a recent article discussing groundwater development in the Mesilla Basin, the manager of EBID made reference to the “West Mesa aquifer” containing “50 million acre-feet of economically extractable water, less brackish than the water being extracted in east El Paso” (LeCompte, 2016). It is unclear what potential undeveloped groundwater resource is being referred to as the “West Mesa aquifer” in the article, in terms of location and depth, but it does not appear to coincide with the City’s West Mesa Well Field as described in this Plan.

The water-quality threshold may also be tied to concentrations of naturally-occurring uranium in groundwater in Las Cruces area of the Mesilla Basin. Seven City wells in the Mesilla Valley (Wells 10, 19, 20, 21, 24, 38, and 44) are not currently in service due to elevated naturally-occurring uranium concentrations in groundwater. The primary drinking water standard for total uranium is 30 micrograms per liter, which would represent the threshold beyond which water treatment is needed.

1.5.4 Groundwater Level Declines

Decline from pre-development heads is on the order of 40 to 50 ft, and current rates of decline are on the order of 1 to 2 ft/yr, for Las Cruces wells in the Valley of the Mesilla Basin, based on pre-development heads as presented in JSAI (2006a) and recent water levels (JSAI, 2016). Appendix E presents hydrographs for selected wells in the Mesilla Basin. Rates of decline appear to be accelerating in a number of wells in the Mesilla Basin (e.g., Figs. E12, E14, E16, E17, E21, and E22); 2 ft/yr would be expected to represent the minimum rate of decline for future projections. However, we do not have a good way to estimate future decline rates if the water table becomes disconnected from the river in areas of heavy pumping, especially where there is little irrigation, as is the case for some Las Cruces wells in the Valley. Thus, rates of decline for future projections could be significantly greater than 2 ft/yr.

Decline from pre-development heads is currently on the order of 60 to 70 ft, and current rates of decline are on the order of 3 to 4 ft/yr, for Las Cruces wells in the Jornada del Muerto Basin, based on pre-development heads as presented in JSAI (1996) and recent water levels (JSAI, 2016). Appendix F presents hydrographs for selected wells in the Jornada del Muerto Basin. Rates of decline appear to be accelerating in wells in the Jornada del Muerto Basin (e.g., Figs. F5 through F7); thus 4 ft/yr would be expected to represent the minimum rate of decline for future projections.

1.6 Planning for Several Possible Future Scenarios

The water-supply development plan must allow LCU the flexibility to meet current and future demand under several potential future scenarios, including:

- Groundwater use will be subject to the implications of the 2008 Operating Agreement among U.S. Bureau of Reclamation (BOR), Elephant Butte Irrigation District (EBID), and El Paso County Water Improvement District No. 1 (EPCWID). This scenario will likely lead to increased pumping of supplemental irrigation wells, and accelerated drawdowns, which may affect pumping of Las Cruces wells close to the Rio Grande and result in more pumping in the Jornada del Muerto Basin.
- Groundwater use will not be affected by the Operating Agreement, but will be subjected to conventional administration by NMOSE. Under this scenario, the City's preference is to pump from the Mesilla Basin.
- Management of the river and groundwater that is hydrologically connected to the river will be "federalized," and the City will be required to enter into a contract with BOR to continue to divert groundwater in the Lower Rio Grande Basin.

These potential future scenarios are discussed in detail in Section 2.11.

2.0 WATER RIGHTS AND WELLS

Las Cruces has well fields in the Mesilla Basin (Fig. 5; Valley and West Mesa Well Fields) and the southern Jornada del Muerto Basin (Fig. 5; East Mesa Well Field), from which groundwater is produced under the terms of NMOSE Permit No. LRG-430 et al., which represents a groundwater right of 21,869 ac-ft/yr with a priority date of 1905.

In the Mesilla Basin, Las Cruces also has permits to develop groundwater rights of 5,042 ac-ft/yr (LRG-389, LRG-399, and LRG-5818 et al.) in the Valley, and 8,000 ac-ft/yr on the West Mesa (West Mesa permit LRG-3275 et al.). In the Jornada del Muerto Basin, Las Cruces has permits to develop a groundwater right of 10,200 ac-ft/yr (East Mesa permits LRG-3283 through LRG-3285 and LRG-3288 through LRG-3296) and permits to develop groundwater rights of 107 ac-ft/yr (LRG-5039 et al.). Las Cruces recently acquired Jornada Water Company with permits to develop a groundwater right of 5,961 ac-ft/yr in the Mesilla and Jornada del Muerto Basins (LRG-47 et al., LRG-48 et al., LRG-50 et al., LRG-1882 et al., and LRG-4278).

In addition to groundwater rights, the City currently owns or leases about 1,412 acres of surface-water rights in EBID. A full annual surface-water allotment from EBID is 3 ac-ft/ac, but the allotment depends on flows in the Rio Grande.

A summary of the City's current rights and permits is presented in Table 1, and a summary description of existing wells is presented in Table 2. Table 3 indicates the NMOSE well number associated with each existing and planned City well. A summary of data for existing wells is provided in Appendix G. Two of LCU's wells (Wells 18 and 27) currently in service in the Valley are operating as plume capture wells for the tetrachloroethylene (PCE) plume at the Griggs and Walnut Superfund site. Water pumped from Wells 18 and 27 is treated and stored in a tank, and the City uses the treated water for municipal water supply; treatment system operation and reporting to the U.S. Environmental Protection Agency (EPA) is being performed voluntarily until LCU has a consent decree with EPA, and represents a positive example of proactive water management. Seven wells in the Valley are not currently in service due to naturally-occurring elevated uranium concentrations in groundwater. LCU has been developing flexible infrastructure to allow for delivery of water to different parts of the water system, and east-west redundancy within the system. Implementation of enhanced meter calibration and automatic meter reading (AMR) ensures compliance with water rights and permits.

Table 1. Summary of City of Las Cruces water rights and permits

NMOSE File No.	basin	water-right status	diversion amount, ac-ft/yr
LRG-430 et al.	Mesilla/ Jornada del Muerto	pre-basin, conditional use of return flow ^a	21,869
LRG-3283 through LRG-3285, LRG-3288 through LRG-3296 East Mesa permit	Jornada del Muerto	permitted, new appropriations, minimal offsets required ^b	10,200
LRG-3275 et al. West Mesa permit	Mesilla	permitted, new appropriations, offsets required ^c	8,000
LRG-389	Mesilla	permitted, new appropriations, offsets required ^d	2,550
LRG-399	Mesilla	permitted, new appropriations, offsets required ^e	1,700
LRG-5818 et al.	Mesilla	permitted, new appropriations, offsets required ^f	792
LRG-5039 et al.	Jornada del Muerto	permitted, new appropriations, offsets required	107
LRG-47 et al., LRG-48 et al., LRG-50 et al., LRG-1882 et al., LRG-4278	Mesilla/ Jornada del Muerto	permitted, new appropriations, offsets required	5,961
groundwater rights and permits			51,179
surface water rights owned		adjudicated ^g	1,412 acres

^a In periods of drought in which EBID allotment to irrigators is less than 2 ac-ft/ac, Las Cruces is not to consumptively use treated effluent derived from LRG-430 wells, but instead must return effluent to stream system.

^b Total of 100 ac-ft/yr in offsets required after 40 years, total of 644 ac-ft/yr in offsets required after 100 years.

^c Amount of water that may be diverted re-evaluated and determined by NMOSE annually subject to any offset debt from previous calendar year(s) and anticipated availability of offsets in the current calendar year, pursuant to Return Flow Plan (JSAI, 2009).

^d The City has permit to drill well LRG-389, but the well has not been drilled due to groundwater quality issues at the permitted location.

^e 435.5 ac-ft/yr of rights already transferred into LRG-399.

^f Total diversion amount is 792 ac-ft/yr. Offsets required for diversions exceeding 42.46 ac-ft/yr (maximum beneficial use). 15 ac-ft/yr serving Southwest Environmental Center.

^g A full surface-water allotment from EBID is 3 ac-ft/ac, but the allotment depends on flows in the Rio Grande.

NMOSE - New Mexico Office of the State Engineer

EBID - Elephant Butte Irrigation District

ac-ft/yr - acre-feet per year

Table 2. Summary of existing City of Las Cruces wells

wells	well field	basin	NMOSE File No.	water-right status	diversion amount, ac-ft/yr
Wells 10, 18-21, 23-33, 35, 38, 39, 44, 45, 54, 57-62, 65, 67, 70, 71, Driving Range, Paz Park	Valley	Mesilla Basin	LRG-430 et al.	pre-basin	21,869
Wells 36, 37, 46, 63, 64	West Mesa				
Wells 42, 43	East Mesa	Jornada del Muerto Basin	LRG-430 et al. ^a	permitted, new appropriations, minimal offsets required ^b	10,200
Well 40	East Mesa		LRG-3289		
Well 41	East Mesa		LRG-3288		
Well 68	East Mesa		LRG-3290		
Well 69	East Mesa		LRG-3291		
Well 72	East Mesa		LRG-3292		
Well 71 ^d	Valley	Mesilla Basin	LRG-399	permitted, new appropriations, offsets required	1,700
Wells 66, S-4, S-6	Valley		LRG-5818 et al.	permitted, new appropriations, offsets required ^c	792
Wells LRG-5039, LRG-5039-S, LRG-5039-S-2	East Mesa	Jornada del Muerto Basin	LRG-5039 et al.	permitted, new appropriations, offsets required	106.866
Wells LRG-47 thru -47-S-6, LRG-48 thru -48-S-2, LRG-50 thru -50-S-13, LRG-1882 thru -1882-POD4, LRG-4278	East Mesa	Mesilla Basin and Jornada del Muerto Basin	LRG-47 et al., LRG-48 et al., LRG-50 et al., LRG-1882 et al., LRG-4278	permitted, new appropriations, offsets required	5,961

^a These wells to be transferred to East Mesa permit (LRG-3283 through LRG-3285, LRG-3288 through LRG-3296)

^b Total of 100 ac-ft/yr in offsets required after 40 years, total of 644 ac-ft/yr in offsets required after 100 years.

^c Total diversion amount is 792 ac-ft/yr. Offsets required for diversions exceeding 42.46 ac-ft/yr (maximum beneficial use). 15 ac-ft/yr serving Southwest Environmental Center.

^d Well 71 (LRG-430-S-44) permitted as supplemental point of diversion under LRG-399.

NMOSE - New Mexico Office of the State Engineer

ac-ft/yr - acre-feet per year

Table 3. Existing and planned City of Las Cruces wells and associated NMOSE file numbers

NMOSE Well No.	City Well No.	well field	status
LRG-430	10	Valley	not currently in service ^b
LRG-430-S	44	Valley	not currently in service ^b
LRG-430-S-2	45 (11)	Valley	not currently in service
LRG-430-S-3	58 (12, 34)	Valley	in service
LRG-430-S-4	38 (17)	Valley	not currently in service ^b
LRG-430-S-5	18	Valley	in service ^a
LRG-430-S-6	19	Valley	not currently in service ^b
LRG-430-S-7	20	Valley	not currently in service ^b
LRG-430-S-8	21	Valley	not currently in service ^b
LRG-430-S-9	62 (22)	Valley	in service
LRG-430-S-11	24	Valley	not currently in service ^b
LRG-430-S-12	26	Valley	in service
LRG-430-S-13	25	Valley	in service
LRG-430-S-14	27	Valley	in service ^a
LRG-430-S-15	28	Valley	in service
LRG-430-POD57	29B	Valley	in service
LRG-430-S-17	65	Valley	in service
LRG-430-POD58	31B	Valley	in service
LRG-430-POD59	32B	Valley	in service
LRG-430-S-20	33	Valley	in service
LRG-430-S-21	35	Valley	in service
LRG-430-S-22	36	West Mesa	not currently in service
LRG-430-S-23	37	West Mesa	not currently in service
LRG-430-S-25	54	Valley	not currently in service
LRG-430-S-27	39	Valley	in service
LRG-430-S-29	42	East Mesa	in service
LRG-430-S-30	43	East Mesa	in service
LRG-430-S-31	57	Valley	not currently in service
LRG-430-POD56	59B	Valley	in service
LRG-430-S-33	Driving Range	Valley	not currently in service
LRG-430-S-34	Paz Park	Valley	in service
LRG-430-S-35	60	Valley	not currently in service

^a operating as plume capture well for Griggs and Walnut tetrachloroethylene (PCE) plume

^b elevated uranium concentrations

^c casing collapsed

NMOSE - New Mexico Office of the State Engineer

Table 3. Existing and planned City of Las Cruces wells and associated NMOSE file numbers (continued)

NMOSE Well No.	City Well No.	well field	status
LRG-430-S-36	46	West Mesa	in service
LRG-430-S-37	61	Valley	in service
LRG-430-S-38	63	West Mesa	in service
LRG-430-S-39	64	West Mesa	not currently in service
LRG-430-S-40	48	West Mesa	not yet drilled
LRG-430-S-41	49	West Mesa	not yet drilled
LRG-430-S-42	67	Valley	in service
LRG-430-S-43	70	Valley	in service
LRG-430-S-44	71	Valley	in service
LRG-3283	No. not assigned	East Mesa	not yet drilled
LRG-3284	No. not assigned	East Mesa	not yet drilled
LRG-3285	No. not assigned	East Mesa	not yet drilled
LRG-3288	40	East Mesa	in service
LRG-3289	41	East Mesa	in service
LRG-3290	68	East Mesa	in service
LRG-3291	69	East Mesa	in service
LRG-3292	72	East Mesa	not currently in service
LRG-3293	No. not assigned	East Mesa	not yet drilled
LRG-3294	No. not assigned	East Mesa	not yet drilled
LRG-3295	No. not assigned	East Mesa	not yet drilled
LRG-3296	No. not assigned	East Mesa	not yet drilled
LRG-399	No. not assigned	Valley	not yet drilled
LRG-5818-S-7	66	Valley	not currently in service
LRG-5818-S-8	S-8	Valley	not yet drilled
LRG-5818-S-9	S-9	Valley	not yet drilled
LRG-5818-S-10	S-10	Valley	not yet drilled
LRG-5039	-	East Mesa	in service
LRG-5039-S	-	East Mesa	in service
LRG-5039-S-2	-	East Mesa	in service
LRG-47	-	East Mesa	in service
LRG-47-S	-	East Mesa	not currently in service
LRG-47-S-2	-	East Mesa	in service

^a operating as plume capture well for Griggs and Walnut tetrachloroethylene (PCE) plume

^b elevated uranium concentrations

^c casing collapsed

NMOSE - New Mexico Office of the State Engineer

Table 3. Existing and planned City of Las Cruces wells and associated NMOSE file numbers (concluded)

NMOSE Well No.	City Well No.	well field	status
LRG-47-S-3	-	East Mesa	in service
LRG-47-S-5	-	East Mesa	in service
LRG-47-S-6	-	East Mesa	in service
LRG-48	-	Valley	in service
LRG-48-S	-	Valley	not currently in service
LRG-48-S-2	-	Valley	in service
LRG-50	-	Valley	in service
LRG-50-S	-	Valley	not currently in service
LRG-50-S-2	-	Valley	not currently in service
LRG-50-S-3	-	Valley	not currently in service
LRG-50-S-4	-	Valley	in service
LRG-50-S-5	-	Valley	not currently in service
LRG-50-S-6	-	Valley	not currently in service
LRG-50-S-7	-	Valley	not currently in service
LRG-50-S-8	-	Valley	not yet drilled
LRG-50-S-9	-	Valley	not yet drilled
LRG-50-S-11	-	Valley	in service
LRG-50-S-12	-	Valley	in service
LRG-50-S-13	-	Valley	in service
LRG-1882	-	Valley	not currently in service
LRG-1882-S	-	Valley	in service
LRG-1882-POD4	-	Valley	in service
LRG-4278	-	East Mesa	not currently in service

^a operating as plume capture well for Griggs and Walnut tetrachloroethylene (PCE) plume

^b elevated uranium concentrations

^c casing collapsed

NMOSE - New Mexico Office of the State Engineer

2.1 LRG-430 et al. Wells in the Valley

The LRG-430 wells located in the Rio Grande Valley of the Mesilla Basin include 25 wells that are currently in service and pumped under Las Cruces' LRG-430 et al. groundwater right, which has a diversion right of 21,869 ac-ft/yr (Tables 1 through 3). The LRG-430 et al. right has a pre-Rio Grande project, 1905 priority date. As indicated in the LRG-430 Subfile Order (Appendix A), Las Cruces is not to consumptively use the treated effluent derived from the LRG-430 wells in periods of drought in which the EBID allotment to irrigators is less than 2 ac-ft/ac, but instead must return the effluent derived from the wells to the stream system.

The 25 wells currently in service in the Valley were completed between 1953 and 2012, to depths ranging from 460 to 1,070 ft. The wells have pumping capacities generally ranging from 300 to 2,900 gpm. Non-pumping water levels range from 30 to 240 ft, and pumping water levels range from 80 to 350 ft.

2.2 LRG-430 et al. Wells on the West Mesa

The LRG-430 wells located on the West Mesa of the Mesilla Basin include two wells that are currently in service and pumped under Las Cruces' LRG-430 et al. right, Wells 46 and 63 (Tables 1 through 3).

Wells 46 and 63 were completed in 1982 and 1996 to depths of 1,288 ft and 1,290 ft, respectively, with pumping capacities of 2,300 gpm and 3,100 gpm, respectively. Non-pumping water levels are 330 ft and 355 ft, and pumping water level is about 395 ft in these wells.

2.3 LRG-430 et al. Wells on the East Mesa

The LRG-430 wells located on the East Mesa in the Jornada del Muerto Basin include two wells that are currently in service and pumped under the City's LRG-430 et al. right, Wells 42 and 43 (Tables 1 through 3). These wells may eventually be transferred to the East Mesa permits LRG-3283 through LRG-3285 and LRG-3288 through LRG-3296.

Wells 42 and 43 were completed in 1998 to depths of 1,170 ft and 1,150 ft, respectively. The wells have pumping capacities of 1,670 and 1,500 gpm. Non-pumping water levels are 520 ft and 550 ft, and pumping water levels are 640 ft and 670 ft.

2.4 LRG-3283 through LRG-3285 and LRG-3288 through LRG-3296, Wells on East Mesa

The East Mesa permits LRG-3283 through LRG-3285 and LRG-3288 through LRG-3296 in the Jornada del Muerto Basin, for a total diversion of 10,200 ac-ft/yr, were approved by the NMOSE on February 4, 2002 (Table 1, Appendix B). These permits require 100 ac-ft/yr in offsets

after 40 years, and 644 ac-ft/yr in offsets after 100 years of pumping; however, diversions under these permits will generate much more return flow than that. The remainder of the return flow is used to offset depletions associated with other permits including the West Mesa permit (Section 2.5 below), or water reclamation projects. The term “offsets” refers to the amount of water that is lost from the river as a result of pumping. Pumping a well can lead to some reduction of flow in the river either by intercepting water that would otherwise discharge to the river or by inducing some recharge from the river; the amount of the reduction is required to be offset. The offset requirements associated with pumping under the East Mesa permits are relatively small because the wells are far from the river, and there is a low-permeability boundary in the form of a bedrock high between the East Mesa Well Field in the Jornada del Muerto Basin, and the Rio Grande in the Mesilla Basin.

The East Mesa Well Field now includes four wells in service and pumped under the East Mesa permits (Table 3). These wells were completed between 1988 and 2012 to depths of 815 to 1,170 ft. The wells have pumping capacities of 520 to 1,440 gpm. Non-pumping water levels are 320 to 480 ft, and pumping water levels are 430 to 575 ft.

2.5 LRG-3275-POD1 through LRG-3275-POD7, Wells on the West Mesa

The West Mesa permit LRG-3275 et al. on the West Mesa of the Mesilla Basin, for a total diversion up to 8,000 ac-ft/yr, was approved by the NMOSE on March 9, 2010 (Table 1, Appendix C). Permit conditions indicate that the amount of water that may be diverted under LRG-3275 et al. will be re-evaluated and determined by NMOSE annually subject to any offset debt from previous calendar year(s) and anticipated availability of offsets in the current calendar year, pursuant to the Return Flow Plan (JSAI, 2009; Appendix H). Permit conditions also require a system gallons per capita day (GPCD) goal of 180 GPCD within 20 years, updates to the Water Conservation Plan every 10 years, progress reports on implementation of the 40-Year Plan every 10 years (at a minimum), and annual reports to NMOSE on water conservation efforts, overall GPCD and residential GPCD, and American Water Works Association (AWWA) system water audit. Wells have not yet been completed under LRG-3275 et al.

2.6 LRG-389, LRG-399 and LRG-5818 et al. Permits in the Valley

Permits LRG-389, for a diversion of 2,550 ac-ft/yr with offsets required, and LRG-399, for a diversion of 1,700 ac-ft/yr with offsets required, in the Valley of the Mesilla Basin, were approved by the NMOSE in 1989 (Table 1, Appendix I). The City has transferred a total of about 435.5 ac-ft/yr of groundwater rights into LRG-399.

LRG-389 has not yet been drilled, and extensions of time have been filed with the NMOSE. The permitted well location has been identified as having poor groundwater quality with respect to concentrations of naturally-occurring uranium. The permitted location may need to be further evaluated in terms of water quality variations with depth.

Alternative points of diversion for LRG-399, and for LRG-430-S-44 as supplemental well, were approved by the NMOSE on August 21, 2008. LRG-399 has not yet been drilled. LRG-430-S-44 (Well 71) was drilled in 2006 to a depth of 725 ft. The pumping capacity is 2,900 gpm, the non-pumping water level is about 40 ft, and the pumping water level is about 120 ft.

The LRG-5818 et al. permits are for a total diversion of 792 ac-ft/yr with offsets required (Tables 1 through 3, Appendix J). LRG-5818-S-7 (Well 66) has been drilled. Of the permitted 792 ac-ft/yr, 15 ac-ft/yr serves the Southwest Environmental Center for wetland restoration. Offsets are required for diversions exceeding 42.46 ac-ft/yr.

2.7 LRG-5039 et al., Mesa Development Acquisition, Wells on the East Mesa

City of Las Cruces has acquired the Mesa Development permit LRG-5039 et al., and associated wells, on the East Mesa in the Jornada del Muerto Basin (Tables 1 and 2, Appendix K). The acquisition was based on the amount that has been put to beneficial use, 106.866 ac-ft/yr. The City will not be able to acquire unperfected groundwater rights, if any, remaining under LRG-5039 et al.

LRG-5039 et al. includes three wells that are currently in service (Table 3). These wells were completed between 1964 and 1990 to depths of 550 to 600 ft. The wells have pumping capacities of 500 gpm each. The non-pumping water level is about 350 ft for these wells.

2.8 LRG-47 et al., LRG-48 et al., LRG-50 et al., LRG-1882 et al., and LRG-4278, Jornada Water Company Acquisition, Wells in the Valley and on the East Mesa

City of Las Cruces has acquired the Jornada Water Company permits LRG-47 et al., LRG-48 et al., LRG-50 et al., LRG-1882 et al., and LRG-4278, and associated wells in the Valley in the Mesilla Basin and on the East Mesa in the Jornada del Muerto Basin (Tables 1 and 2, Appendix Q). The acquisition totals 5,961 ac-ft/yr. The acquisition includes 14 wells that are currently in service based on meter records on file with the NMOSE (Table 3).

2.9 Water-Level Monitoring Program

LCU has maintained a water-level monitoring program, under which groundwater-level data have been collected at the City's supply wells based on a defined methodology and QA/QC process from mid-2011 to present (JSAI, 2016). The monitoring program includes monthly hand-

measurements collected at over 40 wells, plus transducer measurements recorded on an hourly basis in 12 wells plus the nested Jornada shallow, middle, and deep piezometers. Monitoring program wells are located in the Valley of the Mesilla Basin, on the West Mesa of the Mesilla Basin, and on the East Mesa of the Jornada del Muerto Basin. Water-level trends in these wells and the Jornada nested piezometer, plus USGS-monitored piezometers located close to the Rio Grande in Las Cruces, are analyzed in annual reports prepared for LCU (JSAI, 2016).

2.10 NMSU-Las Cruces Water Agreement

Las Cruces water system has been interconnected with the New Mexico State University (NMSU) water system since approximately 1967. The mutual water delivery responsibilities have been set forth in various agreements dated January 1, 1967 and March 23, 1983, which replaced the 1967 Agreement; and related agreements known as the Afton Agreement dated March 8, 2004, the Supplemental Agreement dated March 12, 2007, and the Letter of Understanding dated October 12, 2012. These agreements collectively were for short term emergency and peaking purposes capped at 3,500 ac-ft/yr. There was a Third Amendment to Ground Lease Agreement dated March 1, 2015 in which the City conditionally agreed to buy additional water from NMSU. The City has fully performed the water related provisions in the Letter of Understanding and the Third Amendment, and has terminated the Supplemental Agreement. Therefore, the 1983 Agreement remains in effect, and future water deliveries needed by the City from NMSU are reasonably expected to be minimal.

2.11 Legal Issues and Constraints

Many legal and administrative constraints affect the distribution of water in the Lower Rio Grande Basin, many of them unresolved, and at issue in pending litigation. A comprehensive summary of legal and administrative constraints may be found in the current draft of the 2016 Lower Rio Grande Regional Water Plan,¹ but that summary does not deal in any detail with the fundamental questions of state versus federal jurisdiction over surface water released from Elephant Butte Reservoir and groundwater in the underlying aquifer, the United States' claims for the Rio Grande Project, and associated issues that are important to Las Cruces. Those issues are now being addressed in *Texas v. New Mexico and Colorado* in the United States Supreme Court, and in *State of New Mexico v. Elephant Butte Irrigation Dist.*, the adjudication of Lower Rio Grande water rights in New Mexico State District Court. The following paragraphs describe the current status of the litigations in lay-reader language.

¹ See New Mexico State Engineer website: http://www.ose.state.nm.us/Planning/RWP/region_11.php.

2.11.1 Rio Grande Project Operating Agreement and *Texas v. New Mexico and Colorado*

The management of Rio Grande Project surface water directly affects rights to divert groundwater in the Lower Rio Grande, and therefore has an important impact on the water available under Las Cruces' groundwater rights. Las Cruces presently relies entirely on groundwater for its municipal supply and will do so in the future. The constraints under which it uses groundwater will depend on three factors - implementation of the Operating Agreement, the Original Action brought by Texas in the United States Supreme Court, and the water rights adjudication in State District Court. Litigation currently pending in the U.S. Supreme Court, *Texas v. New Mexico and Colorado*, Original, No. 141, is likely to establish principles of water management and administration in the Lower Rio Grande for the future. Much of the following summary is derived from an *amicus curiae* brief filed in 2013 by the City's legal counsel,² from the City's *amicus curiae* brief in support of the State of New Mexico's Motion to Dismiss the case,³ and from a 2009 report to Las Cruces by John Shomaker & Associates.⁴

The Operating Agreement

In 2008, an Operating Agreement was negotiated among EBID, EP No. 1, and the U.S. Bureau of Reclamation (BOR) to govern the releases of surface water from Elephant Butte Reservoir. In effect, rather than sharing shortages as would have occurred under the earlier management of the system, in which each acre in both EBID and EP No. 1 would receive the same annual allocation, EP No. 1 instead receives the annual amount of water that would be consistent with the "D2 curve" developed by the BOR as if the Project Supply conditions for the period 1951-1978 remained unchanged. The D2 curve relates the historical amount of water available to divert from the river at canal headings ("Project Supply") with the amount released from reservoir storage ("Project Release"), recognizing that part of the water applied to lands becomes return flow, available to be diverted again. The relationship between the two annual quantities, Project Release and Project Supply, defined for the period 1951-1978, and expressed as the D2 curve, determined the total amount of water that could be diverted from the Rio Grande by EBID, EP No. 1, and the Republic of Mexico. Mexico will receive the amount determined from the "D1 curve," which is based on the amount of water available to be released, regardless of the amount of water that remains for EBID. Shortages of Project surface water would be borne by EBID.

² City of Las Cruces' *Amicus Curiae* Brief Opposing Texas' Motion for Leave to File a Bill of Complaint and Supporting Defendants, *State of Texas v. State of New Mexico and State of Colorado*, March 11, 2013.

³ City of Las Cruces' *Amicus Curiae* Brief in Support of New Mexico's Motion to Dismiss Texas' Complaint and the United States' Complaint in Intervention

⁴ Shomaker, J.W., 2009, Long-term effects on Lower Rio Grande water supply of Rio Grande Project Operating Agreement ("D3") and Pecan-Growers Settlement with State Engineer: John Shomaker & Associates, Inc., consultant's report to City of Las Cruces.

However, the conditions in the basin no longer reflect the 1951-1978 relationship defined by the D2 curve, and “[a]fter the Operating Agreement became public, hydrologic analysis by New Mexico revealed that the effect of the Operating Agreement was to alter the historical releases of the Rio Grande Project surface water from Elephant Butte Reservoir which had been made 57% to EBID and 43% to EP No. 1 [based on the areas of irrigated lands in the respective projects] to a new ratio, possibly as low as 38% to EBID and 62% to EP No. 1. The consequence is to significantly increase groundwater pumping in New Mexico, thus decreasing groundwater in storage where the City’s groundwater rights are located.”⁵

One implication of the Operating Agreement is that supplemental irrigation pumping to supply EBID lands would increase, so that groundwater levels in the Lower Rio Grande Basin in general, and the Mesilla Valley in particular, would decline, rather than being roughly in equilibrium as had been the case historically. Groundwater mining may eventually lead to an unsustainable condition. On August 8, 2011, New Mexico filed suit in federal district court in New Mexico⁶ to invalidate the Operating Agreement. The City of Las Cruces intervened in the case on February 17, 2012, on Count V of New Mexico’s Complaint, *i.e.*, to compel the United States to complete an Environmental Impact Statement (EIS) identifying the effects of increased groundwater pumping on water in storage in the aquifer, where the City’s rights are located, over the projected 50-year life of the Operating Agreement. The City has actively participated in the NEPA process related to the BOR’s proposed EIS.

Texas v. New Mexico & Colorado

Evidently concerned that the favorable treatment of EP No. 1 under the Operating Agreement might be in jeopardy, Texas filed a Motion for Leave to File a Bill of Complaint in the United States Supreme Court on January 8, 2013, alleging that New Mexico had violated the terms of the Rio Grande Compact by allowing diversions of surface water and groundwater in excess of the 1938 conditions, more specifically that “[t]he Rio Grande Compact is predicated on the understanding that delivery of water at the New Mexico–Texas state line would not be subject to additional depletions beyond those that were occurring at the time the Rio Grande Compact was executed. New Mexico, through the actions of its officers, agents and political

⁵ City of Las Cruces’ *Amicus Curiae* Brief Opposing Texas’ Motion for Leave to File a Bill of Complaint and Supporting Defendants, *State of Texas v. State of New Mexico and State of Colorado*, March 11, 2013, p. 7.

⁶ *State of New Mexico v. U.S. Bureau of Reclamation et al.*, No. 1:2011-cv-00691-JB-ACT.

subdivisions, has increasingly allowed the diversion of surface water, and has allowed and authorized the extraction of water from beneath the ground, downstream of Elephant Butte Dam, by individuals or entities within New Mexico for use within New Mexico. The excess diversion of Rio Grande surface water and the hydrologically connected underground water downstream of Elephant Butte Reservoir adversely affects the delivery of water that is intended for use within the Rio Grande Project in Texas.”⁷ New Mexico contends that the Compact does not govern the delivery of water at the state line, and that it has met the terms of the Compact.

On March 31, 2014, the United States was granted leave to intervene in *Texas v. New Mexico & Colorado*. The United States contends that groundwater in storage is “Project supply” for which contracts are required with BOR by users of groundwater in New Mexico. Texas and the United States argue that it was “understood” that the Rio Grande Compact requires the delivery of a specific amount of water at the New Mexico-Texas state line. They argue that the Rio Grande Compact resulted in a tacit apportionment of the groundwater of the Lower Rio Grande, resulting in New Mexico being locked into 1938 conditions not applicable to Texas and the United States, then posit that all surface water and hydrologically-connected groundwater below Elephant Butte Reservoir in New Mexico are Rio Grande Project water, which the United States contends cannot be diverted without obtaining a water supply contract from it. *See* United States’ Complaint in Intervention at 4, ¶¶ 12 and 13. This position results in New Mexico being divested of state jurisdiction over all surface water and groundwater in the Lower Rio Grande, assuming that all groundwater is hydrologically connected, threatening the viability of Las Cruces’ water supply and requiring the City to enter into a water supply contract with the United States to divert groundwater in the Lower Rio Grande for municipal use, despite the fact that the City’s groundwater use was initiated more than 100 years ago, prior to the Rio Grande Project. New Mexico filed a Motion to Dismiss which addressed claims by both Texas and the United States. Las Cruces filed an *amicus curiae* brief in support of New Mexico’s motion. Oral argument was held before the Court’s Special Master, Gregory Grimsal, in New Orleans on August 19, 2015. A draft Report was issued for comments on July 1, 2016, and comments were received from the parties and amici on August 1, 2016. A conference call hearing was held on August 11, 2016.

⁷ Texas’ Motion for Leave to File Complaint, Complaint, and Brief in Support of Leave to File Complaint, *State of Texas v. State of New Mexico and State of Colorado*, January 2013, p. 9.

In his draft Report, the Special Master denied New Mexico's motion to dismiss Texas' claims, but granted the motion to dismiss the United States' claims with the following proviso - he recommended that "the Court extend its original, but not exclusive, jurisdiction...to allow for the resolution by the Court of the United States' project claims to occur simultaneously with the resolution of Texas's compact claims against New Mexico. (First Report of Special Master, 2011, p. 205)." If the Court concurs, and the United States prevails on this point, Las Cruces' groundwater may be deemed to be Rio Grande Project water and the City may be required to enter into a contract with the BOR to continue to divert it. In that case, it is possible that the water would be subject to re-assignment to, for example, Endangered Species Act purposes, as has occurred in the Middle Rio Grande.

Las Cruces has established, in the context of the adjudication of Lower Rio Grande water rights (see below), a priority date of 1905 for its pre-basin (and pre-Rio Grande Project) water rights under File No. LRG-430. The Special Master's report (see First Report of the Special Master, June 28, 2016, p. 184) seems to imply that such pre-basin and pre-Rio Grande Project rights are recognized, but that the water to supply them must come from the New Mexico allocation under the Rio Grande Project. The question remains, then, whether Las Cruces' rights would be fully supplied in priority, in their status as senior to the January, 1906 filing of the notice of appropriation for the Rio Grande Project by the U.S. Reclamation Service (see, e.g., First Report of the Special Master, June 28, 2016, p. 83), as they would be under New Mexico law, or would be subject to the shortage-sharing implicit in the distribution of water within the Project (see, e.g., Frank Clayton letter, reproduced in part in First Report of the Special Master, June 28, 2016, p. 179). If the Rio Grande Project is the "sole method" by which the Rio Grande valley in New Mexico receives its equitable apportionment from the stream (First Report of the Special Master, June 28, 2016, p. 175), it seems probable that Las Cruces would share shortages.

The Special Master's report does not deal explicitly with the relation between groundwater and surface water, and seems to treat surface water and its allocation as the only hydrologic issue. This could be the situation only if the groundwater system has always been and will continue to be full. In that context, the streamflow depletion associated with declared pre-Lower Rio Grande Basin groundwater rights, such as LRG-430, would represent an appropriation to be supplied by Rio Grande Project surface water in amounts equivalent to the amounts pumped from wells, less the return flow to the river. Arguably the withdrawal from groundwater in storage in the aquifer represented by a permanent lowering of the water table should not be considered an appropriation of Project water, although any natural replenishment of the water withdrawn from storage, if and as it occurs, would be by Project water.

The Utton Transboundary Resources Center at the University of New Mexico has described the consequences of a New Mexico loss in part as follows (references omitted).⁸

[It]...would be very expensive for the communities in south-central New Mexico in terms of losses in agricultural and supporting businesses and to the state in general. The area is already strained by reduced surface water availability from the drought and under the Operating Agreement. If the U.S. Supreme Court ordered curtailment of groundwater pumping, the pecan orchards and other crops may be severely damaged or lost. The Supreme Court could also order restitution in the form of water or money or both. Texas is asking the Court for compensation for New Mexico pumping since the date of the Rio Grande Compact, that is, 1938. If, as in the Pecos litigation, New Mexico must retire farmland water rights to accommodate a judgment, the cost has been estimated to be upwards of \$1 billion dollars. If solutions such as augmentation well fields or pipelines are required, millions more will follow.

However, the cost of doing nothing could be just as devastating. In June of 2012, the Interstate Stream Commission reported that estimated value of water reallocated in the Project between EBID and EP No. 1 was between several million to 2.5 billion dollars.

Between the reallocation and the [then continuing] drought, farmers, municipalities and others have turned increasingly to groundwater. Not only does extensive groundwater use threaten the aquifer sustainability but it also threatens to change the aquifers from sustainably managed resources to mined resources. If groundwater pumping must continue over the long run, river losses to the aquifers are likely to remain high, and deliveries to EP No. 1 will continue to be a problem.

Another consequence of a New Mexico loss in the Supreme Court may be “federalization” of the management of the river. The United States has alleged that “New Mexico has allowed the diversion of surface water and the pumping of groundwater that is hydrologically connected to the Rio Grande downstream of Elephant Butte Reservoir by water users who either do not have contracts with the Secretary [of the Interior] or are using water in excess of contractual amounts...,” and has asked the Supreme Court to “declare that New Mexico...may not permit parties not in privity with the Bureau of Reclamation...to intercept or interfere with delivery of water from the Rio Grande Project (see First Report of the Special Master, June 28, 2016, p. 188).”

⁸ Utton Transboundary Resources Center, University of New Mexico, 2013, uttoncenter.unm.edu/pdfs/2013-05-16_BushnellTx-NM-Final.pdf

If New Mexico ultimately prevails in *Texas v. New Mexico and Colorado*, and operation of the Rio Grande Project returns to something like the pre-Operating Agreement procedures, it seems likely that some of the economic stress in the Lower Rio Grande would still occur if water shortages continue. The probability of priority administration seems likely to increase, and either in that context or in a process of promulgating new administrative guidelines, the State Engineer may seek to curtail or limit groundwater pumping. Las Cruces' 1905, pre-Rio Grande Project, priority date would presumably protect the City's full supply from the LRG-430 rights in the case of a priority call, but permits for supplemental and replacement wells may become more difficult to obtain under new administrative guidelines.

Figure 7 presents a summary of the Lower Rio Grande Basin water balance based on the groundwater flow model prepared for the NMOSE by S.S. Papadopoulos & Associates, Inc. (SSPA, 2007), and illustrates how water shortages and groundwater pumping have resulted in losses in groundwater storage. The SSPA (2007) model represents one of the most sophisticated models available for the Lower Rio Grande Basin. A version of it is currently being updated, and other models are being developed in preparation for the litigation described above. The high pumping in 2003 and 2004, and precipitous decline in groundwater storage, is likely representative of more recent years.

2.11.2 Rio Grande Adjudication

New Mexico v. EBID, et al., 96-CV-888 (1996) is a state court adjudication being undertaken to identify and to formalize the scope and the description of valid water rights in the area between the Elephant Butte Dam and the state line with Texas. The adjudication is one of the largest in New Mexico and will determine water right claims in about 14,000 subfiles - each of which deals with one or more water rights - and for about 18,000 claimants. The adjudication court and the parties are also working out the stream system issues: so-called because their resolution will affect many if not all of the claimants in the case. The court has or will determine the following stream system issues: 1) the farm delivery requirement (FDR) and the consumptive irrigation requirement (hereinafter CIR) for all crops; 2) the groundwater rights of the Elephant Butte Irrigation District (hereinafter EBID); 3) the status and description of domestic wells; 4) the rights and the nature of the rights of the United States in the Rio Grande Project; 5) the claims of those whose water rights predate those of the Project; and 6) the claims of the Nathan Boyd Estate.

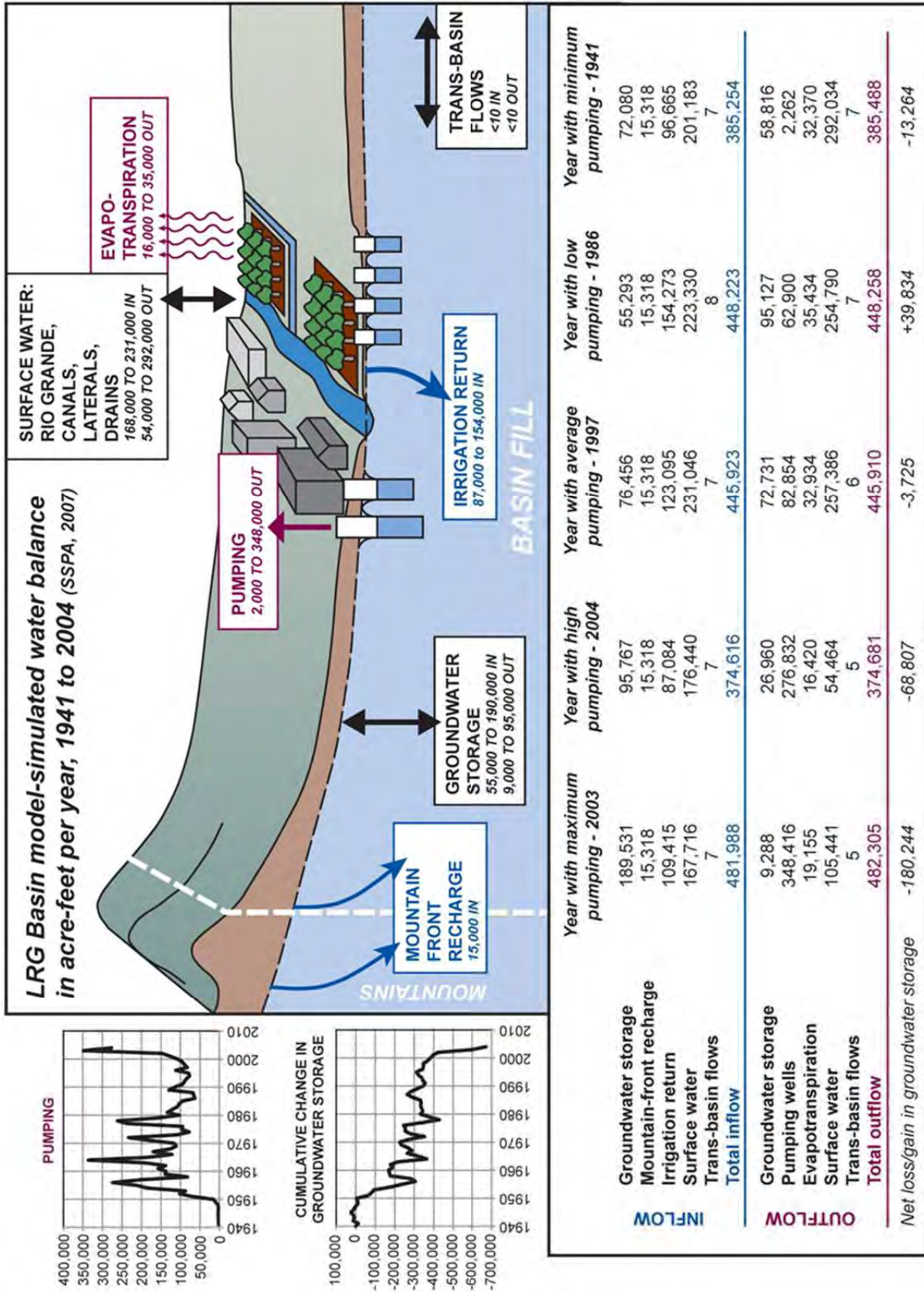


Figure 7. Illustration of Lower Rio Grande Basin water balance based on the groundwater flow model prepared by SSPA (2007).

As of the writing of this report, the adjudication court has established the farm delivery requirements and consumptive irrigation requirements for irrigation, and, as may be of interest to Las Cruces, has ordered that “[f]or future transfers to non-irrigation purposes of use, a CIR of 2.6 afay (ac-ft/yr per acre) shall apply to all irrigated acreage in the Lower Rio Grande,” and that “[o]nly the full amount of combined surface water rights and groundwater rights can be transferred.”⁹ The court has also established the groundwater rights of the EBID.¹⁰ The court granted a motion to dismiss the claims of the Boyd Estate, and the New Mexico Court of Appeals has affirmed the adjudication court’s dismissal. A newly raised issue to be resolved is “the question of whether surface water rights developed before the Rio Grande Project and now served by the Project were extinguished by any means.”¹¹ This may become important for Las Cruces in that depletion of the Rio Grande due to pumping under the pre-Project groundwater rights represents an implied pre-Project surface-water right. The City may make pre-Project claims for uses by the Acequia Madre de Las Cruces in connection with this stream system issue.

As of the State’s annual report for Fiscal Year 2016,¹² the majority of the City of Las Cruces rights, consisting of the LRG-430 wells with the right to divert 21,839 ac-ft/yr, and excepting the Jornada and West Mesa wells and some other rights, had been adjudicated. Almost all of the rights in the Nutt-Hockett and Rincon sections of the Lower Rio Grande had been adjudicated, and offers of judgment had been served for about one-half of the subfiles in the combined Northern Mesilla and Southern Mesilla sections. Of the total number of subfiles in the Mesilla sections, about 35 percent had been adjudicated.

The United States’ interest, designated as Stream System Issue No. 104, has been partially completed. On August 16, 2012, the Court ruled that the United States’ interest consisted of surface water stored in Elephant Butte Reservoir and released for use by the Rio Grande Project - and not a commensurate amount of groundwater. An outstanding issue concerns the United States’ priority date. The United States claims a date of no later than March 1, 1903. The City and the State assert that the United States’ priority date is January 23, 1906, for 730,000 ac-ft/yr, and April 14, 1908, for 60,000 additional ac-ft/yr in accordance with filings by the U.S. Reclamation service with the Territorial Engineer. The adjudication court has not yet decided the priority date issue.

⁹ See Final Judgment, SS-97-101, *New Mexico v. EBID, et al.*, 96-CV-888 (1996), August 22, 2011.

¹⁰ See Stipulated Subfile Order, Subfile No. LRS-28-003-0018, *New Mexico v. EBID, et al.*, 96-CV-888 (1996), October 4, 2010.

¹¹ See Order designating Stream System Issue No. 107 regarding surface water rights developed before the Rio Grande Project, SS-97-107, *New Mexico v. EBID, et al.*, 96-CV-888 (1996), July 6, 2016.

¹² Lower Rio Grande Adjudication Bureau, State of New Mexico’s Rule 71.3 Report, FY 2016.

From the layman's point of view, the outcome of the adjudication would seem largely irrelevant if Texas prevails in *Texas v. New Mexico and Colorado*, and the distribution of all waters downstream from Elephant Butte dam by the Bureau of Reclamation is based on acreages and shortage-sharing rather than priority administration. It would remain only to determine the fraction of New Mexico's allocation that is represented by Las Cruces' pre-Project water rights, and for Las Cruces to enter into a contract with the Bureau of Reclamation.

2.11.3 Return Flow Discussion

Las Cruces' water rights and permits carry with them a variety of conditions, including requirements for discharge of certain amounts of water to the natural system after use. Las Cruces' Return-Flow Plan (JSAI, 2009), which compiles the various requirements for return flows, and presents the City's plan for meeting them, was accepted by the NMOSE in 2009. Figure 8 presents a schematic illustration of the City's return-flow requirements and accounting.

2.11.4 Water Banking Discussion

Discussions of water banking and how it might be implemented in the Lower Rio Grande Basin to repay groundwater over-diversion and out-of-priority diversion are ongoing among the NMISC, NMOSE, and stakeholders in the region (Colby, 2015). Water banking in the Lower Rio Grande Basin will depend on the outcome of *Texas v. New Mexico and Colorado* (see Section 2.11.1, above).

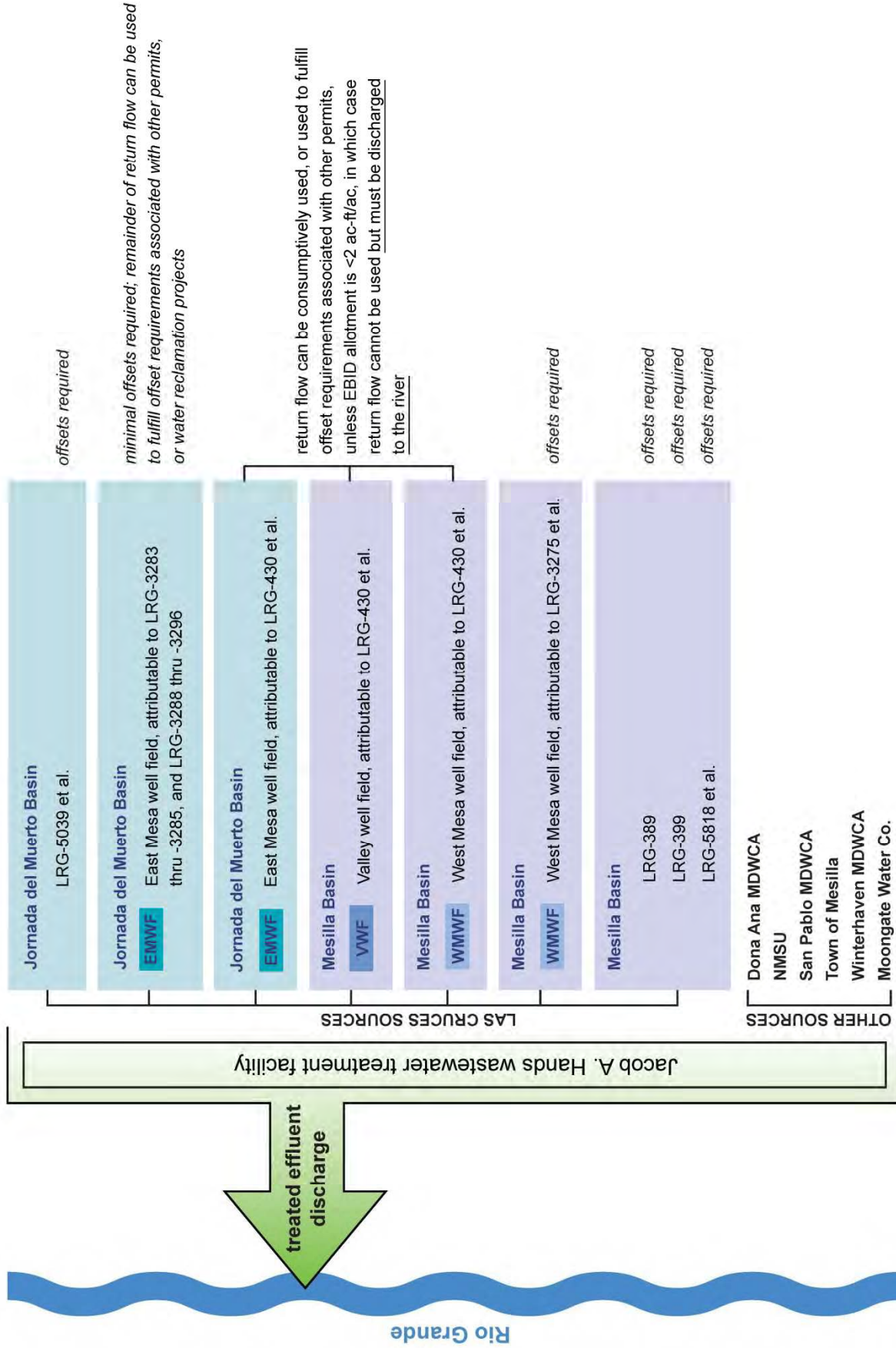


Figure 8. Schematic illustration of City of Las Cruces return flow accounting.

3.0 WATER DEMAND PROJECTIONS

Water demand projections are based on projected population growth and goals for total gallons per capita per day (GPCD) water use.

3.1 Population Projections

Figure 9 and Table 4 present projected population growth for 2015 to 2055. Figure 9 also presents historical population growth from 1960 to 2014. Projected population growth is presented as lines spanning low to high growth in Figure 9.

The medium-growth projection represents 1.9-percent annual growth between 2015 and 2055. The medium-growth projection is from the City’s Land Use Assumptions Study (Water and Wastewater Impact Fee Study; Duncan Associates, 2013). It is based on the range of estimated population growth forecasts used by the City and County in the Vision 2040 regional planning project (Doña Ana County, 2012), and assumes that the City’s share of future growth will be a consistent 46.9-percent share of the County’s population.

Table 4. City of Las Cruces population projections

year	high growth ^a	medium growth ^b	low growth ^c
2015	109,094 ^d	109,094 ^d	109,094 ^d
2020	122,829	119,859	117,544
2025	138,293	131,687	126,462
2030	155,704	144,682	135,481
2035	175,307	158,959	144,500
2040	197,378	174,645	153,519
2045	222,228	191,878	162,753
2050	250,207	210,813	172,542
2055	281,708	231,616	182,920

^a 2.4-percent annual growth (historical average, 1960-2014)

^b Based on 1.9-percent annual growth indicated in City of Las Cruces Water and Wastewater Impact Fee Study, Land Use Assumptions (Duncan Associates, 2013)

^c 1.5-percent annual growth (2015 to 2023) decreasing to 1.2-percent annual growth (2035 to 2055), City of Las Cruces Comprehensive Plan 2040 (City of Las Cruces, 2013)

^d 2015 estimate presented in City of Las Cruces fiscal year 2015-2016 budget adopted by the City Council in May 2015, plus 2,016 Jornada Water Company customers outside City limits multiplied by average household size of 2.43 (U.S. Census 2010)

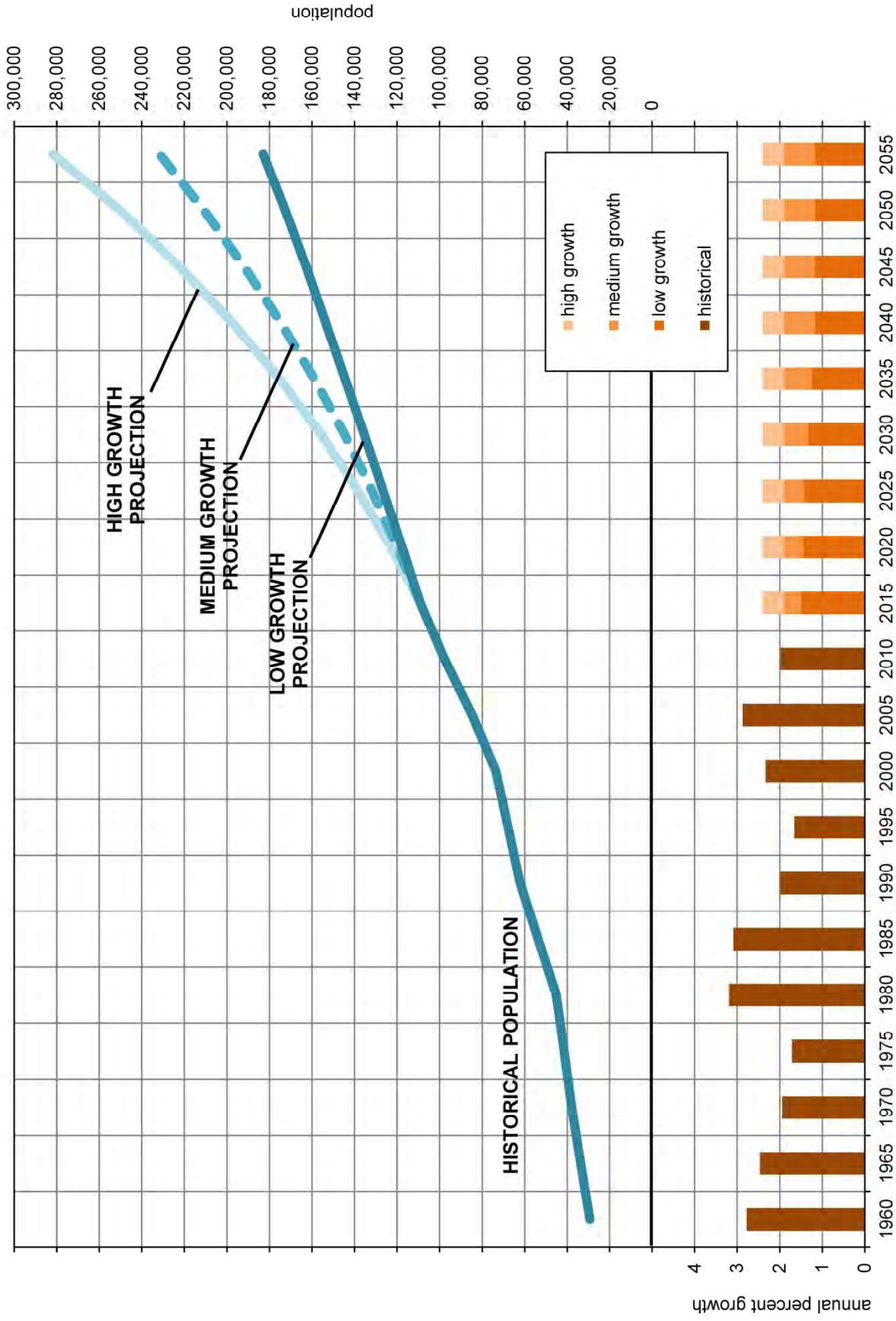


Figure 9. Graph showing City of Las Cruces historical and projected population growth, and percent annual growth, 1960 to 2055.

The high-growth projection is based on U.S. Census historical population data for City of Las Cruces from 1960 to present, with an average annual growth rate of 2.4 percent. Although population growth has been significantly less than the historical average over the last few years, the historical average growth rate should be considered for long-range planning purposes. Planning according to the historical average rate will allow LCU to perfect the water rights in the place-of-use area; LCU recognizes that there is some overlap with areas served by other utilities and place-of-use of water rights from other utilities, such as Moongate Water Company.

The low-growth projection represents 1.5-percent annual growth in 2015 decreasing to 1.2-percent annual growth in 2035. The low-growth projection is from the City's Comprehensive Plan 2040 (City of Las Cruces, 2013), which was adopted by City Council in November 2013. It agrees closely with population projections for Doña Ana County prepared by the University of New Mexico Geospatial and Population Studies (GPS) Group, which represents 1.5-percent annual growth in 2015 decreasing to 1.0-percent annual growth in 2035 (GPS Group; <https://bber.unm.edu/demo/PopProjTable2.htm>).

The New Mexico Universities Working Group on Water Supply Vulnerabilities (2015) indicates that "recent investments and developments in the Santa Teresa, NM area will likely lead to additional businesses (re)locating to the area, and thus to additional population growth." In early 2014, the Union Pacific Santa Teresa Intermodal Terminal was opened. Located about 40 miles from Las Cruces near the Santa Teresa Port of Entry, the terminal can handle 250,000 shipping containers annually. Santa Teresa also includes two industrial parks.

A Las Cruces Sun-News article from October 19, 2015, indicates that plans for construction of the Center for Innovation, Testing and Evaluation (CITE) are moving forward on a 500-acre site about 25 miles west of Las Cruces (Gibbs, 2015a). CITE will be used for scientific research and testing of innovative technologies, building materials, and renewable energy, and will be open to private companies to test products. The facility could be operational by 2018, and the construction investment could run as high as \$600 million. CITE will offer the opportunity for interconnection and research with NMSU, Spaceport, and other regional assets.

Las Cruces also includes the 1,800-acre West Mesa Industrial Park, located about 8 miles west of the City and directly south of Las Cruces Airport. The Industrial Park currently has 14 tenants, and it is the City's intent to develop light industry, general manufacturing, and aviation related and technology based industries, within the Industrial Park over the 40-year planning period. The City is dedicated to bringing in industries and manufacturing businesses that will expand and diversify the local economic base and provide new jobs for the community. A Las Cruces Sun-News article from September 10, 2015, indicates that manufacturing businesses in the Industrial

Park are showing growth. F&A Dairy Products has two processing plants, and is currently hiring as it ramps up from 80-percent production capacity to 100-percent capacity. ARCA Space Corporation and Engineered Wire Products are also hiring (Gibbs, 2015b).

The NMOSE GPCD Calculator calculates utility-served population based on actual single-family and multi-family residential connections, and U.S. Census data on household size and population in group quarters. In the case of City of Las Cruces, utility-served population has ranged from about 98 to 105 percent of U.S. Census population, and 100 percent of U.S. Census population on average. Therefore, it was not necessary to adjust City population numbers to reflect utility-served population even though some areas on the East Mesa are served by Moongate Water Company. The current utility-served population has been adjusted to account for 2,016 new utility customers (formerly Jornada Water Company customers) outside the City limits, multiplied by an average household size of 2.43 (U.S. Census 2010).

3.2 Goals for Total Gallons Per Capita Per Day Water Use

Using historical data on total diversions, and utility-served population calculated using the NMOSE GPCD spreadsheet (version 2-05) and U.S. Census 2010 data, total GPCD water use was calculated for years 2009 to 2015 and presented in Table 5. Figure 10 presents current and projected total GPCD water use, and Figure 11 presents average total GPCD use by month (also see Appendix L). Total GPCD represents total water supply (total water diverted plus imports minus exports) divided by the population served by the utility.

Current total GPCD of 181 GPCD does not factor in GPCD for former Jornada Water Company customers; water use data for the former Jornada Water Company are currently inadequate to calculate GPCD for these customers. Current total GPCD of 181 GPCD does not factor in the City's effluent discharge to the Rio Grande. If effluent discharge to the Rio Grande (attributable to City water sources; 39 percent of total water supply on average, 2009-2014) were factored into Las Cruces GPCD, the City's current total GPCD would be only 110 GPCD. Current total GPCD of 181 GPCD is in-line with the average for Doña Ana County of 182 GPCD based on GPCD calculations for 63 public water systems (NMISC, 2016). It should be noted that this GPCD dataset for Doña Ana County includes high variability, and may include data of varying quality.

Las Cruces has the goal of reducing total GPCD water use to 165 GPCD by 2030, and 140 GPCD by 2055 (Fig. 8). This number does not factor in former Jornada Water Company customers; water use data for the former Jornada Water Company are currently inadequate to determine a realistic GPCD goal for these customers. This number does not factor in effluent discharge to the Rio Grande. Table 5 presents projected total GPCD use, and corresponding reductions in total GPCD use with respect to the current value of 181 GPCD (2009 to 2015 average).

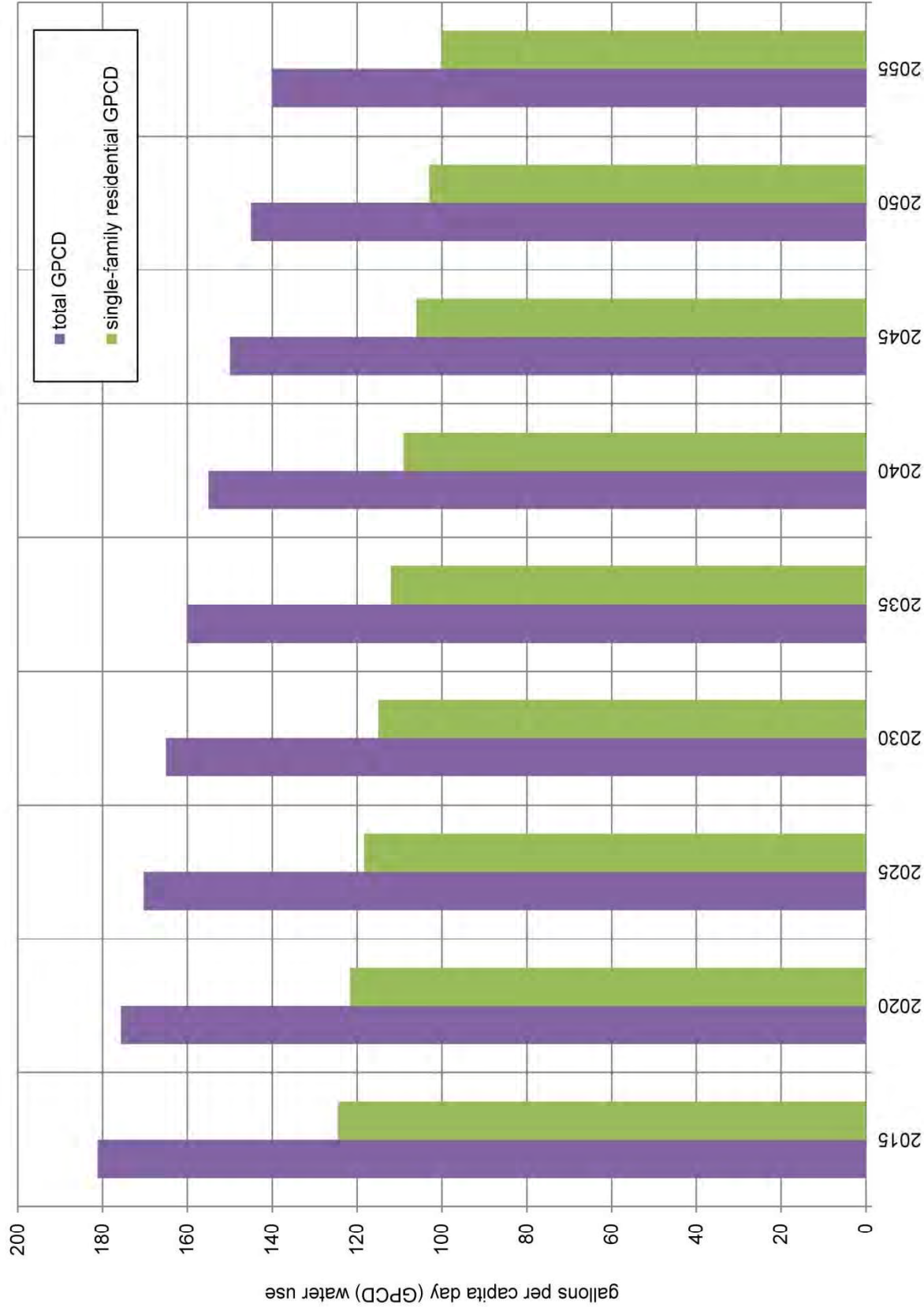


Figure 10. Chart showing City of Las Cruces current and projected total and single-family residential gallons per capita per day (GPCD) water use, 2015 to 2055.

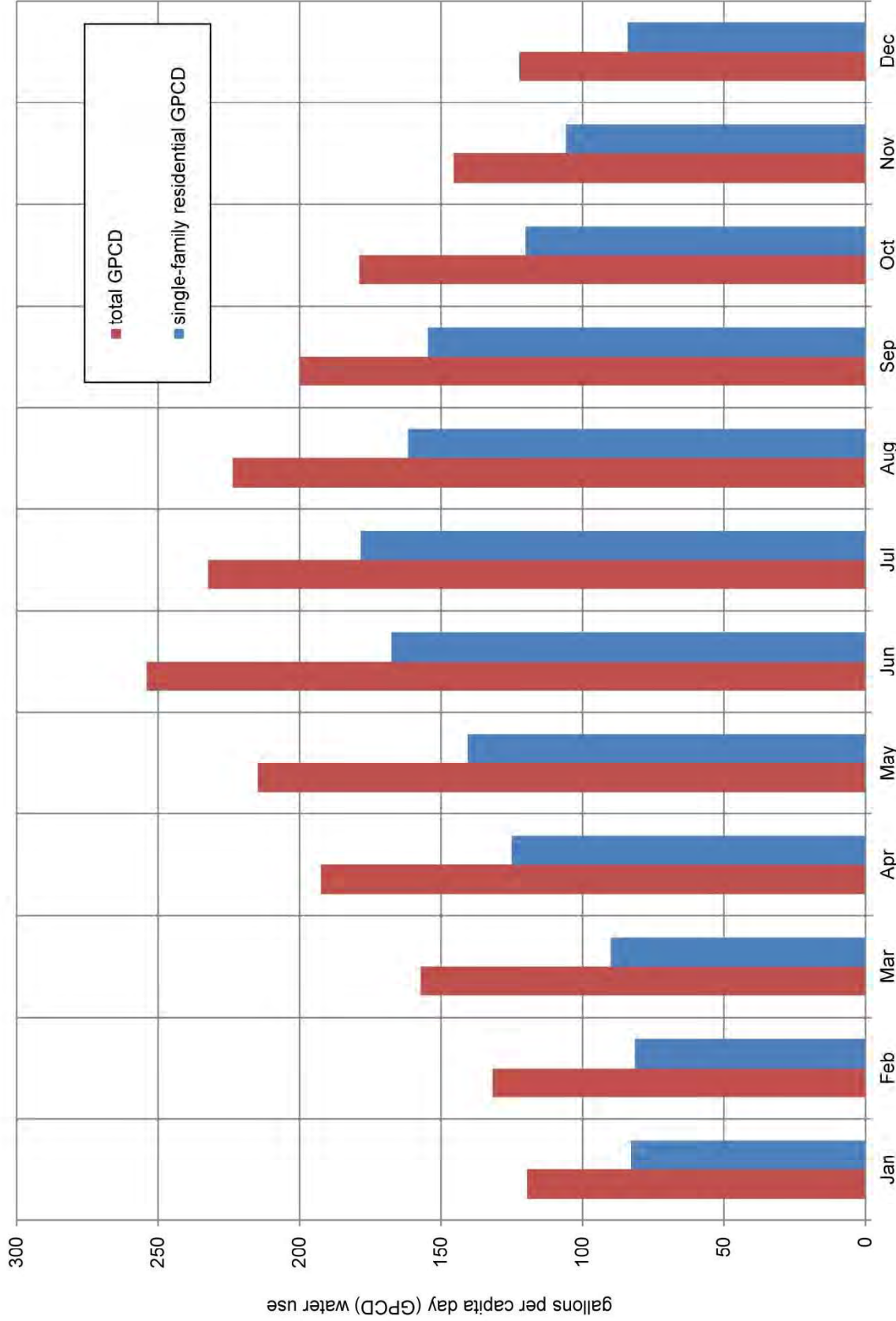


Figure 11. Chart showing City of Las Cruces average (2009 to 2015) total and single-family residential gallons per capita per day (GPCD) water use by month.

Table 5. City of Las Cruces total GPCD projections

year	total GPCD	reduction in total GPCD with respect to 2009-2015 average value ^a	tactics for reducing total GPCD
2009	188	-	-
2010	181	-	-
2011	192	-	-
2012	184	-	-
2013	176	-	-
2014	176	-	-
2015	171	-	-
2009-2015 avg	181	0	-
2015	181	0	reduce non-revenue water to 9 percent; reduce single-family residential GPCD use; implement Water Conservation Program
2020	176	5	
2025	170	11	
2030	165	16	
2035	160	21	
2040	155	26	
2045	150	31	
2050	145	36	
2055	140	41	

^a based on high-growth population projections

GPCD - gallons per capita per day

Details on how the City will meet the goal of reducing total GPCD water use to 140 GPCD by 2055 are presented in Section 4: Water Conservation. Total GPCD water use goals will be met by implementation of the Water Conservation Program, which aims at reducing single-family residential GPCD and also works with City government and industrial, commercial, and institutional customers, and by reducing total non-revenue water from the 2010-2015 average of 15 percent of diversions, to 9 percent by 2055.

Las Cruces’ total GPCD goal of 140 GPCD will allow the City to maintain the ability to serve future commercial and industrial accounts that will develop in the West Mesa Industrial Park over the next 40 years, thereby regulating industrial development to insure environmental sustainability and protect water quality. Las Cruces is part of the rapidly-developing commercial and industrial complex along the U.S./Mexico border. As the City grows over the next 40 years, Las Cruces’ water system will serve existing and new water users in the commercial and industrial sectors, while private water companies and mutual domestic water consumers associations in the area will serve primarily residential users. Thus, the proportion of City water used for commercial and industrial purposes may grow, and the proportion of City water used for residential purposes may decrease.

Las Cruces’ total GPCD goal of 140 GPCD is progressive in comparison to other water systems in the southern part of New Mexico (Table 6). City of Alamogordo has a goal of 165 GPCD (Livingston Associates, 2006; JSAI, 2005). The preliminary 40-year plan for City of Hobbs does not indicate a specific goal, and uses 264 GPCD when calculating projected demand (DBSA, 2009a). The 40-year plan for City of Deming does not indicate a specific goal, and uses 206 GPCD when calculating projected demand (DBSA, 2009b). City of Lovington has a goal of 242 GPCD (JSAI, 2014). Truth or Consequences/Williamsburg has a goal of 176 GPCD (WHPacific, 2012). City of Jal indicates a goal of 165 GPCD; however, this is in terms of residential GPCD (JSAI, 2005). The City of Jal 40-year plan uses 290 GPCD when calculating projected demand.

Table 6. Comparison of City of Las Cruces total GPCD goal with other water systems in southern New Mexico

community	projected year	projected population ^b	projected total demand, ac-ft/yr	total GPCD goal
Las Cruces	2055	269,058	42,222	140
Alamogordo	2045	58,663	10,842	165
Alamogordo without wastewater reuse	2045	58,663	10,842 + 3,363 ^a	216
Hobbs	2050	54,660	16,190	264
Deming	2050	39,526	9,119	206
Lovington	2053	22,670	6,157	242
Truth or Consequences and Williamsburg	2050	14,134	2,795	176
Jal	2045	6,127	1,990	290

^a 3,000,000 gallons per day wastewater reuse

^b high growth projection

ac-ft/yr - acre-feet per year
GPCD - gallons per capital per day

It is important to note a key difference between these water systems and Las Cruces: Las Cruces has return flow, and these other systems do not (with the exception of Truth or Consequences/Williamsburg). In the case of Alamogordo, wastewater reuse is considered into its total GPCD goal of 165 GPCD; its total GPCD goal without wastewater reuse would be about 216 GPCD.

3.3 Goals for Single-Family Residential Gallons Per Capita Per Day Water Use

Single-family residential GPCD water use, calculated for years 2009 to 2015, is presented in Table 7. Historical single-family residential GPCD water use was calculated using the NMOSE GPCD spreadsheet (version 2-05). Figure 10 presents current and projected single-family residential GPCD water use. Figure 11 presents average single-family residential GPCD use by month (also see Appendix L). Single-family residential use represents about half of total use in Las Cruces (Fig. 12).

Table 7. City of Las Cruces single-family residential GPCD water use

year	single-family residential GPCD	reduction in single-family residential GPCD with respect to 2010-2014 average value
2009	132	-
2010	125	-
2011	133	-
2012	126	-
2013	123	-
2014	119	-
2015	114	-
2009-2015 average	125	-
2015	125	0
2020	122	3
2025	118	7
2030	115	10
2035	112	13
2040	109	16
2045	106	19
2050	103	22
2055	100	25

GPCD - gallons per capita per day

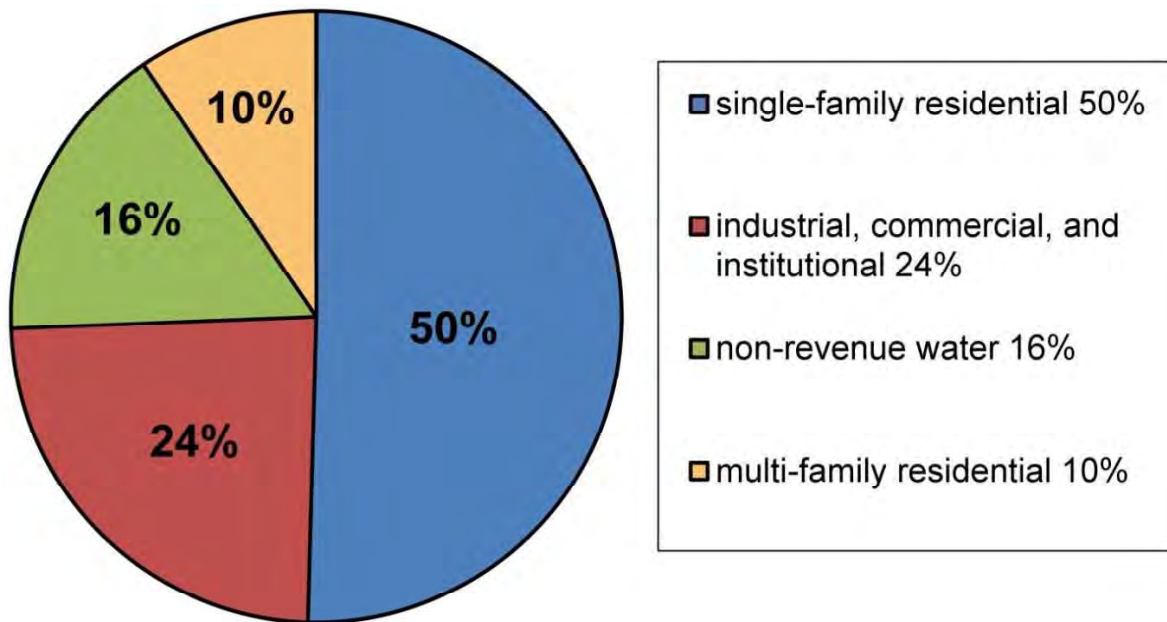


Figure 12. Chart summarizing City of Las Cruces average (2010 to 2014) water use.

Las Cruces has the goal of reducing single-family residential GPCD use to 100 GPCD by 2055 (Table 7). This savings of 25 GPCD in terms of single-family residential GPCD translates to a 17 GPCD savings in terms of total GPCD. Thus, the City’s goal for reducing total GPCD use over the next 40 years will be accomplished in part through the reduction of single-family residential GPCD water use.

The City’s single-family residential water use in summer (June, July, and August) is, on average, more than double the single-family residential water use in winter (November, December, January, February, and March) (Fig. 11; Appendix L), due to the City’s semi-arid to arid climate (Appendix M) and the resultant landscape irrigation and use of evaporative coolers in summertime.

3.4 Water Demand Projections

Water demand projections for years 2015 through 2055 presented in Table 8, in terms of total diversions, are based on projected population growth and projected total GPCD use.

Figure 13 presents a graph of projected demand from 2015 to 2055, under low- to high-growth scenarios, and the City’s groundwater rights and permits. Figure 13 shows that, under the high-growth scenario, diversions will exceed the LRG-430 et al. pre-basin right plus East and West Mesa permits at the end of the 40-year planning period, and approach the City’s total groundwater rights and permits.

During the 40-year planning period, LCU aims to develop an alternate supply up to the amount 44,207 ac-ft/yr to meet current and future demand in the case that activities in the Lower Rio Grande Basin pose challenges to using existing rights and permits to meet demand.

**Table 8. City of Las Cruces water demand projections
[projected population * projected total GPCD water use]**

year	high growth, ac-ft/yr	medium growth, ac-ft/yr	low growth, ac-ft/yr
2015	22,133	22,133	22,133
2020	24,186	23,601	23,145
2025	26,404	25,143	24,145
2030	28,797	26,759	25,057
2035	31,440	28,508	25,915
2040	34,293	30,343	26,672
2045	37,364	32,262	27,365
2050	40,666	34,264	28,044
2055	44,207	36,347	28,705

ac-ft/yr - acre-feet per year

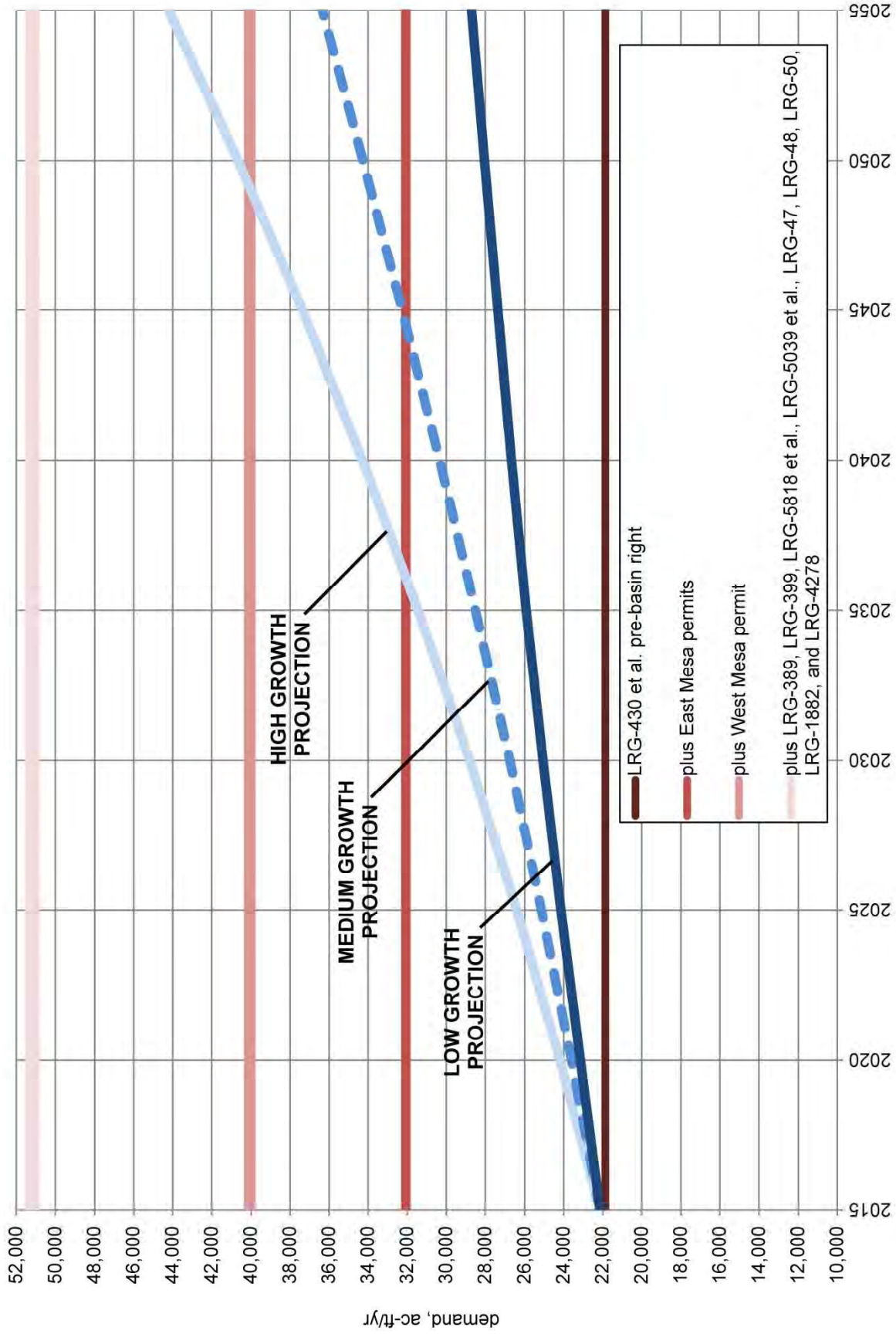


Figure 13. Graph showing City of Las Cruces projected water demands for 2015 to 2055 under low to high growth rate scenarios, City's total existing adjudicated water rights, and existing permits.

3.5 Non-Revenue Water

Non-revenue water is defined by the AWWA water balance (Table 9). Between 2010 and 2015, Las Cruces' non-revenue water represented about 15 percent of total diverted water (Table 10; also see AWWA water audit worksheets completed annually for LCU and included in Appendix P: Water Conservation Plan). The City's Infrastructure Leakage Index (ILI) is about 3.40, which is typical for a community the size of Las Cruces in the United States, with existing water supply infrastructure capable of meeting long-term demand as long as reasonable leakage management controls are in place.

Non-revenue water numbers may be somewhat elevated due to water system flushing, hydrant flushing, and fire protection field testing (unbilled authorized deliveries, see Table 9). These flushing processes represent important preventive maintenance, remove sediment from lines, and are critical to fire protection. These processes are described in the City's Standard Operating Procedure on Hydrants Flushing, included as Appendix N. Some hydrant flushing is performed for the City's iron and manganese program. Although not required by law, LCU chlorinates the water supply to eliminate any potential issues with coliform bacteria; however, even a tiny amount of chlorine can cause iron and manganese to drop out of solution in the water, turning it red. Although there are no health risks associated with the red water, LCU has a program to address it, which involves a fire hydrant flushing procedure in affected areas. Details are included in the LCU Red Water Fact Sheet, included in Appendix N.

The City is utilizing the highest and best technology available and economically feasible for the intended use to ensure conservation of water to the maximum extent practical. In order to reduce non-revenue water, the City operates an advanced supervisory control and data acquisition system (SCADA) with redundant flow meters at a number of locations, and conducts numerous water and wastewater system rehabilitation projects. The City has performed global positioning system (GPS) addressing of utility meters to help locate leaks more quickly, and has implemented enhanced meter calibration and automatic meter reading (AMR). A water metering program has been implemented recently on most water production and waterline maintenance trucks, to track non-revenue water. Another effort to account for non-revenue water is a pilot program to log water consumption from the Fire Department Training Facility and hose-testing hydrants, as well as water meters on hydrants used for field construction. Annual water and wastewater rehabilitation expenditures planned through 2021 range from \$7.7 to \$15.9 million. Table 11 presents the details of the City's 5-Year Capital Improvement Program for water and wastewater rehabilitation.

AWWA has set an industry standard goal of less than 10 percent for water losses (AWWA, 1996). The City has the goal of reducing non-revenue water from 15 percent of total diversions to 9 percent of total diversions by 2055 through water and wastewater system rehabilitation. This reduction of non-revenue water would translate to a reduction of 8 GPCD in terms of total GPCD.

Table 9. American Water Works Association (AWWA) water balance

total water diverted	authorized deliveries	billed authorized ^a	billed metered	revenue
	water losses	unbilled authorized ^b	billed unmetered	non-revenue
unbilled metered				
apparent losses ^c		unbilled unmetered		
		unauthorized		
		customer metering inaccuracies		
		systematic data handling errors		
real losses ^d	leakage on transmission and/or distribution lines			
	leakage and overflows at Utility storage tanks			
			leakage on service connections	

^a examples include metered deliveries for residential, industrial, commercial, and institutional use, and park and golf course irrigation

^b examples include metered main flushing, sewer cleaning, potable well flushing, non-potable production

^c examples include theft and vandalism, customer metering inaccuracies, and data handling errors

^d examples include line leakage, and storage tank leakage and overflow

Table 10. City of Las Cruces non-revenue water and total water losses

year	total diversions, ac-ft/yr	authorized deliveries, ac-ft/yr	non-revenue water, ac-ft/yr	percentage of diversion that represents non-revenue water	water losses, ac-ft/yr	percentage of diversion that represents water losses	ILI ^b
2010	20,235	17,194	3,208	16	3,041	15	4.24
2011	21,796	18,487	3,444	16	3,309	15	3.73
2012	20,626	17,260	3,464	17	3,366	16	3.69
2013	19,540	17,268	2,302	12	2,272	12	2.12
2014	19,760	16,543	3,241	16	3,217	16	3.36
2015	19,430	16,674	2,892	15	2,756	14	3.28
average	20,231	17,238	3,092	15	2,994	15	3.40

^a includes billed (account and bulk sales) and unbilled (main flushing, sewer cleaning, potable well flushing, non-potable production) metered deliveries

^b ILI = Infrastructure Leakage Index (real losses / unavoidable annual real losses)

ac-ft/yr - acre-feet per year

Table 11. Summary of City of Las Cruces 5-Year Capital Improvement Program for water and wastewater rehabilitation

rehabilitation project	fiscal year expenditures, millions of U.S. dollars					
	2016 (funded)	2017	2018	2019	2020	2021
drill replacement wells	2.896	1.846	-	-	-	-
line extension	0.655	-	-	-	-	-
pump station for well	-	-	0.464	-	0.492	-
pump station rehabilitation	-	0.070	-	0.072	-	0.074
rehabilitate pump/PRV	-	-	-	-	-	-
reservoir rehabilitation	-	0.410	-	-	-	-
SCADA rehabilitation	0.015	0.015	-	-	-	-
street improvement projects	1.594	1.194	-	-	-	-
street utility rehabilitation	1.784	0.840	0.788	0.827	0.868	0.912
water production	-	-	-	-	-	-
water projects 2015A	8.763	8.763				
total water rehabilitation	15.707	13.138	1.252	0.899	1.360	0.986
force main rehabilitation	0.168	0.200	0.173	-	0.179	-
lift station renovations	0.330	0.330		0.340	-	0.350
line rehabilitation	0.137	0.172	0.176	0.181	0.185	0.190
line and manhole rehabilitation	0.538	0.100	0.103	0.106	0.109	0.113
East Mesa water reclamation	0.025	0.225	0.225	0.225	0.225	0.225
SCADA rehabilitation	0.150	0.100	-	-	-	-
street improvement project	1.571	1.171	-	-	-	-
street utility rehabilitation	1.591	1.591	1.639	1.688	1.739	1.791
WWTF operations	0.100	0.100	0.100	0.100	0.100	0.100
WWTF primary clarifier	1.400	1.200	-	-	-	-
WWTF rehabilitation	3.036	3.227	3.323	3.423	3.526	3.632
WWTF odor control	0.150	-	-	-	-	-
wastewater projects 2015A	5.011	5.011	-	-	-	-
total wastewater rehabilitation	14.207	13.427	5.739	6.063	6.063	6.401
total water and wastewater rehabilitation	29.914	26.565	6.991	6.962	7.423	7.387

SCADA - supervisory control and data acquisition system

WWTF - wastewater treatment facility

4.0 WATER CONSERVATION

4.1 Introduction

LCU is utilizing the highest and best technology available and economically feasible for the intended use to ensure conservation of water to the maximum extent practical. It may not be possible to meet the City's water demands by conservation alone, in the case that current and future activities in the Lower Rio Grande Basin pose challenges to using existing rights and permits to meet demand.

Las Cruces has adopted a comprehensive Water Conservation Program to ensure the long-range sustainability of the City's water supply. While other cities have successfully implemented demand-side reductions in the face of drought or emergency shortages, Las Cruces is implementing its Water Conservation Program proactively and systematically, and in a manner appropriate to the conditions and needs of the community. In 2003, Las Cruces City Council approved the Water Utility Drought and Water Emergency Response Plan (Appendix O). The City's Water Conservation Ordinance was enacted in 1999, and the Phase I 2005-2010 Water Conservation Program was approved by City Council in April 2005. In 2014, a revised and simplified version of the Water Conservation Ordinance was enacted (Appendix P), with administrative fees for violations of outdoor vegetation watering restrictions and water wasting restrictions. The LCU Water Conservation Plan was submitted to NMOSE in 2012, and an updated version is appended to this 40-year plan as Appendix P.

Future conservation measures will be chosen based on the City's needs and evaluation of the Water Conservation Program performance: specifically, shifts in metered demand in response to implementation of various conservation measures. Evaluation of long-range success of a conservation program, as acknowledged in New Mexico Administrative Code Title 17, Chapter 14, comes with the understanding that every community is unique and dynamic in its population, and commercial and industrial base, and conservation measures should be implemented in a manner that is efficient and cost-effective.

Pursuant to the NMOSE's (1999) definition of conservation, "any action that reduces the amount of water withdrawn from water supply sources, reduces consumptive use, reduces the loss or waste of water, improves the efficiency of water use, increases recycling and reuse of water, or prevents the pollution of water," the City of Las Cruces' Water Conservation Program

is being implemented in a comprehensive manner incorporating the highest levels of quantification of program performance. Methods of quantification and demand trending are being utilized to direct and maintain optimum benefits of actual water conserved with the costs of implementation to the community. Whenever possible, conservation shall be reported in terms of GPCD, yet it must also be understood that the City is engaged in best management practices that may not be quantifiable in terms of GPCD saved. Examples of best management practices that conserve water through pollution prevention include the following:

- Wellhead Protection Program
- Industrial Pollution Prevention compliance and enforcement
- Storm Water Management Plan and Ordinance
- Remediation of contaminated sites
- Solid Waste Department Recycling Program
- Las Cruces Dam Environmental Restoration Project
- Rio Grande Riparian Ecological Corridor Project

Las Cruces is committing substantial economic resources to these best management practices, which represent the City's responsibility to the protection of water resources. For example, Las Cruces is collaborating with Doña Ana County and the U.S. EPA to remediate the Griggs and Walnut groundwater tetrachloroethylene (PCE) plume. LCU Wells 18 and 27 are operating as plume capture wells. Water pumped from Wells 18 and 27 is treated and stored in a tank, and the City uses the treated water for municipal water supply; treatment system operation and reporting to the EPA is being performed voluntarily until LCU has a consent decree with EPA, and represents a positive example of proactive water management.

Las Cruces Dam Environmental Restoration Project represents a fully coordinated effort between U.S. Army Corps of Engineers, Las Cruces, and other federal, tribal, and local entities to restore over 78 acres of riparian habitat, about 4 acres of playa habitat, and construct several acres of emergent wetlands on the east side of Interstate-25 within the City limits. A limited amount of reclaimed water from the East Mesa water reclamation facility will facilitate the wetlands, and storm runoff will facilitate riparian habitat restoration, with socioeconomic and recreational benefits for the community (USACE, 2011).

Las Cruces is providing up to 15 ac-ft/yr of water under LRG-5818 et al. to Southwest Environmental Center for the Rio Grande Riparian Ecological Corridor Project, a wetland restoration project.

4.2 Baseline Water Conservation

4.2.1 Water Conservation Program

The City's Water Conservation Program works to reduce water use among city residents and customers, and within the city government, and utilizes the following components:

- Reporting
- Education and on-line resources
- Working with City departments
- Indoor efficiency
- Outdoor efficiency
- Compliance
- Planning
- Ordinances and regulations

These components to the Water Conservation Program are briefly summarized below, and described in detail in the updated version of the Water Conservation Plan appended to this 40-year plan as Appendix P.

4.2.1.1 Reporting

LCU provides GPCD water use reports and AWWA water audits to NMOSE on an annual basis.

4.2.1.2 Education and On-line Resources

The Water Conservation Program provides education programs for adults and children including Lush and Lean Workshops, Water Festival, and Demonstration Garden. The Water Conservation Program provides numerous on-line resources on the City's website (<http://www.las-cruces.org/WaterConservation>) including:

- Lush and Lean Workshops
- Water Festival
- Demonstration Garden
- Report Water Waste
- Tips for Residential Conservation
- How to Detect Leaks, and How to Read a Water Meter
- Water Efficiency Checklist
- Other Water Conservation Resources, including Calculating Water Needs of Plants, and Rainwater Harvesting Resources

4.2.1.3 Working with City Departments

The Water Conservation Program assists the Parks and Recreation Department with water conservation by providing water audits, and consulting on irrigation issues, water accounts, and level of use. The Water Conservation Program also assists with the Sustainability Program (see Section 4.2.6) and Planet Footprint, an energy and environmental scorekeeping program to which the City subscribes that monitors the City's electric, gas, and water accounts.

4.2.1.4 Indoor Water Efficiency

The Water Conservation Program performs informal water audits for LCU customers with high water bills, and promotes indoor water efficiency through educational programs (see Section 4.2.1.2). The Water Conservation Program has created a water efficiency evaluation form for use by homebuyers, homeowners, and inspectors.

4.2.1.5 Outdoor Water Efficiency

The Water Conservation Program performs informal water audits for LCU customers with high water bills, and promotes outdoor water efficiency practices such as use of Smart irrigation controllers and calculation of water needs of plants (on-line resources provided, see Section 4.2.1.2). The City's Demonstration Garden is an educational tool for promoting outdoor water efficiency.

4.2.1.6 Compliance

The Water Conservation Program assists with compliance to the City's water-conserving ordinances and regulations by publicizing the watering rules, receiving calls from community members reporting water wasting, and providing field staff to observe and record violations, and actively monitor problematic sites. Water Conservation Program staff encourage responsible parties to fix problems, and administer notices of violation and fees where called for, variances for special situations, and appeals to fees.

4.2.1.7 Planning

The Water Conservation Program provides input and helps develop planning documents related to water conservation including:

- Water Conservation Plan
- Drought and Water Emergency Response Plan
- Regional Water Plan
- City Comprehensive Plan
- 40-Year Water Development Plan

4.2.1.8 Ordinances and Regulations

The Water Conservation Program has provided input and helped to develop the City's Water Conservation Ordinance, and helps with evaluation of proposed legislation.

4.2.2 Water Conservation Ordinance

The City's current Water Conservation Ordinance was adopted in August 2014. To review the entire Water Conservation Ordinance, refer to Appendix P. It includes an odd/even address watering schedule, and restrictions on daytime landscape watering between April 1 and September 30. Violators of the Water Conservation Ordinance are subject to progressively higher administrative fees until the violation ceases or until a variance is granted. Administrative fees are assessed on active City utility accounts. In lieu of paying the first administrative fee, the responsible person may have a landscape water audit performed by an authorized irrigation auditor.

4.2.3 Design Standards and Storm Water Ordinances

The City's Design Standards (Land Development Code, Chapter 32) include requirements for urban drainage, soils, plant materials, and erosion control. The City's Storm Water Management code (Land Development Code, Chapter 34, Article III) promotes the elimination or reduction of pollutants from entering the city's municipal separate storm sewer system, control over discharges to and from the system, and quality of surface water and groundwater within the City limits. The Storm Water Management code includes numerous prohibitions and requirements related to discharges, release reporting and cleanup. The Storm Water Management code also prohibits the installation of impervious underlayment for landscaping related uses.

4.2.4 Water Reclamation

The City currently practices wastewater reclamation on the East Mesa and on the West Mesa. The East Mesa water reclamation facility is used to collect wastewater from interceptors serving the East Mesa, High Range, and Sonoma Ranch area, and produces very high quality reclaimed water for landscape irrigation, dust suppression, supply to purple fire hydrants, and potential supply to a future aquifer storage and recovery project. Customers include the Sonoma Ranch Golf Course, Veteran's Park, Sagecrest Park, the closed Foothills Landfill, the City compost operation, Las Cruces Dam Environmental Restoration Project, and Centennial High School. The facility has the capacity to treat 1,000,000 gallons per day. Peak summer demand from the facility is currently about 710,000 gallons per day; however, the facility must ramp down in winter when there is very little demand for the water.

On the West Mesa, reclaimed water is treated at the West Mesa wastewater treatment plant and used for sprinkler-irrigation of native vegetation in the West Mesa Industrial Park. The facility has the capacity to treat 400,000 gallons per day, and is currently operating below design capacity.

4.2.5 Water Rates

The City's current water rate structure represents a cost-of-service pricing program and is not considered a primary conservation tool, although the single-family residential rate increases above the 3,000-gallon volume threshold, and summer rates are higher (City of Las Cruces, 2015). Under the cost-of-service pricing program, single-family residential rates are \$0.70 per 1,000 gallons per month (gal/mo) of water up to 3,000 gallons, and \$2.08 per 1,000 gallons above 3,000 gal/mo during the summer period (June through September; \$1.89 per 1,000 gallons above 3,000 gal/mo during the non-summer period). To review rates for commercial, industrial, multi-unit, parks, and bulk water categories, refer to Appendix P.

4.2.6 Sustainability Program

The City's Sustainability Program draws from a well-established sustainability framework, the Triple Bottom Line, designed to help organizations balance economic vitality, environmental health, and social responsibility. It is a departure from making decisions based solely on the financial bottom-line and reflects a greater awareness of the impacts of decisions on the

environment, society and the economy. The City's Sustainability Action Plan, adopted by the City Council in June 2014, includes the following water-related 3-year objectives for the Sustainability Program:

- Monitor water consumption in City facilities and other operations to identify variances monthly for departmental review
- Reduce water consumption in City buildings, parks, and operations by 3 percent of the end of 2013 baseline rate
- Continue reduction of non-revenue water from end of 2013 baseline level
- Increase green infrastructure capabilities in four City-owned properties
- Put into place mechanisms to fulfill new National Pollutant Discharge Elimination System permit requirements

These objectives involve collaboration of numerous City departments including LCU, Public Works, Parks and Recreation, Information Technology, Fire, Police, and Community Development.

4.3 Water Conservation Plan

The LCU Water Conservation Plan was submitted to NMOSE in 2012, and an updated version is appended to this 40-year plan as Appendix P. The Water Conservation Plan aims to meet the City's conservation goals, and meet conditions of approval associated with the City's water rights permits.

The Water Conservation Plan indicates evaluation, continuation, modification, or update of the baseline water conservation measures described above in Section 4.2. Some baseline measures are relatively new; for example, the process of assessing administrative fees for violations of the water conservation ordinance was adopted in 2014, and the full impact of this measure has not yet been realized. The new process of assessing administrative fees also offers the opportunity to establish a database of repeat offenders. Water efficiency and leak detection audit was implemented as a voluntary conservation measure beginning in October 2011. Thus, baseline measures have contributed to increased water conservation as customers have become aware of these measures; this allows LCU the opportunity for outreach and education to individual customers based on data.

The Water Conservation Plan evaluates baseline and past water conservation measures, and is used to determine whether they are working, need adjustment or modifications, and provides for recommendations and improvements. For example, the odd/even address watering schedule and the daytime landscape watering restrictions from April 1st through September 30th, are working as effective conservation measures to control peak water demand. The educational and outreach programs are working, and are continually being extended to homeowners, commercial and industrial customers, youth and seniors to encourage water conservation.

The Water Conservation Plan identifies numerous voluntary, mandatory, and supply-side conservation measures to be maintained, enhanced, and evaluated to meet conservation goals over the 40-year planning period.

4.4 Meeting Total GPCD Goals

Total GPCD water use goals will be met by implementation of the Water Conservation Program, which aims at reducing single-family residential GPCD, working with industrial, commercial, and institutional customers, conservation at City facilities, and reducing total non-revenue water. A savings of 25 GPCD in terms of single-family residential GPCD, translates to a 17 GPCD savings in terms of total GPCD; thus, the City's goals for reducing total GPCD use over the next 40 years will be accomplished in part through the reduction of single-family residential water use. In addition, the City's goal of reducing total non-revenue water to 9 percent of total diversions, translates to a reduction of 8 GPCD in terms of total GPCD; thus, the City's goal for reducing total GPCD use over the next 40 years can also be accomplished in part through the reduction of non-revenue water. Additional GPCD savings will be achieved through the Water Conservation Program by working with industrial, commercial, and institutional customers, and through conservation at City facilities.

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PDF FILES NEED TO BE COMBINED (TOO LARGE TO EMAIL):

- ✓ **TEXT ONLY**
- ✓ **APPENDICES A THRU G**
- ✓ **APPENDICES H THRU L**
- ✓ **APPENDICES M THRU Q**

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APPENDICES

IN THE SUPREME COURT OF THE UNITED STATES
BEFORE THE OFFICE OF THE SPECIAL MASTER
HON. MICHAEL J. MELLOY

STATE OF TEXAS)	
)	
Plaintiff,)	
	)	Original Action Case
VS.	)	No. 220141
	)	(Original 141)
STATE OF NEW MEXICO,)	
and STATE OF COLORADO,)	
)	
Defendants.)	

REMOTE ORAL AND VIDEOTAPED DEPOSITION OF
SHELDON DORMAN
JUNE 9, 2020

REMOTE ORAL AND VIDEOTAPED DEPOSITION of SHELDON DORMAN, produced as a witness at the instance of the Plaintiff State of Texas, and duly sworn, was taken in the above-styled and numbered cause on June 9, 2020, from 9:09 a.m. to 2:06 p.m., before Heather L. Garza, CSR, RPR, in and for the State of Texas, recorded by machine shorthand, at the offices of HEATHER L. GARZA, CSR, RPR, The Woodlands, Texas, pursuant to the Federal Rules of Civil Procedure and the provisions stated on the record or attached hereto; that the deposition shall be read and signed.

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1 from?

2 **MR. GOLDSBERRY:** I have no objection to
3 that.

4 **THE VIDEOGRAPHER:** The time is 12:40
5 p.m. We're off the record.

6 (Break.)

7 **THE VIDEOGRAPHER:** The time is 12:45
8 p.m. We're on the record.

9 **Q. (BY MR. GOLDSBERRY)** Mr. Dorman, let's look at
10 the first page of Exhibit 5 -- or this -- I guess the
11 second page. The first page is the title page. And
12 in the second paragraph, about halfway through the
13 paragraph, you have a sentence in there that
14 says, "Water Master retains the ability to meter any
15 wells that are suspected of having water diverted for
16 a purpose other than those listed as being exempt."
17 End of quote. Do you see that sentence?

18 **A.** Yes.

19 **Q.** Did you ever do that?

20 **A.** Yes, I did.

21 **Q.** On how many occasions?

22 **A.** I don't know the exact number, but it was a
23 fair number. It wasn't -- it wasn't -- you know, it
24 was a lot more than ten.

25 **Q.** Okay. So these were wells where people were

1 taking the position they were exempt and, in fact,
2 they were using -- using the water for some purpose
3 that was not exempt, correct?

4 A. That's correct.

5 Q. Then in the last sentence of that paragraph,
6 you say, and I quote, "The primary purpose for the
7 creation of the water master position is to administer
8 the proper metering of groundwater withdrawal within
9 the water master district," close quote. Do you -- as
10 you sit here today, do you believe that's an accurate
11 statement of what you understood your primary purpose
12 to be at the time you wrote this report?

13 A. Yes.

14 Q. Let's take a look at the next paragraph. The
15 first sentence talks about you working toward having a
16 unified database, and you indicate that this database
17 is not complete. What -- what database are you
18 referring to in that -- in that first sentence?

19 A. That would refer to the -- the database that
20 the Office of the State Engineer uses, the WATERS
21 database.

22 Q. Okay. And that, at the time you wrote this
23 report, was not complete, correct?

24 A. Yeah. As I stated before, this -- the
25 database is -- the framework was -- is mostly

1 complete, but it's not fully populated.

2 **Q. What is the -- and I'm going to spell it out,**
3 **W-R-A-T-S -- database that you refer to in the middle**
4 **of that paragraph?**

5 A. That database is what they call the WRATS
6 database. It's used by kind of a sister bureau with
7 the water rights. They're the adjudication bureau
8 group. They use the WRATS database for their purposes
9 in adjudication.

10 **Q. What kind of information is in that database?**

11 A. It's very similar to the WATERS database.
12 All of the elements of the water rights, but theirs is
13 geared towards adjudication as opposed to the WATERS
14 database, which is gears towards water rights
15 administration and -- and storage.

16 **Q. Is that a database that you had access to?**

17 A. At the time, yes.

18 **MR. KOPP:** I just want to make a quick
19 objection here, too. Mr. Dorman, the contents of that
20 database are privileged, and to the extent that you're
21 asked general questions about the database, I think
22 that's fine, but I would direct you not to answer any
23 questions about any specific information contained in
24 that database on the grounds of privilege.

25 **THE WITNESS:** Okay.

1 Q. (BY MR. GOLDSBERRY) How frequently did you
2 access this WRATS database?

3 A. I don't know. I don't remember. But it
4 would not have been very frequently.

5 Q. Do you know how the -- and I -- I want to
6 keep this question on a very general level, how this
7 database differed from the WATERS database?

8 A. Actually, I don't even know the answer to
9 that question, because I -- I'm not sure. It's a
10 completely different database, different platform and
11 everything.

12 Q. Why would you be accessing it or why did you
13 access it?

14 A. Administering water in the lower Rio Grande,
15 we were in the middle of adjudication with all of
16 this, so sometimes it was information in that
17 database, which allows me to do my job better.

18 Q. Did you participate in the adjudication?

19 A. No.

20 Q. You're talking about doing your job as the
21 water master?

22 A. Yes.

23 Q. Okay. And what -- what specific information
24 did you access that made -- allowed you to do your job
25 better?

1 A. Well, my position as the water master was to
2 make sure all the wells were metered and enforce
3 against illegal diversions or over diversions. So any
4 information there would allow me to make those
5 determinations to be used.

6 **Q. But my question is: What is the information**
7 **you're referring to?**

8 A. I don't know if that specific information is
9 something, you know, that I'm allowed to disclose.

10 **Q. Tell me how you used the information.**

11 A. As I've stated before, the WATERS database
12 wasn't fully populated, and there was a very --
13 various reasons for that, but my job was to enforce
14 against illegal diversions, over diversions. So if I
15 didn't know how many acres a person was allowed to
16 irrigate or how much water they were allowed to
17 divert, I could possibly use the -- the information in
18 the other database to see if they had over diverted or
19 something.

20 **Q. In that same, I guess, sentence, you also**
21 **referred to something that you -- as the water master**
22 **spreadsheet, and what was that?**

23 A. Well, when we started working with all of
24 these wells, we pretty much told the public if you're
25 using a well, you have to put a meter on it to

1 actually submit meter readings. I took the ending
2 information from the hydrographic survey, and one of
3 my interns was a genius with Excel spreadsheets and so
4 he volunteered to create a spreadsheet with all that
5 information and for those wells that were not
6 available to me in WATERS, I would use that to try to
7 keep track of which wells were metered and which wells
8 weren't and, also, which wells had an actual file
9 number yet, and that's what that spreadsheet was for.

10 **Q. And did you maintain that throughout the time**
11 **that you were the water master?**

12 A. Up until about the last year.

13 **Q. Who was the genius that put together the**
14 **spreadsheet?**

15 A. I knew you were going to ask me that. I
16 can't remember his name.

17 **Q. It wasn't Mr. Serrano, was it?**

18 A. No, no. Ryan was one of my other genius
19 interns, but it wasn't him.

20 **Q. All right. Then in the sentence, you**
21 **say, "And there is an access database currently being**
22 **developed that will encompass the spreadsheet and**
23 **allow the water master to perform several tasks that**
24 **the WATERS database is not equipped to perform." What**
25 **are you referring to there?**

1 A. It's kind of towards the beginning of my time
2 as the water master, I was working closely with a
3 couple of people from Interstate Stream Commission,
4 and we were trying to figure out ways to do my job,
5 and one of the attempts to do this was to create a --
6 an access database outside of WATERS to help me get,
7 you know, through this process. That effort failed
8 miserably, but at this time, we are still working on
9 it.

10 **Q. Okay. Let's look at the next-to-last**
11 **paragraph that begins at the middle of the 2007**
12 **irrigation season. The last sentence of that**
13 **paragraph, you say, and I quote, "Most of the wells**
14 **that were not equipped with a meter were listed under**
15 **the loan program and not listed as noncompliant."**
16 **What are you referring to with regard to the**
17 **term "loan program"?**

18 A. Some of the people who we talked to about
19 this metering order, they stated their problem they --
20 they had was they did not have enough money to pay for
21 the metering for various reasons, and so the state
22 engineer was able to somehow procure money and -- and
23 allow farmers to -- or users to get low interest loans
24 and give a person -- well, that's what it is, low
25 interest loan program.

1 **Q. Who administered that loan program?**

2 A. I -- it was administered through the
3 Interstate Stream Commission and EBID.

4 **Q. What is the problem that you're talking about**
5 **in the last paragraph on that page?**

6 A. So in the Lower Rio Grande area, within EBID,
7 there are a number of tracts of land that are the two
8 acres or less, and a lot of those tracts are in areas
9 that are not within municipal water supplies so they
10 have drilled domestic wells, and we found out that a
11 lot of those domestic wells were being used to
12 supplement surface water on those tracts to irrigate
13 something -- well, didn't matter what they irrigated.
14 They were used -- they had supplement -- they had
15 surface water rights with EBID, and domestic well is
16 not supposed to be used for irrigation of anything
17 over an acre, and they are definitely not to be used
18 for supplementing surface water, so that's one of
19 those categories of wells that we would require them
20 to put a meter on, even though the owner said it was a
21 domestic well and exempt from metering.

22 **Q. How many of those situations did you**
23 **discover?**

24 A. I don't know the number of that either.

25 **Q. Can you give me an estimate?**

1 A. I couldn't even hazard a guess.

2 Q. All right. Let's turn to the next page on
3 Exhibit 5. And I'm -- I'd like to direct your
4 attention to the first block of information at the top
5 of the page. The first entry is, "Total Lower Rio
6 Grande Wells as per WRATS." So that's this privileged
7 database, correctly -- correct?

8 A. Yes.

9 Q. And it was your understanding that the WRATS
10 database showed there were 11,237 wells in the Lower
11 Rio Grande, correct?

12 A. Correct.

13 Q. Did you use that information to go out and
14 identify all those wells?

15 A. That was a starting point.

16 Q. Okay. And I see that you -- you inspected
17 1,883 wells. Was there a search for all 11,000 of the
18 wells that were in that WRATS database?

19 A. Actually, that line, "LRG wells metered as
20 per inspection," we inspected a lot more wells than
21 that. That's just the ones we found metered at that
22 time.

23 Q. Okay. Well, let's -- let's jump then down to
24 the line that says, "Percent in compliance for the
25 LRG." And it's 86.2 percent. So how -- how was that

1 percentage arrived at?

2 A. I don't know -- I don't remember specifically
3 how we arrived at that.

4 Q. Well, you could use algebra and work
5 backwards on it. It suggests 2,184 wells were taken
6 into account when that number was calculated, but
7 that's -- and that's a number that's bigger than the
8 wells metered as per inspection, but it's still a
9 number that's much less than the WRATS database
10 suggests.

11 A. Right.

12 Q. How did you reconcile those differences?

13 A. The number of total LRG wells as per WRATS,
14 that's the total number of holes in the ground. A
15 significant number of those will be domestic wells,
16 unequipped wells, stock wells. That does not describe
17 all the different types of wells that we encountered,
18 and -- and so unfortunately, there's not enough
19 specific information for each one of these lines to
20 describe where they came from or -- or how we got to
21 the results. I don't have an answer for that.

22 Q. Do you remember being concerned about the
23 difference between the numbers?

24 A. No. I don't remember being concerned about
25 that.

IN THE SUPREME COURT OF THE UNITED STATES
BEFORE THE OFFICE OF THE SPECIAL MASTER
HON. MICHAEL J. MELLOY

STATE OF TEXAS)	
)	
Plaintiff,)	
	)	Original Action Case
VS.	)	No. 220141
	)	(Original 141)
STATE OF NEW MEXICO,)	
and STATE OF COLORADO,)	
)	
Defendants.)	

REMOTE ORAL AND VIDEOTAPED DEPOSITION OF
PEGGY BARROLL
AUGUST 7, 2020
VOLUME 2

REMOTE ORAL AND VIDEOTAPED DEPOSITION of PEGGY BARROLL, produced as a witness at the instance of the Plaintiff State of Texas, and duly sworn, was taken in the above-styled and numbered cause on August 7, 2020, from 8:01 a.m. to 3:40 p.m., before Heather L. Garza, CSR, RPR, in and for the State of Texas, recorded by machine shorthand, at the offices of HEATHER L. GARZA, CSR, RPR, The Woodlands, Texas, pursuant to the Federal Rules of Civil Procedure and the provisions stated on the record or attached hereto; that the deposition shall be read and signed.

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1 Q. Okay. Now, you've got -- in terms of asking
2 you questions about this, I -- I -- I don't want to
3 bounce around too much because you've got a summary of
4 opinions and conclusions that precede the actual
5 analysis where you have some conclusions and analysis,
6 so I'm going to use the summary as a starting place,
7 but I want you to feel free to go back into the body
8 of the report as appropriate to answer fully the
9 questions that I'm asking. So even though I'm just
10 focusing on the summary opinions, which began, I
11 think, on Page little Roman numeral 4, I know that
12 there's more information behind, and you can certainly
13 rely upon that. In fact, I ask you to rely upon that.

14 What was the purpose of the July 15th report?
15 In other words, you've -- you respond to five
16 questions on the top -- which are outlined on the top
17 of Page 4. Where did those questions come from?

18 A. I guess they were questions that -- they were
19 not necessarily questions the lawyers asked of me.
20 They were questions that -- that I wanted to know the
21 answers to as far as how the model quantified things
22 that I'd been talking about more qualitatively in my
23 other report.

24 Q. Okay.

25 A. In my report, I -- I talk about the fact that

1 the impacts of New Mexico pumping on Texas is the --
2 the operating agreement is intending to offset those
3 and so the question is well is that -- how does the
4 quantitative analysis work out. When you quantify the
5 effect of New Mexico pumping, you quantify the effect
6 of the operating agreement, and that's -- this comes
7 up into my original report to some extent and more in
8 my rebuttal report rebutting the contention that the
9 operating agreement is a -- a reasonable way to offset
10 the effect of New Mexico pumping on Texas.

11 Q. Okay. And -- and did the additional modeling
12 that was done by -- it's Spronk, right, that did the
13 complete modeling; is that correct?

14 A. Yeah. They document the complete model runs,
15 and they orchestrated them, I believe.

16 Q. Okay. And -- and what was produced in July
17 15th was different than what they had previously
18 produced; it was a new -- essentially new model; is
19 that correct?

20 A. I wouldn't call it a new model, but it had
21 been changed enough that the results were
22 significantly different in some areas.

23 Q. Okay. Did -- did your review of the Spronk
24 modeling combined with your analysis of those results
25 change any opinions or conclusions that were contained

1 in any of your prior reports?

2 A. No.

3 Q. Okay. If I could ask you to take a look,
4 there's a paragraph right before your summary of Run
5 3. Do you see that? Where it says, "My analysis
6 consists"?

7 A. Yeah.

8 Q. Could you explain that to me, explain what
9 you're talking about in that paragraph?

10 A. In order to quantify the effect of some
11 operational method or some -- or some part of the
12 groundwater pumping, the way the modeling works is you
13 do two model runs, one a baseline run, and another one
14 that's identical except that you change the thing that
15 you're trying to focus on, say pumping in New Mexico,
16 and then you have to compare the results of the two
17 models, and what I would compare are the allocations
18 to each district between the two runs and the
19 diversions by the districts in the two runs or the
20 charge diversions for the districts between the two
21 runs.

22 Q. Okay. So basically what you're describing
23 there is that what your methodology was to take one
24 run and compare it with another run to make some
25 determinations; is that -- did I -- did I capture any

1 part of what you just said?

2 A. Yes.

3 Q. Okay.

4 A. And I'm saying what I'm going to take the
5 difference of. There's lots of different model
6 outputs, and ones I'm taking are allocations and
7 diversions.

8 Q. I note that you say that you're -- now, I'm
9 dropping down into what is called "Run 3 Summary." Do
10 you see that?

11 A. Uh-huh.

12 Q. Okay. And that's still on that Page 4, Roman
13 Numeral -- little Roman Numeral 4. You -- you say
14 that, "The resulting impacts occurring in 1980 through
15 2017." So is that the -- the period of analysis
16 that -- that you undertook?

17 A. Yes. For these results, I was looking at
18 1980 through 2017, the period in which Reclamation was
19 allocating to the districts, and the districts were
20 receiving water at the canal headings and distributing
21 it to the lands.

22 Q. And that -- that -- the change then is before
23 the Bureau was delivering to farmers as opposed to
24 districts to shorthand it; is that correct?

25 A. Right. And they -- they were basically

1 running the whole project until 1979.

2 Q. Did you do any comparisons with respect to
3 runs prior to -- to 1980?

4 A. I plotted that data, and I looked at it. I
5 don't have it written up here. It can be found in
6 Spronk's report where the more detailed -- you know,
7 more complete write ups of each model run. So in
8 Spronk's report and then in Spronk's supplementary
9 materials, the -- the comparisons I made for the whole
10 period of record could be found.

11 Q. The comparisons that you made or -- or that
12 they made?

13 A. Well, that they made, which are -- I think
14 they -- I think my comparisons are a subset of their
15 comparisons.

16 Q. Okay. So from -- from your perspective, that
17 is from your reporting perspective, you didn't take a
18 look at the periods from 1938 to 1951; is that
19 correct?

20 A. I didn't write it up.

21 Q. Okay. So that's not part of your report?

22 A. That's correct.

23 Q. And you didn't look at -- well, I should say,
24 you didn't -- part of your report does not -- your
25 report does not cover the periods 1951 through 19, I

1 **guess, '79; is that correct?**

2 A. I think for the most part, that's true, I
3 think. I don't recall if I ever report anything prior
4 to 1980, but for the most part, I'm focusing on -- on
5 the period either starting in '80 or starting whenever
6 two model runs started to really diverge and show
7 significant differences.

8 Q. Is -- is -- would it be fair to say that the
9 purpose of your reports, and here I'm talking about
10 all three of them, is to critique the effect of the
11 operating agreement on New Mexico?

12 A. That's the main focus of my reports.

13 Q. And I -- and I think we -- we talked in one
14 of your earlier depositions that you don't purport to
15 evaluate the effect on -- on -- you didn't do any
16 Compact comparison, that you rather were looking at
17 the operating agreement and taking a look at its
18 affect upon New Mexico?

19 A. Yeah. I don't try and offer an expert
20 opinion on how it compares to what the Compact
21 requires. I -- I left that for Estevan Lopez.

22 Q. Okay. Let's -- I want to look at some of the
23 results that -- that you've come up with here in your
24 report. First, you say that in the full supply years
25 of 1980 to 2002, essentially there's no impact at all;

1 is that correct?

2 A. Yes. No impact on water availability to EP
3 No. 1 or EBID.

4 Q. Let -- let me -- let me preface that by
5 saying, as I understand it, what Run 3 does, what your
6 summary is, it's a comparison of the historic against
7 a -- a counter factual in which all the New Mexico
8 groundwater pumping is turned off; is that correct?

9 A. That's correct.

10 Q. And so what you're hoping to learn is the
11 impact of New Mexico's groundwater pumping on project
12 supply; is that correct?

13 A. That's right.

14 Q. Okay. And so, again, in that 1980/2002
15 period, because there was full supply, there were --
16 groundwater pumping didn't have any impact upon full
17 supply; is that correct?

18 A. That's correct.

19 Q. Okay.

20 A. The extra water freed up by not having
21 pumping just showed up in the -- stayed in the
22 reservoir because it reduced the amount of releases
23 they had to make.

24 Q. Is there any benefit to the project by having
25 water remain in the reservoir?

1 A. Yes. In low supply years, having had more
2 water in the reservoir, the advantage.

3 Q. So if you're looking at -- at the question
4 not from the perspective of one-year impact upon EBID
5 or EP No. 1, but rather looking at the project as a
6 whole, even though there's full supply that goes to
7 EBID and EP No. 1, aren't those districts benefitted
8 in the next year by having additional supply in the
9 reservoir?

10 A. Yes. If the next year was -- would have been
11 a low supply without it, then -- then, yes, they are.

12 Q. Okay. But -- but that's -- you haven't
13 stated that in your report, but that -- that's --
14 that's an accurate statement?

15 A. Yes.

16 Q. Okay.

17 A. And the results I show for Run 3 show that.

18 Q. Okay. The second bullet point under Run 3
19 Summary is that in 2003 through 2005, there are
20 limited impacts to EPWC -- EPCWID when all New Mexico
21 pumping is turned off. Impact is a neutral term. Are
22 you talking about an adverse impact there?

23 A. Well, no. I'm -- we're -- it's confusing
24 because this run turns off New Mexico pumping, so the
25 effect to -- on EP No. 1 is positive. They get extra

1 water in 2003 -- in 2004 if you turn off New Mexico
2 pumping.

3 Q. Okay. Okay. But it's not as large as in
4 other years; is that correct?

5 A. It's not as large as what was calculated
6 following two thousand -- from 2006 on, but in those
7 years, the pumping in New -- in New Mexico is extra
8 high because the operating agreement had reduced
9 EBID's allocation.

10 Q. So -- so --

11 A. You can't separate out any of that so the
12 operating agreement and turning off New Mexico
13 pumping.

14 Q. Okay. And that's why there's a focus on
15 this -- this in terms of -- of these bullets on period
16 before 2006, before the operating agreement came into
17 effect; is that correct?

18 A. That's correct.

19 Q. Okay. Okay. So -- so, now, you actually do,
20 if I just looked a little more carefully or remembered
21 a little bit better, you actually quantify those
22 impacts in your next four sub bullets; is that
23 correct?

24 A. Right. The effects for 2003 through 2005.

25 Q. Okay. So that first little bullet says that

1 EPCWID is -- has an increase in allocations totaling
2 117,000 acre-feet over the three years, 2003, 2004,
3 2005; is that correct?

4 A. That's right.

5 Q. So as I'm understanding that is if you turn
6 off groundwater pumping, that's -- the net effect is
7 that EPCWID is allocated more water than the next
8 little bullet says the net diversion for all three
9 years is 80,000 acre-feet --

10 A. Right.

11 Q. -- is that right?

12 A. Yes.

13 Q. So that's good, right? If -- if you're
14 EPCWID, that's a good thing; is that right?

15 A. Yes.

16 Q. Okay. Describe for me the difference between
17 the allocation number and the net diversion number.
18 Some -- obviously the allocation number is higher than
19 the net diversion number, and what happens to the
20 difference? What is the difference?

21 A. Well, allocation is what they're allowed to
22 take. Diversion is what they actually take. The
23 difference, I think, in the no-pumping scenario
24 relates to the allocation to EP No. 1 as a result of
25 no pumping had gotten high enough that they would not

1 have taken all of that water to supply their demand so
2 the -- the amount was somewhat lower than what they
3 were allocated in 2003 through 2005 simulation.

4 Q. So what you're saying is the impact is
5 significant enough that they would have had the
6 function equivalent of a full supply; is that what
7 you're saying? They wouldn't have taken more than
8 their full supply?

9 A. Yeah. The full supply, as measured by what
10 their actual demand is.

11 Q. If -- if I -- then -- then after you give the
12 EPCWID number, you give EBID numbers, and you show an
13 increase of EBID allocation for all three years of
14 151,000 acre-feet. Did I read that correctly?

15 A. Yes.

16 Q. So that's correct, if you turn off
17 groundwater pumping in New Mexico, the impact is that
18 EBID's allocation goes up or increases over what it
19 otherwise was by 151,000 acre-feet; is that correct?

20 A. That's right. Over those three years.

21 Q. And the -- the second bullet says there's an
22 increase net diversion for all three years totaling
23 146,000 acre-feet; is that correct?

24 A. Yeah. That's correct.

25 Q. So if I understand what you've just explained

1 about EPCWID, the reason the allocation number is
2 higher than the net diversion number is that under
3 that circumstance in those three years where New
4 Mexico pumping is turned off, EBID would also have a
5 full supply and not use all of the water that
6 otherwise would be allocated to them; is that correct?

7 A. Again, full supply is being defined by their
8 actual demand, and it looks like for EBID, I mean, 146
9 is very close to 151, so there's not a -- not much of
10 a difference between the allocation and the diversion.

11 Q. But they wouldn't have been shorted any --
12 any water; is that correct?

13 A. That's another question. I can't answer that
14 one on the fly.

15 Q. Well, if -- if -- if their demand is 146,000
16 acre-feet, isn't that what you -- you just said, the
17 net diversion is equal to what their demand is?

18 A. Yes. Well, this is a difference in what
19 they're diverting so it's not their total demand, and
20 in this -- for 2003 through 2005, there is no
21 carryover, so you don't necessarily have a full supply
22 in each year.

23 Q. You're equivocating because these are --
24 these are totals over a three-year period, and what
25 happens in any one year is --

1 A. Right. There might have been a shortage
2 in -- in -- and I think there probably was a shortage
3 to both EBID and EP No. 1 in at least one of those
4 years.

5 Q. What about -- this seems to show to me, so
6 I'm going to ask if it shows to you, that if
7 groundwater pumping in New Mexico, and obviously
8 you're dealing with these three years so let's --
9 let's -- let's focus on these three years. In these
10 three years, cessation of groundwater pumping benefits
11 the -- the project as a whole; is that correct?

12 A. If New Mexico did no groundwater pumping, the
13 project supply in 2003 through 2005 would have been
14 better than otherwise, but -- and having no
15 groundwater pumping in New Mexico would have had other
16 ill effects like perhaps collapse of agriculture
17 during the '50s drought or something like that. I
18 mean, there's -- these project supply in individual
19 years, not a full indicator of benefit or problems for
20 the project.

21 Q. Right. But I -- I preface that question by
22 saying since you're looking at these three years,
23 let's focus on these three years. In these three
24 years, it seems to me that these results show that
25 cessation of groundwater pumping would have benefitted

1 the project, not just EP No. 1, but also EBID; is
2 that -- is that correct? In terms of surface water
3 deliveries.

4 A. That's correct.

5 Q. It seems to me that these results also would
6 underscore something I think you've said in your
7 previous depositions that there is a relationship
8 between groundwater pumping and project supplies; is
9 that correct?

10 A. Yes. And this quantifies it.

11 Q. Okay. Now, the next major bullet point you
12 have under Run 3 Summary is once you get to that 2006
13 to 2017, the operating agreement is in -- in effect,
14 and -- and can you do this comparison analysis under
15 those circumstances or does it just change things so
16 dramatically that -- that you can no longer utilize
17 this -- this analysis?

18 A. I can't do the analysis based on the runs
19 that had been done. I -- I think it would be possible
20 to -- to fashion a run that could do it, but it --
21 it's pretty complicated.

22 Q. And so -- so you really can't do the same
23 kind of comparison, because there's a -- there's a
24 different rule with respect to how surface water is
25 delivered to EBID; is that a fair way of saying that?

1 all the rest is -- is used in New Mexico?

2 A. No. The assumption is that the water is
3 allocated 57/43 and then both districts take water up
4 to their demand.

5 Q. And then I -- I assume you then, based upon
6 what you said earlier, that the residual, if there is
7 any, is just left in the reservoir for future use; is
8 that correct?

9 A. That's correct.

10 Q. Okay. Did you report -- I just want to make
11 sure that -- Chapter 3 in those results are not
12 reported in the summary opinions and conclusions on
13 little Roman numeral 5; is that correct?

14 A. I thought that I did report those in the
15 first couple of bullets. Analysis of the historical
16 diversion allocation data. Yeah. This -- this bullet
17 relates to Section 3, the historical --

18 Q. Okay.

19 A. -- data, and so does this one. And then the
20 next bullets relate to Section 4 and the model
21 results.

22 Q. Okay. Because those are -- those are --
23 they're not broken out differently, so the first two
24 bullets under your summary of Run 11 are actually
25 derived from Chapter 3, which is just using the

1 historic data; is that correct?

2 A. That's correct.

3 Q. Okay. Then thereafter, what we're looking at
4 comes from the -- the -- the models; is that correct?

5 A. That's correct.

6 Q. Okay. You -- take a look at Page Roman
7 Numeral 6, which is the carryover of this discussion.
8 This whole -- this whole section is focused on the
9 operating agreement; is that correct?

10 A. That's right.

11 Q. Okay. And what you're showing is the effect
12 of the operating agreement; is that right?

13 A. That's right.

14 Q. Your conclusion is EP No. 1 gets more water
15 under the operating agreement than they otherwise
16 would; is that -- is that accurate? That they would
17 absent the operating agreement?

18 A. That's correct.

19 Q. And then EBID gets less surface water under
20 the operating agreement than they would otherwise,
21 than they would without the operating agreement?

22 A. That's right.

23 Q. Okay. Now, to your knowledge, is a
24 fundamental purpose of the operating agreement to
25 account for groundwater pumping impacts on surface

1 water supply? Is that -- is that a purpose of the
2 operating agreement?

3 A. Yes. That's my understanding. That's my
4 understanding from what -- especially from what the
5 U.S. experts have said in their rebuttal reports.

6 Q. Okay. And as I recall from our prior
7 discussions, you believe that while there may be
8 impacts from New Mexico groundwater pumping, not all
9 of the impacts on the surface water are derived from
10 New Mexico groundwater pumping; is that correct?

11 A. That's right. And part of the discrepancy
12 from D2, which has been used to reduce EBID's
13 allocation, part of that discrepancy is related to
14 changes in project accounting.

15 Q. Okay. So that we have -- and then there -- I
16 think you also acknowledge there's groundwater pumping
17 outside of EBID; is that correct?

18 A. That's correct.

19 Q. And that's having an impact upon surface
20 water supply; is that accurate?

21 A. That's correct.

22 Q. If you use D2 without D3, if that makes any
23 sense at all. So a lot of this is talking about D3,
24 which I understand is the mechanism for ensuring that
25 EP No. 1 gets what they otherwise would have gotten

1 based upon the D2 curve; is that correct?

2 A. That's -- that's the way that Dr. Blair
3 describes it, yeah.

4 Q. Well, how would you describe it? Do you --
5 do you believe that it's -- it's something else, other
6 than that?

7 A. I believe that may have been the intent, but
8 that's not how it worked out, that EP No. 1 is getting
9 allocated or getting the ability to use more water
10 than they did under -- in the D2 period, because of --
11 largely because of changes in accounting. So in the
12 end, they're being -- the amount of water that things
13 are carved out for EP No. 1 is even larger than the D2
14 share.

15 Q. If you use D2 as the basis of what EBID and
16 EP No. 1 should get without a D3 and adjusted the
17 respective allocation to EBID to -- to obtain what the
18 D2 curve would provide, would EP No. 1 be shorted --
19 would they -- would they fall below the D2?

20 A. I'm not sure I understand the question.

21 Q. Yeah. What happens if you eliminated D3?
22 Okay?

23 A. If you just use the straight D1/D2 curves --

24 Q. Yeah.

25 A. -- as described in the water supply

1 allocation before its procedures to allocate water,
2 what would happen?

3 **Q. Yes.**

4 A. I would think what would happen is the
5 project would be allocating more water than they
6 might -- than they could deliver, which would be
7 potentially be a problem.

8 **Q. Could you explain that? I don't -- I**
9 **actually don't understand that answer.**

10 A. So the D2 curve tells -- calculates how much
11 water supply, project supply, there's going to be for
12 a given release from storage, and then that water
13 split up between Mexico and the two districts. That
14 number you get off the D2 curve is higher than the
15 charged diversions that can be delivered from that
16 same release of water and so if you use the D2 curve
17 the way they had been to calculate the total amount of
18 project supply, that's more water than would be
19 delivered in the way of charged diversions or
20 allocation charges. And in parts, that's because
21 there's been a change in accounting so not all the
22 water that used to count as part of the D2 curve is no
23 longer being charged. Some of that water is no longer
24 being charged as project diversions, and some of it is
25 a result of physical changes, less drain flow, more

1 river seepage throughout the project. But in either
2 case, it -- the Bureau used the D2 curve, used D1/D2
3 as it had been previously documented, I believe they
4 would probably be allocating more water than they
5 could deliver in the way of charged diversions, and
6 operationally, that could cause problems for them.

7 Q. Is the -- is the reduced drain flow and
8 seepage that you mention, that -- that's a result of
9 groundwater pumping, isn't it?

10 A. Yes.

11 Q. Are -- is the purpose of this chapter to say
12 you ought to be -- you ought to drop the D3 out of the
13 equation and just go with D1/D2?

14 A. I'm not really making a recommendation in
15 this chapter. I'm just trying to quantify the
16 effective -- the switch to D3 and so I can compare
17 that to the impact of New Mexico pumping.

18 Q. With respect to your discussion of carryover,
19 did you assume that if water was not carried over, it
20 would be used in the year it was allocated or did you
21 assume it would be carried over, then split the next
22 year 57/43?

23 A. I assume that any water not called for or any
24 allocation not used, water associated -- the water in
25 storage associated with that unused allocation would

1 stay in storage and be in the pool available for
2 allocation in 57/43 the next year.

3 Q. Okay.

4 A. That's what the model assumes. I -- I mean,
5 when it's doing Run 11.

6 Q. That's the rule; is that right?

7 A. Yeah.

8 Q. Okay. On that same page, you have a
9 paragraph that says, "A large magnitude EBID impacts,"
10 and so forth, then you have two subparagraphs, 1 and
11 2. With respect to two, you say, "The hydrological --
12 hydrologic effects of the increase in New Mexico
13 groundwater pumping and decrease in aquifer recharge
14 caused by the 2008 operating agreement." I said the
15 words right, but I read it in an awkward way. Then
16 you say, "These aquifer impacts reduce project
17 performance, reduce the diversion ratio, reduce
18 project supply, and thus further reduce EBID
19 allocation under the D3 allocation method, i.e. the
20 vicious cycle," in parens. Did I read the words
21 right, even if I emphasized the word?

22 A. Yes, I think so.

23 Q. Okay. Are you saying there that groundwater
24 pumping in and of itself is a problem, and the 2008
25 operating agreement by reducing surface water to EBID

1 **exacerbates the problem?**

2 A. So I -- I interpret that as asking if
3 groundwater pumping in New Mexico was a problem before
4 the operating agreement, and in my opinion, it could
5 have been a problem before the operating agreement. I
6 certainly was concerned about the level of groundwater
7 pumping before the operating agreement, but up until
8 that time, there had been pumping during low supply
9 years that after the low supply period ended,
10 groundwater levels had recovered, and so previously,
11 groundwater pumping had worked to tie EBID and EP No.
12 1, for that matter, over during low supply periods and
13 that the aquifer in New Mexico, at least, had
14 recovered following that and so when -- before the
15 operating agreement, when I was looking at the problem
16 back when we were proposing those AWRM rules, we had
17 just had a couple of really low supply years in which
18 there have been a lot of New Mexico pumping and I
19 think I was concerned that we were getting into
20 trouble with the amount of pumping in New Mexico, but
21 I'm not sure that it would have been a problem without
22 the operating agreement going into effect.

23 **Q. Well, let me ask you this: If not expressed,**
24 **certainly implicit in that statement that we've been**
25 **talking about, is the recognition that pumping from**

1 the groundwater aquifer there has an impact on project
2 operations? Isn't -- isn't that correct?

3 A. It does have an impact on project operations,
4 yes.

5 Q. Okay. The next paragraph that starts
6 with, "Comparison," do you see that?

7 A. Yeah.

8 Q. You say, "Comparison of the results described
9 above shows that the reduction on its -- reduction in
10 EBID allocation diversion caused by the 2008 operating
11 agreement, parens, D3 plus carryover, end parens, is
12 much larger than the effect of New Mexico groundwater
13 pumping on EPCWID in the years leading up to the
14 adoption of D3 plus carryover." First of all,
15 expressed, I think, in there is a -- a statement that
16 New Mexico groundwater pumping has a adverse effect on
17 EPCWID. Is that -- I mean, I think that's what that
18 says. Is that correct?

19 A. Well, I believe that Run 3 calculates the
20 impact of all New Mexico pumping, you know, comparison
21 of a base run, and Run 3 calculates the impact of all
22 New Mexico pumping on the project on EP No. 1's
23 allocation and the delivery. And indeed in some years
24 there is a reduction in EP No. 1's allocation and
25 delivery that can be attributed to groundwater pumping

1 in New Mexico.

2 **Q. So in that statement, is -- is part of the**
3 **concern that EBID is bearing the burden of non-EBID**
4 **groundwater pumping?**

5 A. Well, I don't know that it comes to play in
6 this sentence. I mean, what I'm saying is that if you
7 actually calculate the impact of New Mexico pumping on
8 EP No. 1, it's significantly smaller than the impact
9 of the operating agreement on EBID. So EBID is
10 overpaying, and the overpayments related to a lot of
11 different things, the changes in project allocation --
12 I mean, project accounting, and it's also related,
13 actually, to the vicious cycle, which means that once
14 it gets going, it just -- positive feedback loop
15 occurs, and it gets worse and worse, so EBID ends up
16 paying more and more because of what the -- the
17 positive feedback loop.

18 **Q. If you take a look at, again, the same page**
19 **beginning where it says -- the very bottom of that**
20 **page and carrying over to Roman Numeral 7, "In sum,**
21 **the analyses I have presented demonstrate that the**
22 **actual impact of New Mexico groundwater pumping on**
23 **EPCWID is far less" -- which is bolded -- "than the**
24 **amount of project supply that has been reallocated**
25 **away from EBID under the 2008 operating agreement, D3**

1 plus carryover." Did I read that correctly?

2 A. Yes.

3 Q. That's the fundamental conclusion you're
4 reaching; is that correct?

5 A. That's correct.

6 Q. So, again, it recognizes that there is an
7 impact on EPCWID from New Mexico groundwater pumping,
8 but you're saying that the operating agreements
9 adverse impact on EBID is much greater than the impact
10 of groundwater pumping in New Mexico that it has on
11 EPCWID; is that -- is that what you're saying there?

12 A. Yeah. That's what I'm saying there. And, in
13 fact, when I think back on what the New -- what the
14 U.S. experts were saying, I mean, Dr. King and
15 Dr. Ferguson were talking about the operating
16 agreement being a mechanism to offset New Mexico's
17 additional pumping in excess of what occurred during
18 the D1/D2 period or additional New Mexico depletions
19 beyond what was occurring during the D1/D2 period, and
20 the calculation I made is even more conservative than
21 that. It takes into account the effect of all New
22 Mexico pumping.

23 Q. If I go to what is now Page 1 of your report,
24 this is -- this is where you get into more detail, but
25 I want to make sure that the introduction doesn't

1 introduce any -- any new purposes or concepts than
2 what we're in, in your original summary. It's just
3 amplifying on what's in the summary; is that correct?

4 A. That was my intent.

5 Q. So you lay out five -- five things that
6 you're looking at, which -- and you lay out five
7 things in the summary opinion conclusion part of your
8 report. Are they the same things? Is that --

9 A. I believe they're the same things. The
10 lawyers insist it be identical.

11 Q. Okay. That's good -- good thing.

12 A. My editors insisted they be identical.

13 THE REPORTER: I'm sorry. Please repeat
14 what you just said.

15 THE WITNESS: My editors insisted they
16 be identical.

17 Q. (BY MR. SOMACH) The -- if you look to about
18 mid page on Page 1, you say, "The rebuttal report
19 filed July 15, 2020, by Gregory K. Sullivan." Do you
20 see that there?

21 A. Yes.

22 Q. Then if you look at the last sentence, it
23 says, "The ILRGM simulates the groundwater systems of
24 the Rincon, Mesilla, and Hueco Bolson/El Paso Valley,
25 and also actively simulated -- simulates the

1 allocation and distribution of water by the Rio Grande
2 Project." Do you see that?

3 A. Yes.

4 Q. I read that right, right?

5 A. Uh-huh.

6 Q. There are two things in that paragraph. I
7 want to focus a bit on the -- the first clause just to
8 understand it. You say, "The ILRGM simulates the
9 groundwater systems of the Rincon, Mesilla, Hueco
10 Bolson, El Paso Valley." I thought it was the MODFLOW
11 models that simulate the groundwater basins, and they
12 were fed into the ILRG. You know, perhaps you can
13 correct me in terms of my understanding or at least
14 explain, if the ILRG simulates the groundwater
15 systems, what is the purpose of the two MODFLOW models
16 that were also reported on in July?

17 A. Well, I -- we may be in a question of
18 definition. I -- I take the ILRGM to be the
19 accommodation of two MODFLOW models, a RiverWare model
20 and whatever connective tissue is needed to get those
21 models to talk to each other.

22 Q. Well, let's focus on some of the connective
23 tissue you just talked about. The MODFLOW models
24 themselves have a connective tissue aside from the
25 RiverWare model in terms of the way the groundwater

1 looking at just a straightforward D1/D2 applications
2 of what amount of water was available to each
3 project -- sorry -- each district based upon the 57/43
4 percent that's contained in the D2 curve. Do you
5 recall that discussion?

6 A. Yeah.

7 Q. So my -- my question on the modeling is did
8 you model the inverse of D3? In other words, assuming
9 a full supply now, and the full supply being the
10 amount of water available for a release and then
11 diverted downstream under D2, was there any attempt to
12 model EBID getting its surface water supply of 57
13 percent based upon the D2 under present conditions and
14 seeing what the impact -- or what the result would be
15 for purposes of surface water deliveries to EP No. 1?

16 A. No. I do not think that run has been
17 simulated.

18 Q. Is the model that's been supplied, and I
19 think we have the -- the code as part of the
20 discovery, the integrated model that you have provided
21 us, is it capable of running such a -- such a test?

22 A. I'm pretty sure it is. You have to keep it
23 with the RiverWare rules.

24 Q. Let's go back to your report, and let's go to
25 the next page. Let's -- let's go to PDF 9 first.

1 Sorry. Next page. And it's -- it stated on the
2 Figure 2, but just to make sure, Figure 1, when you
3 say, "Annual irrigation well pumping in New Mexico" --

4 A. Yeah.

5 Q. -- that's including EBID and non-EBID
6 irrigation well pumping; is that correct?

7 A. That's correct. It includes both.

8 Q. Let's go back then to PDF 8. And if you look
9 at that last sentence, that's a footnote -- yeah, last
10 sentence of 4, it says, "Neither set of estimates
11 suggests an upward trend in irrigation well pumping in
12 New Mexico during the '79 through 2002 period." And
13 this is in reference to Figures 1 and 2; is that
14 correct?

15 A. Yes.

16 Q. Let's look at Figure 2. I'm sorry. Figure
17 1. If we could go back up to that Figure 1. Was
18 there a upper trend in irrigation pumping in New
19 Mexico after 2002?

20 A. After 2002, definitely, yes.

21 Q. Okay. And you have averaged -- you have a
22 number of averages, and one of the averages, I think
23 it's the red line, states 2000 -- I'm sorry. It's a
24 green line. 2000 to 2005 average. Why -- why did you
25 average those five years?

1 A. This is -- I was trying to -- the time
2 intervals reflect different allocation regimes, so
3 this is sort of the pre-operating agreement.

4 **Q. When did the operating agreement begin?**

5 A. 2006 is when D3 and at least partial
6 carryover was implemented.

7 **Q. Okay.**

8 A. 2006 is the day the rule changed.

9 **Q. Okay. So -- and why start with 2000 in this?**

10 A. I can't come up with a good answer for that
11 one except I wanted to have more than just a two or
12 three-year period to average.

13 **Q. Okay. Well, that -- what would be the**
14 **average if you took 2003/2004?**

15 A. Just those two years?

16 **Q. Just those two years.**

17 A. You'd end up with like 225,000.

18 **Q. I'm thinking New Mexico for irrigation**
19 **purposes; is that correct?**

20 A. Yeah.

21 **Q. And this is before the 2008 operating**
22 **agreement, which was first implemented in 2006,**
23 **correct?**

24 A. Right.

25 **Q. Figure 2, we can look down, you've -- you've**

1 said on the previous page that this figure does not
2 suggest an upward trend in groundwater pumping from
3 '79 to 2002?

4 A. Yeah.

5 Q. What about 1985 to 2002, is there an upward
6 trend?

7 A. Yeah. If you just look at that subset of the
8 data, there's an upward trend.

9 Q. These are all full supply allocations?

10 A. They are.

11 Q. So why is groundwater increasing during the
12 '85 to 2002 period?

13 A. Well, I think it's exceptionally low during
14 the '85 to '88 period because the reservoir had been
15 spilling. So I sort of think that's -- the values
16 calculated then are exceptionally low because the
17 districts were -- I think the model simulates
18 diversion of spilled water.

19 Q. Okay.

20 A. Which reduces the estimated groundwater
21 pumping.

22 Q. How does it reduce the estimated -- estimated
23 groundwater pumping?

24 A. Yeah.

25 Q. How does that happen?

1 A. Right. How does that?

2 Q. Yeah. Yeah, it's a question. How does that
3 happen after a spill?

4 A. Well, in reservoir spilling, we saw some
5 evidence that the Bureau encouraged the districts to
6 divert water that --- beyond what they would have
7 ordered, and I don't know whether this was for -- to
8 keep it out of the Rio Grande and get it into the
9 canals or whether it was just let's try and charge up
10 the system. We did see evidence that that was -- that
11 that had happened, there was water diverted that was
12 not being charged and so that was simulated in the
13 model by diversion of spill water during times when
14 the reservoir was spilling.

15 Q. Okay. What -- what reports or communications
16 are you recalling for that reason?

17 A. Offhand -- what I -- offhand, what I remember
18 is from project accounting records from the '80s.

19 Q. The annual allocation sheets?

20 A. The -- no, the accounting, not the
21 allocation. And the accounting had, like, some
22 parenthetical comment, plus 40,000 uncharged excess
23 diversions or diversions in excess of, you know, not
24 being charged because it was extra water.

25 Q. Okay. During this period from '85 to 2002,

1 **was consumptive use increasing for irrigation**
2 **purposes?**

3 A. I guess I'd have to look at the data. Based
4 on what I know, the acreage of pecans was increasing
5 during this time, so I think it's quite possible that
6 the CIR was going up, then we'd have to compare that
7 to what the actual irrigated acreages were during this
8 period to see if the total consumption was going up or
9 down.

10 **Q. Okay. Do you recall is that information**
11 **contained in your report?**

12 A. I think I do have some graphs of irrigation
13 consumption in my report. I can't remember.

14 (Cell phone interruption.)

15 **Q. (BY MR. LEININGER) Sorry for that**
16 **interruption. Please continue.**

17 A. So, yeah, I can poke around. I think I've
18 got some graphs on consumption and total consumption
19 in here somewhere.

20 **Q. Okay.**

21 A. Do you want me to try to find it?

22 **Q. Yeah. If you can page through it. I think**
23 **the pecan acreage is your Figure 5.**

24 A. Yeah. Got pecan acreage there, so we -- got
25 too small now. Yes. Pecan acreages going up. Here's

1 irrigated acreage going down. There's pumping data.
2 There's farm deliveries plus irrigation well pumping,
3 which was shown -- Stuart was just asking me about
4 that. Here is annual crop consumption data in terms
5 of acre-feet so this would be the CIR times the
6 irrigated acreage.

7 **Q. So you're looking at Figure 10; is that**
8 **correct?**

9 A. Yeah.

10 **Q. All right. And so after 1985, the question**
11 **is, is there generally increase in crop consumptive**
12 **use for irrigation?**

13 A. Yeah. And so we see variation, some of which
14 might be climatic because this -- this low values
15 around 85 is probably because it was raining all the
16 time and so the temperatures were low and the need for
17 irrigation water was low. But, yeah, I think what I
18 conclude basically is the -- the data does not suggest
19 an increase in the total consumption of irrigation
20 water in New Mexico, at least since the mid '50s.

21 **Q. Right. Again, we're looking at your period**
22 **from '85 to 2000?**

23 A. Right. From '85 to 2000, it's --

24 **Q. 2002, I believe it was.**

25 A. Yeah. So if you just are going from 85 to

1 2002, there is a -- an upward trend, but, of course,
2 it's not a great upward trend. It's showing a lot of
3 fluctuation.

4 **Q. Did you -- did you compare the amount of**
5 **delivery of Rio Grande water into Elephant Butte**
6 **Reservoir for these years, two thousand -- 1985 to**
7 **2002?**

8 A. Well, I've looked at that data. I don't know
9 what kind of comparison you're thinking of.

10 **Q. Well, just wondering how it correlates to**
11 **your Figure 2. Did you do any attempts to see how**
12 **much water was available for release in those years?**

13 A. In which years?

14 **Q. '85 to 2002.**

15 A. So I know that the reservoir was full in the
16 mid '80s, and so the amount of water in the reservoir
17 was, like, 2 million in the mid '80s, and then it --
18 it spilled again in the mid '90s. So I think
19 basically it was mid '80s until about 1999, the
20 reservoir over a million acre-feet up and often 2
21 million acre-feet, then starting about 1995, it
22 dropped until we got to 2003, of course, when there
23 was not enough water in the reservoir to supply the
24 project anymore.

25 **Q. Okay. And the other comparison is comparing**

1 releases from storage, your attempt to correlate
2 releases from storage with this estimate irrigation
3 well pumping?

4 A. For the period '85 to 2002?

5 Q. Yes.

6 A. No, I haven't done that correlation.

7 Q. Okay. Let's go to PDF 10. Let's see. This
8 should be Page 4. Always good to check.

9 A. Yeah.

10 Q. Yeah. There you go. And you have a
11 paragraph at the top, I believe, that includes the
12 statement of both EBID farmers and farmers in large
13 parts of EPC -- EPCWID have access to groundwater that
14 allows them to successfully maintain these orchards in
15 years when the project has short supply. Perhaps it's
16 not on that page.

17 A. I think it must be the next page. Maybe not.

18 Q. I'm sorry. It's on the bottom of Page 4 of
19 PDF 10. Very last sentence.

20 A. Uh-huh.

21 Q. So the -- again, you had this statement about
22 EPCWID farmers having access to groundwater in large
23 parts of EPCWID. I'm just curious, what areas is
24 large parts of EPCWID have access to groundwater this
25 you're referring to?

1 A. Well, from -- I guess I can't quantify it
2 precisely. I've done tours of the valley a few times,
3 and what we observed was the orchard -- pecan orchards
4 were not found in areas where there were not
5 irrigation wells, but as this, I guess, Figure 4
6 showed -- Figure 5 shows that EP No. 1 is now about 40
7 percent pecans, and so, therefore, at least 40 percent
8 of EP1 must have -- groundwater is the correlation I'd
9 make, and, of course, the part of EP No. 1 that's in
10 the Mesilla Valley, I've been through there, and all
11 those farmers have wells so clearly that part of EP
12 No. 1 is well supplied by groundwater. I know there
13 is a part of EP No. 1 where the groundwater is poor,
14 and there, people don't have irrigation wells. As I
15 said before, it appears that orchards are not found --
16 pecan orchards are not found in that area.

17 **Q. I guess that's -- that is my question. With**
18 **regard to the Mesilla Valley, is there groundwater of**
19 **poor qualify for growth of -- for pecan orchard use**
20 **in -- within EP No. 1 district?**

21 A. Well, they grow a lot of pecans there so I
22 assume the groundwater is good enough to grow pecans.
23 I had a -- we had a meeting with the extension agent
24 down in the El Paso Valley who explained the problem
25 wasn't the quality. You can handle the quality. He

1 described various means of dealing with water quality
2 of treatments that the problem was quantity, that you
3 just needed enough.

4 **Q. So if no surface water is available to EPCWID**
5 **farmers in the Mesilla Valley, then they can apply**
6 **solely groundwater to, as you say, successfully**
7 **maintain pecan orchards?**

8 A. I am not an expert in that field, so I guess
9 I can't say.

10 **Q. While we're on the topic of salinity, let's**
11 **go ahead and introduce another exhibit.**

12 **MR. LEININGER:** This exhibit, Christian,
13 is the June 4th memorandum from Dr. Blair. Should say
14 Blair Tech Memo June 4, 2020. Christian, I think I
15 named it Blair Water Quality Report 06-04-20.

16 **THE REPORTER:** Lee, are -- quick
17 question, are these exhibits that you sent yourself or
18 would these be included in the exhibits submitted by
19 Mr. Somach?

20 **MR. LEININGER:** No, these are the ones
21 that I sent today.

22 **THE REPORTER:** Okay. I don't know about
23 Christian, but I have not received those. Christian,
24 did you receive those?

25 **THE VIDEOGRAPHER:** No, I haven't

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IN THE SUPREME COURT OF THE UNITED STATES
BEFORE THE OFFICE OF THE SPECIAL MASTER
HON. MICHAEL J. MELLOY

STATE OF TEXAS)
)
Plaintiff,)
) Original Action Case
VS.) No. 220141
) (Original 141)
STATE OF NEW MEXICO,)
and STATE OF COLORADO,)
)
Defendants.)

ORAL AND VIDEOTAPED DEPOSITION OF
PEGGY BARROLL
FEBRUARY 5, 2020
VOLUME 1

ORAL AND VIDEOTAPED DEPOSITION of PEGGY BARROLL,
produced as a witness at the instance of the
Plaintiff, and duly sworn, was taken in the
above-styled and numbered cause on February 5, 2020,
from 9:39 a.m. to 5:29 p.m., before Heather L. Garza,
CSR, RPR, in and for the State of Texas, recorded by
machine shorthand, at the DRURY PLAZA HOTEL - SANTA
FE, 828 Paseo De Peralta, Santa Fe, New Mexico,
pursuant to the Federal Rules of Civil Procedure and
the provisions stated on the record or attached
hereto; that the deposition shall be read and signed.

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1 inputs. How did you assist in these models?

2 A. The farm budget is most -- that part is most
3 applicable to the lower Rio Grande model in which we
4 have a long period in which there is no metered
5 irrigation well pumping and so irrigation well pumping
6 is calculated by means of a farm budget. I also
7 worked on calculating irrigation well pumping for the
8 Carlsbad model, which is a similar -- had a similar
9 problem. In that case, we were able to use other
10 forms of data to estimate irrigation well pumping.

11 Q. So we'll get into this a little more detail,
12 but you -- you mentioned no irrigation well metering
13 data. So what -- what was the year that you began to
14 rely upon metering well data?

15 A. In the lower Rio Grande.

16 Q. In the lower Rio Grande?

17 A. You get a comprehensive set of metered data
18 in 2009 forward.

19 Q. And "comprehensive" meaning what, all wells
20 are metered?

21 A. Yeah.

22 Q. Okay. And you're relying upon the
23 information then from -- excuse me -- 2009 from the
24 well metering of all wells, all groundwater irrigation
25 pumping wells?

1 A. That's correct.

2 Q. Prior to that --

3 A. In New Mexico.

4 Q. In the lower Rio Grande?

5 A. In the lower Rio Grande part of -- the New
6 Mexico part of the lower Rio Grande.

7 Q. Okay. And just to be more specific, we're
8 talking about the Rincon and the Mesilla valleys?

9 A. That's correct.

10 Q. Prior to that, you said you were using a farm
11 budget package. Was that used to estimate groundwater
12 pumping?

13 A. That's correct.

14 Q. All right. What information -- what actual
15 pumping information did you have prior to 2009 that
16 you recall?

17 A. There are contemporaneous estimates of
18 groundwater -- irrigation groundwater pumping from
19 earlier periods from historical reports, including
20 Gunaji, including Rio Grande project histories.
21 There's information on -- and other -- other technical
22 reports from the time. There's -- there was
23 discussion -- sort of anecdotal reports, discussion by
24 EBID farmers as to what went on during earlier periods
25 and how they used their irrigation wells and how

1 irrigation -- how pumped groundwater was distributed
2 and then there's information from OSE files on when
3 irrigation wells were drilled and what the information
4 on the construction and yield of these wells.

5 Q. So you mentioned the Gunaji report, the
6 Bureau of Reclamation histories, anecdotal reports
7 from EBID, and OSE files. Anything else?

8 A. There are probably other technical reports
9 that I took in -- took information from at one time or
10 another to -- but the ones I've listed are the main
11 sources.

12 Q. And are they referenced in your expert
13 report?

14 A. Yeah.

15 Q. Okay. So --

16 A. I mean, there's -- I also kind of looked into
17 what irrigation pumping was going on in the Texas part
18 of the project, and there was another set of reports,
19 especially from the Texas state government reports,
20 that estimated numbers of wells and pumping in Texas
21 historically. In Mexico, too, for that matter, there
22 was an IBWC report on historical irrigation well
23 pumping.

24 Q. Okay.

25 A. In Mexico.

1 Q. And you -- you -- talking in the context of
2 irrigation wells for all of these sources; is that
3 correct?

4 A. Yes.

5 Q. What about municipal and industrial pumping,
6 what metered records were -- were there prior to 2009?

7 A. Oh, there's lots. Most M&I, municipal and
8 industrial, use in New Mexico has been metered for
9 quite a while and the -- typically a large user like
10 the City of Las Cruces has -- keeps their own records
11 of what they produced, which can be used, and so we
12 generally do not have to estimate major M&I, municipal
13 or industrial, users, but in some cases, we didn't
14 have the data and had to extrapolate or interpolate to
15 come up with the values put in the model in some
16 years.

17 Q. Okay. So when -- when was -- let's start
18 with Las Cruces. When was Las Cruces' wells metered?

19 A. I think they have always recorded the amount
20 of water they've pumped out of their wells. I don't
21 know when their -- the state engineer started
22 requiring them to meter. Yeah, I don't know the date,
23 but I think that the -- I think we have metered data
24 going back quite a ways from the City of Las Cruces
25 that's based on their own pumping records.

1 Q. Okay. And you don't know when the OSE
2 required the metering of municipalities? You don't
3 know when there was a metering order issued?

4 A. I -- well, the metering order was not until
5 2004, when it really went into effect in 2008. The --
6 but entities like the City of Las Cruces, whenever
7 they came before the state engineer office for
8 anything, like a supplemental well application, for
9 example, the state engineer would put as a -- as part
10 of the conditions that you have to meter everything
11 you do. That's typically how it worked for the M&I
12 users is as soon as they had set foot in the state
13 engineer's office for anything, they would then be
14 required to meter all of their pumping.

15 Q. What's your recollection of the earliest OSE
16 requirement of reporting from M&I use?

17 A. Well, the basin was declared by the state
18 engineer in 1980, so I do not -- I'm not aware that
19 any requirement would have been made before that date.

20 Q. What about domestic wells outside of M&I?

21 A. Domestic wells were exempt from the 2004
22 metering order -- or rather single-family domestic
23 wells were exempt from that metering order, as were
24 small stock and livestock wells. Multi-family
25 domestic wells have required meters and do have

1 metering requirements associated with them.

2 Q. So was there pumping -- an annual pumping
3 threshold, this multi-family requirement?

4 A. It's not a pumping threshold. It's just if a
5 well is serving more than one household, it then
6 requires a meter.

7 Q. So when was that put into effect, also in
8 1980?

9 A. I believe that the general requirement
10 probably only came into -- I'm not sure. The metering
11 order would have covered them, but, again, that would
12 have been, like, 2004. Prior to that, I think some
13 were metered because as they came into the office,
14 they were required to get meters.

15 Q. When was this distinction between single- and
16 multi-family wells made by the Office of State
17 Engineer for the purposes of reporting?

18 A. I think it's been a longstanding distinction,
19 but I don't know when it was made.

20 Q. "Longstanding" meaning, what, 1980s or
21 earlier?

22 A. Yeah. And it would have been -- I think it's
23 a distinction that's made throughout the state, not
24 just in the lower Rio Grande.

25 Q. Okay. But you don't know exactly when that

1 difference between metering for multi-families and no
2 metering for single families was made?

3 A. No.

4 Q. So the records should reflect -- the records
5 that have been disclosed in this case should reflect
6 when that began; is that correct?

7 A. I don't know how they would.

8 Q. So you have lists of multi-family wells for
9 domestic purposes, correct?

10 A. I think you'd have to -- I'm not familiar
11 with -- I have seen detailed metering records from
12 Ryan Serrano, and in some of them, if I had tried
13 really hard, I could have distinguished multi-family
14 domestic wells in them, and I've spotted multi-family
15 domestic wells in them. But whether one could pick a
16 date of when they started to be required, I -- I
17 couldn't tell you.

18 Q. So you -- sitting here today, you don't know
19 when it started to be required that metering be
20 reported -- metering and metering results be reported
21 to the OSE for multi-family units?

22 A. I -- I would say that that requirement was
23 definitely made starting when that metering -- 2004
24 metering order went into force. Individual ones may
25 have had individual requirements prior to that time.

1 Q. But you don't know when --

2 A. No.

3 Q. -- that may have started?

4 Okay. For single family then, there was --
5 there is an exemption, but there is no cap on
6 single-family pumping to meet the exemption?

7 A. I believe there is a cap, yes, domestic well
8 permits have a cap on them.

9 Q. And what is that?

10 A. It used to be three acre feet, I believe.
11 Now it's one acre foot. There's also some sort of
12 limitation as to how much ground outside can be
13 watered with it, and there's this -- the -- yeah.
14 It's -- there -- there are, in fact, caps. I think
15 domestic wells that are approved today, the cap is one
16 acre foot, I believe.

17 Q. And let's talk about the earlier three acre
18 foot. When did the Office of State Engineer apply an
19 administrative cap on single family at three acre feet
20 per year?

21 A. The permits that are issued for domestic
22 wells have that written into them, and it has for a
23 long time. I don't know when exactly -- how the
24 wording of the permit has changed with time.

25 Q. So these are exempt wells, correct, for

1 single domestic?

2 A. And small livestock wells.

3 Q. Small livestock wells. So if they are not
4 metered, how are they enforced to ensure that they are
5 not going over one acre foot per annum?

6 MR. ROMAN: Object to form, but you can
7 answer if you know.

8 A. I believe that the state engineer office, in
9 general, and the water master, in particular, have the
10 authority to require a meter if there is reason to
11 believe that they are using more than the amount on
12 the permit.

13 Q. (BY MR. LEININGER) And how many of those are
14 you familiar with?

15 A. I'm not familiar with the details of
16 enforcement and when these have -- I've heard of
17 disputes involving this problem, but I don't know how
18 many and when or what.

19 Q. So is it fair to say that when you were at
20 the OSE from 1991 to 2017, did you see any of these
21 enforcement orders issued for single family?

22 A. I have heard of -- I recall hearing anecdotal
23 reports of disputes between the water rights division
24 and well owners on this topic, that the state engineer
25 's office said, you know, you're watering too much

1 with this domestic well, you either need to get it
2 metered or come bring in another water right or
3 something like that. I heard anecdotal chat about the
4 office about that kind of problem, but I'm not
5 familiar with it. I never worked a case on -- like
6 that.

7 Q. Okay. And you hadn't seen any written orders
8 requiring a single-family domestic to install a meter?

9 A. I've never seen orders of that type.

10 Q. Okay. What about stock watering use, have
11 you seen any orders requiring stock watering well
12 pumping metered?

13 A. I've never seen orders of that type.

14 Q. So prior -- prior to the metering, you said
15 you were relying mostly upon modeling; is that
16 correct, for purposes of trying to come up with a
17 quantity of groundwater pumping?

18 A. I don't know that I'd phrase it that way.
19 Prior to the metering order, we would estimate
20 irrigation well pumping based on crop demands and
21 surface water supply with the difference between those
22 two being the estimated groundwater pumping, and we
23 would support that with the contemporaneous reports of
24 what -- how much irrigation well pumping had occurred
25 in historical periods.

1 Q. So you'd estimate irrigation well pumping
2 based on crop demands and surface water supply. Was
3 that empirical? Did you have the actual data for all
4 of that or is some of this based upon a model?

5 A. Well, crop demands would be based on
6 consumptive irrigation requirement calculations, and
7 the -- those calculations can be done by a number of
8 different methods. I've used consumptive irrigation
9 requirement estimates for various types to do it.
10 When I was working on it myself, it was mostly
11 modified Blaney-Criddle calculations of crop
12 consumption. But a lot of it was based -- or rather,
13 the -- in some cases, it was based on measurements or
14 calculation of consumptive use from field measurements
15 like -- and remote sensing measurements. They put out
16 equipment in pecan orchards to actually measure how
17 much consumption is occurring to the -- and they
18 also -- they're also remote sensing methods for
19 estimating how much CU is occurring and so those have
20 been involved, especially when it comes to the
21 consumptive use of pecans.

22 Q. Okay. Why don't we save that line of
23 questioning for a little bit later because you had
24 some reports that you had generated with regard to
25 your -- I don't remember the name, Blaney-Criddle?

IN THE SUPREME COURT OF THE UNITED STATES
BEFORE THE OFFICE OF THE SPECIAL MASTER
HON. MICHAEL J. MELLOY

STATE OF TEXAS)	
)	
Plaintiff,)	
	)	Original Action Case
VS.	)	No. 220141
	)	(Original 141)
STATE OF NEW MEXICO,)	
and STATE OF COLORADO,)	
)	
Defendants.)	

 REMOTE ORAL AND VIDEOTAPED DEPOSITION OF
 PEGGY BARROLL
 JULY 9, 2020

REMOTE ORAL AND VIDEOTAPED DEPOSITION of PEGGY BARROLL, produced as a witness at the instance of the Plaintiff State of Texas, and duly sworn, was taken in the above-styled and numbered cause on July 9, 2020, from 10:01 a.m. to 4:03 p.m., before Heather L. Garza, CSR, RPR, in and for the State of Texas, recorded by machine shorthand, at the offices of HEATHER L. GARZA, CSR, RPR, The Woodlands, Texas, pursuant to the Federal Rules of Civil Procedure and the provisions stated on the record or attached hereto; that the deposition shall be read and signed.

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1 **Q. Okay.**

2 **MR. SOMACH:** Let's put up -- on my PDF,
3 it says Letter 1. I know there's two Letter 1s, so
4 just do the first Letter 1, and we'll play it by ear.
5 Okay. Could you mark this as Exhibit 3?

6 (Exhibit No. 3 was marked.)

7 **Q. (BY MR. SOMACH) And can you describe -- this**
8 **is another document that you got from Dr. Stevens?**

9 A. That's correct.

10 **Q. And what -- what is this document?**

11 A. It's describing the rectification and some of
12 the benefits of rectification, one of which is that it
13 would be possible to segregate out some of the nasty
14 drain flow from the Fabens area and -- and get it out
15 or remove it so that it didn't have to be diverted at
16 Tornillo, and it seems like it -- the rectification
17 that was one of the benefits that they first saw, I
18 guess, that at -- before the rectification occurred,
19 all of the drains above Fabens flowed into the Rio
20 Grande above Tornillo and were, therefore, included in
21 the water diverted through Tornillo. Some of those
22 drains, apparently the water was particularly bad, and
23 they wanted to segregate that out and -- and send it
24 right to a wasteway instead of diverting into the
25 Tornillo district.

1 Q. When you say -- I think you used the
2 word "bad" just now, and earlier, you used the
3 word "nasty." What is the characteristic of the water
4 that makes it bad or nasty?

5 A. High salinity, as far as I know.

6 Q. And I should have asked. What was the date
7 of the first what was Exhibit 2? Do you recall?

8 A. 1964.

9 Q. And what was the date of this -- this
10 document?

11 A. It seems to be -- it's in the '30s. Let's
12 see. '37. August 26th, 1937.

13 Q. That's the year before the Compact; is that
14 correct?

15 A. That's correct.

16 Q. So in -- you could say is it fair to assume
17 that there was recognition around the time of the
18 Compact that -- that water down in this area of the
19 project was -- had a high saline content?

20 MR. WECHSLER: Objection --

21 A. That's -- yes. There was recognition that
22 there was some drain flow of poor quality in the area.

23 Q. (BY MR. SOMACH) The document is much easier
24 to read on the screen than printed out, I must admit.
25 If you could take a look at Page 3 of this document.

1 **Actually, stop -- stop right there. That's Page 2,**
2 **right?**

3 A. Yeah.

4 Q. Okay. Actually, I -- what I'm referring to
5 is going to be in another document. I'm looking at a
6 different one. Let's -- let's put the next letter up,
7 also Letter No. 1.

8 (Exhibit No. 4 was marked.)

9 Q. (BY MR. SOMACH) Okay. This is now Exhibit
10 No. 4. Can you take a look at that and tell me what
11 that document is?

12 A. I think this is a letter or memo report from
13 Raymond Hill to the IBWC in 1964 related to the losses
14 in the reach between International dam and Riverside
15 heading.

16 Q. And -- and you relied on this in your -- in
17 your first -- first report?

18 A. In my first report, I think I tried to
19 summarize some information related to the losses in
20 that reach, and this is one of the sources I cite.

21 Q. And by "losses," what are -- what are you
22 talking about?

23 A. When I say "losses," I mean the total, as
24 Raymond Hill says, volume of water unaccounted for.
25 So it could be lost to seepage in the ground. It

1 could be lost to evapotranspiration. It could be lost
2 to adverse diversions or under diversions.

3 Q. When it -- when you use the word "losses," is
4 it accounted for -- and what I'm trying to understand
5 is whether or not this is water that -- that is
6 accounted for as part of the allocation of water to EP
7 No. 1?

8 A. This loss was occurring above the Riverside
9 diversion, which is where EP No. 1's diversion -- one
10 of the places EP No. 1's diversions are accounted at.
11 So this loss would have occurred before the accounting
12 point.

13 Q. And when you say "loss," that means it --
14 it's not utilized by -- by, in this case, EP No. 1; is
15 that correct?

16 A. It's not diverted at Riverside or accounted
17 for as part of EP No. 1's diversion or -- or used by
18 farmers off of the Riverside Canal.

19 Q. Well, I guess, my -- my question is actually
20 simpler than that. If it's lost, then it never got
21 used by the EP No. 1 ; is that correct?

22 A. I think I answered that question.

23 Q. Okay. Let me look and see. Well, how did
24 you answer it?

25 A. I said that it was not diverted or accounted

1 for, for EP No. 1, and did not get diverted or
2 delivered to farmers, EP No. 1 farmers, off of the
3 Riverside Canal.

4 Q. Okay. All right. Let's take a look at the
5 next document which is on my list of documents. I had
6 one that's got numbers in front of it, R169C7.

7 (Exhibit No. 5 was marked.)

8 Q. (BY MR. SOMACH) This has been marked as
9 Exhibit No. 5, and what is this document?

10 A. This is a map of the drain system in EP No. 1
11 that appears to have been made about the time of the
12 joint investigation. Yeah. I -- it was a nice map of
13 the drain system.

14 Q. And you -- you would use this map how with
15 respect to your first report?

16 A. I think I put an excerpt from the map in my
17 report in one of the appendices.

18 Q. Okay. Its significance is merely that it
19 depicts -- it's a good map depicting drains
20 contemporaneous with the Compact; is that -- is that
21 an accurate description of -- of --

22 A. Yeah. Yeah. Contemporaneous and prior to,
23 and it -- we chose very similar information on the
24 joint investigation maps, but it's just a lot easier
25 to look at because it is simpler. It only shows the

1 drains in the Rio Grande and so it shows where the bed
2 of the Rio Grande was prior to rectification and the
3 relationship between the drains in the Rio Grande.

4 Q. Let's go to the next document. It's labeled
5 on my copies here as Letter 2.

6 (Exhibit No. 6 was marked.)

7 Q. (BY MR. SOMACH) It's now been labeled as
8 Exhibit 6. What -- what is the significance of --
9 significance of -- of this letter?

10 A. I think it was, again, the -- in relationship
11 to the history of the American canal extension. This
12 letter, written in 1940 is, I believe, suggesting --
13 and I'd have to reread it again to be sure, but I
14 think it is suggesting that it would be a good idea to
15 hook up the American canal to the Riverside heading
16 and avoid the losses of the bed of the Rio Grande
17 between those two. Oh, and then, again, this also --
18 letter also cites the separation of irrigation and
19 drain water in the vicinity of Fabens, again,
20 mentioning the part of what they were trying to do in
21 post-rectification work was segregate out some of the
22 drain flows above Fabens so that it didn't have to be
23 diverted into the project at Tornillo.

24 Q. Is that -- and -- and right now, you've got
25 on the screen Paragraph 10 that has a green underline.

1 Do you see that?

2 A. Yeah.

3 Q. Is that your underline or is that -- was in
4 the document?

5 A. That was in the document.

6 Q. And is this dealing with two issues, one
7 being losses, and the other being the quality of drain
8 water or just one of those two?

9 A. I'm not sure. I'd have to reread it again.
10 I know I was looking at some early documents and
11 seeing reference to proposal to basically create the
12 American canal extension. I can't remember right now
13 whether or not this letter is -- is one of those
14 references or not. I could flip through it and figure
15 it out, but I don't remember right now.

16 Q. Well, we may come back to this. As I said,
17 I've not had a lot of time to review.

18 MR. SOMACH: Let's put up the invoices.
19 Let's mark this as the next in sequence. I think it's
20 7.

21 (Exhibit No. 7 was marked.)

22 Q. (BY MR. SOMACH) My understanding,
23 Dr. Barroll, is that -- that Exhibit 7 are your
24 invoices since -- well, starting January 15th; is that
25 correct?

1 involved there?

2 A. That would have been report writing and maybe
3 attending deposition, sitting in on depositions.

4 Q. Okay.

5 MR. SOMACH: Let's -- let's put up what
6 has -- what I have is -- it's 2005-08-19 Barroll
7 Exhibit 04. Not that. Sorry. I'm looking for expert
8 report that's dated 2019. There we go.

9 (Exhibit No. 8 was marked.)

10 Q. (BY MR. SOMACH) We're going to give this
11 another exhibit number even though it was utilized in
12 your first -- first deposition. I might add this is a
13 list deposition, just a continuation of that
14 deposition, because we didn't finish up. I think we
15 had a date in April scheduled for follow-up of this
16 deposition, and that, of course, the -- oh, the
17 quarantine stuff hit and things got -- got delayed and
18 cancelled and so I want to finish up questions I had
19 about this report and then I will move on because now
20 we also have your rebuttal report to address. If you
21 look at Page -- it's actually 5 -- little Roman
22 numeral 5, two little Is. It's at the very beginning.

23 A. So this one?

24 Q. I said two little Is. I meant three little
25 Is.

1 A. Yeah.

2 Q. Okay. You say at the top there that the --
3 well, I'll read the -- the section I want to ask you a
4 quick question about. It says, "Texas and the United
5 States, through their pleadings and expert reports,
6 make the disputed issues between the parties seem
7 deceptively simple; they claim merely that New Mexico
8 groundwater pumping hurts Texas. This is not the
9 whole story, nor even the primary story of the Rio
10 Grande Project operations and accounting issues
11 between these three parties." Have -- have -- did I
12 read that correctly?

13 A. Yes.

14 Q. Okay. What is the primary story?

15 A. I would say that the primary story relates to
16 the allocation and accounting of the Rio Grande
17 project and how there was disputes about it in recent
18 years. There was disputes apparently settled by an
19 operating agreement, but that operating agreement
20 changed the allocation drastically, and it -- as the
21 new operating agreement was implemented, as time went
22 on after its implementation, that became evident, and
23 the -- that -- that's how I -- I see this primary
24 story, but, of course, there's other aspects to it.

25 Q. You say that in that same sentence, you

1 say, "They claim merely that New Mexico groundwater
2 pumping hurts Texas." You see that?

3 A. Yes.

4 Q. Are you saying that New Mexico groundwater
5 pumping is not hurting Texas?

6 A. That's not what the sentence says, and I
7 would say that it's a complex question. That's not as
8 simple as Texas -- that's not as simple as what Texas
9 puts forward.

10 Q. Well, I -- I understand that. You're saying
11 that there are a lot of other facts or issues that are
12 part of the total story. I think that's what you're
13 saying or at least that's why I understand it, but I'm
14 focusing down now on whether or not part of that story
15 is the harm that groundwater pumping in New Mexico may
16 be having on Texas. Is that -- are you saying it's
17 not that or are you saying that's part of the more
18 complex story?

19 MR. WECHSLER: Object to form.

20 A. I believe that groundwater pumping in New
21 Mexico has an impact on the project and, therefore, it
22 has an impact on project beneficiaries, which include
23 farmers and municipal users in Texas, and calculating
24 that impact is a complex matter. Also changes, of
25 course, in allocation had an impact on the water users

1 in both states.

2 Q. (BY MR. SOMACH) Okay. Let's, if I could, ask
3 you to turn to -- again, this is little Roman numeral
4 9.

5 A. Roman numeral 9?

6 Q. It's where you list your conclusions.

7 A. Oh, okay.

8 Q. If that helps.

9 A. I gotcha. I was going the wrong way. Yes.

10 Q. Okay. In Conclusion No. 2, do you see that?

11 A. Yes.

12 Q. You say, "From the beginning of project
13 operations, each project acre was entitled to the same
14 delivery of water." Did I read that correctly?

15 A. Yes.

16 Q. Okay. And that appears to be a -- a
17 significant or critical point in your report; is
18 that -- is that accurate?

19 A. Yes. I think it's an important point.

20 Q. Okay. You say from the beginning of project
21 operations. I think we established at your first
22 deposition that you're not an expert on the Compact
23 itself; is that -- is that -- do I recall that
24 correctly?

25 A. I'm not an expert on the Compact itself.

1 Stuart.

2 THE REPORTER: Yes, it's Exhibit 8.

3 MR. SOMACH: Is this the exhibit that
4 got changed?

5 THE REPORTER: This is Exhibit 8.

6 MR. SOMACH: Okay. That's good. At
7 least somebody -- Jeff is following.

8 Q. (BY MR. SOMACH) If you could turn to Page --
9 Pages 12 -- I'm going to ask you questions about 12
10 and 13.

11 A. Yeah.

12 Q. Okay. And if -- if you can take a look at
13 the paragraph that starts, "Understanding of project
14 operations." Do you see that?

15 A. Uh-huh.

16 Q. And if I understand what you're saying there,
17 is that greater or lesser drain flows or the
18 availability of -- of greater or lesser flows in -- in
19 the drains, which -- which I think in this context,
20 you're talking about as additional amounts that --
21 surface water amounts that -- that return are used by
22 the project as return flows have an impact upon how
23 Caballo is operated. Is that what you're saying in
24 that -- that paragraph?

25 A. Yes.

1 Q. What you're saying is the greater the return
2 flows, the less amount of water that has to be
3 released from Caballo; is that -- is that accurate?

4 A. That's correct.

5 Q. And the -- the greater the -- or the lesser
6 the amount of drain flow, the lesser the amount of
7 water that needs to be released from Caballo?

8 A. I think you got it wrong. The lesser the
9 amount of drain flow, the more needs to be released
10 from Caballo.

11 Q. That's -- that is right. That is right.
12 Okay. Has -- has the -- would you call -- when there
13 are lesser flows in the drains, is that due to losses
14 from -- from the project?

15 A. I wouldn't describe it that way.

16 Q. Describe it the way you would describe it.

17 A. Drain flows are reduced in years of low
18 supply, because there's less surface water, and
19 applied less canal seepage, which canal seepage can
20 show up in drains, and then also because groundwater
21 pumping can reduce -- lower the groundwater table and
22 reduce drain flows, and groundwater pumping can
23 also -- is also correlated with low supply years.

24 Q. Prior to the operating agreement, let's go
25 back to the good old days -- how was -- give me a -- I

1 realize everything is complex because you told me
2 that, but give me a -- a -- as simple a version as you
3 can of how you understand allocations were made to the
4 two districts prior to the operating agreement.

5 A. Up until 1979, the project Reclamation
6 allotted water to farmers, to lands, and, of course,
7 the lands were 57/43 between the two districts.
8 Starting in '79, the Reclamation started allocating to
9 the districts, allocating deliveries or deliveries to
10 the canal headings at the districts, and they would --
11 they did an analysis of the data from '51 to '78, in
12 order to assist them in this allocation, the key
13 feature of that analysis that affects the districts is
14 the -- the D2 curve, which -- and the D1 and D2 curve
15 together, I guess, were both used to determine the --
16 what a full supply allocation of the districts would
17 be. And from '79 through 2002, it was full supply
18 every year, so that's what the districts were
19 allocated. In 2003 /2004, it was not full supply, and
20 Reclamation determined that using the D2 curve
21 probably wasn't going to work for them so they -- I
22 think, seemed to me they were allocating in storage
23 that year. 57 -- and they would split the U.S. share
24 to the districts 57/43. In 2005, again, they ended up
25 with a full supply year so they gave them that full

1 supply allocation which had been determined
2 previously.

3 Q. Is -- and, actually, my question is a lot
4 simpler than that. It's -- it's -- the 57/43 percent
5 that you're talking about is, what is split 57/43
6 percent?

7 A. The delivery of project water to the canal
8 headings of the district, the amount that they could
9 order for delivery to their canal headings, that's
10 split 57/43.

11 Q. Let me -- let me maybe ask this a little bit
12 differently. At the beginning of an irrigation
13 season, people were -- presumably you look to a source
14 of water, and I assume that source of water is
15 Elephant Butte and Caballo. Is that -- is that where
16 we start?

17 A. That's right. The allocation process is
18 based on usable water in storage and then from that,
19 they make an estimate of how much they think they can
20 deliver in the way of chargeable diversions to the
21 canal headings and then they split that amount 57/43.

22 Q. Okay. So presumably, that subtraction and
23 then division was predicated upon factors that include
24 how much water is actually going to be available for
25 surface water delivery; is that -- is that correct?

1 physical reduction, but you simply, say, change the
2 color of the water to no longer chargeable as
3 diversion, then you've reduced the supply -- the
4 allocatable supply.

5 Q. Go back to Page -- it's little Roman numeral
6 10.

7 A. Yes.

8 Q. If you could take a look at your Conclusion
9 12. I'm not sure that I entirely understand what this
10 encompasses. Perhaps you could -- could explain that,
11 what's in Paragraph -- yeah, your Conclusion 12.

12 A. Okay. I start off with the statement that
13 the way D3 allocation works is that any negative
14 departure from the D2 curve comes out of EBID's
15 allocation, and then I talk -- then I say that that
16 is -- appears to be basically an assumption or is
17 based on an assumption that all negative departures in
18 historical performance are caused by New Mexico, and
19 then I start discussing why that may not be so, that
20 part of the departure -- negative departure from the
21 D2 curve is caused by changes in project accounting,
22 which I referred to in my last answer about changing
23 the color of the water to no longer chargeable, than
24 these changes that have occurred since the 1951 to '78
25 period, which is the basis of the D2 curve, and in

1 addition to that, there's also departures from the D2
2 curve caused by pumping, as we discussed earlier, that
3 pumping can cause inefficiency, and part of that
4 pumping inefficiency is caused by pumping in Texas and
5 Mexico, not all of it in New Mexico.

6 **Q. Is -- is some of that groundwater pumping**
7 **happening in New Mexico, but outside of Elephant Butte**
8 **Irrigation District?**

9 A. There is pumping in New Mexico that's not
10 being done by EBID members that can have an impact on
11 the project.

12 **Q. The -- part of what you're saying here, I**
13 **think, is that penalizes EBID because they are being**
14 **essentially charged for that -- that outside of EBID**
15 **but in New Mexico pumping; is that correct?**

16 A. Yes.

17 **Q. Okay.**

18 A. And they're being charged for all of these
19 other effects that I mentioned, changes in accounting
20 and the effects of pumping in Texas and Mexico.

21 **Q. If EBID doesn't think it's being harmed by**
22 **the operating agreement then -- then who is harmed?**

23 **MR. WECHSLER:** Object to form.

24 A. Well, there -- I'd say that the aquifer upon
25 which everyone in the Lower Rio Grande relies is being

1 harmed, and New Mexico, as I understand from reading
2 Estevan Lopez's report and listening to his
3 deposition, the State of New Mexico itself has the
4 Compacting state regards its share of Compact water as
5 having been wrongly decreased.

6 **Q. (BY MR. SOMACH) I think you said everyone who**
7 **relies on the Lower Rio Grande is harmed, but who is**
8 **that if it's not EBID?**

9 A. Domestic well owners, municipalities, and
10 EBID farmers themselves are -- are -- will find --
11 have found problems in utilizing groundwater as
12 groundwater levels have dropped, and there have been
13 water quality issues coming up.

14 **Q. You mentioned domestic and municipal pumpers.**
15 **Those are groundwater pumpers?**

16 A. Yes.

17 **Q. How -- how were they injured?**

18 A. By the fact that the previously-sustainable
19 aquifer on which they relied has been converted into a
20 mined aquifer.

21 **Q. So have you described -- in describing who is**
22 **harmed, described how the harm has manifest itself --**
23 **it manifests itself based on what I just heard in**
24 **lower groundwater tables and a mined groundwater**
25 **basin? Is that how it manifests itself?**

1 was what when I reviewed your -- your deposition
2 testimony then, you stated that all of your
3 professional work has derived from the State of Texas.
4 I think you indicated that was 30 years of
5 professional work. Do I understand that correctly?

6 A. Derived from the State of Texas?

7 Q. I'm sorry. That's the fact that I'm old and
8 I'm tired. State of New Mexico.

9 A. Almost all. I spent a couple years doing
10 some consulting for state engineer's office.

11 Q. And since you left the state engineer's
12 office, you're doing consulting now; is that correct?

13 A. That's right.

14 Q. And as I understand from your last
15 deposition, most of that is with the State of New
16 Mexico; is that correct?

17 A. Yeah. It's all with the State of New Mexico.

18 Q. Okay. So that all the opinions you're
19 expressing in your expert report, did you develop
20 those while you were working for the State of New
21 Mexico?

22 A. Many of them, I did.

23 Q. And the ones that you didn't develop while
24 working for the State of New Mexico, who were you
25 working for?

1 A. I guess you're including since I've been
2 retired and I was a consultant. Yes, yes, they've all
3 been developed while I was working for the State of
4 New Mexico one way or another, yes.

5 Q. You were talking about, in your first
6 deposition, about the fact that salts accumulated the
7 further down you go in the Rio Grande basin, the lower
8 Rio Grande basin; is that correct?

9 A. Yes.

10 Q. Okay. Today, you also said as well as in
11 your prior deposition that the lower Rio Grande
12 aquifer system is a mined aquifer. Did you say that?

13 A. Yes.

14 Q. Okay. Describe a mined aquifer for me.

15 A. A mined aquifer is one that on a monthly year
16 basis, withdrawals are greater than recharge and so
17 groundwater levels are dropping through time.

18 Q. And then a mined groundwater basin, is there
19 a limit to how far those groundwater basins can drop?

20 A. Yeah. And it depends on the aquifer. I
21 mean, there are some aquifers -- very thin aquifers
22 where people are worried about using up all the water
23 in the aquifer. Those exist.

24 Q. So are you using the -- you know, the way I
25 had it described before is obviously there's what you

1 just described. That's a -- that's a physical limit.
2 There just is no more water left. Does your
3 definition of mined aquifer, including -- include an
4 economic factor?

5 A. Well, the definition of mining does not, but,
6 yeah, the -- what -- what stops groundwater use in
7 such a basin may be economic as opposed to physical
8 limit or it might be water quality issues.

9 Q. Who is it that decides to allow or not to
10 allow a groundwater basin in New Mexico to be mined?

11 A. The state has regulatory authority, and in
12 some basins, the state engineer promulgates rules and
13 regulations to control the mining of an aquifer, and I
14 don't know that the state engineers ever tried to make
15 a decision about whether a basin should be mined or
16 not. It's the water right owners who have the rights
17 to use the water. The state engineer has some
18 regulatory authority, but the state engineer is not
19 the water god making decisions of -- decisions that
20 aren't necessary or aren't, you know, part of his
21 powers.

22 Q. So if the -- the water right holders -- the
23 groundwater right holders in the lower Rio Grande and
24 New Mexico decided that they were going to -- to mine
25 the groundwater basin, absent some affirmative action

1 **by the state engineer, they could do that?**

2 A. State -- water right owners can use the water
3 that they have a right to. There's also opportunity
4 for water right owners to take action against each
5 other if they're interfering with their -- each
6 other's water rights. The -- what you're talking
7 about seems more like a -- a public policy, and as
8 time goes on, it seems like the state starts
9 regulating resources more with an eye for public
10 policy. It started with the Roswell Basin where the
11 water right owners decided they were using up --
12 endangering their water resource, and the state
13 engineer declared the basin and the management started
14 taking place to prevent damage to the resource. That
15 happens in other parts of the state, often through
16 settlement agreements involving the adjudication
17 court. Managing to protect the resource is a
18 difficult matter involving lots of stakeholders. The
19 State doesn't have unitary authority.

20 **Q. Do you know of any actions that the Office of**
21 **State Engineer or, quite frankly, anyone else in the**
22 **State of New Mexico has taken to manage the mining of**
23 **the groundwater basin in the lower Rio Grande and New**
24 **Mexico?**

25 A. Well, the management steps New Mexico has

1 taken in the way of declaring a groundwater basin and
2 then declaring a water master district and then
3 metering groundwater pumping, adjudicating irrigation
4 water rights, those are all steps in water management.
5 I'd say that in addition, the state is undertaking a
6 pilot program involving reducing depletions in the
7 lower Rio Grande, which would be aimed at addressing
8 the mining issue.

9 **Q. So those are the steps that -- excuse me --**
10 **the State of New Mexico has taken to address**
11 **groundwater mining in the lower Rio Grande and New**
12 **Mexico, the ones you articulated?**

13 A. Those -- those are the ones I can come up
14 with at the moment and the --

15 **Q. Do you know -- go ahead. I keep interrupting**
16 **you.**

17 A. No, it's -- that's what I've got so far on
18 that -- on that question.

19 **Q. Okay. Do you know how many groundwater wells**
20 **have been curtailed in terms of pumping by the State**
21 **of New Mexico in the Lower Rio Grande?**

22 A. The water master and the administrative legal
23 unit of the state engineer's office take action
24 against people who are diverting water without permit
25 or in contradiction to their permit or illegally, and

1 I don't know the details of all of those cases so I
2 can't.

3 Q. Well, let's exclude illegal diversions or
4 diversions in excess of permit quantities. Do you
5 know whether or not, aside from those actions, the
6 state engineer's office has taken any action to
7 curtail the groundwater pumping to address the mining
8 situation we've described in the lower Rio Grande in
9 New Mexico?

10 A. The pilot program I described is an effort to
11 curtail some groundwater use in the interests of
12 attacking the mining problem; otherwise, there has not
13 been curtailment. Curtailment outside -- curtailment
14 of lawful legitimate use of a permitted groundwater
15 right is not something the state engineer has the
16 power to do outside of priority -- some sort of
17 priority call.

18 Q. In your opinion, is the mining of the
19 groundwater basin caused by illegal diversions or
20 diversions in excess of permit amounts? Is that
21 what's causing that?

22 A. No.

23 Q. It's -- it's the legal pumping of groundwater
24 that's causing the problem; is that correct?

25 A. Legal groundwater pumping combined with a

1 reduction in New Mexico's share of the Rio Grande
2 project supply.

3 Q. Well, the reduction in Rio Grande project
4 supply, just to put it in context, you're saying
5 that's a cause because it causes more groundwater
6 pumping; is that correct?

7 A. It causes more groundwater pumping and
8 reduces the amount of aquifer recharge.

9 Q. What's a pilot program? How does a pilot
10 program distinguish itself from an actual or a
11 grown-up program?

12 A. Pilot program is a test program.

13 Q. Okay. So when you're talking about a pilot
14 program, it's just a test. What is it testing?

15 A. It is a test of how depletion reduction
16 program involving irrigated agriculture could be
17 accomplished within the New Mexico state law and the
18 operations of the Rio Grande -- or the operations of
19 EBID and the other constraints that exist.

20 Q. And what's the -- the magnitude? What's the
21 relative magnitude of -- of the test program? Is it 5
22 percent of the wells in the Lower Rio Grande in New
23 Mexico? Is it more? Is it less?

24 A. It's based on acreage, not on wells, and I
25 don't know what the number will be.

1 Q. So it hasn't been -- it hasn't -- it's in
2 process, the -- the pilot program hasn't really been
3 implemented then; is that correct?

4 A. That's correct.

5 Q. Okay. When was New Mexico, to your
6 knowledge, first aware that the groundwater basin in
7 the lower Rio Grande was being mined?

8 A. I would say it would be around 2010.

9 Q. 2010. What occurred in 2010 to make New
10 Mexico aware of the fact that it was being mined?

11 A. The awareness of the -- the groundwater being
12 mined came out of observations of the groundwater
13 levels, and historically, groundwater levels in the
14 Lower Rio Grande have dropped during times of drought
15 or low project supply and then recovered thereafter.
16 This happened in the '50s and in low supply periods in
17 the '60s and '70s. It also occurred in 2000.
18 Groundwater levels dropped during the low supply years
19 of 2003/2004. What happened next is the -- in 2006,
20 D3 allocation started, and EBID allocation of surface
21 water was reduced, and in the years around in 2006,
22 2007, 2008, 2009, the project -- I guess it was really
23 2007, '8, and '9, the project had enough water for a
24 full supply in those years, but EBID's allocation
25 remained low, and -- but the -- so despite the fact

1 that the project had full supply, EBID did not, and
2 groundwater levels did not recover, and that was the
3 indication I'd say that we've gone into a regime of
4 mining because we expect groundwater levels to decline
5 in years where we've got a low ground -- low -- low
6 project supply, but we expect them to come back up
7 when the project -- thereafter when the project has a
8 full supply again, and that did not happen in the
9 years 2007, '8, '9, '10, when the project had enough
10 water -- enough usable water for a full supply.

11 **Q. So roughly the State became aware of mining**
12 **about ten years ago; is that correct?**

13 A. Yeah.

14 **Q. Do you know whether or not there have been**
15 **any priority calls in the Lower Rio Grande?**

16 A. Not that I'm aware of.

17 **Q. I think in your first deposition, you**
18 **indicated that when New Mexico administered water**
19 **rights, it does so to protect seniors. Is that -- do**
20 **I recall that? Is that a correct statement?**

21 A. That sounds generally -- that's generally
22 right. There's different kinds of administration
23 and -- and they would protect or deal with the seniors
24 in different ways, but in general, the senior right is
25 the better right in New Mexico.

IN THE SUPREME COURT OF THE UNITED STATES
BEFORE THE OFFICE OF THE SPECIAL MASTER
HON. MICHAEL J. MELLOY

STATE OF TEXAS)	
)	
Plaintiff,)	
	)	Original Action Case
VS.	)	No. 220141
	)	(Original 141)
STATE OF NEW MEXICO,)	
and STATE OF COLORADO,)	
)	
Defendants.)	

 REMOTE ORAL AND VIDEOTAPED DEPOSITION OF
 PEGGY BARROLL
 OCTOBER 21, 2020

REMOTE ORAL AND VIDEOTAPED DEPOSITION of PEGGY BARROLL, produced as a witness at the instance of the United States, and duly sworn, was taken in the above-styled and numbered cause on October 21, 2020, from 1:02 p.m. to 3:29 p.m, before Heather L. Garza, CSR, RPR, in and for the State of Texas, recorded by machine shorthand, at the offices of HEATHER L. GARZA, CSR, RPR, The Woodlands, Texas, pursuant to the Federal Rules of Civil Procedure and the provisions stated on the record or attached hereto; that the deposition shall be read and signed.

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1 THE VIDEOGRAPHER: The time is 1:02 p.m.
2 We're on the record.

3 (The witness was sworn.)

4 MR. DUBOIS: Why don't we do
5 appearances. For the United States, I am James
6 Dubois. I am one of the attorneys for the United
7 States, and Jennifer Najjar, Shelly Randel, and I
8 think eventually Mr. Leininger -- yes, Lee Leininger
9 also on for the United States, and I think that is --
10 oh, and Bert Cortez and Ian Ferguson. That's it. So
11 New Mexico?

12 MR. WECHSLER: Jeff Wechsler for the
13 State of New Mexico. We also have Lisa Thompson,
14 Susan Barela, Arianne Singer, Greg Ridgley, John
15 D'Antonio, and Shelly Dalrymple.

16 MR. DUBOIS: For Texas?

17 MS. KLAHN: Sarah Klahn for the State of
18 Texas, and I'm joined by Stuart Somach.

19 MR. DUBOIS: Colorado?

20 MR. HARTMAN: Preston Hartman for
21 Colorado.

22 MR. DUBOIS: Let's go to the amici. Is
23 anyone on for EB -- EPCWID? Renea?

24 MR. HICKS: Hold on. I'm here. I
25 didn't know Maria wasn't on.

1 **MR. DUBOIS:** I don't see her.

2 **MR. HICKS:** Okay. She just skipped out
3 on me then. I'm here.

4 **MR. DUBOIS:** Is anybody else on?

5 **MS. COLEMAN:** Judy Coleman is on for the
6 United States.

7 **MR. DUBOIS:** Thank you, Judy. Renea,
8 also, Al Blair is on.

9 For EBID?

10 **MS. BARNCASTLE:** Yes. This is Samantha
11 Barncastle for the Elephant Butte Irrigation District,
12 and I'm joined by Dr. Erek Fuchs.

13 **MR. DUBOIS:** Okay. Let me see who else.
14 I'm just sort of scanning through and seeing who's on.
15 Is NMSU on?

16 (No response.)

17 **MR. DUBOIS:** No. City of El Paso?

18 **MR. CAROOM:** Doug Caroom for the City of
19 El Paso.

20 **MR. DUBOIS:** And are there any other
21 representatives on for any of the other amici?

22 (No response.)

23 **MR. DUBOIS:** Okay. I don't see any.

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PEGGY BARROLL,
having been first duly sworn, testified as follows:

E X A M I N A T I O N

BY MR. DUBOIS:

Q. All right. Can you state your name for the record, please, Dr. Barroll?

A. Margaret Barroll.

Q. All right. Now, you've been deposed in this proceeding before once or twice or three times or possibly more so you know the basic ground rules, but I'll go over them anyway. You're under oath as if you were in a court of law. We will try not to talk over each other. Let me finish my questions, and I will try to let you -- to not interrupt your answers. If you don't understand one of my questions, please let me know, and I will try to rephrase it. Otherwise, I'll assume you understand the question. Your other communication devices such as e-mail and texts should be off, and I think that's about it.

You've been identified as a 30(b)(6) witness on behalf of New Mexico with respect to limited topics; is that right?

A. That's right.

Q. Okay.

MR. DUBOIS: Kayla, will you pull up the

1 -- the notice of -- of deposition?

2 (Exhibit No. 1 was marked.)

3 Q. (BY MR. DUBOIS) And, Dr. Barroll, you should
4 have control of that. Have you seen this document
5 before, Dr. Barroll?

6 A. Yeah. I've --

7 Q. Okay.

8 A. -- at least seen the one from September,
9 which I think is the same.

10 MR. WECHSLER: Jim, sorry to interrupt.
11 I would suggest making that exhibit sticker PB as in
12 boy instead of G as in go cart.

13 MR. DUBOIS: Oh. Thank you for catching
14 that.

15 MR. WECHSLER: Peggy, if you go all the
16 way to the top --

17 MR. DUBOIS: Yes, please make that a PB,
18 not a PG.

19 THE VIDEOGRAPHER: Sorry. We're
20 fighting over it right now. Peggy, hang on one
21 second, and I'll change it.

22 THE WITNESS: Thanks.

23 Q. (BY MR. DUBOIS) And, Dr. Barroll, if you'll
24 go down to Pages -- I guess it would be on Page 13 for
25 purposes of -- of your topics.

1 A. That's right.

2 Q. And my understanding is that you've been
3 identified to -- to testify regarding Topic C?

4 A. That's correct.

5 Q. And the first bullet in Topic D; is that
6 correct?

7 A. Yes.

8 Q. Okay. Now, are there any other topics that
9 you've been prepared -- that you're prepared or
10 authorized to respond to for purposes of the 30(b)(6)?

11 A. No, I don't think that I'm authorized to
12 respond on any other topics.

13 Q. All right. And do you understand that you're
14 testifying as if you are the voice of the State of New
15 Mexico for purposes of this deposition so you're
16 testifying as to the positions of the State and those
17 positions will be binding on the State; do you
18 understand that?

19 A. Yes, I do.

20 Q. Okay. And you also testified as an
21 independent consultant in this case, but you're here
22 today -- are you here today as an independent
23 consultant or are you just speaking on behalf of the
24 State of New Mexico?

25 A. I'm speaking on behalf of the State of New

1 Mexico.

2 Q. Okay. And should we understand that the --
3 well, let me rephrase that.

4 Does -- does your role as a 30(b)(6) deponent
5 today change any of the responses that you gave at
6 your -- your prior depositions as an expert witness in
7 this case?

8 A. No, it does not.

9 Q. Okay. So should we understand the opinions
10 you gave as an independent consultant are also the
11 views of the State of New Mexico?

12 MR. WECHSLER: Well, I'll just object to
13 form. Yeah, to the extent that they are on the same
14 subject, Jim, I mean, there was a lot of subjects she
15 covered in her deposition, and I don't know that they
16 overlap with her designations.

17 MR. DUBOIS: Fair enough. Fair enough.

18 Q. (BY MR. DUBOIS) What did you do to prepare
19 for the deposition today?

20 A. I reviewed a number of documents and I talked
21 with the District 4 staff and I talked with counsel
22 and some of the state engineer office lawyers.

23 Q. Did you review any depositions in preparing
24 for today's deposition?

25 A. Yes, I did. I --

1 **Q. Any deposition transcripts. I'm sorry.**

2 A. Yes. I reviewed Ryan Serrano's deposition,
3 Cheryl Thacker's deposition, and Estevan Lopez's
4 30(b)(6) deposition.

5 **Q. Okay. And who did you meet with from the**
6 **state -- from the state engineer's office?**

7 A. Ryan Serrano.

8 **Q. Okay. And what kind of documents -- oh, I'm**
9 **sorry. Go ahead.**

10 A. And also Dave Hotstef [phonetic] from
11 Hydrographic Survey.

12 **Q. Okay. And which counsel did you meet with?**

13 A. Shelly Dalrymple and Jeff Wechsler.

14 **Q. Okay. And you said you -- you reviewed a lot**
15 **of -- a number of documents. Can you tell me what**
16 **kind of documents you reviewed?**

17 A. The AWRM statute and a few related statutes,
18 the AWRM general statewide rules, the water master
19 order -- metering order, and a few other associated
20 administrative documents associated with the Lower Rio
21 Grande like the Mesilla guidelines and domestic well
22 order, 101 Settlement.

23 **Q. Have the AWRM regulations for the Lower Rio**
24 **Grande been adopted?**

25 A. There have not been district-specific

1 regulations for the Lower Rio Grande that have been
2 adopted. There is statewide framework rules and
3 regulations which have been adopted and were succeeded
4 in the constitution in the New Mexico Supreme Court.

5 **Q. How are those statewide regulations applied**
6 **in the Lower Rio Grande?**

7 A. They were applied in that they help frame the
8 role of the water master in the Lower Rio Grande. It
9 was kind of almost simultaneously with these framework
10 rules that we appointed the water master, but the
11 water master of the Lower Rio Grande is in accordance
12 with the framework rules on the metering order for the
13 Lower Rio Grande, again, is in accordance with the
14 framework rules, and I think the framework rules do
15 inform the activities of the water master, which are
16 ongoing.

17 **Q. Under the Rio Grande Compact, what obligation**
18 **does the state of New Mexico have with respect to**
19 **administration of water rights downstream from**
20 **Elephant Butte Reservoir?**

21 A. My understanding from -- especially from
22 listening to Estevan Lopez and rereading his
23 deposition, that New Mexico's Compact responsibilities
24 below Elephant Butte involve one cooperating with
25 Reclamation and the Project in the effectuation of the

1 Compact and the actual delivery of Compact water by
2 the Project to Mexico to work as necessary with
3 Reclamation to ensure that can occur and then Mexico
4 also -- New Mexico is also responsible to act in good
5 faith to resolve any issues raised by Compact parties
6 as to New Mexico's activities below Elephant Butte,
7 especially as to how they might affect the Rio Grande
8 project.

9 **Q. What do you mean by cooperating with**
10 **Reclamation to effectuate the delivery of Compact**
11 **water to the project?**

12 A. Well, Reclamation --

13 **Q. By the project?**

14 A. Well, Reclamation and the project are how the
15 Compact is effectuated below Elephant Butte. The
16 Compact -- sorry. The project is the mechanism by
17 which project water is delivered below Elephant Butte,
18 and New Mexico is the state in which some of this is
19 occurring, and New Mexico has the responsibility not
20 to interfere with that or not to -- or to ensure that
21 that can occur to work in --

22 **Q. And how -- I'm sorry. I didn't mean to cut**
23 **you off.**

24 A. Yeah. To work in concert with Reclamation
25 when it comes to whatever is necessary surface water

1 distribution of the project.

2 **Q. What do you mean by New Mexico has the**
3 **responsibility not to interfere?**

4 A. I would say to not pass laws or -- I mean, to
5 -- to ensure that New Mexico's laws and rules and
6 regulations are consistent with the needs of the --
7 the project's distribution of surface water. To work
8 in good faith with the project, like, for example,
9 when Reclamation EBID wanted to add a point of
10 diversion in one of the wasteways, we ended up coming
11 to an understanding with Bureau of Reclamation as to
12 how that fit into their --

13 **Q. Does -- does New Mexico have any obligation**
14 **to administer non-project surface rights to -- let me**
15 **rephrase that one.**

16 **Does New Mexico have any obligation to**
17 **administer water rights in the State of New Mexico to**
18 **protect or administer the surface water supply of the**
19 **Rio Grande project once water has been stored in**
20 **Elephant Butte reservoir?**

21 **MR. WECHSLER:** Object to form.

22 A. Well, the surface water system has been fully
23 appropriated in the Lower Rio Grande and has been
24 since 1907 -- 1908 is my understanding. And so New
25 Mexico cannot grant any additional surface water

1 rights, and New Mexico must enforce against illegal
2 surface water diversions that would be adverse to the
3 project.

4 Q. (BY MR. DUBOIS) What do you mean that the
5 surface water system has been fully appropriated since
6 1907 or 1908?

7 A. I believe that is when the U.S. filed a
8 letter with the territorial engineer appropriating all
9 the surface water of the Rio Grande.

10 Q. But -- but what does fully appropriated mean
11 to you?

12 A. To me, it means that we cannot issue or allow
13 any additional appropriations of surface water and --
14 yeah, I think that's what it means.

15 Q. Okay. So all -- all of the surface water in
16 the Rio Grande has been allocated by appropriation as
17 of that date? Would that be another way of saying
18 that?

19 A. Yes. That's my understanding.

20 Q. Okay. So does New Mexico have any obligation
21 to assure that the usable water released from storage
22 in Elephant Butte reservoir is delivered to the Rio
23 Grande Project below Elephant Butte reservoir?

24 MR. WECHSLER: Object to form.

25 A. Well, as soon as the water -- as soon as

1 usable water is released from storage, it is, in fact,
2 usable water or project supply.

3 **Q. (BY MR. DUBOIS) So does the State of New**
4 **Mexico have any obligation to assure that the usable**
5 **water that's released from storage is delivered to the**
6 **project below Elephant Butte?**

7 A. I believe that if the Compacting parties or
8 project beneficiaries believe there's a problem in the
9 delivery of project water caused in New Mexico, that
10 New Mexico has the obligation to address that, either
11 as a Compact issue or as a water rights administration
12 issue.

13 **Q. Okay. Does New Mexico take any steps to**
14 **administer water rights in the Rio Grande basin below**
15 **Elephant Butte to assure that the project water supply**
16 **is not depleted or reduced by non-project water users**
17 **in New Mexico?**

18 A. New Mexico takes many steps to administer
19 water below Caballo, below Elephant Butte, in order to
20 protect the water users and protect the project, such
21 as enforcing against illegal diversions, metering
22 groundwater, enforcing against over diversions, our
23 application process by which no additional
24 appropriations can be approved without offsets. There
25 are many steps New Mexico takes for administering

1 water below Elephant Butte.

2 Q. Okay.

3 A. New Mexico does not have an obligation to
4 ensure that no depletions occur.

5 Q. You said that New Mexico has a -- an
6 obligation to prevent over diversion. What are you
7 defining as over diversion?

8 MR. WECHSLER: Object to the form.

9 A. Over diversion would be an excess of the
10 limit of a water right.

11 Q. (BY MR. DUBOIS) And that limit is set by a
12 permit or license? I don't recall exactly what New
13 Mexico calls them.

14 A. Yeah. It depends. We have both permits; we
15 have licenses. But, for example, in the case of
16 irrigation groundwater use, those are set by the 101
17 rule -- sorry -- by the -- the judge's order, the
18 final statement of the judge in the Stream System 101
19 case at the New Mexico adjudication.

20 Q. And so --

21 A. And that's --

22 Q. So that would be -- as I understand it, over
23 diversion under Stream System 101 would be if the
24 diversions exceed either four-and-a-half or
25 five-and-a-half acre-feet per acre?

1 A. That's correct.

2 Q. Is that correct? All right. And so you -- I
3 was just -- I was trying to scratch things down
4 because I don't go nearly as fast as Heather does.
5 You said that the State takes administrative action to
6 -- to prohibit illegal diversions. That was one
7 thing, I think; is that correct?

8 A. Yes. Yes.

9 Q. What are illegal -- what are illegal
10 diversions?

11 A. It can be a broad term, but I -- what I meant
12 in particular was diversions by people who don't have
13 water rights.

14 Q. Okay. And how often has that occurred in the
15 last ten years?

16 A. I believe we've been -- had a case sort of
17 dragging for a number of years involving an illegal
18 river pumper that was shut down.

19 Q. Okay. And you mentioned that in -- can you
20 think of any other -- aside from the river diverter
21 that you're talking about that action was taken
22 against, can you think about -- of any other
23 situations in which illegal diversion -- diverters
24 were attempted to be shut down?

25 A. As far as diversions without water rights,

1 that's the most recent case I know of. I think there
2 have been other cases involving maybe the highway
3 department pumping water out of the river without a
4 water right, and I believe we had some dealings with
5 IBWC about their diversions from the Rio Grande
6 without water rights.

7 Q. All right. The second thing you mentioned
8 was over diversions, and as I understand it, over
9 diversions, as you've defined it, is taking water in
10 excess of the permitted 4-and-a-half or 5-and-a-half
11 acre-feet per acre; is that correct?

12 A. That's correct.

13 Q. Okay. And what's the -- what's the process
14 for -- run me through how that occurs. You've got a
15 pumper, and let's say in 2019, that pumper exceeded --
16 took too much water. That's just sort of my starting
17 point for this. I don't care what the number is.
18 Let's say you took 6 acre-feet. I don't care. How
19 would the -- how would that enforcement occur? Is it
20 -- is the over diversion determined in realtime or at
21 the end of the irrigation season?

22 A. Most often, it is determined at the end of
23 the irrigation season. In some instances, the water
24 master has enough data to tell that someone is
25 approaching their limit and tries to work with them

1 during the course of the year, but most often, people
2 get, eventually divert too much, you know, exceed the
3 limit. It usually happens late in the year. And we
4 usually find out about it in the reconciliation that
5 occurs after the first of the year when the water
6 master compiles all of the meter data that's been
7 obtained, compares it to the acreage and acre-feet per
8 acre limits on those water rights, and then determines
9 where discrepancies lie, where the diversions had
10 exceeded the limits.

11 **Q. And how does the -- how does -- I'm sorry.**
12 **Go ahead.**

13 A. That will occur in February or March.

14 **Q. Okay. And how does the -- how does the**
15 **enforcement or administration occur then after the**
16 **fact?**

17 A. At that time, in the early months of the
18 following year, the water master will make
19 calculations I have described. He will contact water
20 right owners who have over diverted. I believe he has
21 a -- a threshold of approximately 10 percent that
22 exceeded their limit by 10 percent, that 10 percent
23 being based on the general accuracy of the meters, and
24 they -- we will work through the issue with agreeable
25 water right owners, finding any errors in the data,

1 which usually in the first pass, there are a few data
2 points which were erroneous, meter entries, and then
3 work with, again, the agreeable water right owners to
4 come up with a repayment plan, which involves
5 generally that water right diverting less in the year
6 following the under diversion -- the over diversion.
7 Noncooperative water right owners are their -- a
8 packet that's set up to send up to the legal division
9 of the state engineer's office and the enforcement
10 action through the legal division is begun, and often
11 that happening and getting a letter from a lawyer will
12 cause water right owners to become more agreeable and
13 work out a repayment plan for the water master. In
14 general, there are approximately on the order of 200
15 over diversions in a given year, and they are dealt
16 with by the water master through water master local
17 enforcement, most of them, and then he will send
18 recalcitrant ones up to the legal unit of the state
19 engineer's office in Santa Fe, and that total number
20 of enforcement actions that he requests from the legal
21 division varies from 1 to 30 per year, and that would
22 include over diversions and, say, violations -- other
23 violations of the metering order.

24 **Q. So if you've got, I think you said about 200**
25 **over diverters every year, that would have caused --**

1 let's take my example 2019, just as -- so I can put
2 some framework on it so I can put some context on it.
3 In 2019, you had roughly 200 people who over diverted.
4 That would cause a shortage to other rights in 2019;
5 is that right?

6 A. Not necessarily. There's a lot of -- there's
7 over diversion, and there's a lot of farmers who do
8 not divert up to their limit. That depletion doesn't
9 necessarily equal impairment so --

10 Q. There's less water available to somebody
11 else, including the surface water users potentially,
12 if you've got over diversion in year one; isn't that
13 right?

14 A. Potentially.

15 Q. Okay. All right. How does it help those
16 folks who have less water available to them in my 2019
17 hypothetical to have additional water in 2020? How
18 does that protect the senior users?

19 A. Again, the water right owner who has over
20 diverted generally only becomes an over diversion by
21 the end of the year, and the stream impacts that the
22 over diversion may even occur after the surface water
23 system, EBID surface water system, EP No. 1 project as
24 a whole has shut down so it's not necessarily going to
25 cause the impact of the surface water system that's

1 being used by water right holders in the same year.

2 Q. Okay. You talked -- so we talked about
3 illegal surface -- illegal diversions, illegal
4 non-permitted diversions, talked about over diversion.
5 I think you mentioned a third administrative practice
6 to -- to assure that water is delivered. Let's -- am
7 I missing that? I thought you -- I thought you
8 mentioned something else, as well.

9 A. Yeah, I -- I may have mentioned the normal
10 permitting process by which we evaluate water right
11 applications we don't allow appropriations without
12 offset. Is that it?

13 Q. That might have -- that might have been it.
14 Let's talk about that for a minute. The -- the
15 offsets are required for permits only issued after, is
16 it 1980?

17 A. Offsets are --

18 Q. Let me just -- let me just -- let me just
19 back up and break that down a little differently. Are
20 offsets required for all water rights?

21 A. No.

22 Q. Okay. What water rights are offset required
23 for?

24 A. New appropriations after the declaration of
25 the Lower Rio Grande under groundwater basin in -- in

1 1980 and 1982.

2 **Q. Okay. So --**

3 A. And the use of inchoate -- the -- the
4 expansion of inchoate declared water rights that would
5 have been declared, have had declarations prior to
6 1980, expansion of the use beyond 1980 level of the
7 inchoate part.

8 **Q. Explain that last part to me, please.**

9 A. I only know it from a couple of water rights
10 that relates to.

11 **Q. Okay.**

12 A. And their NI, you know, non-irrigation water
13 rights, in which the -- I believe the court recognized
14 under the -- I forget which doctrine it is, but you
15 have a certain amount of time to make beneficial use
16 of the water you've declared after the declaration of
17 a basin, that the water right that had been already
18 put to use under the declaration was X, that they
19 would recognize the water right of Y, and the part
20 they hadn't used yet, they are required by the state
21 engineer's office to get offset for when they do use
22 it, and that's a water right associated with, like, a
23 CR RUA and Southern New Mexico Water Utility.

24 **Q. Okay. So as I understand it, no offsets are**
25 **required for either water rights that were in**

1 existence prior to the declaration of basin closure,
2 let -- let's just assume 1980 for purposes. I don't
3 really care if it's '80 or '81, and for the perfection
4 of inchoate rights that were declared before 1980, but
5 not perfected before 1980. Is that --

6 A. Offsets are required for the perfection of --

7 Q. Oh, okay. Okay. My misunderstanding.

8 That's why I was asking.

9 A. Yes.

10 Q. So for the pre-1980 water rights, no offsets
11 are required, regardless of when the appropriation was
12 made; is that correct?

13 A. That's correct.

14 Q. So for all of the water rights that were --
15 that were appropriated between 1908 and 1980, there is
16 no offset required?

17 A. That's correct.

18 Q. Regardless of whether they deplete the flows
19 of the Rio Grande or not, right?

20 A. That's correct.

21 Q. Okay. And the only enforcement of those
22 water rights is to make sure that they do not exceed
23 the permitted amount of under Stream System 101,
24 4-and-a-half to 5-and-a-half acre-feet of water per
25 acre; is that correct?

1 **MR. WECHSLER:** Object to form.

2 **THE REPORTER:** I'm sorry, Jeff, did you
3 object?

4 A. That the only -- of those water rights.
5 There's lots of different areas --

6 **Q. (BY MR. DUBOIS)** That -- that broke -- your
7 answer just broke up on my audio, and I just want to
8 make sure that Heather got it rather than -- and maybe
9 we need to re-answer because it did break up there.

10 **MR. DUBOIS:** Heather, did you get that?

11 **THE WITNESS:** Doesn't look like it.

12 **THE REPORTER:** I was trying to ask Jeff
13 if he objected. They -- y'all spoke over each other
14 so I need to make sure y'all are speaking one at a
15 time.

16 **MR. WECHSLER:** I did object.

17 **MR. DUBOIS:** Yeah, I apologize. Yeah.
18 And I do - I do apologize, but it just seemed like it
19 all kind of broke up, and I lost that.

20 **Q. (BY MR. DUBOIS)** So going back to my question,
21 and we'll start over again and try it again. The only
22 enforcement of those water rights is to make sure they
23 do not exceed the permitted amount of, under Stream
24 System 101, 4-and-a-half to 5-and-a-half acre-feet of
25 water per acre; is that right?

1 **MR. WECHSLER:** Object to form.

2 A. Let's -- those water rights that were
3 existence and being exercised prior to 1980 do not
4 have any offset requirements, and the state engineer
5 does enforce against over diversion of those water
6 rights. There may be other areas of enforcement that
7 occur as to drilling new wells, transfers. I mean,
8 there is administration of those water rights. I
9 think the statement that there's no enforcement of --
10 of those water rights might be a little broad, and
11 then furthermore, if necessary, the state engineer can
12 administer water rights in priority to curtail water
13 rights in priority, if necessary.

14 **Q. (BY MR. DUBOIS) Has that ever been done in**
15 **the Lower Rio Grande?**

16 A. There certainly has not been any curtailment
17 of groundwater rights in priority in the Lower Rio
18 Grande.

19 **Q. Prior to the adjudication of water rights in**
20 **the Lower Rio Grande, did the state engineer have**
21 **authority to administer a priority call?**

22 **MR. WECHSLER:** Object to form;
23 foundation.

24 A. This might be getting into a legal issue. I
25 believe that in the tri-state decision, the New Mexico

1 Supreme Court may have decided that the --

2 **Q. (BY MR. DUBOIS) That was in, what, two**
3 **thousand -- that was in 2012?**

4 A. 2003.

5 **Q. Okay.**

6 A. Oh, the decision was in 2012. It's -- I
7 mean, the question did -- did the AWRM statute give
8 the state engineer the authority to administrative
9 priority prior to an adjudication being completed or
10 did the state already have that -- state engineer
11 already have that authority under the constitution,
12 and the statute just made it more clear that the state
13 engineer has the authority and the state engineer
14 instructions to get at it to begin the process as
15 necessary to do that. I think the State's position is
16 that the state engineer, under the constitution and
17 statute, has always had the authority to administer in
18 priority.

19 **Q. And how would you determine administer in**
20 **priority should not have adjudication?**

21 A. Yeah. That is -- to address that issue is
22 part of what the AWRM statute and framework --
23 framework rules were written to address and in the --
24 the general framework rules, there's a section on how
25 that determination would be made based on the best

1 available information starting with adjudications and
2 -- and going on down the list. But prior to the AWRM
3 statute and the regs, again, I think it is the
4 position of the State of New Mexico that the
5 constitution gives the State to administer -- the
6 state engineer the authority to administer in
7 priority, and the state engineer would have indeed
8 used the best information available to him to perform
9 that administration.

10 **Q. Does the State of New Mexico have any**
11 **policies or administrative practices in place to**
12 **ensure that non-project water rights in the Rio Grande**
13 **basin below Elephant -- in New Mexico below Elephant**
14 **Butte do not reduce or diminish the surface water**
15 **supply available to EBID?**

16 **MR. WECHSLER:** Object to form.

17 A. The State of New Mexico has policies and
18 administrative practices in place to manage
19 non-project water rights in the Rio Grande basin below
20 Elephant Butte. The purpose of that administration is
21 to protect senior water rights and the Rio Grande
22 Project.

23 **Q. (BY MR. DUBOIS) Have those policies or**
24 **administrative practices ever been applied or enforced**
25 **to prevent reduction or diminishment of the surface**

1 **water supply to the project?**

2 **MR. WECHSLER:** Object to form.

3 A. There has been no priority administration
4 applied in the Lower Rio Grande to curtail water
5 rights that might impact the Rio Grande Project, but
6 there is, again, no -- New Mexico did not have an
7 obligation to prevent all depletions. New Mexico has
8 a right -- water users in the state of New Mexico have
9 a right to deplete water.

10 **Q. (BY MR. DUBOIS) Did they have a right under**
11 **state law to take water away from the project?**

12 **MR. WECHSLER:** Object to form.

13 A. Water users are -- water users in New Mexico
14 cannot divert water that they're not entitled to and
15 so that water users who do not have legal authority
16 cannot divert surface water away from the Rio Grande
17 project if groundwater use is impacting the Rio Grande
18 project, then it would be necessary to, I believe, New
19 Mexico would have to -- sorry. Groundwater use
20 depleting the project were alleged, it would have to
21 be investigated and demonstrated. Groundwater
22 depletions negatively impacting the project
23 demonstrated the New Mexico remedied the priority
24 administration, but this has not occurred.

25 **Q. (BY MR. DUBOIS) There hasn't been any**

1 investigation that demonstrates that groundwater
2 pumping in New Mexico depletes the flows of the Rio
3 Grande?

4 MR. WECHSLER: Object to form.

5 A. Which investigate and quantify, simulate the
6 impact of groundwater pumping on surface water flows.

7 Q. (BY MR. DUBOIS) I think -- I think you and
8 Jeff spoke at the same time, and I think the response,
9 looking at the transcript, missed the first part of
10 your answer.

11 A. There have been investigations in New Mexico
12 which quantity, investigate, simulate the impact of
13 groundwater pumping on surface water flows. In fact,
14 some of those investigations have been done as part of
15 this litigation by New Mexico experts.

16 Q. Okay.

17 A. And then simulations of the sort was involved
18 in development of the groundwater model used for
19 administration of groundwater rights in the Lower Rio
20 Grande.

21 Q. And I think that you just said that if those
22 investigations demonstrated groundwater depletions
23 negatively impacting the project, that the -- that New
24 Mexico would be required to apply priority
25 administration; is that my understanding?

1 **MR. WECHSLER:** Object to form.

2 A. I -- I don't think that's what I said. I
3 said if --

4 **Q. (BY MR. DUBOIS) Okay.**

5 A. -- negative impacts were alleged, and by
6 this, I mean through, say, a priority call or other
7 official complaint alleged and then investigation
8 demonstrated, in fact, that this indeed was a problem,
9 that the depletions occurring from groundwater pump --
10 pumping were impairing the project, then New Mexico's
11 remedy would be priority administration.

12 **Q. And does New Mexico have any obligations**
13 **under the Compact to assure that its non-project water**
14 **rights don't deplete the project water supply?**

15 **MR. WECHSLER:** Object to form.

16 A. So I -- I guess I base my answer on the
17 opinions that Mr. Lopez prefer -- proffered and that
18 that might be the case and that it's -- so, again, New
19 Mexico is obligated to work in good faith with the
20 Compacting states, with the U.S., with the project
21 resolve issues that are brought to it -- that are
22 brought to New Mexico about the actions -- about the
23 actions of New Mexico water users or the hydrologic
24 conditions within New Mexico.

25 **Q. (BY MR. DUBOIS) I'm trying to avoid**

1 repetitive questions here. Does the State of New
2 Mexico administer non-project water rights to assure
3 that water is -- to assure that -- excuse me -- to
4 assure that the senior surface water user is not
5 impacted by those water rights?

6 MR. WECHSLER: Object to form.

7 A. I think I described the administration that
8 New Mexico is currently performing in the Rio Grande,
9 which is intended to protect senior water rights. If
10 current administration is not successful in protecting
11 senior water rights and this is demonstrated, then New
12 Mexico has a remedy described in the AWRM framework --
13 general framework rules.

14 Q. (BY MR. DUBOIS) Does the State of New Mexico
15 administer non-project water rights in the Rio Grande
16 drainage below Elephant Butte reservoir in New Mexico
17 to assure the delivery of Rio Grande Compact water to
18 Texas or to EPCWID?

19 MR. WECHSLER: Object to form.

20 A. I believe my answer is the same as my answer
21 to the previous question.

22 Q. (BY MR. DUBOIS) Okay. So if I asked what
23 steps or what administration New Mexico does to
24 non-project water rights to assure delivery of project
25 water to Texas or EP No. 1, it would be essentially

1 the same thing that you've already described, which is
2 to curtail illegal diversions, to -- to hold people to
3 their permitted volumes, and to have a permitting
4 system for -- with -- with offsets for post-1980 water
5 rights; is that correct?

6 MR. WECHSLER: Object to form.

7 A. I would say that that is a description, which
8 I have given, is a description of the key points of
9 administration that is occurring in the lower Rio
10 Grande to both project and non-project water rights.
11 It is not aimed at assuring any particular delivery.
12 It is aimed at protecting existing water uses and
13 existing water rights, including and especially senior
14 water rights and the water rights associated with the
15 project by which the Compact water is distributed.
16 The distribution of the water -- of the Compact water
17 is done by the project.

18 Q. (BY MR. DUBOIS) Okay. If the United States
19 places a call under its 1903 water right, and we'll
20 just assume for the sake of argument that 1903 is what
21 the Court has recognized and subject to, I suppose,
22 any eventually peal of that, but let's -- let's work
23 under the assumption that the Court is correct, that
24 the 19 -- that the priority for the project is 1903.
25 If the United States places a call under its 1903

1 water right, would wells drilled in New Mexico in the
2 alluvial aquifer after 1903 that deplete the Rio
3 Grande be curtailed under state law?

4 MR. WECHSLER: Object to form.

5 A. If the U.S. makes a call on behalf of the Rio
6 Grande Project, a date of 1903, I believe the first
7 step would be an information by the New Mexico state
8 engineer as to the validity of this call. Assuming
9 that the call is valid, the next step would be
10 determination as to what level of curtailment would be
11 necessary to address the call, and that level of
12 curtailment would be described in terms of a priority
13 date or an administration date -- an administration
14 date, which would apply using depletion limit
15 administration under AWRM, all water rights junior to
16 that administration date would be curtailed, including
17 groundwater wells in the alluvial aquifer. And I say
18 all water rights would be curtailed, I -- I believe
19 that there would be exceptions for health and safety
20 for drinking water, sanitary uses, but that water --
21 those use of those water rights would then be required
22 to be offset.

23 Q. (BY MR. DUBOIS) Okay.

24 A. There is also the possibility that the water
25 users of the Lower Rio Grande would act together to

1 come up with an alternative administration scheme so
2 that the amount of water needed to address the call
3 could be generated without the need for strict
4 priority administration.

5 Q. So water users can get together independent
6 of -- independent of a curtailment order from the
7 state engineer, water users can get together and come
8 up with an alternative plan to address the problem?
9 Is that what I understood you to say?

10 A. Yes. I think that's a fair statement.

11 Q. Okay. Has the State of New Mexico taken any
12 steps to administer non-project water rights in the
13 Rio Grande below Elephant Butte that were appropriated
14 between, take your pick, 1903 or 1907, and 1980, in
15 order to assure that the delivery of project water to
16 EBID and EPCWID?

17 MR. WECHSLER: Object to form.

18 A. I believe the answer to that question is the
19 answer I gave a few questions ago. You administer
20 those water rights in a number of ways, but there has
21 not been any curtailment of those water rights and --

22 Q. (BY MR. DUBOIS) All right.

23 A. -- water rights are administered in order to
24 protect existing water uses and senior water rights,
25 including the water rights associated with deliveries

1 with the Compact, but the administration we do is not
2 aimed at particular deliveries.

3 Q. Is -- is the current -- are the current
4 studies that are being done in this case the first
5 groundwater modeling to look at the impacts of
6 groundwater pumping on flows in the Rio Grande?

7 A. No.

8 Q. Did prior -- there's a state engineer model,
9 isn't there?

10 A. Yes.

11 Q. What's referred to as the state engineer
12 model, and when was that done, 2007; am I right?

13 A. The model that's currently being used for
14 administration by the state engineer's office was
15 developed in 2007.

16 Q. Okay. And did -- did that model demonstrate
17 impacts of pumping on flows of the Rio Grande?

18 A. It could be used for that purpose, and those
19 kind of calculations were done with the model, I
20 believe, they were documented and developed super
21 position version of that model and they were
22 definitely done calculating impacts from the Canutillo
23 well field. I remember documenting that.

24 Q. Does the State do any measurement of the flow
25 or volume of water that's actually being passed

1 through New Mexico to Texas and/or -- well, for my
2 purposes, EPCWID?

3 A. Flows are gaged in New Mexico in the Rio
4 Grande and in drains and canals. Some of the metering
5 is done by USGS, some by the Bureau of Reclamation,
6 some by EBID. The delivery of water by the project to
7 EP No. 1 is not metered by any New Mexico entity. I
8 believe it's metered either by IBWC or by EP -- EP No.
9 1 itself, and that the data -- especially the EP No. 1
10 data is not readily available to the state of New
11 Mexico.

12 Q. But the state itself doesn't -- doesn't
13 actually gage or measure the amount of water that's --
14 that's passed to EPCWID?

15 A. No. The --

16 MR. WECHSLER: Object to form.

17 A. -- memory points are within Texas and
18 EP No. 1 --

19 Q. (BY MR. DUBOIS) And there's no -- and there's
20 no -- there's no measurement or gaging upstream from
21 that in New Mexico?

22 A. There are some measurements and gages
23 upstream of that in New Mexico, but the actual
24 delivery points are within Texas and, in fact, we've
25 raised with the U.S. that we would like the operations

1 of the Rio Grande Project to be more transparent so
2 that we could actually track what is an interstate
3 delivery from EP No. 1, but we have never been
4 successful in convincing Reclamation that this would
5 be a good idea.

6 **Q. And New Mexico's never put in its own gages**
7 **as far as any points they have access to?**

8 A. New Mexico generally has the USGS put in the
9 gages as we want things gaged, and there are indeed
10 gages on the Rio Grande above Texas.

11 **Q. Okay. But none of -- I'm sorry?**

12 A. I think there are also gages on some drains
13 and canals passing into Texas in the southern Mesilla
14 basin.

15 **Q. Okay. And the gages on the Rio Grande above**
16 **Texas are close to the border, not close to the**
17 **border? I mean, saying it's gages on the Rio Grande**
18 **above Texas, there's about a hundred miles of river**
19 **between Elephant Butte and Texas, so I'm just trying**
20 **to get a sense of where those are.**

21 A. Yeah. I'm not sure either. There have been
22 a number of them over the years, and I know -- don't
23 know exactly which ones are active right now. Of
24 course, the Courchesne gage, which is within Texas,
25 and it's either USGS or IBWC gage right now, I forget

1 which, does capture the delivery or rather captures
2 the flow of the Rio Grande into the El Paso Valley
3 quite well. It's -- but that's not, of course,
4 Compact delivery points, which are project delivery
5 points, which are deeper within Texas.

6 **MR. DUBOIS:** Okay. We've been going an
7 hour. Let's take a ten-minute break, Jeff, please.

8 **MR. WECHSLER:** Sure.

9 **THE VIDEOGRAPHER:** The time is 2:08. We
10 are off the record.

11 (Break.)

12 **THE VIDEOGRAPHER:** The time is 2:19 p.m.
13 We're on the record.

14 **Q. (BY MR. DUBOIS)** Dr. Barroll, I've just got a
15 few handful of follow-up questions, I think, and then
16 I will -- I will at least cut you loose. Whether any
17 others have additional questions, I don't know.

18 So as I understand what you've testified to,
19 New Mexico doesn't think it has an obligation to -- to
20 do anything to curtail junior users unless and until
21 someone complains -- the senior -- senior water user
22 complains? Is that an accurate statement?

23 **A.** I believe that 's a fair statement, yes.

24 **Q.** Okay. If Texas makes a complaint, is it
25 Texas' burden to investigate surface water depletions

1 within New Mexico's borders after Texas makes a
2 complaint or is it solely up to the State of New
3 Mexico?

4 A. I believe the Texas -- I believe in general,
5 no, it would not be Texas' responsibility to do that
6 investigation, though, of course, it would be helpful
7 for the complaining party to provide whatever evidence
8 they had regarding their complaint.

9 Q. But it's New Mexico's position that New
10 Mexico is the party that would determine whether the
11 complaint was valid or not?

12 A. I would say in general, in that priority call
13 within the state, it would be the state engineer who
14 would determine whether the call was valid.

15 Q. Okay.

16 A. In the context of Texas and an interstate
17 matter with the Compact, I believe it would go to the
18 Compact Commission to determine whether action needed
19 to be taken. And I guess I would like to make the
20 distinction based on what I was saying earlier, you --
21 you talked about models used to calculate depletions
22 to flow, and our models can and do do that, and that's
23 not always exactly the same as impairment to a senior
24 or other ground -- or -- or other surface water user.
25 Depletion does not always equal impairment. There can

1 be depletions that occur that do not result in any
2 impairment, and what involved in a priority call would
3 be that the senior user was, in fact, impaired, not
4 just the fact that depletions occurred.

5 **Q. Okay. If -- if the United States places a**
6 **call on behalf of the project during the irrigation**
7 **season, my understanding is what you've said is that**
8 **the state engineer would then make an investigation of**
9 **the validity of the call; is that correct?**

10 A. I believe that's -- that would happen. It
11 could also just the U.S. making a call on behalf of
12 the project might end up in the Compact commission, as
13 well.

14 **Q. So the Compact Commission would assert the**
15 **duties of the state engineer? I don't understand**
16 **that?**

17 A. Well, I think we're -- we're speculating as
18 to how it would play out, but it seems to me that the
19 Reclamation operating the project which implements the
20 Compact and makes the Compact deliveries, if the -- if
21 Reclamation is complaining they cannot make those
22 Compact deliveries because of actions of New Mexico,
23 that might become a Compact matter that ends up with
24 the Compact Commission and not solely with the
25 engineer.

1 Q. All right. Assume with me for the sake of
2 argument that the United States holds water rights
3 that are, as you pointed out, an appropriation of all
4 of the surface flow, so fully appropriated -- the Rio
5 Grande is fully appropriated as of 1907 or '8 or '3.
6 Let's just -- that's basically what you already
7 testified to, right?

8 A. I -- if I did, I think I might not have quite
9 said it correctly. I don't think the U.S. holds water
10 rights. I think they have a right to store and
11 release water and that the project itself or project
12 end users have water rights and the U.S. has a state
13 -- had recognized the right to impound and re-impound
14 and release and deliver, move the water around.

15 Q. So it's your assertion that the United States
16 couldn't place a call? Is that what you're saying?

17 A. No, I'm not saying that. I believe -- I
18 believe that if the state had -- if the state -- if
19 the United States had believed that actions of New
20 Mexico were making it difficult to make those Compact
21 deliveries that it is entrusted or that it is
22 connecting or making, that they could make a complaint
23 to New Mexico, and it might become a Compact matter
24 with the Compact Commission, but I'm not -- I'm not
25 saying they would not have grounds to make that

1 complaint. I don't know that it is a priority call on
2 behalf of their 1903 water right is all I'm saying.

3 Q. So you're -- is it New Mexico's position that
4 it does not believe that the United States could place
5 a call on behalf of the project?

6 MR. WECHSLER: Form and foundation.

7 A. I think I stated that they could indeed make
8 a complaint that is either a priority call or
9 analogous to a priority call to protect the operations
10 of the project, which are implementing the Rio Grande
11 Compact.

12 Q. (BY MR. DUBOIS) So if the U.S. placed a call
13 on behalf of the project, how long would an
14 investigation of that call take?

15 A. I don't know.

16 Q. Okay. If the state engineer determined that
17 a call was valid, the state engineer would then make a
18 determination about curtailments in some fashion; is
19 that right?

20 A. That's right. The state engineer --

21 Q. And how long would -- go ahead. I'm sorry.

22 A. The state engineer would make a determination
23 as to what amount of curtailment was necessary, what
24 volume of water, say, was necessary to address the
25 call and probably involving use of groundwater models

1 to take into account any delays as to when the water
2 -- the water associated with curtailing groundwater
3 rights would show up back in the river and would come
4 up with -- he would be tasked with determining the
5 administration date and water rights junior to that
6 date would be curtailed.

7 **Q. Any idea how long it would take to come up**
8 **with that kind of an analysis and plan?**

9 A. I don't know. But the tools we've developed
10 as part of settlement talks and as part of our
11 litigation have definitely made it within striking
12 distance that we should be able to perform such an
13 analysis expeditiously.

14 **Q. What do you -- what do you define as**
15 **expeditiously?**

16 A. Within months rather than years.

17 **Q. Do you recall Mr. Lopez's characterization of**
18 **Texas' complaint in this action as a formal complaint**
19 **for purposes of the Compact?**

20 A. Yes.

21 **Q. Okay. Do you agree?**

22 A. Yes.

23 **Q. Okay. What has New Mexico done since Texas**
24 **has filed its complaint to address Texas' concerns?**

25 A. Well, we have been investigating the validity

1 of Texas' concerns in extensive detail, and we have
2 made certain determinations as to the validity of
3 Texas' concerns. We, I would say, agree with Texas in
4 that there is a problem in the Lower Rio Grande in New
5 Mexico. We disagree as to the causes of the problem,
6 but New Mexico is acting to try and mitigate this
7 problem through a pilot project, which is currently
8 underway to reduce depletions through groundwater in
9 the Lower Rio Grande in New Mexico.

10 **Q. And would you say the U.S. complaint in this**
11 **action is a complaint for purposes of the Compact or**
12 **for purposes of a call within the state?**

13 A. I would --

14 **MR. WECHSLER:** Object to form.

15 A. Yes, I believe so.

16 **Q. (BY MR. DUBOIS) Okay. And what's New Mexico**
17 **done since the U.S. filed its complaint to address the**
18 **U.S. concerns?**

19 A. The same things that I described just above.

20 **MR. DUBOIS:** I don't have anymore
21 questions for you, Dr. Barroll. Thank you.

22 **THE WITNESS:** Wow.

23 **MR. DUBOIS:** I said it was only a
24 handful. Take two hands, but handful. Ms. Klahn?

25 **MR. BROCKMANN:** Jim, before you hand it

1 off. This is Jim Brockmann. I mentioned on break
2 that --

3 **MR. DUBOIS:** I'm sorry. Yes. I did
4 forget, Mr. Brockman, so go ahead, Jim. I apologize.

5 **MR. BROCKMANN:** Yeah, I just wanted to
6 indicate that I have been on since noon. I was having
7 some microphone problems but wanted to make sure I
8 entered my appearance on behalf of the Albuquerque
9 Bernalillo County Water Utility Authority, and also
10 for the City of Las Cruces. I don't know if there
11 will be a separate transcript, but I was actually on
12 this morning, too, with the same issue. But thanks
13 for letting me get it noted at this point in the
14 deposition.

15 **MR. DUBOIS:** And my apologies.
16 Mr. Brockmann talked to me on the break, and I got
17 lost in my own -- in my own head in my questions and
18 forgot about it so my apologies.

19 **MR. BROCKMANN:** No problem.

20 **MR. DUBOIS:** Ms. Klahn?

21 **MS. KLAHN:** All right. Are you ready to
22 proceed, Ms. Barroll -- Dr. Barroll?

23 **THE WITNESS:** Yes.

24

25

E X A M I N A T I O N

1
2 BY MS. KLAHN:

3 Q. All right. I'm Sarah Klahn. I represent the
4 State of Texas. I have a few follow-up questions from
5 what Mr. Dubois asked you. At the beginning of the
6 deposition, he asked you what you had done to prepare
7 for the deposition, and you mentioned looking at the
8 AWRM statute and the statewide framework rules. Which
9 section of your topics that you're authorized to
10 testify about on behalf of the State of New Mexico do
11 -- do you understand the AWRM statute and framework
12 rules to fit under? And feel free to -- I think it
13 was Exhibit 1.

14 A. I think I've got a copy. I believe it's C.

15 Q. Okay.

16 A. 1, 2, and 3.

17 Q. And the water master order was another
18 document you specifically mentioned?

19 A. Yeah.

20 Q. That would be under Topic C or Topic D?

21 A. I'd say it relates to C.

22 Q. Okay. What documents did you review related
23 to Topic D, the first bullet point in Topic D?

24 A. I don't know that I reviewed any document
25 specifically for that point in addition to the ones I

1 was reviewing for Topic C.

2 **Q. So as far as New Mexico's policies relating**
3 **to the administration of water delivered to EBID**
4 **pursuant to the 1938 contracts, what policies would**
5 **you point to that New Mexico has related to that**
6 **administration?**

7 A. Well, the same policies and administration
8 mechanisms that I described earlier, the same policies
9 and administrative mechanisms we use for all water
10 rights in the Lower Rio Grande.

11 **Q. So you don't distinguish between the contract**
12 **water delivered as part of Texas' Compact entitlement**
13 **and just a routine state water right?**

14 A. So when I look at D1, it talks about New
15 Mexico policies relating to the administration of
16 water delivered to EBID pursuant to the 1938
17 contracts, the '70/80 operation and maintenance
18 transfer contracts, and the 2008 operating agreements.
19 Your question talked about delivery to Texas.

20 **Q. No my question was -- I'm limiting my**
21 **question, first of all, to the first clause in that**
22 **bullet point, and that's New Mexico's policies related**
23 **to administration of water delivered to EBID pursuant**
24 **to the 1938 contracts between --**

25 A. Okay.

1 Q. -- the United States and the districts. I'll
2 stop. That's all I want to talk about right now.

3 A. Okay. And delivery to EBID, though, you're
4 talking about delivery to Texas?

5 Q. The water that is delivered to EBID under the
6 contract is -- gets there as part of the Compact
7 entitlement that Texas is receiving in the Elephant
8 Butte reservoir; is that how you understand it?

9 A. Yeah. I guess -- I guess there is that --
10 that relationship, that the Compact delivery to
11 Elephant Butte is indeed described as delivery to
12 Texas. Yes. Okay. I'm following you.

13 Q. And the water that Texas is entitled to in
14 Elephant Butte Reservoir is the water that but for the
15 amount that EBID is entitled to under its contract on
16 New Mexico treaty, correct?

17 MR. WECHSLER: Object to form.

18 This is beyond the scope of her -- her
19 subjects.

20 MS. KLAHN: I'm trying to establish the
21 foundation to ask the question I asked five minutes
22 ago and trying to see if she understands the -- what
23 I'm asking. So that's where I'm going with this.

24 A. The administration of water below Elephant
25 Butte Reservoir is the same for all of the water

1 rights below Elephant Butte Reservoir. We do not have
2 a special administration for water associated with
3 water released pursuant -- that had been stored as
4 part of Texas' entitlement under the Compact.

5 Q. (BY MS. KLAHN) Okay. I'm going to work
6 backwards through the transcript and ask you some
7 follow-up questions about some things that Mr. Dubois
8 asked you. So that's what I'm doing is looking for
9 the spot. Towards the end of his questioning, he
10 asked you a question about the -- whether it was New
11 Mexico's position that New Mexico is the party that
12 would get to determine whether a complaint from Texas,
13 I think, was the point of his question at that point
14 was valid, and you went on to say that depletions that
15 occurred do not -- do not necessarily result in
16 impairment. Do you recall that?

17 A. Yes. I recall it.

18 Q. In the context of this litigation, both sides
19 have conducted groundwater modeling, which shows that
20 the groundwater pumping in New Mexico was depleting
21 the surface water of the Rio Grande; would you agree?

22 A. Yes.

23 Q. And would you also agree that even though
24 there's no disagreement, that New Mexico groundwater
25 pumping's depleting the Rio Grande, New Mexico doesn't

1 believe that the depletions impair Texas -- Texas'
2 entitlement; is that right?

3 A. We certainly do not believe there's a
4 one-to-one relationship between depletions and
5 impairment to Texas.

6 Q. What is the relationship?

7 A. It's very complex, and it depends on the
8 water supply conditions and the operations of the Rio
9 Grande Project. That's why we have the two -- you
10 know, the integrated model system in order to simulate
11 all of those parts of the system.

12 Q. So are some of those model runs, runs that we
13 should consider to be New Mexico's admission that
14 there's impairment to Texas?

15 MR. WECHSLER: Object to form.

16 A. I -- no. I think those model runs provide
17 quantitative results that would then feed into any
18 impairment determination.

19 Q. (BY MS. KLAHN) So speaking for New Mexico,
20 your position is that there is some impairment, but
21 you're looking to the Special Master to figure out
22 what that is; is that right?

23 MR. WECHSLER: Object to form. That
24 mischaracterizes her prior testimony.

25 A. Yes. I do not agree with what you said.

1 Q. (BY MS. KLAHN) Where did I go wrong?

2 A. I did not say that there was some impairment.
3 I said, instead, that the quantitative results coming
4 out of the model would then be used in an impairment
5 calculation determination.

6 Q. A few minutes ago, you told me that you don't
7 -- that New Mexico doesn't believe there's a
8 one-to-one relationship between depletions and
9 impairment and then you went onto tell me that the
10 relationship is very complex and referred to your
11 modeling. Is it -- is it your position as the State
12 of New Mexico that any of your modeling provides a
13 basis for finding impairment to Texas?

14 MR. WECHSLER: Object to form.

15 A. We believe that our modeling is the best
16 quantitative calculation of the effects of pumping in
17 Texas and in New Mexico on the Rio Grande Project and
18 thereby on -- on Compact -- on the Compact equities or
19 deliveries or performance.

20 Q. (BY MS. KLAHN) That didn't answer the
21 question.

22 A. I think that our model does form the best
23 basis for any findings related to impairment.

24 Q. And based on your earlier answer, it's the
25 State of New Mexico's position that there's some

1 impairment, but it's complicated; is that right?

2 A. No.

3 **MR. WECHSLER:** Object to form. Again,
4 mischaracterizes her testimony.

5 **Q.** **(BY MS. KLAHN)** So what did your statement
6 mean a minute ago that New Mexico doesn't believe
7 there's a one-to-one relationship between depletions
8 and impairment?

9 A. That just because depletion occurs does not
10 mean that there is impairment downstream.

11 **Q.** So is it New Mexico's position that there's
12 no impairment to Texas from groundwater pumping in New
13 Mexico?

14 A. I am --

15 **MR. WECHSLER:** Object to form.

16 A. -- not empowered to testify on behalf of the
17 State of New Mexico on that topic.

18 **Q.** **(BY MS. KLAHN)** So, again, towards the end of
19 Mr. Dubois' examination, he was asking you about the
20 State of New Mexico's administrative tools, if you
21 will, for assuring delivery of project water to EBID
22 and EPCWID, and your answer was that, "Water rights
23 are administered in order to protect existing water
24 uses and senior water rights, including the water
25 rights associated with deliveries with the Compact,

1 but the administration we do is not aimed at
2 particular deliveries." I wanted to follow up with
3 that. How can there be administration of water rights
4 that isn't aimed at particular deliveries? What do
5 you mean by that?

6 A. Well, that would seem to be part of the
7 question that Mr. Dubois was asking, what
8 administration did we do to protect particular
9 deliveries or particular flows, and the administration
10 we were performing in the -- in the Lower Rio Grande
11 is not aimed at protection of particular flows or
12 deliveries. Instead, it is normal water rights
13 administration that is aimed at over diversions,
14 stopping illegal diversions, not permitting additional
15 appropriations of water and so on and so forth, not
16 allowing transfers that would impair existing water
17 rights, all in the service of protecting existing
18 water rights and senior right -- water right holders.

19 Q. So is the sense then that if you do those
20 things, everything's going to be fine, and you don't
21 have to worry, and if somebody has a complaint,
22 they'll come to the state engineer and say you need to
23 curtail because I'm not getting my water?

24 A. Typically, if more active water rights
25 administration in priority is to occur, it is as a

1 result of a complaint of a senior who is not receiving
2 their water, yes.

3 Q. You mentioned a couple of times this concept
4 of water users getting together and developing an
5 alternative scheme. You also mentioned a pilot
6 program. Describe the pilot program and this
7 alternative scheme that you were referring to in your
8 testimony today.

9 A. Well, we did not have a fully developed
10 alternative scheme in the Lower Rio Grande. We -- at
11 the moment, we have a pilot program, which there are
12 hopes that might turn into the basis for an
13 alternative administration scheme. The existing pilot
14 program involves money from the State of New Mexico
15 that would be available to pay farmers in order to
16 fallow actively irrigated acreage and thereby reduce
17 groundwater depletions.

18 MS. KLAHN: Kayla, could you pull up the
19 document that is called ISC fallowing update? I'm
20 going to shut the door, so people can't hear my dogs
21 barking.

22 (Exhibit No. 2 was marked.)

23 Q. (BY MS. KLAHN) Can you see that?

24 A. Yeah.

25 Q. Okay. I can't because I think I've made my

1 Zoom thing go away again, but if you have control of
2 that, let's take a look at that together. This should
3 be marked as Exhibit 2, I think. Is that right?

4 A. Yes.

5 Q. Have you seen this memorandum?

6 A. I think I saw a draft of it.

7 Q. When was that?

8 A. Back in July.

9 Q. Did you review this before your deposition
10 today?

11 A. No.

12 Q. If you'd go down with me to -- it's a cover
13 memo, which the ISC staff apparently sent to the
14 Interstate Stream Commission asking for approval of
15 this project and then the report that follows is
16 provides some examples, as I understand it, of other
17 efforts around the west that the consultant was
18 looking at.

19 A. I haven't read that report.

20 Q. Are you familiar with any of the example
21 projects that the ISC staff are using as a basis for
22 the recommendation?

23 A. I'm -- I'm familiar --

24 Q. Go to PDF Page 12 -- 11, sorry.

25 A. PDF Page 11. I have some familiarity with

1 the Fort Sumner Irrigation District program, though
2 I've never worked on it. I am -- have some
3 familiarity with the Lower Arkansas Super Ditch. I
4 was and had presentations by people involved in that
5 system. I'm not familiar with the Upper Colorado
6 River System Conservation Program. I am familiar with
7 the Rio Grande Water Conservation District Subdistrict
8 No. 1. I've been up there, and I've also attended
9 meetings in which people involved in that system have
10 presented information on how -- how it works.

11 **Q. Are any of these projects mandatory for the**
12 **water users; do you know?**

13 A. Not to my knowledge.

14 **Q. Is that the concept that New Mexico's looking**
15 **at, a voluntary project in the Lower Rio Grande?**

16 A. Well, the pilot project is indeed voluntary.
17 A farmer wants to get money for fallowing voluntarily
18 would apply and the alternative administration
19 discussions I have been involved with have also
20 involved voluntary -- voluntary systems by which money
21 is paid to farmers who agree to fallow.

22 **Q. Did this pilot project -- project arise**
23 **because of the litigation between Texas and New Mexico**
24 **in this case?**

25 **MR. WECHSLER:** Object to form;

1 foundation.

2 Q. (BY MS. KLAHN) Do you know?

3 A. There were a lot of reasons that it has come
4 about in part due to the hydrologic conditions and
5 dropping groundwater levels in the -- the Lower Rio
6 Grande in New Mexico, and it's also because of the
7 current litigation and a lot of different causes that
8 are all related to each other.

9 Q. Is the price that New Mexico is looking at
10 paying equivalent to what a pecan farmer could get if
11 he kept his trees in production; do you know?

12 A. I don't know.

13 Q. Is the expectation that pecan farmers
14 wouldn't participate in this because they have
15 permanent cover crop?

16 A. That is the expectation, though we believe
17 it's possible that there may be some orchards that are
18 not doing well that might end up in the program.

19 Q. Has the State of New Mexico done any
20 evaluation of potential folks who would want to
21 participate in this based on what's known about the
22 problems they are having in their production or
23 something like that?

24 A. I do not think we have done any evaluation of
25 that nature about individual farmers' situations.

1 **Q. How about any evaluation of potential acreage**
2 **that might be persuaded to get into this?**

3 A. We have done evaluations of what potential
4 acreage we would consider for the program on the basis
5 of irrigation status, but we have not done any formal
6 evaluation of individual farmer interests. Instead,
7 we -- this program is being run together with the
8 Lower Rio Grande Water Users Group, and there have --
9 I believe that the water users group entities have
10 been working with the farmers and have information as
11 to interest among the farmers.

12 **Q. When you said at the beginning of your answer**
13 **there that you have -- the I -- the State of New**
14 **Mexico has done evaluations of what potential acreage**
15 **you'd consider for the program on the basis of**
16 **irrigation status, what does that mean?**

17 A. We have evaluated historical irrigation of
18 acreage on an acre-by-acre basis from the remote
19 sensing, NDVI, and other analysis done mostly as part
20 of the litigation technical work in order to ensure
21 that we are not paying the fallowed acre that is not
22 being irrigated.

23 **Q. I see. Would the goal be to fallow acreage**
24 **that is using a lot of water so you'd get a lot of**
25 **bang for your buck?**

1 A. I believe the program will treat acreage
2 equally.

3 Q. So it wouldn't pay more for land that was
4 fallowing or basically wouldn't pay more for -- for
5 ground that's not going to be using a lot of water, if
6 you will?

7 A. I believe we are not making that distinction.
8 I believe that all land that is -- satisfies the
9 requirement for irrigation, having been irrigated,
10 will be treated equally.

11 **MS. KLAHN:** Kayla, could you pull up
12 that deposition exhibit that Yolanda sent to you this
13 morning? It was a single-page agenda item -- or
14 agenda, sorry.

15 THE VIDEOGRAPHER: Let me make sure I'm
16 pulling up the right one. Hold on.

17 **MS. KLAHN:** It should say groundwater
18 conservation pilot program. It's a JPEG.

19 (Exhibit No. 3 was marked.)

20 Q. **(BY MS. KLAHN)** And you have to tell me if
21 it's up because I can't see it.

22 A. I can see it. It's up.

23 Q. And is it the document that relates to some
24 meetings that are scheduled for next week?

25 A. Yes, it is.

1 Q. Okay. How many meetings like this has the
2 State of New Mexico had in the Lower Rio Grande; do
3 you know?

4 A. So there have been internal meetings between
5 the state and water user group representatives and
6 lawyers. There have been a number of them, but I
7 don't know how many. There have been no public
8 meetings, as yet, to my knowledge.

9 Q. So even though this is going to be online,
10 this is the first public -- set of public meetings
11 that's scheduled?

12 A. To my knowledge, that is true.

13 Q. Do you have any understanding of the feedback
14 that farmers have given to the state about this,
15 farmers that you've been talking to anyway? What have
16 they said about this program?

17 A. My understanding is that the water users
18 group entities, which include the New Mexico diverse
19 crop farmers have been involving their farmers in
20 these plans and that they believe there is interest in
21 participation in this program.

22 Q. In the absence of the pilot project, does --
23 is it your understanding that the state engineer could
24 authorize a local group of water users like in the
25 Lower Rio Grande to come up with their own alternative

1 **scheme for administering water rights?**

2 **MR. WECHSLER:** Object to form.

3 A. Yes. I believe that it would be possible for
4 another group of water users to organize and come up
5 with an alternative administration scheme, which if
6 acceptable to the state engineer, could be approved as
7 alternative administration.

8 **Q. (BY MS. KLAHN) Would that be under the AWRM**
9 **statute?**

10 A. Yeah. Yes, it would.

11 **Q. And that was an effort that was begun maybe**
12 **ten years ago or 15 years ago, not long after the AWRM**
13 **statute was adopted down in the Lower Rio Grande,**
14 **right?**

15 A. What do you mean, what -- what effort?

16 **Q. That wasn't a very com -- understandable**
17 **question. I apologize. I'm remembering a PowerPoint**
18 **that you did for the Lower Rio Grande water users**
19 **group from 2006 about 15 years ago was when the state**
20 **was looking at adopting local AWRM regulations; is**
21 **that correct?**

22 A. That's correct. So you're right. Shortly
23 after the passage of the AWRM statute and -- and the
24 promulgation of the AWRM general framework regs, we
25 did do a push to try and get district-specific rules

1 in place in the Lower Rio Grande but that did not come
2 to fruition.

3 **MS. KLAHN:** Kayla, I e-mailed you an --
4 an exhibit that was marked in the Thacker deposition.
5 Could you pull that up.

6 **THE VIDEOGRAPHER:** Okay. It's pulled
7 up. I'm just going to mark it now.

8 **MS. KLAHN:** Thank you.

9 (Exhibit No. 4 was marked.)

10 **MS. KLAHN:** So this is going to be
11 Barroll 3 -- 4, right?

12 **THE WITNESS:** 4.

13 **Q. (BY MS. KLAHN)** Could you turn in this
14 document back to -- the document is Bates numbered,
15 and it -- you're welcome to take a look at it. It's a
16 packet of material we received from New Mexico in
17 discovery. It's Bates numbered, and it starts out
18 with while metering requirements. But if you go back
19 to New Mexico No. 210807, there's objectives -- list
20 of objectives. I don't know if you can hear my dogs.
21 I apologize. They're keeping us safe from the
22 mailman.

23 **A.** 807. Okay. Let me see if I can rotate this
24 sucker. I rotated it. Okay. So Objectives for Lower
25 Rio Grande District-Specific Regulations.

IN THE SUPREME COURT OF THE UNITED STATES
BEFORE THE OFFICE OF THE SPECIAL MASTER
HON. MICHAEL J. MELLOY

STATE OF TEXAS,	§	
	§	
Plaintiff,	§	
	§	
vs.	§	ORIGINAL ACTION
	§	CASE NO.: 220141
STATE OF NEW MEXICO,	§	(ORIGINAL 141)
and STATE OF COLORADO,	§	
	§	
Defendants.	§	

REMOTE VIDEOCONFERENCED DEPOSITION OF

JOHN D'ANTONIO, P.E.

AUGUST 14, 2020

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1 **alternative administration? Is it all under the**
2 **AWRM statute?**

3 A. Well, it is, but, I mean, we did the -- we
4 had the ability to do it prior to the AWRM statute
5 being -- being put in place. What the AWRM statute
6 does, it formalizes or would formalize some of these
7 processes by putting and allowing for
8 district-specific regulations to be put in place.

9 **Q. Okay.**

10 MR. LEININGER: Jeff, John, this would
11 be a good time to take a break. I'm gonna pull up
12 another exhibit. So would you like to take a break
13 now or continue on? John, is that all right?

14 THE WITNESS: Yeah, that's fine, yeah.

15 MR. LEININGER: Okay. Let's resume at
16 10:30.

17 THE WITNESS: Can we do 10:35?

18 MR. LEININGER: 10:35 is fine.

19 THE WITNESS: Okay. Thanks.

20 THE VIDEOGRAPHER: The time is
21 10:20 a.m., and we are off the record.

22 (A recess was taken from 10:20 a.m. to
23 10:35 a.m.)

24 THE VIDEOGRAPHER: The time is
25 10:35 a.m., and we are back on the record.

1 **Q. (BY MR. LEININGER) Mr. D'Antonio, let's**
2 **call up another exhibit. This is the first draft of**
3 **the Alternative Water Right Management Regulations**
4 **for the Lower Rio Grande dated June 28th, 2006.**

5 DOCUMENT TECHNICIAN: (Complied.)
6 (Deposition Exhibit JD-015 marked for
7 identification.)

8 MR. LEININGER: It's now been marked
9 as Exhibit JD-015.

10 **Q. (BY MR. LEININGER) Did you assist in**
11 **drafting the AWRMs for the Lower Rio Grande?**

12 A. Again, they're district-specific
13 regulations as opposed to at the water resource
14 management. So the proposed rules and regulations,
15 no, I didn't. Our attorneys worked on this.

16 **Q. Okay. What was your involvement in either**
17 **helping to create or review the proposed rules and**
18 **regulations?**

19 A. I gave direction to our attorneys and,
20 again, I think one of the things we've -- this was
21 truly a draft. It was something to put in place so
22 that we could start the discussion. And so, you
23 know, the intent, and it says it right there on the
24 front page here, (as read) "These draft rules are
25 intended to provide a detailed basis for priority

1 administration."

2 And so it's -- it gets into that. So
3 yeah, it was my attorneys at my direction that
4 prepared it, and that was the extent of my
5 involvement. It was probably reviewing drafts when
6 they got to a certain point. But we also did get
7 sued on these things, so we didn't get very far,
8 based on the legal challenges.

9 **Q. So at your direction, the attorneys**
10 **prepared it. Why did you direct your attorneys to**
11 **create proposed rules and regulations under the AWRM**
12 **for the Lower Rio Grande?**

13 A. Well, it was in following this the AWRM
14 legislation that passed in 2003, I believe, where we
15 were directed by the legislature to put rules and
16 regulations in for expedited leasing and marketing
17 and water rights in those areas in the state that
18 were subject to priority administration.

19 So as I've stated in earlier questions
20 in this deposition, we had seven priority basins
21 within the State of New Mexico, and we were doing a
22 little bit on all of them. This particular draft
23 was for the Lower Rio Grande.

24 **Q. Okay. Let's go to .pdf 13, please.**

25 A. (Complied.)

1 Q. And, John, if you could go down to the
2 page number. Yeah, okay. So the .pdf is also the
3 page number in this situation. And I'm looking at
4 paragraph V, as in Victor, V, double Victor. It's
5 a -- this is the definition section, correct?

6 A. I believe so, yeah.

7 Q. And you have here a definition for the Rio
8 Grande Project Supply.

9 D2 was proposed for purposes of
10 calculating the Rio Grande Project Supply at that
11 time; is that right?

12 A. D2 has always been a discussion point. I
13 don't remember exactly when it -- well, it came in
14 after the '58 to -- or the 1950 to 1978 time frame,
15 right before the district -- well, the Bureau
16 essentially exchanged hands as far as the ownership
17 of the facilities or the diversion structures, but I
18 think that's when the D2 curve was put in place, and
19 it's always been something that was in place up
20 until it was unilaterally changed in 2006, right, so
21 I think by the districts going to what was
22 considered a D3, which -- so I'm not sure what
23 you're asking here.

24 These regulations were done at about
25 that time, so let me go back to your question. D2

1 was proposed --

2 Q. Let me restate the question.

3 So in 2006, the Office of the State
4 Engineer was proposing rules and regulations for
5 alternative administration in the Lower Rio Grande,
6 and in that process defined the Rio Grande Project
7 Supply as based upon the releases and deliveries
8 under the D2 curve.

9 A. Okay.

10 Q. Is that a fair statement?

11 A. Yeah. Based on this graph, yeah.

12 Q. It also talks here about Caballo releases
13 plus return flows.

14 Do you see that?

15 A. Yeah, I see that.

16 Q. Let's go up a page to page 12, paragraph
17 SS, where you define return flows. So here you're
18 defining return flows as owner's application of
19 water that flows into the groundwater system; is
20 that correct?

21 A. (Examined exhibit.) That's what this
22 draft says, yes.

23 Q. It says the project supply therefore
24 includes groundwater.

25 MR. WECHSLER: Object to form.

1 **Q. (BY MR. LEININGER) Under these**
2 **regulations.**

3 MR. WECHSLER: Again, object to form.

4 A. (Examined exhibit.) Well, that's what
5 this draft says. And I'll reiterate this is a draft
6 that was put together by attorneys, so whether or
7 not it was cleaned up or not, but it does say that
8 flows into the groundwater system or surface water
9 system, yeah.

10 **Q. (BY MR. LEININGER) Okay. And that --**
11 **those flows into the groundwater system are return**
12 **flows, and return flows in paragraph VV are part of**
13 **the Rio Grande Project Supply, right?**

14 A. I think, based on this draft, that would
15 have -- that would have been ultimately corrected,
16 based on what water was actually in the streams in
17 the return drain flow system versus water that
18 actually got down to the groundwater, which was --
19 which is new water appropriable by downstream users.

20 So there's a clear distinction in
21 New Mexico water law between surface water and
22 groundwater, and so at this -- the administrable
23 water right that flows into the groundwater system,
24 as I read that, I probably -- if I had a chance to
25 review this, which I don't know if I did or not, but

1 the point is that language would have been cleaned
2 up to actually identify what was project water
3 return flow versus water that actually got back into
4 the groundwater system.

5 **Q. Were these drafts publicly disseminated?**

6 MR. WECHSLER: Foundation.

7 A. Again, we're talking about -- what was
8 this, 2006, so 13 years ago. The intent was to
9 always make them public. I'm not sure if it was
10 publicly disseminated or just with the Lower Rio
11 Grande water user's group down there. I don't
12 remember at what phase we were at.

13 I have a feeling it was to -- it was
14 not necessarily public, but to a limited amount of
15 stakeholders that would have had a chance to look at
16 it.

17 And, again, I want to reiterate, it's
18 draft. It's a draft.

19 **Q. (BY MR. LEININGER) Sure. Yeah, I'm just**
20 **trying to understand what the OSE was proposing at**
21 **this time for alternative administration.**

22 **Let's go to page 8, and let's go to**
23 **paragraph X, as in X-ray.**

24 A. (Complied.)

25 **Q. And here you have a definition of a**

1 Downstream Flow Target, which is 67/155ths of the
2 Rio Grande Project Supply plus Mexican Delivery.
3 And does 67/155ths -- what's your recollection of
4 where that comes from?

5 A. Well, that's the El Paso number one's
6 apportionment. It's 43 percent of the total, of
7 which that fraction is 67 divided by 155 is the
8 Texas apportionment on the combat.

9 Q. So was the AWRMs intended to administer
10 junior water users to ensure that this downstream
11 flow target was met?

12 MR. WECHSLER: Foundation.

13 A. Well, again, this was a draft, we had to
14 have a starting point, and this was at that time
15 something that was put out there for discussion
16 purposes.

17 Q. (BY MR. LEININGER) Right.

18 But my question really is, why are you
19 calling this a target to provide alternative
20 administration so that you can meet this target of
21 downstream flow deliveries?

22 A. I think you have to identify other
23 conditions and targets in any sort of administrative
24 scheme that you're trying to put together, so this,
25 again, was a starting point for discussion. And

1 this was, again, a -- the idea on this particular
2 one was to make sure that the water that was getting
3 to Mexico and for the project water for the folks
4 that are in Texas, the 67,000 acres, at least that
5 water is accounted for in some form or fashion.
6 But, again, it's a draft document.

7 Q. Okay. But at this time, the target is to
8 get EP#1 its project supply fraction based upon D2.
9 Is that fair?

10 A. Well, based on the -- this reading with
11 the other paragraph that you showed me, yeah, that
12 was probably an initial target to use D2 as the
13 overlying principal.

14 Q. Let's go to page 21, .pdf 21.

15 A. (Complied.)

16 Q. Let's look at -- it might be 22. Sorry.
17 It's F. There we go. No. I was right. 21. Right
18 there you've got a paragraph that's -- has the
19 Number 19.15.108. It's called "Rio Grande Project
20 Priority Call By the Bureau of Reclamation."

21 So what's your recollection of BOR's
22 ability to make a priority call, and what would be
23 the effect of a priority call under these rules and
24 regulations?

25 A. Well, my recollection is I don't remember

1 this paragraph. I haven't looked at this for
2 forever. It was put in here, obviously, for a -- to
3 consider in times of shortage that a -- that the
4 bureau could call a priority call and make a
5 priority call.

6 Again, this was for -- one of the
7 things that these rules were intended to do is to
8 show somewhat a draconian picture of what
9 curtailments and prior appropriation really does and
10 what effect it could have.

11 And I would, I guess, harken back to
12 the Pecos settlement. Once you get it back into a
13 strict priority administration protocol, there's a
14 lot of things that happen that really set up an
15 opportunity for alternative administration so that
16 you don't have to do that.

17 So as I recall on this draft, this was
18 for these draft -- this draft was for priority
19 administration, and so, again, it's within the
20 context of putting that in place to show all the
21 stakeholders how difficult this might be.

22 **Q. So under this draft, it's an**
23 **acknowledgment that the BOR could place a priority**
24 **call for curtailment of junior rights that interfere**
25 **with Reclamation's ability to deliver project water**

1 to EP#1; is that correct?

2 A. Under this draft, yes.

3 Q. You have a statement here, and I'm trying
4 to recall just where it is, but it states that call
5 is satisfied if the downstream flow is currently
6 equivalent to the downstream flow target. And I
7 believe it's right above where you are right now in
8 this document. Sorry. Yeah. I apologize, John. I
9 don't have control of the cursor, but if you --

10 A. You need to go up?

11 Q. You may have to go down, but let's take a
12 look. Go to the line where it talks about how a
13 call is satisfied.

14 A. Some of it's discussed in C, talking about
15 curtailments.

16 Q. If you go up a little bit higher.

17 A. (Scrolled.)

18 Q. You have a statement in here about
19 historical river efficiency condition that I'm
20 trying to pull out and, again, I apologize. I don't
21 have the . . .

22 A. Do you want back control of the documents
23 so you can scroll through it or do you --

24 Q. Sure. Yeah.

25 A. So wait.

1 Q. It was the next page.

2 Do you want to take control back?

3 A. Sure.

4 Q. So here at the top of page 23, there's a
5 sentence, (as read) "The State Engineer will deem
6 the call satisfied if the downstream flow is
7 currently equivalent to the downstream flow target
8 or upon attainment of the Historical River
9 Efficiency Conditions as defined by the D2 curve."

10 Do you recall why you used the
11 disjunctive here or? And my question really goes to
12 wasn't the downstream flow target contemplated under
13 these rules and regulations the same as the
14 historical river efficiency as defined by D2?

15 MR. WECHSLER: Object to foundation.

16 A. Yeah, I can't answer that question.
17 Again, my attorneys put this together, and the line
18 of thinking back then, I don't want to speculate on,
19 but, again, I think they were trying to be
20 comprehensive in putting the document together so
21 that it could be looked at, essentially, to make
22 sure that if we were going to enforce by priority,
23 everything was taken into consideration. So I don't
24 think I can answer your question.

25 Q. (BY MR. LEININGER) Okay. Let's go up to

1 22 again, page 22 at the bottom. And you've got a
2 sentence here that -- and it's under C. I'm sorry.
3 "If the State Engineer determines such additional
4 curtailments are required, the State Engineer may
5 direct the Bureau of Reclamation to implement
6 partial curtailments of EBID surface water
7 diversions."

8 Do you see that sentence?

9 A. I do, yeah.

10 Q. So currently under the operating
11 agreement, isn't that what happens, EBID agrees to
12 forego part of its surface water diversions?

13 MR. WECHSLER: Foundation.

14 A. Well, I've got absolutely no -- few things
15 here. I have no input on that operating agreement.
16 I had no input. And so when you ask me about the
17 operating agreements, surface water diversion, this
18 again was -- would have been working in conjunction
19 with the Bureau of Reclamation to enforce
20 curtailments, and so I don't know if that's what
21 happens.

22 I just don't -- I know that what the
23 operating agreement does, is all the departures
24 for -- the departures from D2 that were put in place
25 for the D3 curve are all suffered by EBID. I do

1 know that.

2 Q. (BY MR. LEININGER) Yeah, no. I'm just
3 trying to understand if this concept here that were
4 going to be in the regulations, that one of the
5 alternatives to priority administration appears to
6 be the State Engineer directing BOR, and let's not
7 talk about how that's legally possible, but the
8 State Engineer may direct the BOR to implement
9 partial curtailments of EBID surface water
10 diversions.

11 So the concept here was that EBID
12 surface water could, in fact, under an allocation be
13 reduced under its annual allocation. Excuse me.

14 A. Again, this is a draft document, and that
15 was put in there as a -- I guess as something that
16 was considered by our attorneys, if it were going to
17 go into full-priority administration.

18 Q. Do you recall what sort of feedback you
19 got when you gave this document to the stakeholders?

20 A. Well, yeah. I remember they didn't like
21 it, and --

22 Q. Who were "they"? Who are you --

23 A. Everybody in the Lower Rio Grande did not
24 like it. And, again, it's -- it was a draft
25 document, and the idea -- and I'll go back to what I

IN THE SUPREME COURT OF THE UNITED STATES
BEFORE THE OFFICE OF THE SPECIAL MASTER
HON. MICHAEL J. MELLOY

STATE OF TEXAS)	
)	
Plaintiff,)	
	)	Original Action Case
VS.	)	No. 220141
	)	(Original 141)
STATE OF NEW MEXICO,)	
and STATE OF COLORADO,)	
)	
Defendants.)	

REMOTE ORAL AND VIDEOTAPED DEPOSITION OF
JOHN D'ANTONIO
JUNE 25, 2020
VOLUME 2

REMOTE ORAL AND VIDEOTAPED DEPOSITION of JOHN D'ANTONIO, produced as a witness at the instance of the Plaintiff State of Texas, and duly sworn, was taken in the above-styled and numbered cause on June 25, 2020, from 9:15 a.m. to 12:57 p.m., before Heather L. Garza, CSR, RPR, in and for the State of Texas, recorded by machine shorthand, at the offices of HEATHER L. GARZA, CSR, RPR, The Woodlands, Texas, pursuant to the Federal Rules of Civil Procedure and the provisions stated on the record or attached hereto; that the deposition shall be read and signed.

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EXAMINATION INDEX

WITNESS: JOHN D'ANTONIO

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EXHIBIT NO.3 PAGE
178

Active Water Resource Management in the
Lower Rio Grande Tools for a New Era in
Water Management PowerPoint Presentation

EXHIBIT NO.4 210

United States Department of the Interior
Geological Survey Report Dated
October 23, 1947

1 Q. Let's take a look at the first slide after
2 the cover, which is at US0539808. Are you there? You
3 do -- you describe about midway through the existence
4 of downstream pressure. Do you see that?

5 A. I do see that.

6 Q. Okay. And what -- what is that pressure?
7 What was that pressure back in 2005?

8 A. It -- it looks like it's a quote from
9 somebody, and I don't remember who that quote is from.
10 That's been 15 years ago. But there's always been
11 some discussion with downstream -- with the downstream
12 and Texas. I mean, I can go back to -- to 1997 when
13 there was a discussion of a pipeline being built to
14 Elephant Butte by Texas water. I've seen their senate
15 bills that have appropriated a billion dollars to look
16 at and evaluate supplies from the Rio Grande. So
17 there -- there's been an ostensible threat always, and
18 if you -- if you understand western water law, there's
19 a lot of litigation that ensues from a downstream
20 state that ensues an upstream state, so I think
21 there's always an awareness that something could
22 happen. I think I was always comfortable that we
23 were -- we were doing the things we needed to do in
24 New Mexico in managing our water resources that --
25 that could answer and -- and stay out of litigation

1 with the State of Texas. So, again, it's just a --
2 it's just an awareness thing downstream pressure.
3 Texas sues us on the Pecos. Texas has always been in
4 the minds of new Mexicans -- in 1974, Texas sued New
5 Mexico on the Pecos for a billion dollars and so
6 there's always been downstream pressures, and it
7 happens in -- in most western states.

8 **Q. You were aware of this pressure in 2005 then,**
9 **I assume?**

10 A. Apparently.

11 **Q. And I think you also said that that pressure**
12 **existed prior to 2005; is that correct?**

13 A. Well, the knowledge of -- of actions in
14 Texas, we were aware of. Like I said before, the --
15 the pressure that I felt was in managing our water in
16 the entire State of New Mexico with the droughts --
17 the drought that was happening in -- in 2002, and I
18 would say through the -- the last probably 15 years,
19 we suffered severe droughts. So, yeah, it was -- I
20 think it was in that regard that the pressure to be
21 able to manage and have the tools in place necessary,
22 not only to manage the lower Rio Grande, but all the
23 other priority basins that we had at the State of New
24 Mexico that were subject to prior -- priority
25 administration.

1 Q. What -- if I can ask you to turn to
2 US0539810. I think it's the -- the slide before this
3 one.

4 A. Are you asking me do I control this one or is
5 it them that's doing it?

6 Q. You should have control. If not, if we can
7 get --

8 A. I do now. I do now.

9 Q. Could we give control to Mr. D'Antonio,
10 please?

11 A. I've got it. It's just this is very touchy.
12 I don't have a slide number, so it'd be easier if I
13 could see a number here. Am I --

14 Q. Yeah.

15 A. Okay.

16 Q. That -- that is the slide.

17 A. Is this the slide? Okay.

18 Q. Right. And for the record, again, it's
19 US0539810. That's its page number. There are no
20 numbers on the slides themselves. What -- what is --
21 describe for me what active water resource management,
22 you know, what -- what is that term? I think the
23 acronym is AWRM, A-W-R-M; is that correct?

24 A. That's correct.

25 Q. What is it?

1 A. It's a -- there was a law passed in New
2 Mexico in 2003 which we called the active water
3 resource management statute. It's a 72-2-9.1 is in
4 New Mexico law, and that one -- when that law passed,
5 it directed the state engineer to come up with and
6 promulgate rules and regulations to allow for
7 expedited marketing and leasing so that -- using --
8 using appropriate hydrologic models to -- in the
9 priority basins we had in the State of New Mexico that
10 were subject to priority administration. So the --
11 the active water resources management initiative was
12 just that. It was something that I, as state
13 engineer, implemented, directed, and charged putting
14 metering and measuring in place, establishing water
15 master districts and water masters in the field,
16 shoring up our technical data and all of our district
17 offices, abstracting those files so that they would be
18 complete and also establishing district-specific
19 regulations appropriate for each of the priority
20 basins within New Mexico as directed by that piece of
21 legislation.

22 **Q. Is -- how is the area below Elephant Butte to**
23 **the New Mexico state line, is that one management**
24 **area?**

25 A. Yes. There was seven basins. That was one

1 more of it. Okay.

2 Q. You define groundwater pumping here as a
3 problem; is that correct?

4 A. Yes.

5 Q. And you -- you talk about heavy reliance on
6 groundwater without controls on it and then you list
7 three bullet points, right?

8 A. Yes.

9 Q. And you say in the first bullet point, I will
10 repeat essentially what you said before, in that
11 groundwater and surface waters are linked, but here
12 you use the word closely linked. What does -- what
13 does that mean?

14 A. A direct connection, hydrologic connection.

15 Q. And on the second bullet point, you
16 say, "Pumping" -- presumably groundwater
17 pumping -- "reduces river flow"; is that correct?

18 A. Yes.

19 Q. Okay. So river flow is how water gets from
20 Elephant Butte reservoir to Texas; is that -- is that
21 correct?

22 A. Yes.

23 Q. So if groundwater pumping in New Mexico
24 reduces river flow, does that mean it also reduces the
25 amount of water flowing to Texas?

1 **MR. WECHSLER:** Object to form.

2 A. Not necessarily. When you say to water
3 flowing to Texas, there -- there's enough -- what
4 this -- what this presentation doesn't say and doesn't
5 include is all the groundwater pumping that
6 historically happened in Texas to disconnect that
7 groundwater from its surface water supply and the
8 effects of that surface water, as it goes through the
9 Texas basins that have been over pumped. So this --
10 this presentation is meant for the water users within
11 New Mexico and -- and so, you're right, as we -- as we
12 managed water within the State of New Mexico,
13 obviously we were very concerned about making sure any
14 increased activity with respect to permitting would
15 only look at transfers of the consumptive use portion
16 so that we would minimize any of the ground and
17 surface water connections and -- and impacts.

18 **Q. (BY MR. SOMACH) Let's isolate. A moment ago,**
19 **you said that the interconnection between these**
20 **so-called over pumped basins in Texas and the basins**
21 **in New Mexico, Mesilla and Rincon valleys, that their**
22 **hydrologic connection was very limited. And so**
23 **let's -- let's focus on the flow of water through New**
24 **Mexico, and -- and it's true that water released from**
25 **Caballo that was intended to go to Texas must flow**

1 through New Mexico; is that correct?

2 A. Yeah, that's correct.

3 Q. Okay. And so to the extent that there is
4 surface water in the Rio Grande that is flowing to
5 Texas, will groundwater pumping in New Mexico have an
6 affect on that flow of water?

7 MR. WECHSLER: Objection; ambiguous.

8 A. I can say it will have a affect. I'm not
9 sure exactly what affect. And I think that goes back
10 again to asking our modelers and our experts on what
11 exactly that affect is.

12 Q. (BY MR. SOMACH) If -- is New Mexico river --
13 is -- is water flowing in the river -- the Rio Grande
14 in New Mexico, that is used by New Mexico interest any
15 different from the flow of water in the Rio Grande
16 that is intended for use by Texas? Are they -- is
17 there some physical distinction between that flow that
18 is used in New Mexico and that flow that is intended
19 for Texas? What -- what's the physical difference?

20 MR. WECHSLER: Object to form.

21 A. Well, there -- the physical difference would
22 be as water flows. There is a hydraulic gradient
23 associated with groundwater levels and drawdown levels
24 with respect to the basins that it overflows. There
25 definitely could be a physical difference of that

1 water being affected greater when it -- when it is in
2 the Texas area than in New Mexico. I would answer it
3 that way.

4 Q. (BY MR. SOMACH) Yeah, but I -- I'm isolating
5 now on New Mexico. We're only talking about New
6 Mexico here, and what I'm asking is: Does groundwater
7 pumping, which reduces river flow, discriminate
8 against New Mexico where it doesn't discriminate and
9 reduce the amount of water that's -- that's available
10 to Texas?

11 MR. WECHSLER: Object to form.

12 A. Well, I think, you know, what -- what -- what
13 I would focus on is the -- the -- the amount of water
14 that's -- that's -- that's allocated to the project,
15 again, and so -- let me read your question again. I
16 would say no, it doesn't discriminate whether it's New
17 Mexico or --

18 Q. (BY MR. SOMACH) Right. It's a reduction in
19 flow; isn't that correct?

20 A. It could be a -- there could be a reduction
21 in flow.

22 Q. But in turn --

23 A. You have to look at location --

24 Q. Go ahead. I'm sorry. I shouldn't interrupt.

25 A. Well, I said there could be a reduction in

IN THE SUPREME COURT OF THE UNITED STATES
BEFORE THE OFFICE OF THE SPECIAL MASTER
HON. MICHAEL J. MELLOY

STATE OF TEXAS)	
)	
Plaintiff,)	
	)	Original Action Case
VS.	)	No. 220141
	)	(Original 141)
STATE OF NEW MEXICO,)	
and STATE OF COLORADO,)	
)	
Defendants.)	

REMOTE ORAL AND VIDEOTAPED DEPOSITION OF
JOHN D'ANTONIO
JUNE 26, 2020
VOLUME 3

REMOTE ORAL AND VIDEOTAPED DEPOSITION of JOHN D'ANTONIO, produced as a witness at the instance of the Plaintiff State of Texas, and duly sworn, was taken in the above-styled and numbered cause on June 26, 2020, from 9:02 a.m. to 12:59 p.m., before Heather L. Garza, CSR, RPR, in and for the State of Texas, recorded by machine shorthand, at the offices of HEATHER L. GARZA, CSR, RPR, The Woodlands, Texas, pursuant to the Federal Rules of Civil Procedure and the provisions stated on the record or attached hereto; that the deposition shall be read and signed.

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1 that -- that the state engineer's office, using the
2 best records available within its district offices,
3 can -- can enforce by priority -- can enforce priority
4 administration in the absence of a completed
5 adjudication.

6 Q. Okay. Let's move on. Let's go back to your
7 PowerPoint, if we could pull that back up. Again,
8 this is Exhibit 3, I believe. And we're on PDF 18.
9 My question here is: You have a timeline from 2005
10 onward, and in this timeline, you have taking -- you
11 begin in 2005 going to 2006, enforce against illegal
12 diversion. Do you see that?

13 A. Yes, I do.

14 Q. So you had -- you had some discussion with
15 Mr. Somach with regard to illegal diversions, but I
16 just wanted to make sure I understand. How do you
17 define illegal diversions in this context?

18 A. Well, any -- any diversion that's not been
19 permitted, and any inappropriate use of water. Again,
20 this is just showing a timeline. This was to educate
21 the public. We've always had the ability to enforce
22 against illegal diversion, but this was, again, to
23 highlight some of the steps that -- that we do and
24 would continue to do. So there might be some sort of
25 misunderstanding of why it's in there. We've always

1 had the ability to enforce against illegal diversions.

2 **Q. So any un-permitted use of water is an**
3 **illegal diversion?**

4 A. Well, I would say un-permitted use of water,
5 yeah, basically if it's not -- if there's not a permit
6 or if it's a -- may not have a permit because it's a
7 pre-basin use, but that would be recognized as a -- as
8 a -- an approved use of water if it was a pre-basin.
9 So, you know, some -- some uses aren't perhaps
10 permitted, because it was prior to a state engineer
11 basin declaration.

12 **Q. Let me -- let me understand that distinction**
13 **between pre-basin use. So that's -- you're talking**
14 **about 1980 when the basin was declared?**

15 A. Yes.

16 **Q. So uses prior to 1980 were not permitted; is**
17 **that correct?**

18 A. Groundwater uses prior to 1980 did not
19 require a -- an application before the state
20 engineer's office.

21 **Q. So they're not permitted?**

22 A. Well, I would say they weren't permitted in
23 the sense of an actual permit, but they -- what they
24 do -- what water users do is they file declarations of
25 those particular water rights and then the state

1 engineer's office can, I guess, approve that
2 declaration essentially as a -- an allowable use of
3 water. But that -- in some of those cases, they
4 hadn't gotten through the actual permitting process.
5 So it's not a -- that would be a legal diversion based
6 on -- based on a prior basin use and a -- and a
7 declaration that's filed.

8 **Q. Why haven't pre-1980 groundwater uses gone**
9 **through the actual permitting process? You explain**
10 **that there are declarations, but why not require**
11 **permits?**

12 A. I've just -- I've just told you why. Before
13 the state engineer took jurisdiction over any basin
14 within the State of New Mexico, there was no need to
15 go in and file a permit and go through the application
16 process. People could go in and -- and use water
17 without having to go through that particular process.

18 **Q. So how do you -- how do you then control from**
19 **pre-1980 water uses if you don't have a permit? Do**
20 **you just take the declarations that are offered to**
21 **that water user?**

22 A. Well, that was the purpose of the -- the
23 metering order that I put in place in December of 2004
24 is to go in and quantify all of the groundwater, what
25 we call pre-basin wells, that were using water. We

1 required metering on all of those, and that was to be
2 able to get a handle on the water use and to make sure
3 people were not over diverting what their eventual
4 adjudicated amount would be.

5 Q. How many enforcement actions have you brought
6 for people that you've determined are over divert --
7 over diverting amounts in excess of what they are
8 either permitted or recognized as declared use based
9 upon your metering information? I'm sorry. That's a
10 terrible -- yeah, that's a terrible question. Let me
11 break that down for you.

12 So you said that you want to make sure that
13 people are not over diverting, and so you have
14 required metering, correct?

15 A. That's correct.

16 Q. So how many actions have you brought against
17 groundwater users for over diverting?

18 A. Well, I can answer that generally. You know,
19 we have -- we appointed a water master in that same
20 time frame, 2005, lower Rio Grande water master we
21 have down there, we have five staff that go out and on
22 a daily basis, they look at -- at -- they look at the
23 metering -- well, they look at surface and ground,
24 but -- but really in the -- in this case, looking at
25 all the groundwater meters, if they're hooked up

1 properly, if they have the -- if they're in the right
2 location within the -- to account for a totalizing
3 meters that you're actually getting accurate results,
4 are they in working order. I have numbers for 2018.
5 I know we had -- we had 103 enforcement actions,
6 roughly 70 or 70 percent of those enforcement actions
7 in 2018 were -- were solved. The other 30 percent had
8 to go through a hearing unit action, so that we could
9 enforce through our administrative litigation unit,
10 and we're very successful in -- in coming to an
11 agreement on -- on those particular actions. So
12 we're -- we're very good. We've got a very good water
13 master group down there. The -- the compliance --
14 it's voluntary compliance on filing water meters or
15 water meter readings essentially is in the high 90
16 percentile. If you consider the completion of the
17 enforcement actions and everything we do, we're in
18 high 90 percentile of -- of completion -- of
19 compliance.

20 **Q. So let me understand, for your 103**
21 **enforcement actions in 2018, were those enforcement**
22 **actions for over diversion or were they enforcement**
23 **actions for some irregularity in the meter readings?**

24 **A.** Some irregularity in the meter readings. I
25 can't tell you how many were over diversions, but it

1 could have been a non-functional meter or not in the
2 right location or, you know, not a meter that wasn't
3 appropriate for the situation, so there were just --
4 they were actions that are -- and we do have a really
5 good unit down there that gets involved in -- in
6 clients and enforcement every day -- every day of the
7 week.

8 **Q. I'm interested in actually the amount of**
9 **water that's being diverted, being pumped. So these**
10 **enforcement actions, you said you can't tell me how**
11 **many were over diversions. Why not? Give me an idea**
12 **how many times you went out there in 2018 and stopped**
13 **groundwater pumpers for pumping more than they --**
14 **they're either declared or permanent amounts?**

15 A. Well --

16 **MR. WECHSLER:** Object to form.

17 A. Because -- because I'm -- not all the actions
18 have to come through me and so like I said we will
19 have -- if there's any illegal diversions, over
20 diversions, whatever the problem might be, they red
21 tag -- our unit down there red tags them, and a vast
22 majority of those issues get resolved within the
23 district office, and I don't have to see those. The
24 time I see things is when there -- it gets critical.
25 There's some bad actors, and there's -- there's really

1 very few bad actors, but the ones -- and these are
2 onesies and twosies that are bad actors that may be
3 repeat offenders that we have to send out cease and
4 desist orders. But my -- my -- my water masters take
5 care of the vast majority of all those issues, so your
6 question is why don't I know. I know when they get
7 bad and they come to my level and we have to -- to
8 take additional legal action, but for the most part,
9 it's handled administratively and through
10 administrative litigation unit until that needs to
11 come to my attention.

12 **Q. (BY MR. LEININGER) And let me just ask about**
13 **this because we're using words of over diversion and**
14 **illegal diversion intermixed here so enforcement**
15 **against illegal diversion, is that over diversion**
16 **beyond declared or permanent amount? Is that what**
17 **you're defining as an illegal diversion?**

18 A. The main example I have for that is a river
19 pumper, somebody that would throw away a pump into a
20 river and directly divert out of that river. A lot of
21 the -- a lot of the over diversions that happen,
22 happen as a result of how the project is managed so
23 many -- many times, you know, we get a March 4th --
24 March 1st forecast, April 1st forecast, and there's --
25 there's a supply of surface water and project water

1 that's going to come -- come in for the project, and
2 there's a -- you know, and -- and you probably know
3 that process better than I do. The Bureau gets
4 involved. They -- with the two districts, and they
5 determined how much of an allocation is going to
6 happen. Well, sometimes, and it's -- and it's
7 variable every year. Sometimes the farmers want to
8 pump early, because they know there's going to be a
9 small supply, and -- and they don't take surface water
10 or sometimes they take surface water early and then
11 there's -- we got a good monsoon season. There's
12 additional allocations that are made, and when we do
13 the reconciliation of the accounting, we get to a
14 point where there's quite a few of these farmers that
15 have over diverted and so those -- those are
16 reconciled by our water master group, and there's a
17 payback in -- in the next year to make up for that
18 potential over -- over diversion through no fault of
19 really the farmers. It's just on -- on how they
20 received a supply and maybe how they -- maybe they
21 pumped a little too much groundwater because they
22 weren't aware that they were going to get another
23 surface water allocation. So it's -- it's in that
24 context that we -- we'd, I'd say, enforce against over
25 diversions. It's to make sure that we're not over --

1 over diverting what that -- what that adjudicated
2 amount is or the amount that they're -- they're
3 supposed to get on an annual basis.

4 **Q. So when you say you get to a point where**
5 **there's quite a few of these farmers that have over**
6 **diverted at the intervening season, when you go to**
7 **correct that over diversion, is there a formal**
8 **process?**

9 A. Yes. Yes, there is. I'm refreshing again.
10 I'm sorry. Yeah, there's a formal -- there's a formal
11 process that -- that our water masters go through with
12 the farmers. It's not adversarial. It's one of those
13 things where we go in. We talk -- we give them the
14 numbers, and they come to an agreement on how the --
15 that water is paid back. A lot of time it's through
16 fallowing and some acreage the following year to make
17 the system whole.

18 **Q. And then for the pumps directly in the river,**
19 **that's -- that's a more formal process?**

20 A. That -- that is a more formal process.
21 That -- that typically -- well, I want to say formal.
22 That requires typically legal action if they don't
23 cease and desist through just actions by the district
24 office, and if -- and there's a couple of back players
25 along the lower Rio Grande and probably down in the

1 payback of water. We have different provisions that
2 we use, and we can settle these things through our
3 administrative litigation unit, but every once in a
4 while, somebody that's illegally diverting will --
5 will challenge even our administrative control and --
6 and we'll -- we'll have to go to a district court
7 judge to make a decision before they comply. But for
8 the most part, yeah, we've got the authority through
9 the administrative processes and through our ALU
10 process, through alternate dispute resolution, if it
11 were to get to that point. But, yeah, we have -- we
12 have -- we take care of most of those things
13 internally, but once in a while, we've got to have the
14 Court enforce some -- some actions.

15 **Q. Let's -- let's go to another exhibit. This**
16 **is --**

17 **MR. LEININGER:** Pete, I'm sorry. This
18 is the February 5, 2020, Barroll deposition testimony
19 transcript, and I have it as Letter E.

20 **Q. (BY MR. LEININGER) John, this is a -- this is**
21 **a transcript -- I'm sorry. Let's get the sticker on**
22 **here.**

23 **(Exhibit No. 10 was marked.)**

24 **Q. (BY MR. LEININGER) John, this is -- this is**
25 **the transcript of Dr. Barroll's deposition on February**

1 5th of 2020. If we go to Page 56, and I think it's
2 also PDF 56, and down to Lines 19 and 20.

3 A. Okay.

4 Q. Do you see where Dr. Barroll says, "So far in
5 the lower Rio Grande, we have not done active
6 curtailment of any water rights"? Do you see that?

7 A. Yeah, I see it.

8 Q. So this is a -- this is a 2020 statement. We
9 were talking about your earlier PowerPoint, which was
10 January, 2005, and here in 2020, Dr. Barroll is
11 saying "we," and I think she's referring to the state
12 engineer's office -- "has not done any active
13 curtailment of water right." Do you agree with that
14 or not?

15 **MR. WECHSLER:** Objection; foundation.

16 A. Well, you've got to understand what active
17 curtailment is, and if you go back up to her answer,
18 she's talking about -- so the question is how water
19 use is administered by the state engineer prior to
20 2005, and she's talking about water rights -- let's
21 see. Standard administration of water rights versus
22 active administration of water rights, active
23 administration being more related to some sort of
24 priority call or other curtailment of water rights.
25 So what she's talking about here is actually putting

1 in district-specific regulations under the active
2 water resource management initiative and looking at
3 how you would curtail uses or come to an agreement on
4 an alternative needs of administration. That's not
5 the same -- curtailment there is not the same as
6 enforcing against illegal uses. So, yeah, I agree
7 with her statement that she has in here, but there are
8 two different issues that -- that I think you're
9 trying to ask.

10 Q. (BY MR. LEININGER) Okay. So your -- your
11 understanding of her statement is that there's not
12 been a active water resource management plan that's
13 been put into effect to curtail water rights?

14 A. No. The active water resource management
15 plan has been put in place, and that's the tools, the
16 water master's, the metering, the databases that we're
17 doing, that's the active water resource management
18 initiative. What she's talking about here is
19 essentially how we would administer, which would be
20 through district-specific regulations, and those were
21 challenged, those aren't in place yet, so any active
22 curtailment with respect to water administration, that
23 piece is not in place yet.

24 Q. Okay. If you go to Page 57, next page. And
25 I'm just trying to understand this testimony further

1 and your explanations are helpful. So if you look on
2 Lines 1 through 4, she's also explaining that --
3 sorry. Page 57. You have to go down a little bit.

4 A. Right. I didn't want to just pick it up in
5 the middle of -- of a sentence, but go ahead and ask
6 your question and see if I have to go back up and read
7 the context that it was stated in. So go ahead and
8 ask your question.

9 Q. Okay. So the question here is just she's
10 talking about permits are being issued with
11 conditions, which would be fulfilled in enforcement by
12 the office of these conditions.

13 A. Right.

14 Q. And she describes that as part of the
15 active -- early active water resource management. So
16 those conditions that are put onto permits that are
17 then enforced, can you describe any examples of those?

18 A. Sure. Let me just look at the prior page a
19 little bit, what the question was. I think this goes
20 to your last line of questioning before our break.
21 She's talking about permits that are filed for new
22 appropriations, and we -- we conditioned those --
23 those applications, those -- those permit
24 applications, we always condition them, and -- and
25 obviously they cannot impair, they cannot -- they

1 can't be detrimental to the public welfare of the
2 State of New Mexico, they can't be contrary to
3 conservation. The impairment piece is where we
4 require offsets, so -- so in this particular case, if
5 there was a new appropriation, somebody would have to
6 acquire a water right and transfer that water right in
7 before they could -- that permit would be accepted.
8 So -- so there's -- there's different conditions.
9 There's metering conditions depending on the use, if
10 it's a commercial use. So there -- there's various
11 conditions associated with any permits that gets
12 applied for, and if it gets granted, it can't cause
13 impairment. It can't be detrimental to public welfare
14 or contrary to conservation with the State of New
15 Mexico. So there's -- there's a process that happens
16 that prevents impairment to other water users.

17 **Q. Are you using the ILRGM model to evaluate**
18 **those impairments, the -- I believe it's Integrated**
19 **Lower Rio Grande Model?**

20 A. I don't know what my district office uses
21 down there. They -- they definitely use a -- a
22 conjunctive management model that they use, and they
23 use the Mesilla Valley guidelines. If it's within the
24 Mesilla Valley that's a -- the process they use to
25 evaluate applications.

1 Q. Do you know that when you're evaluating
2 impairment of the water users, are you looking at,
3 again, completions to the surface water of the Rio
4 Grande as a whole?

5 A. Yeah. They evaluate everything, yes.

6 Q. Including reductions in surface water flow?

7 A. Yes, they do that. And, in fact, the
8 Interstate Stream Commission is always there to -- the
9 Interstate Stream Commission will protest applications
10 if they feel that there's -- that could effect a
11 Compact or Compact delivery requirement. So if -- if
12 it's not through our local office that's administering
13 water rights and checking for impairment issues, the
14 Interstate Stream Commission also monitors those
15 applications, and oftentimes, a protestant in
16 applications that come before the state engineer's
17 office.

18 Q. Okay. I have one more question about
19 enforcement, and then we can move on. So I understand
20 that you have exemptions for certain wells, single
21 family, domestic, and livestock wells; is that
22 correct? I'm sorry. Exemptions for meter
23 installations.

24 A. Yeah. Domestic wells are considered in most
25 areas of the state a de minimus use and so unless it's

1 a shared domestic with four or more people, I believe
2 that's still in effect. We don't require metering if
3 it's -- unless there's a shared well with -- with more
4 folks, and each -- each branch of that domestic well
5 would have to require a totalizing meter.

6 **Q. Is there some estimate of water use for a**
7 **single family which you don't require a meter or is it**
8 **just a single family?**

9 A. It's a -- I changed the domestic well rules.
10 It used to be up to 3 acre-feet per acre, and any of
11 those domestic wells that were in place were
12 grandfathered in. The -- when -- when we promulgated
13 rules and regulations to change that, we allow up to
14 an acre foot of water a year for outside irrigation
15 for domestic purposes essentially, and so that's --
16 that was in the mid 2000s, which we changed that law.
17 So what was your question? Yeah, there's -- you know,
18 a typical household might use a quarter of an
19 acre-foot of water per year.

20 **Q. But the rules and regulations now is -- is**
21 **one acre-foot for domestic use?**

22 A. Any new domestic well applicant shall --
23 yeah, the -- they had the ability to go in and get a
24 domestic well permit for up to one acre-foot of water.

25 **Q. So what type of monitoring, if any at all, is**

1 **there for the single-family homes up to and not**
2 **exceeding one acre-foot?**

3 A. They're -- through -- and this is through our
4 observations and historical use. As I mentioned, it's
5 very difficult to use more than even a quarter of an
6 acre-foot per a regular household, quarter acre lot,
7 you know, 2,500, 2,000 square foot home, they don't
8 use that much water, and most of the water essentially
9 returns -- returns to the system for domestic wells.
10 So the consumptive use portion is -- is really
11 considered de minimus. We -- we keep records of -- of
12 numbers of domestic wells throughout the State of New
13 Mexico and so -- so we understand what percentage of
14 it is, and it's a very low percentage of water use. I
15 can't tell you what it is right off the bat for Lower
16 Rio Grande, but it's -- it's domestic wells are very
17 small users of water.

18 **Q. Is there any monitoring at all going on for**
19 **these permitted exempt domestic wells?**

20 A. When you say "monitoring," there's no -- as I
21 mentioned before, there's no measuring or meter
22 required. We -- we can calculate them based on
23 averages, and as I -- as I said, we use probably about
24 a quarter of an acre foot per domestic well as a
25 reasonable average as to water use within a certain

1 area. So when you say monitoring, we know how much
2 approximately water use, but there's no --

3 **Q. Have you brought any enforcement actions**
4 **against a domestic well user that exceeded 1**
5 **acre-foot?**

6 A. Well, not to my knowledge. I mean, we have
7 the ability to go in and declare domestic well
8 management areas. It's a management tool that I put
9 in place when I was trying to change -- change the law
10 from -- from 3 acre-feet down to an acre foot. So if
11 there's an area that's problematic with respect to
12 domestic well development, as it affects surface
13 water -- and, again, this is in the statute, then I
14 have the ability to go in and create a domestic well
15 management area to reduce that one acre-foot down to a
16 quarter of an acre-foot or actually require water
17 transfers into that particular area, and to date,
18 there's -- there's been some inquiries here and there
19 around the State of New Mexico, but there's not been
20 the need, and I have that tool, but there's not --
21 there's not a need, and there's certainly not a need
22 in the Lower Rio Grande to put in the domestic well
23 management area within that particular basin based on
24 the current uses of domestic wells.

25 **Q. Okay. Let's leave the subject matter. We're**

1 going to go to another exhibit. We're going to go to
2 another exhibit.

3 MR. LEININGER: Pete, this is Exhibit F.

4 Q. (BY MR. LEININGER) So this exhibit -- I'll
5 wait.

6 (Exhibit No. 11 was marked.)

7 Q. (BY MR. LEININGER) John, if you go up to the
8 top of this exhibit which has now been marked Exhibit
9 11, it's titled, "Suggesting Speaking Points Lower Rio
10 Grande Interstate Issues and Federal Involvement
11 November 3, 2006," and this is a -- this is a document
12 that was provided by New Mexico in discovery. Do you
13 recognize this?

14 A. I'd have to read it to know if I recognize
15 it. Okay. I mean, I understand the issues that are
16 on it. I'm not sure who prepared it or, you know,
17 this probably the whole document that we prepared
18 internally.

19 Q. Okay. So this is an OSE document discussing
20 the Rio Grande Interstate issues, federal involvement,
21 and if you go down to the middle section of this, it
22 states that there's conceptual agreement has been
23 reached with the federal government in many areas. Do
24 you see that?

25 A. Yeah. I see that.

IN THE SUPREME COURT OF THE UNITED STATES
BEFORE THE OFFICE OF THE SPECIAL MASTER
HON. MICHAEL J. MELLOY

STATE OF TEXAS)	
)	
Plaintiff,)	
	)	Original Action Case
VS.	)	No. 220141
	)	(Original 141)
STATE OF NEW MEXICO,)	
and STATE OF COLORADO,)	
)	
Defendants.)	

REMOTE ORAL AND VIDEOTAPED DEPOSITION OF
ESTEVAN LOPEZ
JULY 6, 2020
VOLUME 1

REMOTE ORAL AND VIDEOTAPED DEPOSITION of ESTEVAN LOPEZ, produced as a witness at the instance of the Plaintiff State of Texas, and duly sworn, was taken in the above-styled and numbered cause on July 6, 2020, from 9:06 a.m. to 4:50 p.m., before Heather L. Garza, CSR, RPR, in and for the State of Texas, recorded by machine shorthand, at the offices of HEATHER L. GARZA, CSR, RPR, The Woodlands, Texas, pursuant to the Federal Rules of Civil Procedure and the provisions stated on the record or attached hereto; that the deposition shall be read and signed.

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1 make the demand of New Mexico is not relevant to who
2 the water within the reservoir is apportioned to?

3 A. That's correct.

4 MR. SOMACH: Why don't we -- it's 1 --
5 what time is it? 1:15 means it's 2:15. We've been
6 going for a little over an hour. Why don't we take a
7 15-minute break and come back at 2:30 your time. Does
8 that work?

9 THE WITNESS: Works for me.

10 MR. WECHSLER: Sounds good.

11 THE VIDEOGRAPHER: The time is 2:16 p.m.
12 We're off the record.

13 (Break.)

14 THE VIDEOGRAPHER: The time is 2:31 p.m.
15 We're on the record.

16 Q. (BY MR. SOMACH) Mr. Lopez, what control does
17 New Mexico maintain over water once it's delivered to
18 Elephant Butte reservoir?

19 MR. WECHSLER: Object to form.

20 A. New Mexico -- regulates the use of water in
21 New Mexico, its apportionment of water below, but, you
22 know, we don't, for example, control releases out of
23 Elephant Butte or anything else. But -- but the state
24 engineer does oversee the -- the -- the use of -- by
25 New Mexicans of that water in New Mexico.

1 Q. (BY MR. SOMACH) And --

2 A. And, also, he oversees -- he regulates the
3 use of groundwater that might impact it, as well.

4 Q. And when you say the water that's released,
5 and I want to -- I may be asking this again
6 foundationally, but the water that's released from the
7 Elephant Butte reservoir for use in New Mexico is use
8 pursuant to the contract that Elephant Butte
9 Irrigation District has with the United States; is
10 that -- is that correct?

11 MR. WECHSLER: Object to form.

12 A. I think that's correct. Just as the water
13 that EP1 uses in Texas is pursuant to the contract
14 that it has with Elephant Butte -- with Reclamation,
15 excuse me.

16 Q. (BY MR. SOMACH) So I -- I assume then that
17 the control, and I'm using that word, you can redefine
18 if you want to then, New Mexico has over that water is
19 constrained by the contract that EBID has with the
20 Bureau of Reclamation; is that correct?

21 A. I'm not sure what you mean by that, frankly.

22 Q. Well, exactly what control does New Mexico
23 exercise over that water that is released from the
24 Elephant Butte Irrigation District?

25 MR. WECHSLER: Object to form.

1 A. Well, I think New Mexico state engineer in
2 particular has a regulatory function. The -- first of
3 all, he has adjudicated a quantity -- he adjudicates
4 the -- the right to that water to individual farmers.
5 He -- he has oversight as to whether someone is
6 properly a project beneficiary, things of that nature.

7 **Q. (BY MR. SOMACH) Was this role to protect the**
8 **surface water supply for use in the Elephant Butte**
9 **Irrigation District from -- from other either surface**
10 **or groundwater users that may adversely effect that**
11 **supply?**

12 A. That's one of the roles, yeah.

13 **Q. Okay. Does New Mexico have any obligation to**
14 **Texas once it delivers water into Elephant Butte**
15 **reservoir?**

16 A. Well, I think we have an obligation to comply
17 with the Compact, and similarly, I -- I believe Texas
18 has an obligation to New Mexico to comply with the
19 Compact. You know, we being upstream, there's
20 certainly the opportunity for things up -- upstream to
21 impact the Compact in -- in a more direct fashion
22 perhaps so, yeah, we have some obligations there.

23 **Q. Would that be to preclude the consumption of**
24 **all the flow within the Rio Grande within New Mexico?**

25 A. Are you asking if that's part of the

1 regulatory function that we have?

2 Q. Yes. Is that -- is that an obligation that
3 New Mexico has to Texas to ensure that all the Rio
4 Grande project water supply isn't consumed in New
5 Mexico?

6 MR. WECHSLER: Object to form.

7 A. I guess to the extent that that were
8 possible.

9 Q. (BY MR. SOMACH) Well, what are the limits on
10 how much water could be -- could be depleted within
11 New Mexico? Are there any limits -- and that's
12 vis-à-vis on obligation to Texas?

13 A. Well, as I've said a number of times already,
14 I think the apportionment below Elephant Butte is that
15 New Mexico has a right to 57 percent of the project
16 supply and Texas has a right to 43 percent of the
17 project supply so to the extent that New Mexico were
18 consuming more than that 57 percent, then I guess
19 Texas has an argument.

20 Q. Is all of the water in New Mexico -- all the
21 water used in New Mexico authorized by the State of
22 New Mexico?

23 MR. WECHSLER: Object to form.

24 A. I'm not sure that I understand what you're
25 asking. Are you asking does it -- does everything

1 have to be permitted?

2 **Q. (BY MR. SOMACH) Yes.**

3 A. No. For example, surface water that was
4 appropriated before 1907 does not need permits.
5 Groundwater that was appropriated before the
6 groundwater basin was declared does not need permits.

7 **Q. Is the use of groundwater prior to the basin**
8 **declaration, is that groundwater use granted pursuant**
9 **to New Mexico state law?**

10 A. I'm not sure that I'm understanding what
11 you're asking. Are you asking if New Mexico state law
12 allows such use?

13 **Q. Yes.**

14 A. Yes, it does.

15 **Q. Is it -- is it the same thing with respect to**
16 **surface water prior to the permitting system?**

17 A. Yes. So let me make sure that I'm
18 understanding what you asked. Are you asking -- are
19 you asking whether somebody that is using a pre-1907
20 water right has a right to use that?

21 **Q. Correct.**

22 A. Yes, they do.

23 **Q. And it's pursuant to New Mexico state law; is**
24 **that correct?**

25 A. It actually precedes -- it precedes New

1 Mexico state law, but, yeah, New Mexico state law
2 recognizes that use, yes.

3 **Q. Okay. In terms of monitoring Compact**
4 **compliance, who within the State of New Mexico ensures**
5 **Compact compliance?**

6 A. I think that is the specific obligation of
7 the Compact commissioner, that is state engineer,
8 currently John D'Antonio, and he does that with the
9 assistance of the engineer advisor and the Rio Grande
10 basin staff of the ISC, of the Interstate Stream
11 Commission.

12 **Q. So it's a -- it's a -- a joint effort between**
13 **the Rio Grande commissioner for New Mexico and ISC?**
14 **I'm just trying to figure out what the relative roles**
15 **are in terms of Compact compliance.**

16 A. The Compact commissioner, I think, is the
17 individual that has that authority. The ISC and the
18 engineer advisors serve as staff to that Compact
19 commissioner in that regard.

20 **Q. You agree that the operation of the Rio**
21 **Grande project is protected by the Compact?**

22 A. Would I agree that the operation of the Rio
23 Grande project is protected by the Compact? Could you
24 be more specific? What operation are you talking
25 about?

1 Q. Its operation to deliver water to EBID and EP
2 No. 1.

3 A. Yes, I think that it is.

4 Q. Okay. And would you agree that the
5 apportionment of Rio Grande project water is -- is --
6 a portion to Texas is protected by the Compact?

7 A. The 43 percent of project supply that I
8 talked about? Yes.

9 Q. It's whatever you believe is apportioned
10 under the Compact.

11 A. I just said what I believe it was.

12 Q. Okay. 43 percent. You think that's
13 protected by the Compact?

14 A. Yes.

15 Q. Okay. To your knowledge, has the amount of
16 groundwater pumping within New Mexico below Elephant
17 Butte increased since 1938?

18 A. Based on my review of historical records,
19 yes, it has.

20 Q. Do you have an opinion as to whether
21 groundwater levels generally below Elephant Butte
22 reservoir have declined since 1938?

23 A. They certainly have, particularly after the
24 2008 operating agreement. Before that, groundwater
25 levels have been quite resilient, and they've declined

IN THE SUPREME COURT OF THE UNITED STATES
BEFORE THE OFFICE OF THE SPECIAL MASTER
HON. MICHAEL J. MELLOY

STATE OF TEXAS)	
)	
Plaintiff,)	
	)	Original Action Case
VS.	)	No. 220141
	)	(Original 141)
STATE OF NEW MEXICO,)	
and STATE OF COLORADO,)	
)	
Defendants.)	

 REMOTE ORAL AND VIDEOTAPED DEPOSITION OF
 ESTEVAN LOPEZ
 JULY 7, 2020
 VOLUME 2

REMOTE ORAL AND VIDEOTAPED DEPOSITION of ESTEVAN LOPEZ, produced as a witness at the instance of the Plaintiff State of Texas, and duly sworn, was taken in the above-styled and numbered cause on July 7, 2020, from 9:00 a.m. to 4:17 p.m., before Heather L. Garza, CSR, RPR, in and for the State of Texas, recorded by machine shorthand, at the offices of HEATHER L. GARZA, CSR, RPR, The Woodlands, Texas, pursuant to the Federal Rules of Civil Procedure and the provisions stated on the record or attached hereto; that the deposition shall be read and signed.

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1 **THE VIDEOGRAPHER:** The time is 9:00 a.m.
2 We're on the record.

3 ESTEVAN LOPEZ,
4 having been first duly sworn, testified as follows:

5 E X A M I N A T I O N

6 BY MR. GEHLERT:

7 Q. Thank you. Just one quick preliminary
8 question before we start. Is there any reason today
9 that you're not capable of giving truthful and
10 complete answers?

11 A. No.

12 Q. Thank you. I want to start by revisiting the
13 hypothetical we discussed yesterday about the water
14 traveling through the EBID canal. We talked about
15 what would happen if the water seeped out of the canal
16 into the ground, and I believe your testimony was that
17 that water would not be considered project water or
18 usable water at that point; is that correct?

19 A. Well, that hypothetical -- hypothetical kind
20 of morphed as we went along, and I think toward the
21 end, you had asked me about if it comes back as return
22 flow, is it usable water, and yes, it is. If it's --
23 if it -- return flow is part of project supply. What
24 I -- where I thought you had begun with that
25 hypothetical was that it was just simply lost, it

1 seeped into the ground and was not coming back.

2 Q. Yeah. So during the interval between the
3 time when the water seeps out of the canal and
4 reenters a different canal or the river or some other
5 project feature, you consider it to be not project
6 water and not usable water; is that correct?

7 A. Well, until -- until it returns to the
8 system, yes, it's not usable. It's not project
9 supply. I mean, that's why I drew that distinction.
10 Initially I was thinking you were talking about water
11 that has simply seeped into the ground and is not
12 returning.

13 Q. Okay. Thank you. Appreciate the
14 clarification. I want to change the hypothetical in
15 just one way. Instead of the water seeping out of the
16 canal, does it change your opinion that the water is
17 pulled out of the canal by a pump?

18 A. Are you asking -- what's the question you're
19 asking?

20 Q. The hypothetical, water is traveling down a
21 canal within EBID. We're agreement that water in the
22 canal is project water and it is usable water, but my
23 question to you is: What happens if that water is
24 pulled out of the canal by a pump?

25 A. So I think I understand what you're asking.

1 Yeah. So if the -- if the pump is pumping groundwater
2 and then that is applied on project -- on project
3 lands, yeah, I would say that that -- that portion
4 of -- of project water is usable water -- excuse me.
5 That portion of groundwater that was pulled from --
6 from the canal and then applied to the project,
7 that -- that's project water.

8 Q. Okay. And I want to look at it from the --
9 the other end, as well. You talked about how if water
10 had seeped out of the canal and it moved to a point
11 where it reentered another canal or project feature,
12 it would then become project water. What happens if
13 the water is intercepted by pumping before it is able
14 to reach a project feature and become return flow
15 under your definition?

16 A. I'm not sure how that's significantly
17 different than what we just talked about.

18 Q. So the pumping would be taking project water
19 and usable water?

20 A. Say that again, please.

21 Q. I just wanted to confirm that your testimony
22 is that the pumping that was preventing water from
23 reaching the system and becoming return flow under
24 your definition would be taking project water and
25 usable water?

1 **MR. WECHSLER:** Object to form.

2 A. Taking project water --

3 **Q. (BY MR. GEHLERT) Let me clarify. Taking**
4 **water that is both project water and usable water.**

5 A. Well, I probably need to -- to go back to the
6 definition of usable water. It's in the Compact, and
7 in the Compact, the definition of usable water is --
8 excuse me. So -- so -- and I realize that we talked
9 about this yesterday about usable water being part of
10 the release water, but under the Compact, the
11 definition of usable water -- and just to be clear and
12 not confuse matters, we probably ought to stick with
13 that definition. That's water in project storage that
14 is available for release. So once it's released, at
15 least under that definition, it's not usable water.
16 At that point, it becomes part of project supply, and
17 I'd like to just keep that distinction point.

18 **Q. I appreciate that. Let me rephrase my**
19 **question, and we'll just refer to it as project water**
20 **or project supply. Do you understand project water**
21 **and project supply to be essentially synonymous?**

22 A. That's the way I've been using it, yeah.

23 **Q. Okay. So, again, we have water that would be**
24 **otherwise reaching a project feature but for pumping,**
25 **and my question is whether the water that's captured**

1 **by the pump is project water or not?**

2 A. Yeah. I -- I think it's -- so, you know,
3 we're kind of going around in circles about this whole
4 thing, but I've already talked about the fact that,
5 yeah, groundwater pumping impacts surface supply,
6 and -- and this is -- this is kind of what we're
7 describing.

8 **Q. Okay. Do you have an opinion on to what**
9 **extent pumps within EBID are drawing water that's**
10 **derived from surface features? And by "surface**
11 **features," I mean the river drains or canals.**

12 A. What do you mean do I have an opinion? Are
13 you asking me if I can quantify it?

14 **Q. Yeah. Do -- have you seen studies or have**
15 **you done any quantification yourself?**

16 A. I have not done any quantification myself
17 but, yes, I've seen some studies.

18 **Q. And what were the conclusions of those**
19 **studies?**

20 A. I don't recall in detail, but the -- yeah,
21 there's -- there's impacts of on-the-ground water
22 pumping -- excuse me. There's impacts from the
23 groundwater pumping on that project supply.

24 **Q. And can you identify for me the studies that**
25 **you're thinking of?**

1 A. Well, I'm thinking of some of the work that's
2 been done by our -- our modeling team through the
3 integrated models.

4 **Q. Anything else?**

5 A. I think that -- I think that Peggy has done
6 some -- some other -- excuse me -- Dr. Barroll has
7 done some quantification of those impacts, as well.
8 It's not necessarily coming through the modeling, but
9 I -- I can't recall specifically.

10 **Q. Okay. You were just looking at the**
11 **definition of usable water. In your opinion, does the**
12 **Compact require usable water to be divided up along**
13 **the 57/43 percent split that we talked about**
14 **yesterday?**

15 A. No.

16 **Q. It's just the whole project supply?**

17 A. Yes.

18 **Q. Thank you. You talked about conjunctive use**
19 **of groundwater. Can you -- what can you tell me about**
20 **how conjunctive use is managed in New Mexico?**

21 **MR. WECHSLER:** Object to form.

22 A. Well, the state engineer has adjudicated an
23 overall farm delivery that's allowed, and that can --
24 that is made up of the combination of surface supply
25 and -- and groundwater supply. So once that limit is

1 reached, that's as much as can be used.

2 Q. (BY MR. GEHLERT) And water supply is
3 commingled as it's supplied to the ground?

4 MR. WECHSLER: Object to form.

5 A. It can be, yes. If it's adjudicated that
6 way, yes.

7 Q. (BY MR. GEHLERT) Can I ask you to look at
8 your initial expert report? I'm sorry. I believe it
9 was Exhibit 2 from yesterday, and I'm specifically
10 interested in Page 38.

11 A. Okay.

12 Q. And you see the full paragraphs there that
13 begins with, "To remain in compliance"?

14 A. Yes.

15 Q. And you talk about three general categories,
16 river and drain maintenance, water management, and
17 water rights administration. And then you provide
18 some examples, including coordinating with major
19 Middle Rio Grande water users. Do you know, has New
20 Mexico ever enforced a call against a Middle Rio
21 Grande water user?

22 A. I don't know that there's ever been a call
23 against a Middle Rio Grande water user. I don't know
24 if there's been a call.

25 Q. Okay.

1 A. But I should say, though, that whether
2 there's a call or not, we do -- we do measure how much
3 is being used by -- by folks in the Middle Valley, and
4 we do assure that it's not excessive.

5 **Q. And what do you do to assure that it's not**
6 **excessive?**

7 A. Well, by measuring and making sure people are
8 not taking beyond -- beyond what is reasonable. But
9 back a number of years ago, there was quite a lot of
10 water that was being -- being taken out of the -- in
11 the Middle Valley, and we certainly tightened up that
12 operation quite a lot.

13 **Q. Tightened up in the sense of holding people**
14 **to their quantities in their decreed water rights**
15 **or --**

16 A. Well, you know, I'm not sure that there are
17 decreed water rights down there in that section, for
18 the most part. I mean, there are some licenses where
19 there's well-defined water rights, but -- but we
20 certainly made sure that people aren't using excessive
21 amounts and simply just flooding -- flooding things,
22 that -- that there's not a lot of waste.

23 **Q. Okay. On Page 38, you also mention that the**
24 **State conducts administration activities to facilitate**
25 **Compact compliance. What are some of those?**

1 A. Well, I guess, most of -- most of the things
2 that we do that I've mentioned here are -- could be
3 considered some of those administration activities.
4 You know, we've -- we talked about limiting excessive
5 uses in the Middle Valley, making sure that there's
6 measure -- measurement of those water uses, there's
7 measurement and permitting that's required in the --
8 the Lower Valley before post -- post-basin uses. And
9 what I mean by post basin is after the basin was
10 declared, there's permitting that's required and
11 offsets required. I think -- arguably, I think that
12 some of the work that we do on river -- river
13 maintenance and drain maintenance and things of that
14 nature, that's -- that's another form of -- of
15 administration, I guess.

16 **Q. And what do you do regarding river**
17 **maintenance and drain maintenance?**

18 A. We work with Reclamation and the Corps of
19 Engineers on levees. We clear out drains, make sure
20 that they're getting it -- those flows are getting
21 back in the river. We do the pilot channel in the
22 sediment delta of Elephant Butte to make sure that
23 the -- the water that we're delivering gets into the
24 live pool, things of that nature.

25 **Q. You mentioned the creation of the Lower Rio**

1 Grande underground water basin. When was that
2 created?

3 A. I think it was declared, I think is the -- is
4 the word that we use and -- and I think that was some
5 time in the '80s, in the early '80s.

6 Q. Okay. Do you have a sense of how much of the
7 pumping that's presently within the New Mexico portion
8 of the Rio Grande project had been established by
9 1980?

10 A. Not exactly. I do know that there had been
11 pretty extensive pumping that had gone on in the '51
12 through '78 period, but I -- offhand sitting here,
13 I -- I can't remember what those proportions are
14 relative to what's going on today.

15 Q. Is there someone who would be better equipped
16 to answer that question?

17 A. Well, I think -- I think there's probably a
18 few people that can answer that question better that
19 have the information as part of the reports and stuff.
20 I think Dr. Barroll does. I think probably Greg
21 Sullivan and Heidi -- Heidi Welsh. Their report had
22 some information along those lines. There may be
23 others.

24 Q. Thank you. And if I understood you
25 correctly, after the creation or declaration of the

1 **groundwater districts, new wells are required to be**
2 **offset?**

3 A. Not groundwater districts. We don't
4 create -- declare groundwater districts. We declare a
5 basin that is the state engineer ascertains reasonably
6 defined boundaries of it and defines those, and after
7 that point, the -- the -- there's -- any new uses are
8 required to be permitted, and any new uses are
9 required to be offset, that sort of thing.

10 **Q. Great. I appreciate your correcting my**
11 **terminology. So we're talking about the basin. What**
12 **is -- what does offset mean?**

13 A. Offset means that to the extent that the --
14 that the impacts of that new use are impacting the
15 surface water supply, that -- those impacts need --
16 need to be offset by -- by some method or another.

17 **Q. And what are some of those methods?**

18 A. Well, it could be in -- in the case of, say,
19 a municipal user or something like that, it could be
20 by the return flows. If the return flow is -- is
21 sufficient to offset the surface water impacts, that
22 could be the offset for a time. Over time, that'll
23 change, and then maybe additional offsets will be
24 required. It could be acquiring a water right and --
25 and using that water right to offset those impacts.

1 It could be -- although I don't know that this has
2 happened down there, it could be the importation of
3 water from some other source.

4 **Q. Okay. So you're not certain whether there**
5 **are any permits that require imported water or water**
6 **to be imported as an offset?**

7 A. You know, I don't -- I'm not aware of them.
8 I do believe that there's some importation of
9 non-basin water that's going on, but it may be that
10 it's -- that this is pre -- pre-declaration, so I
11 don't know that that's required for an offset, but in
12 the case of Las Cruces, I believe some of their supply
13 comes from the -- the Jornada that's not
14 hydrologically linked to the -- to the surface water
15 system. So any water that comes in from that system,
16 the return flows that are coming in for that are
17 essentially imported supplies that augment to the
18 surface water supply.

19 **Q. I believe you mentioned that there -- that a**
20 **possible offset would be acquisition of another water**
21 **right?**

22 A. I think that's correct, yeah.

23 **Q. Do you know if that has actually been done?**

24 A. I don't.

25 **Q. Is there somebody who's better equipped to**

1 **talk about the -- what's been done as far as offsets**
2 **within the district?**

3 A. I would expect that the water master and
4 the -- the district state engineer personnel down
5 there would -- would know that quite well.

6 **Q. And who is the water master?**

7 A. I believe it's Ryan Serrano. I think that's
8 correct.

9 **Q. I'll ask you one last question about offset.**
10 **How is the quantity that needs to be offset**
11 **determined?**

12 A. Well, it kind of depends on -- on how complex
13 it is. It might be -- if it's a -- it's a groundwater
14 source that's very close to the river and shallow, it
15 might be a simple calculation using the Theis equation
16 or it may -- if it's more complex and further away, it
17 might require a groundwater model to assess what those
18 impacts are.

19 **Q. And those processes for potentially assessing**
20 **the impacts, those occurred during the permitting**
21 **process?**

22 A. Yeah. And -- and as I mentioned before, I
23 think there's at least a potential that some of these
24 could change over time so they'd probably have to be
25 revisited from time to time. I, frankly, don't know

1 exactly how often they revisited or -- or if they do
2 or if all of it is kind of done ahead of time.

3 **Q. Okay. Do you know when New Mexico started**
4 **work on -- on the AWRMS, Active Water Resources**
5 **Management System, I believe?**

6 A. I think we refer to it as just AWRM, and I
7 don't know exactly. I think -- I think there was --
8 there was at least the -- the -- the concept that was
9 being fleshed out by the time I came to work for the
10 ISC and -- and John D'Antonio came to work as state
11 engineer the first time, that is at the start of 2003,
12 I think there had been some very preliminary work done
13 before that, but really, I think most of the -- most
14 of the effort arises after 2003. In 2003, there was
15 some kind of key state legislation that mandated that
16 the state engineer should put in -- put in effect the
17 administrative tools necessary to administer water
18 rights if necessary, even in -- in -- without a
19 completed adjudication. And -- and so much of the
20 work for AWRM -- or AWRM as we affectionately call
21 it -- was done after that point.

22 **Q. And AWRM is a statewide process, correct?**

23 A. It is.

24 **Q. And then there are -- there are what I'll**
25 **call local regulations. Is it stated that there would**

1 **be a separate set of regulations for the Lower Rio**
2 **Grande?**

3 A. I should back up on that question and perhaps
4 be a bit more precise. I don't think it's a statewide
5 process. There is a -- kind of an overarching set of
6 regulations that I think has been put -- put in place
7 and affirmed and -- and then, yeah, you're correct,
8 for the more specific areas, there's district-specific
9 regulations that would be required and -- and -- to
10 actually make it functional.

11 **Q. And when you say "district specific," what's**
12 **the applicable district for the Lower Rio Grande?**

13 A. It may be called the Lower Rio Grande
14 district. I'm not sure exactly what it's called, but
15 it -- my understanding of that is that it's generally
16 the -- the correspondence to the -- the boundaries
17 of -- of the project boundaries within New Mexico.

18 **Q. And have those district-specific regulations**
19 **been promulgated?**

20 A. I don't believe that they have.

21 **Q. There's -- there's been some reference to**
22 **groundwater pumpers within E BID supplementing**
23 **their -- their water supply. Do groundwater pumpers**
24 **have separate water rights for pumping?**

25 A. I believe that -- so we're talking here about

1 conjunctive -- conjunctive use of groundwater, and I
2 believe that, yes, they have separate groundwater
3 rights.

4 **Q. Are those considered supplemental rights as a**
5 **matter of New Mexico law?**

6 A. I -- I'm not sure. I -- I don't know.

7 **Q. Okay. Would the water master be a better**
8 **person to ask about that?**

9 A. I think that they would have that -- would
10 understand it very well.

11 **Q. Okay. Do you have any familiarity with the**
12 **priority of pumping water rights within EBID?**

13 A. Do -- do I know the priority of what?

14 **Q. Of the groundwater pumping rights within**
15 **EBID.**

16 A. Well, it depends on when they were developed,
17 and as -- as we know from this case, quite a lot of
18 that -- those groundwater pumping -- the groundwater
19 pumping was begun in the -- in the early '50s, so
20 probably a fair amount of it is from that time frame.
21 Some of it may be later.

22 **Q. So it's -- it's -- there are -- is a little**
23 **junior to the project water rights?**

24 A. Correct.

25 **Q. When you spoke with Ms. Klahn in February,**

1 **you talked about some time around --**

2 A. Could I back up -- could I back up just a
3 second?

4 **Q. Yeah. Certainly.**

5 A. I'm -- you asked me -- the last question you
6 asked me has a rule that they're junior to -- to the
7 project. If -- if that implies that all groundwater
8 pump -- groundwater pumping is -- is junior to the
9 project, I'm not sure that that's exactly been
10 decided, that we have a final answer on that. I know
11 that at least the City of Las Cruces began developing
12 some groundwater rights close to the time of the -- of
13 the Compact, and I think that that -- that still may
14 be an open question or at least open to appeal.

15 **Q. Okay. Thank you. I appreciate the**
16 **clarification. When you spoke with Ms. Klahn in**
17 **February, you talked about some time around 2013, the**
18 **State had curtailed a -- a pumper within EBID. Did --**
19 **do you recall that conversation?**

20 A. I think we talked about some river pumping --
21 river pumping -- excuse me -- river pumpers that we
22 had some concerns raised about by perhaps it was IBWC
23 or -- or -- or maybe Texas. I think that there has
24 been some instances where the State has curtailed some
25 of them, and some of them, the State has verified that

1 they did, in fact, have senior rights to the project
2 and so they were allowed.

3 Q. Okay. And Ms. Klahn has asked if you had any
4 documentation of the efforts that you were referring
5 to. Do you?

6 A. I don't. I didn't then, and I don't now.

7 Q. Okay. I don't know that we need to go to
8 your report, but you're welcome to if you'd like. On
9 Page 40, there's a reference to the Mesilla Valley
10 Administrative Area Guidelines for Review of Water
11 Rights Applications, and that's looking at the first
12 full paragraph that begins, "On January 5." You'll
13 see about halfway through, the report talks about how
14 the MVAA guidelines created more stringent limitations
15 on water use in the floodplain alluvium or within one
16 mile of any surface water source, which is defined as
17 a high impact area. What are those more stringent
18 limitations?

19 A. You know, I -- I don't have that at my
20 fingertips. When I -- when I was writing this report,
21 I -- I inquired with the Office of the State Engineer
22 as to whether the administration was going on, and
23 that got this general information. I don't have the
24 specifics of it.

25 Q. Okay. You may not be able to answer this

1 question anyway, but I'll ask it. Do you have any
2 sense of how the geographic scope of the high impact
3 area compares to the New Mexico portion of the Rio
4 Grande project?

5 A. I don't. Other than -- other than what's --
6 what says in the -- in the -- in the report there,
7 within one mile of any surface water source and -- and
8 seems like relatively shallow. So I would -- I would
9 expect that that'd be a relatively minor portion of
10 the -- of the overall project area.

11 Q. Do you know how surface water source is
12 defined?

13 A. In this instance, no. I would -- I -- I
14 would expect that it would be the -- the -- the river
15 and project analysis is my guess.

16 Q. Okay. I want to talk with you a little bit
17 about carryover accounting, and you talked with
18 Ms. Klahn about this to some extent back in February,
19 and if I understood you correctly, you told her that
20 carryover -- well, let me first ask you what -- make
21 sure we're talking about the same thing. What do you
22 consider carryover accounting to be?

23 A. Well, I think -- at least what I think you're
24 asking me about is the carryover accounting that came
25 about that is part of the 2008 operating agreement. I

1 think it was first applied maybe in 2007, shortly
2 before the agreement was signed, but that's what I'm
3 referring to.

4 Q. And that's what I meant to ask you about so
5 thank you. And just to clarify that that's distinct
6 from physical carryover of water, we're talking about
7 just limiting it to accounting?

8 A. Yeah. So here I'm talking specifically about
9 district-specific -- district-specific accounts as
10 opposed to project carryover in the -- I don't even
11 like to call it carryover just because of the
12 confusion that that lends. But the storage of water
13 from one year to the next in -- in the project as a
14 whole for the benefit of the project as a whole.

15 Q. Great. I appreciate that clarification. If
16 I understood your conversation with Ms. Klahn
17 correctly, you told her that carryover accounting was
18 not necessarily a bad thing?

19 A. If you say so. I don't have that transcript
20 in front of me.

21 Q. No, let me just ask --

22 A. I don't remember the context of that.

23 Q. Sure. Do you think carryover accounting is,
24 per se, a bad thing in all situations?

25 A. No.

1 **Q.** And one benefit of it is it can provide
2 incentive to conserve water; is that correct?

3 **MR. WECHSLER:** Object to form.

4 **THE REPORTER:** I'm sorry. It can
5 provide what?

6 **MR. GEHLERT:** Incentive to conserve
7 water.

8 **A.** Theoretically. And I think that's -- that is
9 part of the rationale that's been given for -- for
10 this carryover accounting that's done in the operating
11 agreement. I disagree that there's any significant
12 real conservation of water that's going on. I think
13 it's a shell game that's going on there.

14 **Q.** **(BY MR. GEHLERT)** And when you refer to the
15 shell game, are you referring to the treatment of
16 alfalfa effluent or EP No. 1's effluent?

17 **A.** That, among other things, yes.

18 **Q.** And where and how is El Paso's effluent being
19 discharged?

20 **A.** Where is it being discharged? Is that what
21 you asked?

22 **Q.** **Yes. Yes.**

23 **A.** I believe there's several discharge points.
24 The two that I think are problematic are the Haskell
25 Street Wastewater Plant. If it discharges into the

1 detail. I think that we knew that the parties were --
2 were talking in the context of the ongoing litigation.
3 I don't think that we knew -- well, I certainly didn't
4 know anything of the -- the positions of the parties
5 and so forth.

6 **Q. So to your knowledge, New Mexico did not**
7 **receive copies of drafts of the operating agreement?**

8 A. I'm unaware of them. There may have been
9 some of that. I'm not aware of them.

10 **Q. And do you know if there were meetings**
11 **between New Mexico officials and negotiating parties?**

12 A. So let me -- let me back up. Let me back up
13 a little bit. I -- I don't know that this took the
14 form of a draft of a -- of the operating agreement,
15 but at one point, I think it was in 2006, I think
16 that's the time frame, EBID proposed D3, and
17 Reclamation didn't let us know that they were going to
18 put that in effect, and we didn't know that. I know
19 that John D'Antonio sent a letter, I believe it was to
20 Connie Rupp. I think she's the area manager in the
21 Albuquerque office, and I think in essence, said
22 something like that's great, we're -- we're glad that
23 there's progress being made, but we want to withhold
24 judgment on it. We want to see how it works, and --
25 and we think it needs to be evaluated to see how it's

1 working. So there was some communication, at least at
2 that level. I don't think it was a draft of the
3 operating agreement or anything like that, but that
4 was -- certainly we were apprised of that element that
5 ended up being part of the operating agreement.

6 Q. Thank you. That's helpful. I appreciate it.
7 In your rebuttal report, there's a discussion based on
8 Dr. Barroll's work that you didn't see that there was
9 a compelling need for offset of the impact of
10 groundwater pumping in New Mexico. Is that a fair
11 summary? We can go to your report if -- if you want
12 to look at it.

13 A. Can you direct me to it? I've got it in
14 front of me.

15 Q. Sure. It's on Page 14. And it says -- it's
16 the last sentence in the first full paragraph. The
17 paragraph begins with "next."

18 A. Let me read through this paragraph, see what
19 I was talking about.

20 Q. Sure.

21 A. Okay. So, now, what's your question?

22 Q. Your last sentence in that paragraph
23 is, "There does not appear to be any compelling need
24 to have offset any groundwater pumping impacts." I
25 take it that's based on the analysis that Dr. Barroll

1 did from the period 1985 through 2006; is that
2 correct?

3 A. That's -- that's -- I believe that's correct.
4 Yeah. As I point out, there's -- in -- in all of that
5 time, there was two years in which they didn't get a
6 full supply.

7 Q. Sure. And wasn't 1985 through 2002 a very
8 wet period?

9 A. It was.

10 Q. And so in the first two dry or normal years,
11 they didn't get a full supply?

12 A. Those were pretty extremely dry years, and,
13 again, I -- I don't think that there's been any
14 demonstration by Texas, the U.S., or anybody else that
15 there was a -- a need for New Mexico to -- to offset
16 or otherwise curtail groundwater supply -- groundwater
17 diversion.

18 Q. And the last few questions I have, I just
19 want to make sure that I'm understanding your position
20 on a couple of points correctly. As I recall
21 yesterday, you testified that New Mexico is obligated
22 under the Compact not to overuse water, and
23 specifically that it can't use more than 50 -- 57
24 percent of the project supply. Is that a fair
25 statement?

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MR. WECHSLER: Object to form.

A. I think that's generally correct, yes.

Q. (BY MR. GEHLERT) And then you also acknowledged that pumping by New Mexico in the Mesilla basin depletes the project supply; is that correct?

A. I did.

Q. So am I understanding correctly that it's New Mexico's position that groundwater pumpers in New Mexico can continue to pump and deplete the project supply so long as Texas gets 43 percent of whatever project supplies remain?

MR. WECHSLER: Object to form.

A. Not of -- not 43 percent of whatever project supply is remaining, but 47 percent of project supply in that year.

Q. (BY MR. GEHLERT) And I believe you meant 43 percent of project supply in that year?

A. That's right. 43 percent. Thank you.

Q. Sure. You're welcome. Is it New Mexico's position that EBID is being denied the opportunity to receive 50 percent of the project water -- 57, excuse me, percent of the project water supply?

MR. WECHSLER: Object to form.

A. I believe that the operating agreement denies them -- generally denies them the ability to get 57

1 percent of the project supply, understanding that EBID
2 agreed to that. But nevertheless, as I -- as I
3 mentioned earlier with Ms. Barncastle, I believe
4 that's -- the apportionment is New Mexico's, and
5 that's a decision that we -- if -- if we're going to
6 vary from that, that's a decision that the State
7 should make.

8 **Q. (BY MR. GEHLERT) And you mention that it**
9 **generally denies them the ability to get 57 percent of**
10 **the project supply. Do you see a distinction between**
11 **the ability to get 57 percent of the project supply,**
12 **and the opportunity to get 57 percent of the project**
13 **supply?**

14 A. I guess I would ask you to clarify what --
15 the distinction you're trying to draw.

16 **Q. I was just wondering if you see ability as**
17 **synonymous with opportunity?**

18 A. No. I think at least theoretically, there's
19 the opportunity for them to get 57 percent, but I
20 think the operation over the last 12 years or so has
21 demonstrated that most times, that opportunity is not
22 achievable, so there's not the ability to get it.

23 **Q. Thank you. That -- that's helpful. Do you**
24 **know if, since 2008, the EBID members have been able**
25 **to use their full farm delivery requirement?**

1 **MR. WECHSLER:** Object to form.

2 A. I believe that generally speaking, that
3 most -- they've gotten most of their full farm
4 delivery requirement with -- with a much larger
5 proportion of that coming from groundwater as opposed
6 to surface water. And, again, I'll just repeat, even
7 though I've repeated this numerous times, it's my
8 position that the Compact apportioned surface water,
9 did not apportion groundwater. Groundwater is New
10 Mexico's water. The groundwater under New Mexico is
11 New Mexico's water.

12 **MR. GEHLERT:** Thank you, Mr. Lopez.
13 I -- I believe that I am done questioning you. I
14 really appreciate your patience yesterday and today.
15 I will turn it over to Ms. O'Brien for some questions.

16 **THE WITNESS:** Thank you.

17 **MS. O'BRIEN:** Hi, good afternoon.
18 Mr. Somach and I talked about him doing some follow up
19 and then I would follow just in the interest of trying
20 to be as efficient as possible. It might lessen the
21 number of questions I have if Mr. Somach is ready to
22 go, and then I'll follow him.

23 **MR. SOMACH:** I'm ready.

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25

IN THE SUPREME COURT OF THE UNITED STATES
BEFORE THE OFFICE OF THE SPECIAL MASTER
HON. MICHAEL J. MELLOY

STATE OF TEXAS)	
)	
Plaintiff,)	
	)	Original Action Case
VS.	)	No. 220141
	)	(Original 141)
STATE OF NEW MEXICO,)	
and STATE OF COLORADO,)	
)	
Defendants.)	

 REMOTE ORAL AND VIDEOTAPED DEPOSITION OF
 ESTEVAN LOPEZ
 SEPTEMBER 18, 2020

REMOTE ORAL AND VIDEOTAPED DEPOSITION of ESTEVAN LOPEZ, produced as a witness at the instance of the United States, and duly sworn, was taken in the above-styled and numbered cause on September 18, 2020, from 9:02 a.m. to 12:38 p.m., before Heather L. Garza, CSR, RPR, in and for the State of Texas, recorded by machine shorthand, remotely at the offices of HEATHER L. GARZA, CSR, RPR, The Woodlands, Texas, pursuant to the Federal Rules of Civil Procedure and the provisions stated on the record or attached hereto; that the deposition shall be read and signed.

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1 outside independent consultant.

2 Q. Okay. You're not an employee of the State?

3 A. I am not.

4 Q. Okay. And does your role as a 30(b)(6)
5 deponent change any of the responses you gave in your
6 prior depositions as an expert witness?

7 A. That's a very broad question, but I don't
8 think that it really changes any of the -- the
9 responses that I had before.

10 Q. Okay. So should we understand that the
11 opinions that you gave as an independent consultant
12 are the views of the State of New Mexico?

13 A. I believe that's correct. You know, there --
14 there may be some where some portions of the
15 depositions were done. It's been a lot of questions
16 asked. There may be certain questions if I were asked
17 today that I would answer in a more way. It's just as
18 I mentioned, it's a very, very broad question here
19 you're asking me. I don't -- unless I were asked a
20 specific question, I'm not sure that I could give you
21 a more specific answer than that.

22 Q. Okay. How about the -- the questions that
23 you were asked about what New Mexico's apportionment
24 is under the Compact, will those change?

25 A. No.

1 **Q.** Okay. Is it New Mexico's position that the
2 Rio Grande Compact is a complete apportionment of the
3 flows of the Rio Grande between the head waters and
4 Fort Quitman?

5 **A.** Yes. Excuse me. Can I ask a question, kind
6 of a process question?

7 **Q.** **Sure.**

8 **A.** In -- in prior depositions, I've had access
9 to realtime -- the realtime transcript. I don't have
10 that up right now. I'm not sure if that's --

11 **Q.** **I think that's a good idea to get that up.**

12 **MR. DUBOIS:** I assume, Heather, that it
13 is the usual transcript realtime.

14 **THE REPORTER:** Yes.

15 **THE VIDEOGRAPHER:** Do you want to go off
16 the record to set this up?

17 **MR. DUBOIS:** Yeah. Why don't we go off
18 the record and get that up.

19 **THE VIDEOGRAPHER:** The time is 9:18 a.m.
20 We're off the record.

21 (Break.)

22 **THE VIDEOGRAPHER:** The time is 9:23 a.m.
23 We're on the record.

24 **Q.** **(BY MR. DUBOIS) Okay. I think that we -- you**
25 **-- we were just talking about whether or not the Rio**

1 Grande Compact is complete apportionment of the flows
2 of the Rio Grande, and you said that it was. What --
3 what does New Mexico think that a -- a complete
4 apportionment of the flows of the Rio Grande means?
5 What does that mean?

6 A. I think that it means that all of the flows
7 that arise in the Rio Grande between the head waters
8 and Fort Quitman are divide -- are divided as between
9 the three states.

10 Q. So was there any flow of the Rio Grande
11 between the head waters and Fort Quitman that was not
12 apportioned by the Compact?

13 A. I cannot think of any, no.

14 Q. Okay. Now, you've also -- you previously
15 stated in earlier deposition that the Rio Grande below
16 Elephant Butte was fully appropriated by 1938. Do you
17 remember discussing that in depositions?

18 A. Yes.

19 Q. Okay.

20 A. Yes, I do.

21 Q. And -- okay. Do you still stand by the --
22 the conclusion that the Rio Grande below Elephant
23 Butte was fully appropriated in 1938?

24 A. I do.

25 Q. Okay. And so that -- I just want to be clear

1 that that's also the position of the State of New
2 Mexico then?

3 A. That's correct.

4 Q. Okay. Okay. What does it mean that the
5 river was fully appropriated?

6 A. That means that all of the waters -- all of
7 the surface waters of the river are -- have been
8 spoken for.

9 Q. Okay. So all of the surface water had
10 already been allocated to existing water rights? Is
11 that another way of saying it?

12 A. Yes. Let me -- let me review that. Yes,
13 that's correct.

14 Q. Okay. And does that mean that any additional
15 diversions after 1938 that deplete the river would
16 take water away from existing water rights?

17 MR. WECHSLER: Object to form.

18 A. It would impact those water rights, yes.

19 Q. (BY MR. DUBOIS) All right. If you're taking
20 water away from them, that would be a -- add adverse
21 impact of those water rights?

22 MR. WECHSLER: Object to form. And I
23 also think we're getting a little beyond the scope.

24 MR. DUBOIS: No, we aren't, but he can
25 answer if he knows anyway.

1 A. Generally speaking, I think that's correct.

2 **Q. (BY MR. DUBOIS) Okay. Does the Rio Grande**
3 **Compact apportion water to New Mexico below San**
4 **Marcial?**

5 A. Yes.

6 **Q. Does New Mexico assert that it receives an**
7 **apportionment of water -- does New Mexico assert that**
8 **it receives an apportionment of water from the Rio**
9 **Grande below San Marcial?**

10 A. I'm not sure I understand what distinction
11 you're making between that and your prior question.

12 **Q. Okay. When did -- when did New Mexico**
13 **determine that it had an apportionment of water below**
14 **San Marcial?**

15 A. I think when we agreed to the Compact.

16 **Q. What is New Mexico's apportionment of water**
17 **under the Rio Grande Compact?**

18 A. Under the Rio Grande Compact?

19 **Q. Yes.**

20 A. This is what we receive from Colorado under
21 Article 3 of the Compact at the state line, plus all
22 of the inflows that arise between the state line and
23 Elephant Butte, less our obligation to deliver water
24 into Elephant Butte under Article 4, plus 57 percent
25 of project supply below Elephant Butte, project supply

1 being comprised of releases of usable water, inflows
2 below Elephant Butte, and return flows, returning
3 drain flows.

4 **Q. So let's -- let's -- and my question was**
5 **overly broad for my purposes, I guess. So let's just**
6 **focus on the apportionment of water below San Marcial,**
7 **the apportionment of water to New Mexico below San**
8 **Marcial. That's -- just focus on that and call that**
9 **out from the answer. So what's the apportionment of**
10 **water to New Mexico below San Marcial?**

11 A. So I think this is probably the same thing,
12 but I'm going to -- I'm going to just clarify that I'm
13 referring to below Elephant Butte given that the
14 delivery point under Article 4 was changed in 1948.
15 So I'll -- I'll be responding --

16 **Q. And that's fine. That's fine. I understand.**

17 A. So as I -- as I answered above, and as I've
18 laid out in my reports and in questions -- in
19 responses to questions before, it is 57 percent of the
20 project supply, and that project supply being
21 comprised of releases of usable water inflows below
22 Elephant Butte and returning drain flows.

23 **Q. So do the downstream contract -- do you --**
24 **are you familiar with what the term downstream**
25 **contracts refers to?**

1 A. I am. Certainly as I've defined them in my
2 reports, there may -- and I think it's consistent with
3 how it's been used otherwise by others.

4 **Q. And so when you're referring to the**
5 **downstream contracts, what are you referring to?**

6 A. I'm referring -- in my report, I referred
7 specifically to three contracts, 19 -- I may get the
8 dates from memory, get them off, but --

9 **Q. Would it be helpful to have them in front of**
10 **you?**

11 A. I can look at my reports. I have the copy of
12 my reports in front of me. If it's all right, I can
13 refer to that if you'd like.

14 **Q. You can. I can also -- I can also provide**
15 **you the contracts.**

16 A. That's fine. So let me tell you generally,
17 it's a 1938 contract between Elephant Butte and --
18 Elephant Butte Irrigation District and Reclamation.
19 It's either 1937 to 1938, that -- that contract is,
20 and similar time frames for a contract between
21 Reclamation and El Paso County Water Improvement
22 District No. 1, and the third contract that I referred
23 to as one of the -- the downstream contracts is a 1938
24 contract between the two districts that was later
25 approved by the Department of Interior. I believe it

1 was in April of 1938. Is that -- is that sufficient
2 specificity?

3 Q. Yes. As I said, I can provide them. I just
4 wanted to make sure that we're talking about the same
5 things. So do the -- do the -- do the downstream
6 contracts between the United States and EBID and
7 between EBID and EPCWID define the apportionment to
8 New Mexico?

9 A. I think they inform the -- the apportionment
10 to New Mexico. They don't define it as explicitly as
11 -- as -- as I've defined here in my responses to you.
12 They inform it by -- in several ways. First of all,
13 the -- the contract between EBID and -- and EP No. 1
14 that is EPCWID has a shortage provision that is
15 specific and explicit about in times of shortage,
16 water is to be shared 57/43. In essence, in
17 proportion to the acreage in each of the districts as
18 a total of -- a total project authorized acreages.
19 And then the -- the two contracts between Reclamation
20 and the districts specify the acreages of each of the
21 districts, the authorized acreages of each of the
22 districts. That's consistent with that. Those two
23 contracts also have essentially identical terms except
24 for the -- the proportion of payment that is also
25 proportionate to the acreage and so those things

1 inform that apportionment, and in my report and in
2 responses to my prior depositions, I've explained how
3 the 57/43 that I assert is the apportionment below
4 Elephant Butte we get from a reading of the Compact
5 together with those downstream contracts and the
6 historical practice of how the project has been
7 operated up until essentially 2006.

8 **Q. So is the contract with EBID the sole means**
9 **for New Mexico obtaining its apportionment under the**
10 **Compact?**

11 **MR. WECHSLER:** Object to form.

12 A. Are you referring only to that -- the
13 apportionment below Elephant Butte?

14 **Q. (BY MR. DUBOIS) Yes. I'm sorry. I should**
15 **have been clear on that. I apologize.**

16 A. I believe that it is, yes.

17 **Q. Okay. Is it New Mexico's position that the**
18 **contracts between the United States and the two**
19 **districts and the contract between the two districts**
20 **are integrated into the Compact?**

21 A. I think what I testified is that they -- that
22 the Compact and the project are inextricably linked,
23 and the -- and the contracts are also kind of
24 inextricably linked to -- or inextricably intertwined,
25 I think is what I -- what I said in my report. I was

1 using some of the language that the -- that the
2 Supreme Court has used and relied on that -- on that
3 -- their findings, as well.

4 **Q. What do you mean by inextricably intertwined?**

5 A. They work together. They work together, and
6 you can't -- you can't -- you can't read them
7 independent of one another.

8 **Q. So anything -- I'm just trying to understand**
9 **this. So anything that impacts the project water**
10 **supply impacts the apportionment; is that correct?**

11 **MR. WECHSLER:** Object to form.

12 A. Could you rephrase that? I'm not
13 understanding what you're asking.

14 **Q. (BY MR. DUBOIS) Well, I'm trying to**
15 **understand when you say that they're inextricably**
16 **intertwined and that they have to be read as part and**
17 **parcel of each other; is that correct? Is that what**
18 **you're saying?**

19 A. Yes. And I'm specifically speaking as to how
20 you -- how you make a determination as to the
21 apportionment. Certainly, there is probably elements
22 that could be looked at independently, but -- but for
23 -- for getting to an apportionment below Elephant
24 Butte, I think you have to look at all three of these
25 -- all, I guess, four of these documents together.

1 Q. Okay. And so my question was then if they're
2 inter -- interdependent and intertwined, anything that
3 affects -- is anything that affects the project water
4 supply affecting the Compact?

5 A. So first of all, if -- I think you may have
6 just been reading what I answered earlier. I don't
7 think that I said they were inextricably
8 interdependent. I did they they were inextricably
9 intertwined. And that's -- if you're asking me the
10 difference, I don't know that I -- that I can say what
11 the difference is. But nevertheless, you asked if --
12 is anything that affects project supply also affecting
13 the Compact. I'm not sure. I don't know that. I
14 don't know the answer to that. Unless you give more
15 specificity to what you're talking about in -- in
16 anything.

17 Q. Is there any other apportionment in the
18 Compact to New Mexico below Elephant Butte, other than
19 the water under the contract with EBID?

20 MR. WECHSLER: Object to form.

21 A. I think I already answered that, and I said
22 no.

23 Q. (BY MR. DUBOIS) Okay. Is there any
24 apportionment of water to New Mexico below Elephant
25 Butte, other than project water that EBID is entitled

1 to under what we've been referring to as the
2 downstream contracts?

3 A. Again, I'm not seeing how this is different
4 than your prior question.

5 Q. It's slightly different so please answer it.
6 Or should I just -- can I take it that the answer to
7 that is no?

8 A. I'm rereading it.

9 Q. Uh-huh.

10 A. I think the answer is no.

11 Q. Okay. So are the -- the EBID project
12 allocation and New Mexico's apportionment under the
13 Rio Grande Compact below Elephant Butte the same?

14 A. They are not certainly -- they are certainly
15 not since the 2008 operating agreement.

16 Q. That's not what I asked. Are the EBID
17 project allotment and New Mexico's apportionment under
18 the Compact below Elephant Butte reservoir the same?

19 MR. WECHSLER: Object to form.

20 A. Not since two thousand -- not since 2006.

21 Q. (BY MR. DUBOIS) You're refusing to answer the
22 question.

23 A. I have answered the question.

24 Q. Let me try again.

25 A. You don't like my answer.

1 Q. All right. Let's rephrase the question then.
2 Is it the Compact's intent that the EBID project
3 allotment and New Mexico's apportionment under the Rio
4 Grande Compact below Elephant Butte reservoir the
5 same? Are they to be the same?

6 A. Would you please -- please define project
7 allotment for me, please?

8 Q. What EBID is entitled to receive under the
9 downstream contracts?

10 A. In that instance, I would say yes.

11 Q. Okay. Are the contracts for the Rio Grande
12 project the only means provided for in the Compact for
13 distribution of New Mexico's apportionment?

14 MR. WECHSLER: Object to form.

15 A. Well, to the extent that you're asking that
16 -- I guess the way I would say it and I have said it
17 is that the operation of the project is the -- is the
18 -- the mechanism for effectuating the Compact
19 apportionment.

20 Q. (BY MR. DUBOIS) And the operation of the
21 project is pursuant to the downstream contracts; is
22 that correct?

23 A. Generally, yes.

24 Q. Okay.

25 A. Or at least --

1 Q. So the downstream -- I'm sorry. What? I
2 didn't mean to cut you off.

3 A. Or at least it was.

4 THE REPORTER: I'm sorry. Please repeat
5 that again.

6 THE WITNESS: I said, "Or at least it
7 was."

8 Q. (BY MR. DUBOIS) Okay. Does Texas have an
9 apportionment of water under Elephant Butte -- below
10 Elephant Butte reservoir?

11 A. As I've testified in my reports and in my
12 depositions, my prior depositions, yes, it has an
13 apportionment below Elephant Butte.

14 Q. And I know some of this is repetitive,
15 Mr. Lopez, but you're now -- you're now speaking for
16 the State of New Mexico as opposed to as an
17 independent contractor so they seem redundant, but I'm
18 still needing to ask you these things. So it's fine
19 that you clarify and -- and reiterate your prior
20 testimony, but, you know, there's -- there is a reason
21 that we're covering some same ground?

22 A. I understand.

23 Q. So just --

24 A. I'm simply --

25 Q. Okay. All right.

1 A. -- simply trying to -- you asked me earlier
2 if -- if my responses had changed. They hadn't, and
3 hasn't really changed --

4 Q. Okay.

5 A. -- from my reports either.

6 Q. No, and that's -- and that's fine.

7 Basically, that's what we're trying to -- to make sure
8 that we're consistent going along here, so that's --
9 that's fine. Understand that I do appreciate some of
10 this is plowing old ground, but because of sort of
11 your -- your position in this deposition, we're going
12 to -- we're going to recover some of that. So I'm,
13 you know, just explaining that I'm not merely doing
14 this to be obnoxious, not the only reason.

15 A. And I'm not -- I'm not trying to be obnoxious
16 by responding by referring to --

17 Q. No.

18 A. -- my prior depositions or my reports. I
19 simply want to say that it hasn't changed.

20 Q. Okay. And that's -- and that's fine. So
21 just so we know that we're -- we're both on the same
22 track, so that's good.

23 So what's Texas' apportionment of the Rio
24 Grande Compact?

25 A. 47 -- excuse me. 43 percent or roughly 43

1 percent of the project supply that arises below
2 Elephant Butte, and that is comprised of releases of
3 usable water of Caballo reservoir, inflows between
4 there and Fort Quitman, and returning drain flows.

5 **Q. So do the downstream contracts define the**
6 **apportionment to Texas?**

7 A. My response here would be the same as my
8 response was to -- to their relationship to -- they
9 inform the apportionment to Texas in the same way that
10 they inform the apportionment to New Mexico that I
11 described above.

12 **Q. So under the Compact, is the EPCWID project**
13 **allotment intended to be identical to Texas'**
14 **apportionment?**

15 **MR. WECHSLER:** Object to form.

16 A. With the same caveats as my responses
17 earlier, that is that at least originally, yes.

18 **Q. (BY MR. DUBOIS) Okay. And are -- are the**
19 **contracts for the Rio Grande project to EPCWID the**
20 **only means provided for in the Compact for**
21 **distribution of Texas' apportionment?**

22 **MR. WECHSLER:** Object to form.

23 A. I will respond again mirroring my response to
24 your similar question on EBID, and that is that it's
25 my opinion that the -- that the operation of the

1 project is the means, the mechanism by which the
2 Compact apportionment is effectuated.

3 Q. (BY MR. DUBOIS) Is there any apportionment to
4 Texas under the Rio Grande Compact other than project
5 water that EPCWID is entitled to under its contracts?

6 MR. WECHSLER: Object to form.

7 A. I would say no.

8 Q. (BY MR. DUBOIS) Okay. Does New Mexico agree
9 that groundwater pumping in New Mexico below Elephant
10 Butte dam in the Mesilla and Rincon basins for
11 irrigation and municipal and industrial uses in New
12 Mexico deplete the flows of the Rio Grande that are
13 available for diversion by the Rio Grande Project?

14 MR. WECHSLER: Object to form; scope.

15 A. The groundwater pumping in New Mexico does
16 impact surface supply.

17 Q. (BY MR. DUBOIS) Does it deplete the surface
18 supply?

19 MR. WECHSLER: Same objection.

20 A. I think that it does, yes.

21 Q. (BY MR. DUBOIS) Okay. What obligation does
22 New Mexico have under the Compact to be sure that the
23 project water supply is not depleted or reduced by
24 non-project water users?

25 A. I'm not sure that we have any specific

1 obligation not to deplete or reduce project supply
2 unless -- unless there is some notice that -- that
3 there is -- that Texas is not getting its
4 apportionment. Having said that, New Mexico does and
5 has permitted such uses to -- to require that any
6 impacts -- any such impacts would be offset since it's
7 closed the basin -- or since it's -- since it's
8 declared the basin. Excuse me.

9 **Q. All right. So all the development before it**
10 **closed the basin is ignored for purposes of**
11 **administration; is that correct?**

12 **MR. WECHSLER:** Object to form.

13 A. No, it's not ignored, but I think that unless
14 -- unless we are put on notice that Texas is not
15 getting its apportionment, we don't necessarily have
16 to do anything about it.

17 **Q. (BY MR. DUBOIS) So there's no obligation**
18 **under the -- let me rephrase that. If pumping of**
19 **groundwater in New Mexico depletes the flow of the Rio**
20 **Grande, either directly by pulling water from the**
21 **river drains or by preventing water from returning to**
22 **the river and -- and they reduce the project water**
23 **supply, do those depletions to the river count against**
24 **New Mexico's apportionment?**

25 **MR. WECHSLER:** Object to form.

1 A. I think that it is non -- for non-project
2 uses. If it is for non-project uses, those might have
3 to be offset, but not if it's for project uses.

4 **Q. (BY MR. DUBOIS) Why not if it's for project**
5 **uses?**

6 A. Because -- well, one of the -- one of the
7 purposes of the Compact is to -- is to make the -- the
8 project viable over the long haul, and that viability
9 includes getting -- or having access to groundwater
10 for conjunctive use, and that's consistent in both
11 states.

12 **Q. Is there any limitation on New Mexico as to**
13 **how much surface water can be depleted by pumping in**
14 **New Mexico?**

15 **MR. WECHSLER:** Object to form.

16 A. Are you asking about for a specific purpose
17 or just generally?

18 **Q. (BY MR. DUBOIS) Generally.**

19 A. Well, yes, I think there is a limitation. If
20 -- if Texas is not getting 43 percent of its project
21 supply of the project supply then I think that would
22 -- that would set the limitation.

23 **Q. But you've told me that depletions to the**
24 **water supply from pumping, at least for pumping for**
25 **project beneficiaries, does not count against the**

1 **apportionment; is that right?**

2 A. I guess what I'm saying is that the use of
3 conjunctive -- the use of groundwater for conjunctive
4 purposes on project ag lands does not -- does not have
5 to be counted.

6 **Q. There's a logic after that I'm trying to**
7 **figure out. You told me that if I -- tell me if I'm**
8 **correct in my understanding. You've told me that**
9 **Texas is entitled to 43 percent of the surface supply;**
10 **is that right?**

11 A. That is correct. What I call the project
12 supply.

13 **Q. And you told me that New Mexico can pump**
14 **groundwater and the depletions from that pumping**
15 **affect the record; is that right?**

16 A. Yes.

17 **Q. And that the depletions from pumping are not**
18 **accounted against the apportionment; is that right?**

19 A. That's correct. That's -- that's true on
20 both New Mexico and in Texas.

21 **Q. It's -- it's nice that you're wanting to**
22 **throw in Texas, and I don't have any problem with --**
23 **with sort of the sauce for the goose, sauce for the**
24 **gander, but what's the limitation on New Mexico on how**
25 **much the surface water can be depleted by pumping in**

1 **New Mexico?**

2 A. Well, I've already told you, if Texas is not
3 getting its 43 percent, that -- that creates --

4 **Q. You --**

5 A. But secondarily -- secondarily, it can only
6 pump as much water as is needed for its agricultural
7 water users on project acreage. There's a limit to
8 that.

9 **Q. Okay. But New Mexico's position is that they**
10 **-- that their pumping can deplete the project water**
11 **supply overall without reference to the Compact,**
12 **correct?**

13 **MR. WECHSLER:** Object to form.

14 A. I'm not sure what you mean by without
15 reference to the Compact. If you're meaning do you
16 have to account for it, that's correct. We don't have
17 --

18 **Q. (BY MR. DUBOIS) Okay.**

19 A. Our position is that we don't have to account
20 for that.

21 **Q. So if you -- so how would any limitation --**
22 **skip that one.**

23 And you said that -- that the limitation on
24 pumping in New Mexico, if I understand you correctly,
25 is essentially the -- the permits under New Mexico law

1 that allow four-and-a-half to five-and-a-half
2 acre-feet per acre of farm delivery requirement; is
3 that a fair statement?

4 A. Not exactly. And I guess what I mean by not
5 exactly is that, yeah, for certain acreage, could be
6 that it's up to five-and-a-half acre -- acre-feet per
7 acre, but on an overall weighted average for the
8 entire author -- authorized project acreage, it's
9 considerably less than that.

10 Q. But the permits --

11 A. So --

12 Q. The permits -- go ahead. I'm sorry.

13 A. So for a -- a certain specific acreage to
14 which there is a permit for five-and-a-half acre --
15 five-and-a-half acre-feet per acre, yes, that's
16 correct.

17 Q. Okay. So the limitation on pumping is
18 whatever is in the state-defined permits; is that
19 accurate?

20 A. I think it's whatever is -- that's the
21 ultimate limitation, I guess, and if the actual crop
22 requirement is less than that, that's the limitation.

23 Q. Okay. But under New Mexico law, the
24 limitation on pumping would be whatever it's the
25 maximum in the permits; is that right?

1 A. That's correct. To supplement the -- the
2 available surface supply.

3 Q. Okay. So the -- and the farm delivery
4 requirement number was a number derived in negotiation
5 of the adjudication; is that correct?

6 MR. WECHSLER: I'm going to object. We
7 have designated a different witness for this topic.

8 Q. (BY MR. DUBOIS) You can answer if you know,
9 Mr. Lopez.

10 A. I don't know.

11 Q. Okay. All right. Do you understand how
12 priority administration of water rights operates?

13 A. Generally, yes.

14 Q. Okay. And do you understand what I -- what I
15 mean if I say placing the call for the senior water
16 user?

17 A. He's -- generally, yes.

18 Q. And -- and what would that -- what --
19 generally -- generally, what do you -- what do you
20 understand that to mean?

21 A. So if there is a senior user that is not
22 receiving all of the water that he has a right to, he
23 can place a call, that is ask that all junior users
24 that are impeding his ability to -- to get his full --
25 full supply be curtailed. That's my general

1 understanding of a priority call.

2 Q. If the United States places a call under its
3 1903 water right, would wells drilled in New Mexico in
4 the alluvial aquifer after 1903 that deplete the Rio
5 Grande be curtailed?

6 MR. WECHSLER: Object to form.

7 A. I think that that's probably something that
8 would be better answered by someone that deals with
9 those issues more specifically. I don't know exactly
10 how a call would be effectuated or -- or administered.

11 Q. (BY MR. DUBOIS) Fair enough. How does New
12 Mexico understand its obligation to deliver water to
13 Elephant Butte under Article 4?

14 A. Depending on the flows of the Otowi index
15 gage flows, we have a -- kind of a -- a schedule of
16 deliveries that are required, that we are required to
17 make into Elephant Butte in that same year, but we had
18 -- we're allowed some flexibility in making those
19 deliveries through a system of credits and debits that
20 are defined broadly in Article 6 of the Compact.

21 Q. Does New Mexico have any obligation with
22 respect to that water once it's delivered to Elephant
23 Butte reservoir?

24 MR. WECHSLER: Object to form.

25 A. What -- what obligation are you referring to?

1 Q. (BY MR. DUBOIS) Fair enough. Is there any
2 obligation to assure that -- that the usable water
3 that's delivered to the project -- or that the usable
4 water is delivered to the project below Elephant
5 Butte?

6 A. Usable water as defined in the Compact is in
7 the -- is in the reservoir itself.

8 Q. Correct.

9 A. And -- and so what is -- what is it you're
10 asking?

11 Q. Is there any obligation -- is there any
12 obligation under the Compact to assure that that
13 usable water, once it's released, is delivered to the
14 project below Elephant Butte?

15 A. I think that responsibility generally lies
16 with -- with historically, at least, certainly before
17 1979 or '80, that was the responsibility of -- of
18 Reclamation. That responsibility largely now has been
19 kind of been dispersed a little bit since the
20 Reclamation, EBID, and EP No. 1 share responsibility
21 for operation of the -- the project. New Mexico does
22 have, I think -- New Mexico exercises administrative
23 authority of water within -- the state engineer does,
24 and assures that water is used consistent with, for
25 example, surface water is used in -- within the

1 authorized project acreages, for authorized purposes,
2 and that groundwater is used consistent with state law
3 and permits.

4 **Q. And maybe the -- maybe -- go ahead.**

5 A. I was going to say, and I guess to the extent
6 that there were a call, it would be the state
7 engineer's obligation to administer that in some way
8 that would be effective.

9 **Q. Does New Mexico contend --**

10 **MR. DUBOIS:** You know what, let's --
11 we've been going for a little over an hour. Jeff, do
12 you want to take a ten-minute break?

13 **MR. WECHSLER:** Sure. That sounds great.

14 **THE VIDEOGRAPHER:** The time is --

15 **MR. DUBOIS:** It's --

16 **THE VIDEOGRAPHER:** Sorry.

17 **MR. DUBOIS:** I'm sorry.

18 **THE VIDEOGRAPHER:** The time is 10:11
19 a.m. We're off the record.

20 (Break.)

21 **THE VIDEOGRAPHER:** The time is 10:25
22 a.m. We're on the record.

23 **Q. (BY MR. DUBOIS) All right. Mr. Lopez, we are**
24 **back. I'm going to try and -- we've got a lot of**
25 **ground to cover today with other folks, so I'm going**

1 try and be reasonably efficient with getting through
2 the rest of the stuff here. Does New Mexico contend
3 that it can permit water to be taken away from the Rio
4 Grande Project by operation of state law?

5 MR. WECHSLER: Object to form.

6 A. No.

7 Q. (BY MR. DUBOIS) Okay. Does New Mexico assert
8 that the Compact allows New Mexico to deplete the
9 surface water -- the surface flows to the Rio Grande
10 below Elephant Butte that reduce the volume of water
11 apportioned to Texas?

12 MR. WECHSLER: Object to form.

13 A. I'm not sure that I understand that.

14 Q. (BY MR. DUBOIS) All right. Let -- let me --

15 A. Would you rephrase it?

16 Q. I can throw some hypothetical numbers so that
17 perhaps my question will be clearer if I -- if I just
18 toss out some -- some hypothetical numbers. Let's say
19 that the -- that a release of 400,000 acre-feet --
20 well, let's make it -- let's make it a hundred
21 thousand acre-feet because then I can use your -- your
22 53 and 47 a lot easier for my small brain. Okay?
23 Let's say that a release of -- of reservoir water
24 without pumping would release -- would -- would be a
25 delivery of 57,000 acre-feet to -- to New Mexico and

1 43,000 acre-feet to Texas, right? Now, without pump
2 -- with pumping, the amount of surface flow available
3 is reduced to 80,000 acre-feet. So assume those --
4 assume that hypothetical, this is just to try and
5 frame the question that I'm -- I'm trying to ask you.
6 With pumping, surface flow is 80,000 acre-feet.
7 Without pumping, surface flow available to the project
8 is a hundred thousand acre-feet. Are you with me?

9 A. I -- I think I follow you.

10 Q. Okay. Does New Mexico assert that the
11 Compact would allow New Mexico to deplete the surface
12 flow that was available to the project and, therefore,
13 available to Texas under your described apportionment?

14 MR. WECHSLER: Object to form;
15 foundation; and then incomplete hypothetical.

16 Q. (BY MR. DUBOIS) Do you understand the
17 question?

18 A. Well, I think I understand it, as you've laid
19 it out. I think it is incomplete, and specifically,
20 you know, throughout the -- throughout the operation,
21 throughout the history of the Project and the Compact,
22 both -- both states have allowed and utilized
23 conjunctive groundwater pumping and so, yes, New
24 Mexico may be impacting -- New Mexico groundwater
25 pumping may be impacting some of the surface supply.

1 Similarly, Texas groundwater pumping may be impacting
2 some of the surface supply. The -- the other thing
3 that's also important in this is that throughout the
4 entire history of the Compact and the Project, there's
5 never been an accounting of that pumping by either
6 state, and only -- only recently has it become an
7 issue.

8 **Q. So can I conclude from what you just said**
9 **that New Mexico does say that the Compact allows New**
10 **Mexico to deplete the surface flow of the Rio Grande**
11 **below Elephant Butte and reduce the volume of water**
12 **apportioned to Texas?**

13 **MR. WECHSLER:** Object to form;
14 mischaracterizes his testimony.

15 A. And I don't think that given what you've
16 said, you've demonstrated that reduces the amount of
17 water apportioned to Texas. You know, Texas --

18 **Q. (BY MR. DUBOIS) If you reduce the --**

19 A. Texas is similarly getting groundwater and
20 increasing its supply that way. There's some inflows
21 that flow in below. There's also -- it's a complex
22 system that's not fully covered by your hypothetical.

23 **Q. If you reduce the flow of the Rio Grande by**
24 **pumping, that reduces the volume of water that, as**
25 **you've defined it, is apportioned to Texas; isn't that**

1 correct?

2 MR. WECHSLER: Object to form.

3 A. So let me just flip that around. Let's say
4 that New Mexico wasn't allowed to pump any
5 groundwater, but Texas was unconstrained, it would be
6 doing the same thing. It would be reducing the amount
7 of water that's available to New Mexico. Instead,
8 both of us had been allowed to pump groundwater and
9 utilize that groundwater conjunctively with project
10 supply throughout the entire history of the project
11 and the Compact.

12 Q. (BY MR. DUBOIS) That's not an answer to the
13 actual question. I didn't ask about whether pumping
14 in Texas is also impacting project supply. My
15 question is regarding New Mexico and New Mexico's
16 position and is New Mexico permitted under the Compact
17 to reduce the surface water supply, and as you defined
18 New Mexico -- Texas' apportionment, reduce the
19 apportionment to Texas?

20 MR. WECHSLER: Object to form.

21 A. No. Pumping is not allowed to reduce the
22 apportionment to Texas. It -- what -- what is allowed
23 is we're each allowed our -- our relative percentages
24 of project supply and conjunctive use of our respected
25 groundwater supplies.

1 Q. (BY MR. DUBOIS) Are you allowed to reduce the
2 volume of water apportioned to Texas? That's what I
3 asked.

4 MR. WECHSLER: Form and foundation.

5 A. That's what you've asked. You haven't really
6 given me a hypothetical that demonstrates that.

7 Q. (BY MR. DUBOIS) Do you understand the
8 question?

9 A. I think that I understand the question, yes.

10 Q. Okay.

11 A. I disagree -- I disagree --

12 Q. So --

13 A. I disagree with kind of the foundation of the
14 question, the hypothetical that you set up.

15 Q. So you can't answer the question of whether
16 the Compact allows New Mexico to deplete the surface
17 flows of the Rio Grande and reduce the volume of the
18 water apportioned to Texas. Is that what you're
19 saying?

20 MR. WECHSLER: Object to form.

21 A. What I'm saying is you gave me a hypothetical
22 to explain how this worked, but it was a really
23 incomplete hypothetical about how the project works.

24 Q. (BY MR. DUBOIS) I was giving you a
25 hypothetical to simply -- so that you understand, and

1 I think that you do understand exactly what I'm
2 saying, that if -- if a flow is -- if the flow of the
3 Rio Grande is reduced by pumping in New Mexico, does
4 that reduce the amount of water that's available for
5 the apportionment, as you've defined it?

6 MR. WECHSLER: Again, I object. It
7 feels like that's an incomplete question.

8 A. You know, it is completely an incomplete
9 question in that, you know, the -- the response -- the
10 report that I put together talks specifically about
11 how the significant portions of supply arise within
12 the El Paso Valley in Texas, and you can't -- you
13 can't get at the entire question that you're asking
14 without filling out those blanks. I don't know that
15 -- that given the hypothetical that you just -- that
16 you just pointed out there, I can't tell that it
17 reduces the amount of the surface water available in
18 the project. It's impossible to tell by what you've
19 just said.

20 Q. (BY MR. DUBOIS) You said previously that
21 pumping in New Mexico depletes the flow of the Rio
22 Grande; is that right?

23 A. I did.

24 Q. Okay. And if it depletes the flow of the Rio
25 Grande, that means there's less surface water

1 **available to the project, doesn't it?**

2 A. It could. It could. You know, but, again,
3 that is a really broad question, and in certain years,
4 we can pump all we want, and if there's a full supply,
5 it doesn't change a thing in terms of how much we get
6 or how much Texas gets.

7 **Q. How about in a low supply year?**

8 A. It could. It could impact -- it could impact
9 the volumes, but, again, it's not a complete picture
10 of how the Compact works, how the project works, and
11 without a complete picture, you can't tell -- it's --

12 **Q. If you've got a decrease of the surface flow**
13 **due to pumping, let's -- and I'm just going to throw**
14 **out a number that's just a number. Let's assume that**
15 **depletions from pumping in New Mexico to the river are**
16 **50,000 acre-feet. Okay? How is that not resulting in**
17 **less surface water available to the project?**

18 **MR. WECHSLER:** Object to form;
19 foundation.

20 A. Well, again, it's a very incomplete picture.

21 **Q. (BY MR. DUBOIS) Okay.**

22 A. You know, in any given year, there can be
23 50,000 acre-feet of effluent that's released out of
24 the wastewater treatment plants in El Paso Valley.
25 You've got to --

1 Q. So what --

2 A. -- things like that.

3 Q. So what, how does that affect whether or not
4 a depletion in New Mexico affects the amount of
5 surface flow available to the project?

6 A. It affects the amount of surface water into
7 the project. So what. Unless you get all of the
8 pieces of the project operation, you can't -- you
9 can't describe what the overall impact of that
10 reduction is, whether there's been any -- any reduced
11 apportionment or not, allocation or not.

12 Q. What in the Compact prevents EBID from
13 accounting for depletions caused by its farmers'
14 pumping as part of their project allocation?

15 MR. WECHSLER: Object to form.

16 Q. (BY MR. DUBOIS) Let me rephrase it. Does
17 anything in the Compact prevent by EBID from
18 accounting for depletions caused by its farmers'
19 pumping as part of their project allocation?

20 MR. WECHSLER: Same objection.

21 A. If I understand what you're asking, you're --
22 in essence, you're asking can EBID do what it did
23 under the 2008 operating agreement. I mean, it can
24 account for whatever it wants to account, but it can't
25 change the apportionment as between Texas and New

1 Mexico.

2 Q. (BY MR. DUBOIS) Is there anything in the
3 contracts between EBID and the United States that
4 precludes EBID from taking groundwater in lieu of
5 surface water and accounting for that as part of their
6 allocation?

7 A. So let me -- let me be clear about, earlier
8 you were asking me about the contracts and -- and --
9 and whether that was the only mechanism by which New
10 Mexico got water. What -- the downstream contracts
11 and -- and what the -- the importance of those is, as
12 I said before, they inform the -- the appropriation.
13 That was the split of -- of lands that were
14 contemporaneous with the -- with the Compact, and that
15 resulted in the 57/43 apportionment between the two
16 states. Those contracts -- that's the importance of
17 those contracts. The rest of that and what you just
18 asked me about, EBID and taking groundwater and doing
19 surface water, no, the -- the Compact apportions the
20 surface water. It did not apportion the groundwater,
21 and that's not part of the equation there.

22 Q. So you -- you just said the contracts are
23 generally informing the apportionment. What do you
24 mean by generally informing?

25 A. I'm saying that they laid out the proportions

1 of the project acreage, they laid out the split in a
2 time of shortage, they -- they laid out how the split
3 existed at the time the Compact was -- was negotiated,
4 and that then -- that apportionment, once set, should
5 -- should not be re -- reset by the districts, by
6 Reclamation, or by anyone else, other than through --
7 by the Compact parties.

8 **Q. So you'd agree that New Mexico doesn't have**
9 **the authority to unilaterally change the**
10 **apportionment?**

11 A. I would agree that New Mexico nor Texas nor
12 Reclamation, anyone, has unilateral authority to
13 change the apportionment.

14 **Q. Does Texas have to account as part of their**
15 **apportionment depletions to the Rio Grande caused by**
16 **pumping in Texas?**

17 A. Not if it's for project conjunctive use, no.
18 Unless to an extent -- as an outcome of this case, I
19 would say -- as an outcome of this case, what's good
20 for one state is good for the other, as well.
21 That's...

22 **Q. I don't think you find that we disagree with**
23 **that.**

24 A. Good.

25 **Q. So let me just understand, make sure that I'm**

1 clear on things. Your testimony is that New Mexico
2 feels it's entitled to 57 percent of the surface water
3 supply available to the Rio Grande Project under the
4 downstream contracts; is that correct?

5 MR. WECHSLER: Object to form;
6 mischaracterizes his testimony.

7 Q. (BY MR. DUBOIS) That's why I'm asking you if
8 that's a correct summary.

9 A. Not under the downstream contracts, but
10 rather under the Compact, as informed by the
11 downstream contracts.

12 Q. Okay.

13 A. The -- the con --

14 Q. And --

15 A. The contracts didn't apportion the water.
16 The Compact did.

17 Q. Okay. And in addition, New Mexico asserts
18 it's entitled to deplete the flow of the Rio Grande
19 that are project supply by withdrawing groundwater
20 that's hydrologically connected to the river; is that
21 accurate?

22 A. I'm -- to the extent that it's through
23 conjunctive use for project purposes, yes.

24 Q. Okay.

25 A. As is Texas.

1 Q. For -- for -- but that doesn't apply to
2 non-project pumpers?

3 A. That's correct.

4 Q. And that doesn't apply to M&I pumpers?

5 A. That's correct. In both states.

6 Q. Okay. I'm just trying to understand.

7 A. In both states.

8 Q. And -- and the -- and there's no limitation
9 -- and it's New Mexico's position that there's no
10 limitation that the amount of pumping that can occur
11 in New Mexico so long as the pumpers stay within
12 whatever the permits New Mexico grants allow; is that
13 correct?

14 MR. WECHSLER: Object to form.

15 A. Not exactly. We've been through this. I mean,
16 there's -- there's actual physical limitations that
17 are set by the crop requirements, and --

18 Q. (BY MR. DUBOIS) Okay.

19 A. -- the -- the -- to the extent that the crop
20 requirements is greater than the permit amount, then
21 -- then you're correct; but otherwise, it's the crop
22 -- crop requirement that controls.

23 Q. Okay. But under -- under New Mexico law, the
24 limitation -- simply the permit and the crop can catch
25 up with whatever the permit allows?

1 A. I'm not sure I understood what you -- what
2 that meant.

3 Q. Okay. That's fine. And as I understand your
4 testimony, it's New Mexico's position that Texas is
5 apportioned 43 percent of whatever is left of the
6 surface supply after the exercise of groundwater
7 rights in New Mexico, as defined by New Mexico state
8 law?

9 MR. WECHSLER: Object to form;
10 mischaracterizes the testimony.

11 A. No, that's not correct.

12 Q. (BY MR. DUBOIS) Okay. Tell me --

13 A. It's apportioned 43 percent of surface supply
14 after whatever is left of exercise of groundwater
15 pumping in both states.

16 Q. Okay. All right.

17 A. For project purposes, I should -- I should
18 add.

19 Q. So is it fair to say that under the positions
20 you've asserted, that New Mexico state law largely
21 defines what Texas is apportioned under the Compact?

22 MR. WECHSLER: Object to form.

23 A. I disagree with that completely.

24 Q. (BY MR. DUBOIS) Okay. Okay. Were you
25 involved in the drafting of the -- I think we talked

1 about this earlier. You -- you were not involved in
2 drafting the counterclaims in this matter; is that
3 right?

4 A. I was not.

5 Q. Okay. And who did you talk to in preparation
6 for the deposition for talking about the
7 counterclaims?

8 A. I reviewed stuff with my attorneys.

9 MR. DUBOIS: Kayla, can we pull up the
10 counterclaims, which is the State of New Mexico's
11 counterclaims PDF.

12 (Exhibit No. 2 was marked.)

13 Q. (BY MR. DUBOIS) All right. Do you have that
14 in front of you, Mr. Lopez?

15 A. I do.

16 Q. Okay. I'd like you to go to Paragraph 64 of
17 the counterclaim. In Paragraph 64, do you see that it
18 says, "Since 1938, Texas has allowed the construction
19 and use of hydrologically connected groundwater wells
20 for irrigation, municipal, and other uses, has allowed
21 the unauthorized use of surface water, and has allowed
22 Project return flows to be unaccounted for, all in
23 violation of the Compact." Can you tell me what
24 unauthorized use of surface water means?

25 A. There's a number of ways that this could be

1 arrived at. One way is through the -- the change from
2 irrigation supply to municipal supply without --
3 without accounting for irrigation like return flows,
4 that is giving a full FDR allocation, allowing that
5 use. That, in my estimation is unauthorized use of
6 surface water.

7 **Q. Unauthorized -- unauthorized -- this is what**
8 **I'm trying to understand. What does unauthorized**
9 **mean? Unauthorized by what?**

10 A. By the Compact. The Compact says that the
11 water will be used for -- for irrigation purposes.

12 **Q. Okay. So it's -- it's New Mexico's position**
13 **that any use for anything other than irrigation is not**
14 **authorized by the Compact?**

15 A. Well, no, that's not what I'm -- that --
16 that's not what I meant to say, and that's not what I
17 said. The -- what I meant was that the Compact says
18 that it -- it -- it authorizes the use of water for
19 irrigation purposes, and as I've said in my prior
20 testimony, we don't -- we don't object to some of that
21 water being transferred to El Paso for municipal uses
22 through -- through the miscellaneous purposes
23 contracts. What we do object to is that there was no
24 opportunity to -- for New Mexico to engage to see if
25 the accounting was done such that it -- that transfer

1 actually reflected irrigation like uses or -- or use,
2 and specifically there, I'm -- I'm referring to the --
3 the return flow impacts. Secondly -- you know -- so
4 that -- that's one area of -- of what I would say is
5 unauthorized use of surface water.

6 Secondly, the use of -- of municipal effluent
7 without accounting for those as project supply, I
8 think that's an unauthorized use of project -- of
9 surface water. The sale of -- of water to Hudspeth, I
10 think that's an unauthorized use of surface water.

11 The -- the nonuse of available drain flows above
12 Fabens to -- to meet the irrigation demands within
13 Texas and, as a result, having to call for additional
14 releases from the reservoir, I think that's an
15 unauthorized use of surface water. I think the 2011
16 credit -- release of New Mexico's credit water and its
17 use by large -- almost exclusively by EB -- EP No. 1,
18 I think that's an unauthorized use of credit water. I
19 think that the -- that the 2008 -- the -- the change
20 in allocation that resulted from the 2008 operating
21 agreement and the increase above the 43 percent of
22 project supply to EBID or to EP No. 1 and to -- to
23 Texas, I think that's an unauthorized use of surface
24 water. There's -- there's probably a few other
25 things, but I think I've covered most of them.

1 Q. So unauthorized use, as you're -- as New
2 Mexico is using it here, is an allegation that that is
3 not authorized by the Compact?

4 A. That's correct. If -- an allegation that if
5 it is not fully in conformance with the -- with the
6 Compact.

7 Q. Okay. Looking at Paragraph 65, the second
8 sentence says, "First, surface and groundwater
9 diversions in Texas interfere with the Project's
10 ability to deliver water to New Mexico's Project
11 beneficiaries directly intercepting water meant for
12 delivery to Project beneficiaries in New Mexico." Do
13 you see that?

14 A. I do.

15 Q. I'm sorry. I clipped a piece out of the
16 middle of that sentence, but you see that sentence?
17 All right.

18 A. Well, I'm not sure that I see all of it now
19 because of the page break.

20 Q. Yeah. I -- I fluffed the -- I fluffed that,
21 but you're looking at the same sentence as I am?

22 A. Yeah. But could --

23 Q. Okay.

24 A. Could you scroll up just a little bit and let
25 me read the whole thing?

1 **Q. First sentence -- "First, surface and**
2 **groundwater diversions in Texas interfere with the**
3 **Project's ability to deliver water to New Mexico's**
4 **Project beneficiaries near the Texas-New Mexico border**
5 **by directly intercepting water meant for delivery to**
6 **Project beneficiaries in New Mexico." So is it New**
7 **Mexico's position that -- that that groundwater use is**
8 **unauthorized?**

9 A. So in the same sense that it's unauthorized,
10 that is not in conform -- full conformance with the
11 Compact. Yes, I'm saying that the -- that to the
12 extent that there is groundwater pumping, for example,
13 in the Canutillo well field that is not fully offset
14 and I know that since 2001 or so, there's been some
15 offsets, but not -- not full offsets of -- of that
16 groundwater pumping impacts. I think those, I think,
17 are unauthorized.

18 **Q. Unauthorized --**

19 A. That --

20 **Q. So -- I'm sorry. Go ahead and finish. I'm**
21 **sorry.**

22 A. I was just going to, again, say unauthorized
23 in that it's not fully in conformance with the
24 Compact.

25 **Q. Okay. So groundwater pumping in the**

1 **Canutillo well field that intercepts Project water**
2 **supply is unauthorized under the Compact?**

3 A. To the extent that it is not fully offset, I
4 would say yes.

5 **Q. Okay. How about the other pumping by**
6 **irrigators in the Texas Mesilla, is that unauthorized?**

7 A. Again, consistent with what I've said
8 earlier, I would say no. I would say that that is
9 authorized. It's allowed by the Compact. It has been
10 exercised on both -- in both states throughout the
11 entire history of the Compact. And here, again, I'm
12 -- I don't know the specifics of -- of irrigators in
13 that portion of the Mesilla basin in Texas. I don't
14 know if the entire thing is within the authorized
15 project acreage. I believe that it is so that's what
16 I'm -- if there's any that's not within the authorized
17 project acreage, I would -- I would say that that's
18 unauthorized.

19 **Q. Let's look at Paragraph 75, Claim 2.**
20 **Paragraph 75, is -- is carryover storage prohibited by**
21 **the terms of the Compact?**

22 A. I assume you're talking about the carryover
23 storage as was implemented in 2007 or so; is that
24 correct?

25 **Q. I am just referring to carryover storage**

1 **generally. Is carryover storage prohibited by terms**
2 **of the Compact?**

3 A. Well, I want to -- I think there's two types
4 of carryover storage that I've talked about in
5 previous depositions. One is carryover storage that
6 just benefits all -- benefits the project generally.
7 For example, the -- we have reservoirs that can hold
8 approximately 2 million acre-feet of -- of water. In
9 good times, there's carryover, and absolutely, that's
10 -- that is consistent with the Compact and allowed by
11 the Compact. The carryover storage accounts that were
12 to the individual districts that are now part of the
13 2008 operating agreement, I contend that those are
14 inconsistent with the Compact.

15 **Q. In what way are they inconsistent with the**
16 **Compact?**

17 A. As I've laid out in -- in my -- in my reports
18 and in my responses in private positions, the -- the
19 Compact contemplates an annual operation of the
20 project in terms of how that water is apportioned.
21 This -- these carryover storage accounts changed that,
22 and -- and they have the -- an additional impact of
23 simply changing the apportionment as between the two
24 districts.

25 **Q. Looking at Paragraph 73, the second**

1 recollection is that there was not agreement as to the
2 Compact accounting for evaporative losses and so we
3 had two different accounting methodologies that were
4 developed, one by New Mexico and Colorado that I would
5 assert is the correct method, and one by Texas and
6 Reclamation that I would assert is incorrect.

7 **Q. Okay. Does the credit water carried over in**
8 **Elephant Butte reservoir physically suffer evaporative**
9 **losses?**

10 A. It does.

11 **Q. Okay. Let's turn to Paragraph 106.**
12 **Paragraph 6 states that, "The United States has a duty**
13 **to conduct annual Project accounting in a manner**
14 **that's consistent with the Compact." Where does the**
15 **Compact provide or define a duty to conduct annual**
16 **project accounting in any particular manner?**

17 **MR. WECHSLER:** Object to form.

18 A. You know, the -- I don't think the conflict
19 itself requires any specific form of accounting, but
20 it does -- the -- for example, on going back to credit
21 water accounting, it does specify how that is to be
22 dealt with, and that's one of the ways that the United
23 States has not conducted annual project accounting
24 consistent with the Compact. The more general Compact
25 accounting is -- is better to -- is more -- is further

1 defined in the Compact rules and regs and through the
2 historic practice of the Rio Grande Compact
3 Commission. Again, I would point to specifically,
4 there are elements that -- that are spelled out in the
5 Compact and accounting for credit water evaporation is
6 one of those, that is where the United States had not
7 done that accounting consistent with the Compact, at
8 least not -- not since 2011 and continuing on through
9 the present.

10 **Q. (BY MR. DUBOIS) Does the --**

11 A. I guess I would -- I want to expand on that
12 answer, too. So the -- the Compact, as we've talked
13 about, apportions water between Texas and New Mexico
14 below the Elephant Butte 57/43, and to the extent that
15 Project accounting since the 2008 operating agreement
16 is inconsistent with that apportionment, and I believe
17 it is, I believe that's inconsistent with the --
18 inconsistent with the Compact, as well.

19 **Q. In what way is the project accounting**
20 **inconsistent with the terms of the Rio Grande Compact?**
21 **I understand what you said about the credit water. We**
22 **can agree to disagree on that, but what other ways**
23 **does New Mexico assert that the accounting is**
24 **inconsistent with the terms of the Compact?**

25 A. Well, as I've mentioned, the -- the Compact

1 apportions the water informed by the downstream
2 compacts -- contracts, excuse me, and the historic
3 practice, and as reflected in documents from the time
4 of the Compact as to the understanding of the
5 negotiators, and the apportionment 57/43. To the
6 extent that there's project accounting that's going on
7 since 2006 that yields a different apportionment or --
8 or allocation that is inconsistent with that
9 apportionment, I would say that that's inconsistent
10 with the Compact. I would say that not accounting for
11 all of the water, particularly in the El Paso Valley,
12 is inconsistent with the Compact. Not accounting for
13 use of -- of treated effluent, not accounting for --
14 or giving a -- an American Canal Extension credit to
15 EP No. 1, I think that is inconsistent with the
16 Compact in that both of those yield -- end up
17 affecting the -- or yielding an allocation that is
18 inconsistent with the apportionment. The -- the lack
19 of accounting of -- or -- or not minimizing waste and
20 releases to -- to Hudspeth, I think that's
21 inconsistent with the Compact, and the accounting of
22 those, therefore, is inconsistent with the Compact.

23 **Q. Anything else?**

24 A. Yeah. The accounting, as I've talked about
25 earlier about the return flows or lack of accounting

1 of return flows for water that's been transferred to
2 municipal uses, I think that's inconsistent for the
3 Compact. In recent times since 2008 with a new
4 operating agreement where, in essence, all -- all of
5 the project inefficiencies are assessed, in essence,
6 to EBID, I think that is inconsistent with the -- with
7 the Compact and that it, again, changes the -- the
8 allocation such that it's not consistent with the
9 apportionment. That includes things like impacts from
10 Mexico pumping, and it includes all of the other
11 things that I've already mentioned.

12 **MR. WECHSLER:** Jim, when you get a
13 chance, I could --

14 A. Excuse me. I'm looking at the -- at the --
15 I'm looking at the realtime, and I -- I did not say
16 New Mexico pumping. I said Mexico pumping.

17 **Q. (BY MR. DUBOIS) Thanks for catching that.**

18 **MR. WECHSLER:** Yeah. Jim, I was just
19 going to say, when you get a chance, I could use a
20 break.

21 **MR. DUBOIS:** Sure. Let's take ten
22 minutes.

23 **MR. WECHSLER:** Thanks.

24 **MR. DUBOIS:** Come back at 11:30?

25 **MR. WECHSLER:** Sounds good.

1 **MR. DUBOIS:** Okay.

2 **THE VIDEOGRAPHER:** The time is 11:19
3 a.m. We're off the record.

4 (Break.)

5 **THE VIDEOGRAPHER:** The time is 11:30
6 a.m. we're on the record.

7 **Q. (BY MR. DUBOIS)** Mr. Lopez, I think I've only
8 got one more question at this point, and I'll turn it
9 over to Mr. Somach. Your testimony that New Mexico's
10 obligations under the Compact not to deplete the flow
11 of the Rio Grande through non-project water users --
12 non-project pumpers isn't triggered until Texas
13 complains, I mean, is that -- is that a fair summary
14 of what you said is that New Mexico's obligation under
15 the Compact not to deplete flows through non-project
16 users isn't triggered until Texas complains about not
17 getting its apportionment?

18 **MR. WECHSLER:** Object to form.

19 **A.** You know, I think -- I think I did say that.

20 **Q. (BY MR. DUBOIS)** Okay.

21 **A.** I think that is what I said earlier. But I
22 -- but, you know, I -- the reality is that I think
23 that we have -- New Mexico has, in fact, been
24 requiring any non-project users that have -- you know,
25 get permits or whatever else to offset their impacts.

1 So we're --

2 Q. But that's true -- that's true only of
3 non-project pumpers after the closure of the basin,
4 right?

5 A. That's correct. But I also think -- and this
6 is probably subject to check, but I think that the --
7 that largely, the -- here, I'm thinking about
8 municipal -- municipal users, Las Cruces specifically.
9 I think that their -- their impacts have been
10 essentially offset by their -- by their wastewater
11 effluent.

12 Q. A factual question that's sort of outside of
13 our discussion, I think.

14 A. Sure.

15 Q. But -- but my understanding is what you said
16 was that also applied to non-project irrigators?

17 A. That's correct.

18 Q. Okay. So if the Compact allegation in that
19 regard is triggered once Texas lodges some sort of a
20 formal complaint, do you agree that the complaint that
21 Texas filed in this original action constitutes such a
22 formal complaint?

23 A. I do. I think it constituted a formal
24 complaint. So --

25 Q. Right.

1 A. -- and the way --

2 Q. So -- go ahead. I'm sorry. And the way?

3 A. And the way I would see that playing out is
4 there will be an investigation as to whether there is
5 -- whether Texas has actually been shorted and that we
6 would deal with it. I think that's kind of what's
7 going on here.

8 Q. Okay. So what, if any, investigations of
9 impacts in the river has been done regarding those
10 non-project irrigation users?

11 A. I think we've investigated every facet of
12 project operations and non-project operations, every
13 facet of water use in that section of the river that I
14 can think of, and, you know, having said all of that,
15 my -- my impression is that Texas has not been
16 shorted.

17 Q. Has the -- have those -- has the pumping by
18 those non-project irrigators impacted the amount of
19 water available to EBID?

20 A. You know, I don't recall -- I don't recall
21 the -- there's a -- we've got an analysis of that. I
22 just don't recall the specific --

23 Q. Okay. Fair enough.

24 A. -- answer for that.

25 Q. Okay. Fair enough.

1 A. But I think -- I think -- I think it is
2 within all of the various scenarios that are laid out
3 in -- in the Spronk report, series of reports.

4 Q. And then -- but none of those impacts for --
5 for pumping initiated prior to the designation of the
6 basis -- basin, excuse me, has -- requires offsets; is
7 that right?

8 A. You're asking if New Mexico requires that
9 pumping for non-project irrigation that precedes the
10 basin declaration requires offsets?

11 Q. Uh-huh. Yes.

12 A. You know, I believe -- I believe they don't,
13 but I think someone else would be better equipped to
14 answer that.

15 Q. I just was recalling that I think maybe this
16 was discussed in one of your prior depositions and
17 merely closing my own intellectual curiosity on that.

18 MR. DUBOIS: Okay. I -- at this point,
19 I don't think I have anymore questions for you,
20 Mr. Lopez. Thank you. I'll turn it over to
21 Mr. Somach.

22 THE WITNESS: Thank you.

23 E X A M I N A T I O N

24 BY MR. SOMACH:

25 Q. Mr. Lopez, I'm going to try to get through

1 **constrained in using its apportionment to the lands**
2 **that previously had been within the Elephant Butte**
3 **Irrigation District?**

4 A. You know, I think that is a correct read of
5 it. I think as I've -- as I've talked about in my
6 previous depositions and reports and so forth, it's --
7 it's for use within the authorized project acreage.
8 So, you know, I -- it's -- the hypothetical that we're
9 talking about is not something that I envision or
10 desire or anything else. It's -- it's just the
11 question that Mr. Dubois asked me and, now, that
12 you're asking me made me think about that, and I
13 thought -- I just wanted to emphasize that the -- that
14 the apportionment, while it arises out of -- out of a
15 contract with EBID, the apportionment itself is -- is
16 to New Mexico.

17 **Q. I understood that. I just want to make sure,**
18 **you did say, however, even if it was a New Mexico**
19 **apportionment, it would have to be used within those**
20 **project boundaries; is that correct?**

21 A. I think at least at present, yes. There
22 probably will be some process to change that. Could
23 be perhaps a miscellaneous purposes contract, let's
24 say, that could change it, but I think you would --
25 there would be -- there would have to be some process

1 that would be undertaken to change the -- the use from
2 agricultural to something else or to change it to out
3 of that project acreage, authorized project acreage.

4 Q. And is the quantity of water involved also
5 limited by the provisions within the -- the contract
6 with or without EBID, it serves as a mechanism to
7 define how much water is apportioned to -- to -- to
8 New Mexico under your analysis?

9 MR. WECHSLER: Object to form.

10 A. Let me just reread that. So I guess I would
11 answer that this way. I think the -- the
12 apportionment is defined without -- without specifying
13 quantity. It's 57/43. After the -- after those
14 contracts were entered in -- as in the history of the
15 project operation, it has been some things that have
16 kind of defined what a full supply is under the --
17 under the project, and I think that initially came
18 about in the late '40s when they defined the
19 per-project allocation of 3.024, and I think later on
20 in perhaps the '90s, the '91, the overall full supply
21 amount for each district was also defined. I think in
22 the case of Elephant Butte, that ended up being
23 something on the order of 494,000 acre-feet per year,
24 in the case of EP No. 1, 376 -- 376,000 acre-feet per
25 year roughly.

1 Q. (BY MR. SOMACH) So let me ask you this
2 question: You said earlier in response to Mr. Dubois
3 -- Dubois' questions that what -- the way you did it
4 is -- or the way you understood how much water was
5 apportioned was that you -- you took the usable water
6 within the reservoir, you added to that return flows
7 and other accretions that -- that existed in the
8 system, and that's what you -- that you divided 57/43.
9 Is that -- I'm interested in knowing how it works.
10 Okay? You say New Mexico had apportionment is 57
11 percent of something. Go through and tell me what
12 it's the 57 percent of what.

13 A. I'll do my best to do that, but first I want
14 to -- I want to correct what you said. Not usable
15 water that's in the reservoir, but rather whatever
16 usable water is released. So --

17 Q. Yeah. Yeah.

18 A. Usable water that's released out of Caballo
19 reservoir, such that it's now usable by project
20 beneficiaries, there's that, plus any accretions or
21 intervening inflows between Elephant Butte and Fort
22 Quitman, plus return flow of -- of that water. So
23 some of that water might be used more than once, not
24 -- not fully consumed the first time, and is diverted,
25 reused again downstream.

1 Q. Okay. So it's 57 percent of that?

2 A. Yes.

3 Q. In accounting for that -- that pool of water
4 that we're splitting 57/43, how do you account for
5 losses in -- in the system? You've got usable water.
6 You've got return flows. You've got accretions, but
7 you've got depletions, also, don't you?

8 A. You do have depletions, and, you know, I
9 don't -- I don't know exactly how that's accounted for
10 or if it's accounted. I think, you know, certainly
11 there's an implicit amount that's -- that was built
12 into, say, the D1/D2 curves, but beyond that, I don't
13 know that there's been any -- any other accounting.
14 Certainly in the 2008 operating agreement, there's --
15 there is a, what's it called, diversion ratio or
16 something like that, that tries to account for that,
17 but that's -- that's it. As you know, I disagree and
18 New Mexico disagrees with the 2008 operating
19 agreement.

20 Q. Yeah. I'm certainly aware of that. Let's --
21 but I want -- I still want to understand because it
22 seems to me that it would be important both in New
23 Mexico and Texas to know what the 57 percent is of as
24 well as what the 43 percent is of. It's got to be a
25 57 percent of something, and so I'm trying to define

1 what the something is. So let's -- let's begin back
2 in 1938 when the Compact was executed. I understand
3 we won't call it a 1938 condition in the way you've --
4 you've disagreed with it, but certainly there was a
5 physical setting in 1938 upon which you could make the
6 57/43 allocation, and it included as you said usable
7 water that's released from the reservoir. It included
8 return flows. It include -- included other
9 accretions, and it presumably, it subtracted
10 depletions. Is that more or less what would have
11 occurred in 1938?

12 MR. WECHSLER: Object to form.

13 A. I don't believe that it subtracted the
14 depletions. I think there was a defined what was
15 referring to as a normal release, 790 up to, you know,
16 790 usable water that potentially could be used and --
17 and that the -- that based on the historical hydro--
18 hydro-graphical information that they had, they felt
19 would get them a full supply. In fact, the full
20 supply that they've used and delivered has been based
21 on releases less than 790, and so as far as I know, I
22 don't think that there was ever any subtraction of
23 depletions. There was, though, an expectation that
24 790 would yield a full supply, and to my
25 understanding, it always has, and less than that has

1 yielded a full supply, as has been defined by the
2 project.

3 Q. (BY MR. SOMACH) Well, I think you -- you also
4 said, though, that groundwater pumping, which is --

5 A. I'm sorry. I'm having trouble hearing you
6 again.

7 Q. I think you've also said that groundwater
8 pumping, which is a -- a condition of depletions has
9 increased over time and that that increase in
10 depletion has affected flow in -- in -- in the river.
11 I think you said that?

12 A. Well, you know, I think -- I think I probably
13 did say that, but let me put some fine point -- finer
14 points on that. It certainly increased pretty
15 dramatically in the '50s from essentially no
16 groundwater pumping, for project purposes, to pretty
17 substantial project -- groundwater pumping. Then we
18 have a period of full project supply where groundwater
19 pumping was greatly reduced in the early 2000s,
20 2003/2004, again, groundwater pumping went up pretty
21 dramatically, but not -- not appreciably more than
22 what we had that we experienced in the '50s. It did
23 go up appreciably after the 2006 and the 2008
24 operating agreement where New Mexico's surface water
25 allotments were dramatically reduced as a result of

1 the operating agreement.

2 Q. To the extent that -- that losses exist in
3 the system, do they -- do they reduce the amount of
4 surface water that -- that is available for
5 application of consumptive use in the project? And
6 here, I'm not -- I'm not distinguishing between --
7 between New Mexico project lands and Texas project
8 lands. I'm just asking the general question of
9 whether losses affect the amount of water that can be
10 applied and consumed by crops?

11 MR. WECHSLER: Object to form.

12 A. So certainly, losses reduce the amount of
13 water. If there were no losses, there would be more
14 water available. We could build up -- keep a lot more
15 water in the reservoir, wouldn't have to call -- call
16 for as much water. But the project -- you know, the
17 project anticipated that. Every project has losses,
18 and this one is no different.

19 Q. (BY MR. SOMACH) If losses are greater in one
20 year than they were in a prior year, with everything
21 else being equal, that is the amount of -- of usable
22 water released from the reservoir, if -- if losses are
23 greater in one year than another year, will that
24 result in less water available for actual application
25 to -- to irrigated lands?

1 **MR. WECHSLER:** Form and foundation.

2 A. It depends. It depends. I mean, certainly
3 losses probably vary every year. I doubt that they're
4 ever exactly the same from one year to the other.
5 But, you know, if you have a full supply period, you
6 might have very -- very high losses and still there's
7 absolutely no reduction to -- to the project users.
8 So that's a -- you're going to need a lot more
9 information before you can answer that question.

10 **Q. (BY MR. SOMACH) I think you said, and**
11 **actually, I wrote this down from the realtime. I**
12 **think you said, "I'm not sure that New Mexico has any**
13 **specific obligation not to deplete or reduce project**
14 **supply." Do you recall saying that?**

15 A. You're talking about earlier today?

16 **Q. Yeah.**

17 A. Yeah. I think -- I think that I did say
18 that.

19 **Q. I think you said that you -- you qualified**
20 **that by saying unless you have notice, and I think at**
21 **the very end of Mr. Dubois' questioning, you suggested**
22 **that the complaint itself in this case was -- was**
23 **notice; is that correct?**

24 A. I did.

25 **Q. Do you, State of New Mexico, think that you**

1 have a obligation not to deplete or reduce project
2 supply if you -- if you know that your actions are
3 depleting project supply?

4 MR. WECHSLER: Object to form.

5 A. Again, I -- I don't -- I don't think that we
6 -- if -- if our actions are such that were depleting
7 the project supply and Texas is not getting their
8 apportionment and they let us know and, yes, in fact,
9 we verify it, yes, I think we have to do something
10 about it.

11 Q. (BY MR. SOMACH) Yes. But you added something
12 to that in that if they let us know.

13 A. Right.

14 Q. What happens if you know but Texas hasn't
15 provided you whatever you are talking about in terms
16 of notice?

17 A. I'm sorry? I -- let me -- let me read this.
18 I'm having trouble hearing you.

19 Q. I'm sorry. You -- you qualified your answer
20 to the last question with "if Texas lets us know."
21 What happens if Texas doesn't provide you notice, but
22 nonetheless, you are aware that you are depleting
23 supplies that otherwise would be going to Texas? Do
24 you have an obligation if you know that that's what's
25 happening?

1 A. I would say no, not if we're depleting
2 supplies, but rather if Texas is not getting its
3 apportionment, then we have an obligation.

4 **Q. Even if Texas hasn't provided you notice?**

5 A. If we know about it, I would say yes.

6 **Q. Does the Compact treat lands apportioned**
7 **water in New Mexico the same way as it treats lands**
8 **apportioned water in Texas?**

9 A. I'm -- I'm puzzled by -- by your -- your
10 question asking about how the Compact treats lands.
11 What -- what are you getting at? Perhaps you can
12 expand on that.

13 **Q. What I'm looking for or what I'm asking is**
14 **whether or not the -- the Compact apportionment treats**
15 **New Mexico below Elephant Butte the same as it treats**
16 **the apportionment to Texas below Elephant Butte**
17 **reservoir. Is there any distinction made in the**
18 **Compact?**

19 A. In my estimation, no. I believe that both
20 should be treated -- that the Compact should -- treats
21 both equally.

22 **Q. Okay. Let me look -- I want to be -- I want**
23 **to be done, actually. I want to in the worst possible**
24 **way be done, but hold on a second. I think you**
25 **indicated earlier that the historic operations of the**

1 project, since 1938, are an element of understanding
2 New Mexico's apportionment; is that -- is that
3 correct?

4 A. I -- I think they're an element of
5 understanding both states' apportionment, yes.

6 Q. Are there any specific years after 1938 that
7 one looks to or is it the entire universe of years
8 from 1938 to price of time that one -- or at least in
9 2006 that one looks to?

10 A. I would look at the entire period between '38
11 and 2006, but recognizing that in the very first few
12 years, through the '40s, there was kind of a unique
13 situation, one was an abundance of supply. I think
14 that everybody was still getting used to -- used to
15 operating under a Compact and what that meant, and
16 finally, not until the late '40s and into early -- the
17 1950s, did they -- did Reclamation specifically start
18 really focusing in on tightening up its operation to
19 make sure that in less than full supply years, they
20 were allocating or apportioning water consistently.

21 Q. Well, can you point to any specific years
22 after 1938 where they got it right versus other years
23 where they got it wrong?

24 A. You know, no, that -- that -- I prefer not to
25 do that. I'd rather look at kind of the entire time

1 frame and, you know, this is a lot of what Dr. Barroll
2 did for us. She -- she tracked how much was delivered
3 to each district year by year, and under different
4 operations regimes and -- and largely, as I said, if
5 we just kind of remove the '40s from the '50s through
6 '78 is pretty consistent. Largely 57/43, then after
7 '78, D1/D2, that was meant to -- that was a mechanism,
8 frankly, to try and repeat what had happened before
9 under the control of three different entities as
10 opposed to a single entity, and largely, it
11 accomplished that, and the districts, by and large,
12 got 57/43. Not until 2006 did that really start
13 changing.

14 **MR. SOMACH:** Okay. I don't -- I don't
15 have anymore questions.

16 **THE WITNESS:** Am I done?

17 **MR. SOMACH:** I don't know.

18 **MR. DUBOIS:** Not quite. Not quite.
19 I've got literally one follow-up question, and I don't
20 know if anybody else is going to have any questions or
21 not so I'll just ask my one follow-up question, and
22 we'll work from there and see if anybody else has any
23 questions.

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IN THE SUPREME COURT OF THE UNITED STATES
BEFORE THE OFFICE OF THE SPECIAL MASTER
HON. MICHAEL J. MELLOY

STATE OF TEXAS)
)
Plaintiff,)
) Original Action Case
VS.) No. 220141
) (Original 141)
STATE OF NEW MEXICO,)
and STATE OF COLORADO,)
)
Defendants.)

ORAL AND VIDEOTAPED DEPOSITION OF
RYAN SERRANO
APRIL 17, 2019
VOLUME II

ORAL AND VIDEOTAPED DEPOSITION of RYAN SERRANO,
produced as a witness at the instance of the Plaintiff
State of Texas, and duly sworn, was taken in the
above-styled and numbered cause on April 17, 2019,
from 9:17 a.m. to 4:34 p.m., before Heather L. Garza,
CSR, RPR, in and for the State of Texas, recorded by
machine shorthand, at the HOTEL ENCANTO DE LAS CRUCES,
705 S. Telshor, Las Cruces, New Mexico, pursuant to
the New Mexico Rules of Civil Procedure and the
provisions stated on the record or attached hereto;
that the deposition shall be read and signed.

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1 it's -- it says surface underscore NTR underscore
2 amount. I presume that refers to surface meter
3 amount?

4 A. Correct.

5 Q. Are -- are these, in fact, surface meters?

6 A. No, ma'am. As I explained earlier,
7 there's -- there's only what we refer to them as
8 virtual meters so we created those meters in our
9 waters database, and we -- that's where we enter the
10 calculated allotment that we received from EBID. So
11 they'll say 6 inches. We calculate how much acre feet
12 that is for the whole district, and then we enter it
13 to any one of these particular virtual meters, that
14 way it can be distributed out to each file.

15 MS. COLEMAN: Okay. Thank you.

16 MR. GOLDSBERRY: All right. The next
17 exhibit, which I guess is 92, let's put that on there.

18 (Exhibit No. 92 was marked.)

19 MR. GOLDSBERRY: It's New Mexico 83443.
20 And this is another Excel spreadsheet with basically
21 three files.

22 FURTHER EXAMINATION.

23 BY MR. GOLDSBERRY:

24 Q. Would you please examine this spreadsheet and
25 then we'll talk about it?

1 MS. COLEMAN: This is Exhibit 92?

2 MR. GOLDSBERRY: Yes. I'm sorry. 92.

3 A. Okay.

4 Q. (BY MR. GOLDSBERRY) What is -- is this a
5 document that you recognize?

6 A. Yes, sir.

7 Q. Is this a document that you created?

8 A. It appears so, yes, sir.

9 Q. All right. And what is the document?

10 A. Again, this is groundwater accounting --
11 water right accounting at the end of the year so this
12 was similar to the previous exhibit with some
13 additional columns and fields.

14 Q. Okay. So this particular document relates to
15 the year 2012, correct?

16 A. Correct.

17 Q. And which of these -- what's added to this --
18 this exhibit, Exhibit 92, that we didn't see in
19 Exhibit 91?

20 A. Under Column E, you have a field identified
21 as "NOI file." That stands for notice of intent.
22 Under column F, you have a column added for "same
23 management." And then if you scroll all the way to
24 the right, under Columns P, Q, R, S, and T, you have
25 secondary accounting, more form -- excuse me -- more

1 formulas that were added.

2 Q. Okay. Okay. What is a notice of intent?

3 A. Under the stream system issue 101 settlement
4 and final order in the adjudication court, owners of
5 irrigation water rights had the opportunity to file a
6 notice of intent to prove a higher farm delivery rate,
7 or an FDR, and the NOI that's listed here would
8 reflect those water right owners that did file.

9 Q. Okay. And why were you interested in
10 tracking that in 2012?

11 A. If they had a notice of intent, if they filed
12 that within the court defined deadlines and supporting
13 evidence within the court defined deadlines then that
14 would have an affect on their total allowable
15 diversion limit.

16 Q. How many owners filed within the defined --
17 within the defined deadline and have been granted the
18 additional diversion limit as we sit here today?

19 A. As we sit here today, I -- I don't have
20 specific numbers. I know there was well over a
21 thousand filed, but how many have been granted, I do
22 not know.

23 Q. And who is processing those notices of
24 intent?

25 A. That would be the lower Rio Grande

1 adjudication.

2 Q. As of the date of this document, had any of
3 these rights for additional diversions been granted?

4 A. As of the date of this document, no.

5 Q. That I -- I guess I -- maybe I wasn't
6 listening close enough. Why were you interested in
7 that information at this point in time?

8 A. So it was -- it was important for us to track
9 because some of these owners had filed that notice,
10 and they were -- they had expressed interest in making
11 sure they had proved up to that -- that higher limit,
12 and because there was no judgment yet on any of those
13 particular files, in consult again with our upper
14 management team and legal counsel, it was decided that
15 until such time that we heard otherwise from the
16 adjudicating court on each file, that those people
17 that met those deadlines would be allowed to divert up
18 to the -- the upper limit of five and a half.

19 Q. So they were allowed to divert five and a
20 half even though their application hadn't been acted
21 on?

22 A. As I understand it, yes, sir.

23 Q. And that higher diversion rate was -- was
24 what?

25 A. That's 5.5 acre feet per acre.

1 Q. You indicate that Columns P, Q, R, S, and T
2 are secondary accounting, and what do you mean by
3 that?

4 A. So those -- those columns that you referenced
5 would have calculated, for instance, Column P total
6 acre feet. That's total allowable. You can see that
7 number is different from Column K, as a result of
8 the -- the notice of intent being allowed for.

9 Q. Okay. So you -- you're doing accounting in
10 these -- are you doing accounting in all of these
11 columns, P through T, simply related to adding an acre
12 foot per acre to each of these individuals?

13 A. Column P would be acre feet per acre at a
14 rate of -- of five and a half for those that have
15 provided that notice of intent. Column Q is the total
16 used. Again, that's surface water and groundwater
17 combined. Percent over is simple division, allowable
18 versus diverted, and then S and T, Columns S is
19 whether they were over or they were under, and Column
20 T is the difference in terms of percentage -- I'm
21 sorry -- acre feet.

22 Q. Okay. Let's go back to Column F. It
23 says, "Same management." What is that? Is that the
24 owner management program we've talked about before?

25 A. You know, at the time that process had yet to

1 get underway, it was still in the development phases.
2 This was just a note. This wasn't pulled out of the
3 database. This was just a note that some of the
4 notices of intent showed that those particular files
5 were under the same ownership or management.

6 Q. And what was the significance of that
7 information to this -- to the purpose of this
8 particular document?

9 A. It just gave us an idea that that particular
10 water right may have been serving other lands and
11 those wells under the same ownership or management.

12 Q. Okay. In the universe of -- the universe
13 that we're talking about of entries in the all over,
14 those are the over diverters again?

15 A. Yes, sir.

16 Q. So this is -- this is the group of folks that
17 are over diverting beyond 110 percent of what they're
18 entitled to?

19 A. Yes, sir. It came from that -- the previous
20 exhibit.

21 Q. All right. Line 109, what's the
22 significance, if any, of the blue highlighting?

23 A. I do not recall.

24 Q. Are you the one that would have made the --
25 included the blue highlighting?

1 A. Most likely, yes, sir.

2 Q. Do any of your assistant water masters create
3 documents like Exhibit 92?

4 A. No, sir.

5 Q. Who else would work with this particular
6 document or have access to it?

7 A. That would be myself, and then I work closely
8 with our WRAB bureau in Albuquerque, the abstracting
9 bureau and the bureau chief up there to make sure that
10 all of our queries are accurate and our data is
11 correct.

12 Q. Remind me again of who that is or who it was
13 at the time of this?

14 A. At the time it was a gentleman by the name of
15 Rick DeSimon.

16 Q. And who is it today?

17 A. Today I don't work with the bureau chief. I
18 work with somebody that works under the bureau chief,
19 a gentleman by the name of Michael Opitz, and he's
20 been helping me work through these queries for the
21 last at least four years.

22 Q. How do you spell his last name?

23 A. O-P-I-T-Z.

24 Q. What was the purpose of the NOI sub-file?

25 A. We -- we just broke those out to get a count

1 A. Correct.

2 Q. But that's not tracked anywhere?

3 A. No, sir.

4 Q. Okay.

5 MR. GOLDSBERRY: Judy, do you have any
6 questions?

7 FURTHER EXAMINATION

8 BY MS. COLEMAN:

9 Q. When you say about a hundred enforcement
10 actions occur a year, does that include over diversion
11 related enforcement actions or is that just the types
12 of enforcement matters that are in this spreadsheet?

13 A. That's only what's in this spreadsheet.

14 Q. Okay. Do you know how many about an average
15 number of over diversion enforcement actions occur
16 every year?

17 A. That -- that number tends to fall between 200
18 and 300.

19 Q. Per year?

20 A. Per year.

21 Q. Keeping your lawyers busy.

22 A. It keeps me busy.

23 Q. Yeah. And have -- I guess I'll just repeat
24 Mr. Goldsberry's questions then. Have you testified
25 in any of those enforcement matters?

1 A. Again, so with over diversion, we have a
2 separate process. We have an expedited hearing
3 process set up for that to try to resolve those issues
4 within a year, and I've been prepared to testify at
5 hearing, and we usually resolve those issues at -- at
6 the table without having to testify.

7 Q. For purposes of your compliance tracking, do
8 you take into account priority date?

9 A. Not at this point in time, no, ma'am.

10 Q. When you say "at this point in time," can you
11 explain why you say "at this point in time"?

12 A. Well, you know, in a priority call, it's
13 always a potential issue. So if that were the case
14 then we would look at priority date for enforcement
15 actions, but as of right now, we haven't had to deal
16 with that.

17 Q. So you would look at priority date only if
18 there was a call?

19 A. Correct.

20 MS. COLEMAN: That's all I have.

21 MR. GOLDSBERRY: All right. Let's mark
22 this as the next exhibit in order, please.

23 (Exhibit No. 99 was marked.)

24 MR. ROMAN: Thank you.

25 MR. GOLDSBERRY: I've got plenty.

1 FURTHER EXAMINATION

2 BY MR. GOLDSBERRY:

3 Q. Okay. I've had marked a document. I believe
4 it's four pages long. It's also designated as NM --
5 New Mexico 94165 through 94168. Have you seen this
6 document before?

7 A. Yes, sir.

8 Q. And what is it?

9 A. This is our procedures for expedited hearing
10 for LRG over diversions.

11 THE VIDEOGRAPHER: Sorry, sir, can you
12 put your microphone back on?

13 MS. COLEMAN: Microphone. Your mic.

14 MR. GOLDSBERRY: I'm sorry.

15 Q. (BY MR. GOLDSBERRY) And what's the -- what's
16 the date of this document? I mean, when -- when was
17 it put into effect?

18 A. From -- from what I recall, this was 2013. I
19 worked on these procedures with a contract attorney.

20 Q. Well, this particular document, if you turn
21 to Page 4, at least it's not a signature, but there's
22 a date of January 30th, 2015, and the name Hilary
23 Lamberton. Do you know who she is?

24 A. Yes, sir. She's the contract attorney I
25 referenced, and she was also previously the managing

1 attorney for the ALU, the administrative litigation
2 unit.

3 Q. Okay. So let's go back and see if I can make
4 my question a little clearer. Do you know when these
5 procedures were made known to the public?

6 A. I don't recall a specific date that happened.

7 Q. Because this has the date, January 30th,
8 2015, on it, have these procedures been modified since
9 that time?

10 A. Not to my knowledge.

11 Q. And if I'm a diverter in the lower Rio
12 Grande, how is it I educate myself about these
13 procedures?

14 MR. ROMAN: Object to form.

15 MR. GOLDSBERRY: Let me try it a
16 different way.

17 Q. (BY MR. GOLDSBERRY) Where do members of the
18 public have to go to inform themselves of these
19 procedures?

20 A. Straight to the district office. We would
21 provide this to them if they requested it. And we
22 also try -- you know, when we're doing over diversion
23 enforcement at the different stages of the process, we
24 inform those folks that we're enforcing against their
25 options under these expedited hearing procedures.

1 Q. Are you aware of any other water master
2 districts in the State of New Mexico that follow these
3 procedures?

4 A. I do not. As far as I know, we are the --
5 the only district.

6 Q. Do you have an understanding as to why that
7 is?

8 A. Well, we're -- we're unique in the sense that
9 we have such a large -- it's a large district, a lot
10 of water users, an active adjudication and a -- and an
11 FDR associated with the amount of irrigated acreage
12 per -- per water right. So in trying to enforce that,
13 it's such a large volume of enforcement actions that
14 we had to do something specific to the lower Rio
15 Grande that would be able to accommodate that
16 enforcement. It -- it's unlike anywhere else in the
17 state, as I understand it.

18 Q. And these hearing procedures refer to an
19 administrative law proceeding, correct?

20 A. Correct.

21 MR. GOLDSBERRY: Are we finished with
22 Exhibit 98?

23 MS. COLEMAN: I just have a couple of
24 questions.

25

1 FURTHER EXAMINATION

2 BY MS. COLEMAN:

3 Q. To your knowledge, have any of these
4 expedited hearing procedures that have been initiated
5 resulted in an actual hearing or have they all been
6 settled?

7 A. Hearings have been scheduled, and the issues
8 were settled before the hearing occurred.

9 Q. Were there any default judgments entered in
10 any of these procedures?

11 A. Not that I'm aware of.

12 Q. So -- so the 200 to 300 enforcement actions
13 approximately that happened per year involved have all
14 been settled with the water users?

15 A. Yes, ma'am.

16 Q. To your knowledge, has any other party
17 intervened in one of these procedures before?

18 A. No, ma'am, not that I'm aware of.

19 Q. Not that you're aware of. When I -- I'm
20 sorry for not having read this document, but to your
21 knowledge, are the -- is there notice of the hearing
22 procedure sent to EBID, for example?

23 A. No, ma'am. As far as I know, notice is only
24 sent to the -- the person in question, the violator.

25 Q. And how are those settlements -- how are the

1 settlements in these processes documented?

2 A. In the beginning when this was first
3 generated, when we would get to the point where we had
4 to schedule a hearing, we would generate a settlement
5 agreement like we referred to earlier with those
6 people that -- that had a scheduled hearing, and those
7 would be signed by myself and the individual, and
8 those would be reviewed by the -- or sent to the water
9 right director for his final approval. And today --
10 I'm sorry. And then today, we have a more formal
11 process where we have what's called a repayment plan,
12 that every -- every over diverter has to commit to,
13 and that details their plan for repaying or
14 reconciling that over diversion. And that started in
15 2017.

16 Q. Is that plan publicly available?

17 A. It's available. Again, it's in the files.

18 Q. In the files. To your knowledge, have there
19 been repeat over diverters?

20 A. There have.

21 Q. Do you have a sense of how many?

22 A. Not right now.

23 Q. As -- to your knowledge, do the penalties
24 increase for repeat over diverters?

25 A. Typically, when we have a repeat offender,

1 it's not consecutive years. It's -- they'll have one
2 over diversion in a year, and then they'll have come
3 into compliance the following year, and then they may
4 over divert again in the year three or year four. So
5 there's no increased penalties when it's
6 nonconsecutive. In my career to this point, I haven't
7 seen a consecutive over diversion.

8 Q. To your knowledge, have there been any
9 actions relating to violations of these settlement
10 agreements?

11 A. There have not to my knowledge.

12 MS. COLEMAN: Okay.

13 (Exhibit No. 100 was marked.)

14 F U R T H E R E X A M I N A T I O N

15 BY MR. GOLDSBERRY:

16 Q. All right. I've had Exhibit No. 100 marked,
17 and that is New Mexico 142285. Okay. So, now, I'm
18 being told that this particular drive has a problem.

19 MR. ROMAN: Done pretty well up to this
20 point.

21 MR. GOLDSBERRY: See if my luck can hold
22 out.

23 MR. ROMAN: Does it have a -- a disk
24 space that you can put this disk in?

25 MR. GOLDSBERRY: No. They've gotten

1 lazy and they don't put those in machines anymore.
2 They can sell it peripheral that way. All right.
3 I've gotten it to come up.

4 Q. (BY MR. GOLDSBERRY) This is another
5 spreadsheet, and it appears to have four sub-files.
6 Please take a look at that, and we'll talk about it.

7 A. Okay.

8 Q. Do you recognize this document?

9 A. Yes, sir. Again, this is our -- a copy of
10 our lower Rio Grande water master report.

11 Q. Okay. It's another one of your enforcement
12 spreadsheets?

13 A. Yes, sir.

14 Q. Well, the metadata on this document is kind
15 of interesting. It tells us that this document was
16 created in 2008, and January 3rd of 2008, and it was
17 last modified on January 25th of this year. Do you
18 have any understanding about what's going on with this
19 particular document?

20 MR. ROMAN: Can you just clarify what
21 you mean by "what's going on"?

22 MR. GOLDSBERRY: That's fair enough.
23 I'm getting lazy and --

24 MR. ROMAN: I'm not trying to be a
25 stickler.

1 MR. GOLDSBERRY: No, that's a valid
2 objection.

3 Q. (BY MR. GOLDSBERRY) Can -- do you believe
4 that you created this document?

5 A. I -- I believe I did. We -- we just -- from
6 the previous exhibit that we discussed, it was -- it
7 was all the years between 2008 and 2018, and to
8 facilitate a smaller file size, we reduced that to
9 2016 through 2019, as a -- as a working file for my
10 staff to go on.

11 Q. So you just -- you downsized the query that
12 created this document?

13 A. Yes, sir.

14 Q. So in 2019, in the 2019 sub-file, there's
15 only one action listed, correct?

16 A. So far. As of the date of -- that this was
17 last modified, yes, sir.

18 Q. And there were no carryovers from 2018?

19 A. They would still be listed under the 2018
20 tab.

21 Q. All right.

22 MR. GOLDSBERRY: Judy, any questions?

23 MS. COLEMAN: No.

24 (Exhibit No. 101 was marked.)

25 Q. (BY MR. GOLDSBERRY) All right. We've marked

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IN THE SUPREME COURT OF THE UNITED STATES
BEFORE THE OFFICE OF THE SPECIAL MASTER
HON. MICHAEL J. MELLOY

STATE OF TEXAS)
)
Plaintiff,)
) Original Action Case
VS.) No. 220141
) (Original 141)
STATE OF NEW MEXICO,)
and STATE OF COLORADO,)
)
Defendants.)

ORAL AND VIDEOTAPED DEPOSITION OF
RYAN SERRANO
FEBRUARY 26, 2019

ORAL AND VIDEOTAPED DEPOSITION of RYAN SERRANO,
produced as a witness at the instance of the Plaintiff
State of Texas, and duly sworn, was taken in the
above-styled and numbered cause on February 26, 2019,
from 9:23 a.m. to 3:29 p.m., before Heather L. Garza,
CSR, RPR, in and for the State of Texas, recorded by
machine shorthand, at the RAMADA HOTEL & CONFERENCE
CENTER BY WYNDHAM LAS CRUCES, 201 East University
Boulevard, Las Cruces, New Mexico, pursuant to the
Federal Rules of Civil Procedure and the provisions
stated on the record or attached hereto; that the
deposition shall be read and signed.

Job No. 3197405

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EXHIBIT NO.73

103

Memorandum dated January 29, 2019

1 the well that's being replaced?

2 A. No, sir, not always.

3 Q. How frequently does that occur that the
4 replacement well is going to have a larger capacity or
5 be at a greater depth?

6 A. I think for the most part, what we see is
7 greater depth, not necessarily larger capacity in
8 terms of casing size or -- or pump size. Greater
9 depth, individuals trying to achieve better quality
10 water, from -- from what I've been told, from those
11 well owners. But we also see where a well --
12 replacement well will be drilled, you know, sometimes
13 would be smaller, smaller diameter, more depth.

14 Q. How frequent is that?

15 A. Probably more on the order of a third of the
16 time.

17 Q. What is meant by measuring water usage?

18 MR. ROMAN: Object to form.

19 You can answer, if you can.

20 MR. GOLDSBERRY: Let me withdraw the
21 question and rephrase it.

22 Q. (BY MR. GOLDSBERRY) I believe you testified
23 that one of your duties was measuring and reporting
24 water usage within the district. What's involved in
25 reporting water usage?

1 A. Well, of course, through our -- through our
2 metering program, we track the -- we quantify -- track
3 and quantify the amount of water diverted in each
4 of -- a number of different use categories, different
5 uses such as irrigation, municipal, commercial,
6 industrial, dairy, domestic.

7 Q. And -- and are all of those uses reported to
8 the waters database?

9 A. Yes, sir, they are.

10 Q. Are municipal and industrial water uses
11 recorded on the water -- waters database accessible to
12 the public?

13 A. Yes, sir, it is.

14 Q. Is one of your duties the curtailing of how
15 to priority diversions?

16 A. The -- the duties, as they're described in --
17 of a -- in statute, the duties of a water master, yes,
18 sir. Have I ever conducted that activity in my time
19 as the water master, no.

20 Q. Okay. Why not?

21 A. I've never had a priority call called in my
22 district.

23 Q. Is one of your duties the -- some sort of
24 coordination with the United States Bureau of
25 Reclamation?

1 A. Some -- some coordination with regard to the
2 two districts and their use of surface waters within
3 the district. Not too frequently do we coordinate
4 with the Bureau of Reclamation directly. I do receive
5 some e-mails from the Bureau of Reclamation with
6 regard to annual project operations from the area of
7 field office in Albuquerque, and -- and I use those
8 generally just to get a sense of where Rio Grande
9 project surface waters are within the district, and
10 that -- that gives me a good sense of where I can
11 allocate my staff's time and resources.

12 Q. And that's the only interaction you've had
13 with the Bureau of Reclamation?

14 A. That's the only regular interaction I have.
15 I have -- in the past, I have had the Bureau report
16 what -- what they determine -- what they categorized
17 as illegal activity to me. They reported that -- that
18 particular incident, I think it went to the state
19 engineer and, again, that was forwarded to the water
20 rights director. The water rights director forwarded
21 it to the manager, and the manager had me investigate.
22 That's happened a couple of times during my tenure.

23 Q. Okay. When was the last time?

24 A. I want to say that was 2013 approximately.
25 2012/2013.

1 Q. Okay. And this was an allegation or
2 indication by the Bureau of Reclamation that there was
3 illegal pumping going on?

4 A. Illegal diversions off of the main stem of
5 the Rio Grande.

6 Q. Okay. And did you investigate that?

7 A. I did, yes, sir.

8 Q. And what was the result of that
9 investigation?

10 A. We -- we found that many of the sites that
11 the Bureau had identified as illegal were not, in
12 fact, illegal, but were valid under New Mexico
13 statutes. Some of the sites were points -- project
14 points of diversions for individuals who receive water
15 through the Elephant Butte Irrigation District, and
16 there were, in fact, a couple that were illegal, yes,
17 sir.

18 Q. Okay. And what was done about the illegal
19 ones?

20 A. The illegal ones, they were, again, in
21 accordance with our -- with our process, we conducted
22 that field investigation. We documented it
23 thoroughly, and I sent them a notice of noncompliance
24 and asked them to remove all of that equipment from
25 the banks of the river immediately.

1 A. Through my own personal e-mail, and I did --
2 some e-mails were provided as part of that RFP
3 process.

4 Q. Do you know how long your e-mails are
5 maintained?

6 A. No, sir, I don't know.

7 Q. What stimulates a field check of the well?
8 Let me rephrase that question. I don't like it.

9 What causes you to go out and do an
10 inspection of a well?

11 A. There's -- there's a couple of different
12 things. One -- the first would be when a meter is
13 installed on a well or a meter is replaced or
14 repaired, the owners will notify us of that activity,
15 and that would trigger an inspection on the part of me
16 and my staff. We would go out and make sure that the
17 meter and the meter installation adheres to our
18 standards and specifications. The second would be, I
19 think we talked a little bit about this earlier, with
20 regard to the buckslip and the standard process for
21 the water rights division. When those approved
22 applications are forwarded through me, we'll set up an
23 appropriate meter file for that particular point of
24 diversion, and when the well log is received for that
25 particular application, we'll go out and inspect that

1 well to make sure that all the well driller's rules
2 and regulations with regard to construction are
3 followed, the permit conditions are followed, and as
4 well as the metering conditions and all the related
5 meter requirements as stated in the lower Rio Grande
6 metering order. So that's a second trigger. And then
7 the third would be in the course of our day-to-day
8 activities out in the field, if we come across a well
9 that's pumping, that's diverting groundwater, my staff
10 would make a point to stop and test those meters on a
11 regular basis to ensure that they're -- they fall
12 within our acceptable accuracy range.

13 Q. And what is that range?

14 A. As stated in the lower Rio Grande metering
15 order, that range is plus or minus 10 percent
16 installed accuracy. The manufacture accuracy out of
17 the box has to be plus or minus 2 percent.

18 Q. So the -- the folks that have the meters on
19 their wells, they have an obligation to, I think you
20 told me, to report either on a quarterly or monthly
21 basis the amount of their diversions, correct?

22 A. Correct.

23 Q. And is that done electronically?

24 A. It takes on several different forms.
25 Electronic is one, via e-mail. They also send in

1 paper copies of their meter forms to the office or
2 they fax it in.

3 Q. Okay. How does -- how did the faxed and
4 paper copies, how did those get entered in the
5 database?

6 A. When they're received, our front office staff
7 date stamps those. They hand them off to any one of
8 my four assistant water masters, and they enter that
9 data on a daily basis.

10 Q. Okay. So your -- your assistants are doing
11 the entry. How many -- how many wells -- I may have
12 asked you this, but I'll ask it again anyway. How
13 many wells are you getting metering reports on
14 currently?

15 A. Currently, we're receiving approximately 90
16 percent of our metered wells are sending in their
17 readings, and that's as of -- as of our last quarterly
18 on that particular issue, which was run some time last
19 month.

20 Q. So 90 percent of what sort of a total?

21 A. Right in the range of 2,600 wells. So 90
22 percent of the 2,600 is -- has a reading entered for
23 the last quarter of 2018.

24 Q. I take it that will be referred to in your
25 2018 annual report, correct?

1 A. Yes, sir.

2 Q. Has that been completed, your 2018 annual
3 report?

4 A. As of today, no, sir. I've kind of been busy
5 with RFPs.

6 Q. Haven't we all? So as of the last quarter of
7 2018, you've got about 260 wells that aren't sending
8 in their reports, correct?

9 A. Approximately, yes, sir.

10 Q. Walk me through the process of what you're
11 going to do about those folks.

12 A. Well, the -- the process would have began
13 prior to the last quarter, so we have a standard
14 process for achieving -- or receiving those last
15 quarter meter readings. What we do every year is we
16 send out a postcard, a reminder postcard to every
17 single owner of an actively-metered well, reminding
18 them of their obligations to submit their readings at
19 the end of the year or for every quarter for that
20 matter, and that's sent out prior to the January 10th
21 reporting deadline. After the January 10th reporting
22 deadline, roughly two weeks after that has past, I
23 will run a query to see which readings are still
24 outstanding, and I will send a notice -- an initial
25 notice noncompliance to those owners who had not sent

1 in the readings, and we usually -- we generally get a
2 really good response to that, and it'll bump up our
3 percentages up to 70 or 80 percent. And from there,
4 if we still have some outstanding, what we do is we'll
5 conduct what's called a meter blitz, and the purpose
6 of the meter blitz is to acquire those meters that are
7 outstanding for the purpose of completing our water
8 master report and ensuring that we have a
9 representative sample of all the wells reporting. So
10 from there, after that point, it would be where we're
11 at today. If those readings are outstanding, we'll
12 send a second notice of noncompliance to those owners
13 and begin a process where -- with our administrative
14 litigation unit where we can try to seek penalties for
15 them not complying with their requirements to report.

16 Q. When you took over the job as the water
17 master, what was the compliance rate with regard to
18 meter reporting?

19 A. It -- it was variable at times, more in the
20 range of -- of 80 to 85 percent submittal rate.

21 Q. Okay. And that -- and that submittal rate is
22 documented every year in your annual report?

23 A. Since -- since my time as the water master,
24 yes, sir.

25 Q. Okay. Now, what type of wells have a monthly

1 reporting requirement?

2 A. That would be municipal, commercial,
3 industrial.

4 Q. How many of those wells do you have currently
5 in the district?

6 A. I can't say that I've ever broken out that
7 particular category. What I would consider
8 non-irrigation, which is inclusive of some of those
9 types of uses is on the order of 400 to 450.

10 Q. So you get 400 to 450 wells that are
11 non-irrigation, and that includes municipal,
12 commercial, and industrial?

13 A. A portion, yes, sir.

14 Q. Okay. What else does it include?

15 A. It includes some metered domestic, some
16 metered multiple domestic, some ag use -- what are
17 considered ag use, which is non -- it's ag use that's
18 non-irrigation. There would be some fish and game
19 propagation, some utilities, some subdivision, some
20 school use. There -- there's a long list of
21 categories in the non-irrigation field.

22 Q. And where would I find that if I wanted to
23 look for it?

24 A. You can find that -- we try to detail that in
25 our annual water master report, but a more complete

1 list would be available in the water rights
2 abstracting bureau, because we follow suit with their
3 codes as they're entered into the water database.

4 Q. Okay.

5 MR. GOLDSBERRY: Let's break for lunch.

6 THE VIDEOGRAPHER: Off the record,

7 12:03.

8 (Break.)

9 THE VIDEOGRAPHER: On the record, 1:36,
10 File 4.

11 Q. (BY MR. GOLDSBERRY) Just before lunch or
12 shortly before lunch, you mentioned something about
13 the administrative litigation unit collecting
14 penalties for non -- noncompliance. Are you involved
15 in the actual -- well, tell me the process. How --
16 how do they get to the -- to the penalty stage?

17 A. The penalties themselves are not collected by
18 the administrative litigation unit. We -- through our
19 compliance order and action process, we will -- we'll
20 send an initial notice like we've talked about from
21 the water master, then there's a certain period of
22 time between a second notice will be sent from the
23 administrative litigation unit if the issue hasn't
24 been resolved, and if the issue continues to be
25 unresolved then we will petition district court for

IN THE SUPREME COURT OF THE UNITED STATES
BEFORE THE OFFICE OF THE SPECIAL MASTER
HON. MICHAEL J. MELLOY

STATE OF TEXAS)	
)	
Plaintiff,)	
	)	Original Action Case
VS.	)	No. 220141
	)	(Original 141)
STATE OF NEW MEXICO,)	
and STATE OF COLORADO,)	
)	
Defendants.)	

 REMOTE ORAL AND VIDEOTAPED DEPOSITION OF
 JENNIFER STEVENS
 JULY 27, 2020

REMOTE ORAL AND VIDEOTAPED DEPOSITION of
 JENNIFER STEVENS, produced as a witness at the
 instance of the Plaintiff State of Texas, and duly
 sworn, was taken in the above-styled and numbered
 cause on July 27, 2020, from 9:01 a.m. to 1:45 p.m.,
 before Heather L. Garza, CSR, RPR, in and for the
 State of Texas, recorded by machine shorthand, at the
 offices of HEATHER L. GARZA, CSR, RPR, The Woodlands,
 Texas, pursuant to the Federal Rules of Civil
 Procedure and the provisions stated on the record or
 attached hereto; that the deposition shall be read and
 signed.

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1 surface water and groundwater in the area below
2 Elephant Butte was so limited and conflicting at the
3 time of the Compact ratification that it did not
4 warrant a single mention as part of the water supply
5 during the negotiations. Compact negotiators did not
6 intend to include groundwater as part of the supply
7 subject to the terms of the Compact."

8 Now, the Compact commissioners of 1938 had
9 engineer advisors, correct?

10 A. Yes.

11 Q. And who was the engineer advisor for the
12 State of Colorado?

13 A. Hinderlider. I don't recall off the top of
14 my head.

15 Q. He was the commissioner, right?

16 A. He was the commissioner.

17 Q. He was also --

18 A. Yes. Tipton.

19 Q. Royce Tipton?

20 A. Yes.

21 Q. John Bliss was then hearing advisor to New
22 Mexico, correct?

23 A. Yes.

24 Q. And Raymond Hill was the engineering advisor
25 for Texas?

1 A. Yes.

2 Q. And the commissioner had an engineering
3 advisor named Dimler, right?

4 A. Yes.

5 Q. What was the educational background of
6 Mr. Bliss; do you know?

7 A. I don't.

8 Q. Do you know the educational background of
9 Mr. Tipton?

10 A. Not off the top of my head, no.

11 Q. How about Raymond Hill?

12 A. Don't recall.

13 Q. How about Mr. Dimler?

14 A. Educational background? I don't remember.

15 Q. They were all trained engineers of some sort,
16 correct?

17 A. I assume so, yes, but I don't recall
18 specifically what their educational backgrounds were.

19 Q. As part of your responsibility as engineering
20 advisors, do you expect that those gentlemen would
21 have reviewed material available about the water
22 resources of -- of the Upper Rio Grande Basin as a
23 part of their job in connection with advising the
24 commissioners to the Compact Commission of 1938?

25 A. Yes.

1 Q. So you would expect them to -- to have been
2 familiar with the Slichter report?

3 A. I would imagine they were, at least -- at
4 least New Mexico and Texas' engineers would have been.

5 Q. And the Lee report?

6 A. Most likely, yes.

7 Q. And the reports in the 1920s about the --
8 about the waterlogged lands and the creation of the
9 drains?

10 A. I would imagine they'd be familiar with
11 those, yes.

12 Q. And the Bliss report in the '30s?

13 A. Yes.

14 Q. And Conkling's report?

15 A. I would imagine so.

16 Q. How about the JIR, would they have been
17 familiar with the JIR?

18 A. Of course. That was the basis of their
19 discussions.

20 Q. And as I understand it, the JIR made some
21 comments about groundwater, correct, and you -- you've
22 talked about those comments in your report?

23 A. Yes.

24 Q. Let's see what those comments were, if I can
25 find them. There we are. Let's turn to Page -- let's

1 turn to Exhibit 3, Page 12. Scroll down to Page 12.
2 It's not 12 of the J -- I think it's probably 13 or
3 14. There you go. Right there. Now, these comments
4 were part of the General Report, correct?

5 A. Which comments are you referring to?

6 Q. Those -- on Page 12, the quoted comments
7 there designated 1, 2, and 3. See those?

8 A. I'm sorry. We're on Dr. Miltenberger's
9 report? Okay.

10 Q. Yes. I'm sorry.

11 A. Sorry. You're asking me what?

12 Q. First, those comments are a quote from the
13 JIR, correct, those three comments?

14 A. Yes.

15 Q. And this part of the JIR was prepared by
16 Mr. Bryan; is that correct?

17 A. Yes.

18 Q. That was done under the supervision of C.V.
19 Theis, correct?

20 A. If I remember correctly, Bryan worked with
21 Theis. I don't recall seeing that Theis was directing
22 this particular investigation.

23 Q. Well, look at Footnote 29 of
24 Mr. Miltenberger's report, Exhibit No. 3, which is at
25 the bottom of that page.

1 A. I see that.

2 Q. Mr. Bryan is identified as the senior
3 geologist and associate professor of geology at
4 Harvard, and he carried out his study, quote, under
5 the direction of C.V. Theis, end quote --

6 A. I see that.

7 Q. -- in the JIR 197. Do you have any reason to
8 disagree with that?

9 A. No.

10 Q. And in there, it's stated, No. 1, "The
11 extensive development of groundwater for irrigation
12 would add no new water to the Upper Rio Grande Basin."
13 Is that correct?

14 A. That's what it states, yes.

15 Q. Do you have any reason to disagree with that
16 statement?

17 A. I think it's an isolated -- are you -- are
18 you done asking?

19 Q. Yes. I'm sorry.

20 A. So I think that I don't have any reason to
21 doubt that that was in the report; however, there were
22 many other things in the report that I think are
23 equally important to recognize when we're talking
24 about this particular issue, and that is that with
25 regard to groundwater below Elephant Butte Dam, the

1 report also said that in Part 4 that there was meter
2 data and Texas, in particular, Hill -- at the
3 direction of Hill recommended and asked that the area
4 south of Elephant Butte not actually be studied for
5 this joint investigation. So while I don't doubt that
6 this is what No. 1 says, and it comes directly from
7 the joint investigation, I think that there are other
8 things that are important to recognize that came from
9 that same investigation and that same report.

10 Q. Well, let's understand what -- what you
11 understand to be the state of groundwater development
12 in 1938 below Elephant Butte. First, there was a
13 problem identified in 20 -- in -- in -- in 1920s or
14 19 -- actually, 1919 that there was waterlogging down
15 below Elephant Butte because of over-irrigation,
16 correct?

17 A. Yes.

18 Q. And that they had to build drains, correct?

19 A. Yes.

20 Q. And that the drains were necessary in order
21 to continue to irrigate the lands that were meant to
22 be irrigated pursuant to the project, correct?

23 A. Yes.

24 Q. And, in fact, under the JIR, that drain water
25 that appeared in the drains was part of the project

1 supply, correct?

2 A. Yes. The return water was part of the
3 project supply.

4 Q. So that the down -- as you went downstream
5 from the dam, first users were using mostly almost
6 primarily water released from the dam. As you went
7 downstream, each user was using less water from the
8 dam and more water from return flow, correct?

9 A. Yes. That is right.

10 Q. All the way down through El Paso, is that
11 right?

12 A. It is true, yes.

13 Q. And that was --

14 A. Return flows were used multiple times.

15 Q. Okay. And that was the state of affairs in
16 1938, correct?

17 A. Yes. It was.

18 Q. And -- and, in fact, there were very few
19 wells in Elephant Butte Irrigation District as of
20 1938, correct?

21 A. That's right. They were displaced when
22 surface water became readily available when the
23 project went in.

24 Q. In fact, I think I saw in one of the -- your
25 documents that you attached as a supporting document

1 (Exhibit No. 6 was marked.)

2 Q. (BY MR. HOFFMAN) This is Exhibit No. 6. Do
3 you recognize this document? Why don't we go through
4 it page by page? Have you seen the Report of the Rio
5 Grande Board of Review before? Do you see the title
6 up there?

7 A. I may have at some point. I don't recall the
8 details of it right now.

9 Q. It's dated -- do you know what the board of
10 review was?

11 A. Can you go back down to the first page? I
12 don't recall what this is, no.

13 Q. Do you know who the National Resources
14 Committee was?

15 A. Yeah. This was -- okay. So now, I'm reading
16 what it is. Yes.

17 Q. What -- what was the Board of Review?

18 A. It says here it was presumably a group of
19 people appointed by the National Resources Committee.
20 They were the -- the National Resources Committee, of
21 course, was the agency that was charged with assessing
22 various national -- natural resources in the nation,
23 particularly river basins.

24 Q. And this was in 1935 that this report was
25 made?

1 A. The document is September 13, 19 -- I think
2 it's '35. It's hard to read the date.

3 Q. I think it's '35, yeah. That's what I read.
4 Going down to the third numbered paragraph on -- on
5 initial page of this document, the first sentence, do
6 you see that?

7 A. Yes.

8 Q. It says, "The available water resources of
9 the Rio Grande are fully appropriated." Do you agree
10 with that statement as of 1935?

11 A. The surface water was fully appropriated as
12 of 1935.

13 Q. Okay. And that was a part of the basic
14 knowledge that was available to the commissioners and
15 their engineering advisors when they negotiated the
16 Compact, correct?

17 A. They were aware of the -- the full
18 appropriation of the surface supply in 1935, yes.

19 Q. Looking at Page -- document Page No. 839 of
20 this report -- actually, go to 840. It's sort of the
21 conclusion of the report. It says in the middle --
22 second full paragraph, "Should the National Resources
23 Committee elect to seize the opportunity and accept
24 the challenge presented by the situation in the Upper
25 Rio Grande Valley, the initial steps to be taken, in

1 the opinion of the Board, are as follows," and they
2 talk about an investigation. Is that the origin of
3 the JIR to your knowledge?

4 A. I don't know.

5 Q. Okay.

6 MR. HOFFMAN: Could you mark as an
7 Exhibit No. 7, 19380303 to 18?

8 (Exhibit No. 7 was marked.)

9 MR. HOFFMAN: Could you scroll down a
10 little further on the first page, please, so we can
11 read?

12 Q. (BY MR. HOFFMAN) This is a document that
13 comes from the Bureau of Reclamation Project
14 Correspondence File from '30 to '45. Go down further
15 to the -- that describes the file access point that it
16 came from. You looked through the document. This
17 appears to be the proceedings of the Rio Grande
18 Compact Commission that led to the Compact, including
19 various engineering reports, correspondence, et
20 cetera, et cetera. Have you seen this document
21 before?

22 A. I can't see a document. I only see a file
23 folder title.

24 Q. Okay. Scroll through the next page of the
25 document, please. There it goes. Wait, wait, wait.

1 any additional opinions in -- in the future?

2 A. If counsel asks me to or there's new
3 information, I -- I may, yes.

4 MR. HOFFMAN: I have no further
5 questions.

6 United States, do you have any
7 questions?

8 MR. DUBOIS: I have actually got a
9 couple of follow-up questions.

10 E X A M I N A T I O N

11 BY MR. DUBOIS:

12 Q. Dr. Stevens, my name is Jim Dubois. I
13 represent the United States. I'm one of the counsel
14 for the United States in this action. Go back to very
15 early today. Mr. Hoffman asked you about whether or
16 not you had opinions regarding the amount of water
17 that was apportioned to Texas in this case. Do you
18 recall that?

19 A. Yes. And I think he was asking me
20 specifically about a quantitative volume.

21 Q. Is it your opinion as a historian that water
22 was apportioned to Texas under the Rio Grande Compact?

23 A. Yes. I believe that the Compact apportion --
24 incorporated the contracts that were signed
25 contemporaneously with this and apportioned Texas 43

1 percent of the project supply.

2 Q. So that is, in your opinion, all that was
3 appORTIONED to Texas?

4 A. Yes.

5 Q. I didn't hear that because I think you got
6 cut off by something else. Sorry about that. I just
7 got rid of my realtime here.

8 A. Yes.

9 Q. So could you -- okay.

10 Is it your opinion as a historian that
11 water -- as an historian, that water was appORTIONED
12 to New Mexico below Elephant Butte Reservoir under the
13 Rio Grande Compact?

14 A. Yes.

15 Q. And what were they appORTIONED?

16 A. 57 percent of the water supply in the
17 project.

18 Q. Nothing else?

19 A. For the surface water supply, yes, that's
20 correct, nothing else.

21 Q. Is the surface water supply affected by
22 groundwater?

23 MR. WECHSLER: Object to foundation.

24 Q. (BY MR. DUBOIS) That's fine. You can answer.

25 A. Can you be more specific?

1 different than what they were talking about in
2 Colorado. So, yes, concerned, but quite different
3 circumstances.

4 Q. Was -- when Texas sued in 1935, were they
5 concerned about increased depletions from the Middle
6 Rio Grande Project affecting the -- the water supply
7 below Elephant Butte?

8 A. Yes. By 1935, they were.

9 Q. Okay. Turn to Page 39, the last paragraph on
10 39 of your report. This is a discussion of the -- of
11 the 1929 temporary Compact, isn't it?

12 A. Yes.

13 Q. The, quote, temporary Compact?

14 A. Yes.

15 Q. Okay. And you say that, "The Compact would
16 allow for Rio Grande project water users to continue
17 receiving the same allotments of water." Do you see
18 that?

19 A. Yes.

20 Q. What did you mean by continue receiving the
21 same allotments of water?

22 A. Basically, the 1929 Compact, for lack of a
23 better term, froze conditions on the river, and so
24 that's what I was referring to, that they could rest
25 assured that they would continue to receive the water

1 because of the Compact.

2 Q. Well, what did you mean by continuing to
3 receive the same allotments of water?

4 A. I think you're probably ascribing some legal
5 significance to it that I didn't intend.

6 Q. I'm trying to find out what you mean as a
7 practical significance of what was their allotments of
8 water?

9 A. Well, I answered it earlier, though, and said
10 it was because I believe that when they froze the
11 conditions on the river, that they could continue to
12 receive the same amount of water that they'd received
13 before.

14 Q. Okay. The districts or -- or the reservoir,
15 are you talking about, when you said "they"?

16 A. What I wrote was water users.

17 Q. Okay. So you're talking about the end users?

18 A. I believe that's what I was talking about,
19 yes.

20 Q. Okay. That's what I'm asking is I was trying
21 to figure out what you were talking about so you're
22 the only one who can tell me what that is.

23 I think you stated earlier today that it's
24 your opinion that the Compact anticipated the
25 development of water resources below Elephant Butte --

1 **Elephant Butte Reservoir; is that correct?**

2 A. I think it -- I think it did anticipate
3 continued development of water resources throughout
4 all the states, yes.

5 Q. So it's your professional opinion that the
6 Compact anticipated water development below Elephant
7 Butte Reservoir that would deplete or reduce the water
8 supply of the Rio Grande Project?

9 A. No. The Project's supply was protected by
10 the Compact.

11 Q. You're stating that the Compact that
12 anticipated that the amount of supply available to the
13 water users down below Elephant Butte Reservoir could
14 and would be depleted by additional water
15 developments; is that correct?

16 MR. WECHSLER: Object to form.

17 A. I don't think that's what I stated, no.

18 Q. (BY MR. DUBOIS) Okay. What pre-19 -- what
19 pre-Compact documents do you rely on to support your
20 opinion that the Compact drafters intended for
21 development below Elephant Butte Reservoir that would
22 decrease the surface water supply available to the Rio
23 Grande project?

24 MR. WECHSLER: Object to form.

25 A. I don't -- I don't state that. I don't say

1 that opinion, so I don't have any documents to say
2 that.

3 Q. (BY MR. DUBOIS) Okay. Do you agree that the
4 historical documents show that the engineering
5 committees at the time of the Compact understood that
6 pumping in the Rincon and Mesilla Valleys below
7 Elephant Butte Reservoir would impact the flow of the
8 Rio Grande?

9 A. No.

10 Q. So you -- it's your position as historian
11 that the engineers and hydrologists involved in the
12 investigate prior to the Compact did not understand
13 that -- or did not believe that pumping in the Rincon
14 and Mesilla Valley would impact the river flow?

15 A. I think my rebuttal report demonstrates
16 clearly that their knowledge of what would happen with
17 pumping in the Mesilla Valley and how that would
18 affect surface supply was inadequate and that they
19 didn't have an understanding of that.

20 Q. They had no belief one way or the other as to
21 whether pumping would impact flows of the river?

22 A. I think it's pretty clear from all of the Rio
23 Grande Joint Investigation, they may have had beliefs,
24 but they were not based on any good data, and over and
25 over in the historical record, it says that that --

1 the data in the area that we're talking about
2 downstream from Elephant Butte was, quote unquote,
3 meager, and that was repeated over and over and over.
4 So they may have had beliefs about what that might
5 have done, but they did not have data that supported
6 that and -- yeah, I'll leave it at that.

7 **Q. What was -- what was their belief as to**
8 **whether or not pumping impacted the river?**

9 A. Who -- who --

10 **Q. The 1938 joint -- the 1938 joint**
11 **investigation, what was the belief as to whether**
12 **pumping in the Rincon and Mesilla impacted the Rio**
13 **Grande River?**

14 A. Do you have the joint investigation and the
15 tiny little paragraph that they talk about in the
16 Mesilla Valley, because I don't have it committed to
17 memory.

18 **Q. Okay. But it's your opinion that they had --**
19 **that they -- is it your opinion that they had no**
20 **belief or understanding of how -- of whether --**
21 **whether pumping impacted the river?**

22 A. As I said, I think they probably did have
23 beliefs, but they don't even talk about them. They
24 talk about pumping and groundwater in the areas above
25 Elephant Butte, and they acknowledge readily and

1 repeatedly that the information they have south of
2 Elephant Butte is meager and that they -- they didn't
3 even devote any -- hardly any -- they hardly devoted
4 any resources to studying that during the joint
5 investigation. \$7,000. That's all they spent. And
6 Texas actually discouraged them from spending money
7 and doing any studies there. So they may well have
8 had beliefs, but they say very clearly in documents
9 and in the actual published report that they don't
10 have data in that area.

11 **Q. So is it your statement that there's nothing**
12 **in the Rio Grande Joint Investigation Report that**
13 **indicates whether or not the engineers believed that**
14 **pumping from the -- the aquifers next to the river**
15 **impacted the flow of the Rio Grande?**

16 A. In the Mesilla Valley?

17 **Q. Uh-huh. In the Mesilla Valley, yes.**

18 A. I don't recall. And, again, I'd like to look
19 at the report again and look at that section.

20 **Q. Okay. Is it your opinion that the Compact**
21 **drafters intended for water development in New Mexico**
22 **below Elephant Butte would be able to decrease the**
23 **water supply of the Rio Grande Project?**

24 A. I believe that the Compact protected the Rio
25 Grande project water supply.

IN THE SUPREME COURT OF THE UNITED STATES
BEFORE THE OFFICE OF THE SPECIAL MASTER
HON. MICHAEL J. MELLOY

STATE OF TEXAS)	
)	
Plaintiff,)	
	)	Original Action Case
VS.	)	No. 220141
	)	(Original 141)
STATE OF NEW MEXICO,)	
and STATE OF COLORADO,)	
)	
Defendants.)	

REMOTE ORAL AND VIDEOTAPED DEPOSITION OF
GREGORY K. SULLIVAN
AUGUST 13, 2020
VOLUME 1

REMOTE ORAL AND VIDEOTAPED DEPOSITION of GREGORY K. SULLIVAN, produced as a witness at the instance of the Plaintiff State of Texas, and duly sworn, was taken in the above-styled and numbered cause on August 13, 2020, from 9:04 a.m. to 4:35 p.m., before Heather L. Garza, CSR, RPR, in and for the State of Texas, recorded by machine shorthand, at the offices of HEATHER L. GARZA, CSR, RPR, The Woodlands, Texas, pursuant to the Federal Rules of Civil Procedure and the provisions stated on the record or attached hereto; that the deposition shall be read and signed.

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1 **MR. DUBOIS:** That's okay.

2 **Q. (BY MR. DUBOIS)** This should pull up,
3 **Mr. Sullivan, as a -- as a Excel spreadsheet.**

4 **A.** Well, that's not going to answer it.

5 **Q. We should be so lucky, right?**

6 **A.** Yeah. Let's see. I could -- I could figure
7 out the answer to this, but I -- I think if the
8 question is what is included in this Juarez column, I
9 don't -- I don't know off the top of my head, and I
10 would have to look into that and get back to you, to
11 be sure.

12 **Q. Okay. Going back to the --**

13 **A.** Hold on just a sec.

14 **Q. Sure.**

15 **A.** I thought of something else that might help
16 me. I'm pretty sure this is just the Acequia Madre
17 because it's maxing out at 60,000 many years. These
18 are the annual totals I'm looking at now.

19 **Q. Okay. Going back to --**

20 **A.** So --

21 **Q. Go ahead.**

22 **A.** Well, in the earlier years, of course there
23 was diversions more than 60,000 before they re-plumbed
24 the -- the system, but, yeah.

25 **Q. Okay. Going back to the -- the comment on**

1 the EBID column in Column S.

2 A. Okay.

3 Q. The 15, 20 percent carriage deducted from
4 EBID's, is that based on an analysis of seepage losses
5 that was actually performed by -- by -- that was
6 physically performed to look at -- to look at seepage
7 losses or is that the result of a tuning factor?

8 A. No. I think those are the figures that are
9 used in the accounting.

10 Q. In which accounting?

11 A. Project accounting.

12 Q. Going back to the sensitivity analysis you
13 were talking about with Ms. Barfield, you just said
14 that there were low, medium, and high sensitivity
15 elements that -- that were tested; is that right?

16 A. Well, I think we were talking about the
17 results, and that's what I --

18 Q. Yes.

19 A. The characterization is more specific in the
20 report, but there was some -- some parameters or
21 inputs that have more sensitivity than others. Some
22 were low, some were high, some were in the middle.

23 Q. What -- how did you -- how did you define
24 what was a low sensitivity?

25 A. I think they're just relative to one another.

1 So -- and then looking at the results, the -- the --
2 that are in the table in particular, it was just a
3 general somewhat subjective characterization of how
4 sensitive I felt they were.

5 **Q. What -- what inputs had high sensitivity?**

6 A. Well, the ones that stand out is the CIR crop
7 irrigation requirement input.

8 **Q. Anything besides CIR?**

9 A. No, that's the one with the high sensitivity.

10 **Q. What were some of the medium sensitivity**
11 **inputs?**

12 A. Well, I guess what I put in generally in the
13 meeting category was the canal bed conductance, and
14 then the other three were fairly low sensitivity, the
15 drain bed, river bed, and alluvial aquifer hydraulic
16 conductivity.

17 **Q. Did you make any -- any changes to inputs**
18 **based on sensitivity runs?**

19 A. No.

20 **Q. Can you turn to, in your rebuttal report,**
21 **Opinion 4 of Jean Moran, which is on PDF Page 103,**
22 **please?**

23 A. Okay.

24 **Q. All right. If you recall, Ms. Moran pointed**
25 **out that there was a -- a bias change between the**

1 pre-1985 results and the post-1985 results. Do you
2 recall that?

3 A. I do recall that.

4 Q. Okay. And it appears that in the rebuttal
5 report and the revised model runs, the difference in
6 the bias pre and post 1985 has been narrowed; is that
7 correct?

8 A. Yes.

9 Q. What changes were made in the models to -- to
10 address the bias difference between the pre and post
11 1985 times -- time periods?

12 A. I don't know if it was anything specific that
13 this is just an outcome of the model improvements and
14 tuning.

15 Q. So the changes in the tuning factors narrowed
16 the -- the bias; is that correct?

17 A. Well, as well as the other improvements and
18 refinements to the rules. All -- all of that put
19 together had -- had an effect of narrowing that
20 difference between pre and post '85, Caballo releases
21 and El Paso flows.

22 Q. Were those changes made to address that bias
23 or that change in bias?

24 A. Not specifically, no. I -- I didn't think
25 that bias was a problem before, but it hasn't been.

1 Q. And who developed the -- who developed the
2 changes to the -- to the rules in the tuning that --
3 that resulted in that improvement?

4 A. Well, it was Hydros with collaboration from
5 myself and others.

6 Q. And what changes in the -- in the rules or
7 the -- or the tuning did you suggest?

8 A. Well, I think we went over this, this
9 morning, but I'm glad to go over it again.

10 MS. THOMPSON: I'll go ahead and object,
11 too. It was asked and answered this morning.

12 Q. (BY MR. DUBOIS) You can go ahead and answer.

13 A. Well, I mean, just in general, as -- as the
14 tuning was done or even the -- yeah, I guess as we
15 started the start of the tuning, we had some
16 discussions about, say, how the reservoir was
17 performing in wet times or what the diversions looked
18 like and -- and just a general discussion about
19 what -- what things -- it was more, I guess, the
20 context of, Steve, is there anything you can do to
21 help improve this particular piece of, you know,
22 performance, you know, this looks like something that
23 it'd be nice if we could get this -- tighten up this
24 part of the calibration, and then Steve would try
25 some -- try some things out, some adjustments and

1 tuning factors and the like to see if he could do
2 that.

3 Q. Okay. Turn to Page -- PDF Page 110 of your
4 rebuttal report, please.

5 A. All right.

6 Q. Well, I'm having trouble getting there so you
7 have to be patient with me. It's Page 98 of your
8 report. Okay. All right. Now, in Ms. Moran's
9 Opinion 16, she states that, "Both models are able to
10 make predictions and show the pumping in the Rincon
11 and Mesilla basins impact the project. Neither New
12 Mexico nor Texas provides an error analysis for the
13 models to give a range of uncertainty of the results.
14 The differences between the models is likely within
15 the uncertainty of the models. Both the New Mexico
16 and Texas models are numerical tools showing that
17 pumping impacts the project and cutting back pumping
18 would improve project performance. Both models have
19 uncertainties." Do you see that?

20 A. Yes.

21 Q. And you submitted a response implying that
22 you do not agree with her Opinion 16. Do you agree
23 with her Opinion 16? Let me -- let me break it down a
24 different way and make it simpler. Ms. Moran says
25 that both models are able to make predictions. Do you

1 agree with that, both the ILRG and the Texas model?

2 A. Well, I mean, from 30,000 feet, that's true,
3 but the Texas model is not able to make the kinds of
4 predictions that the New Mexico model can.

5 Q. I understand -- I understand that, but they
6 are both capable of making predictions; isn't that
7 right?

8 A. Very -- in a simplistic way of interpreting
9 that question, yes.

10 Q. Okay. And Ms. Moran says that both models
11 show that pumping in the Rincon and Mesilla Basin
12 impact the project. Do you disagree with that?

13 A. Yes. Because the Texas model doesn't --
14 doesn't compute impacts on the project. It just
15 computes water running out the bottom of the model.

16 Q. All right. Does the New Mexico model show
17 that pumping in the Rincon and Mesilla Basins impacts
18 the project?

19 A. Yes.

20 Q. Okay. And next, Ms. Moran says that,
21 "Neither New Mexico nor Texas provided an error
22 analyses for their models to give a range of
23 uncertainty of the results." Do you disagree with
24 that?

25 A. I do not.

1 Q. Okay. Next, she says, "The differences
2 between the models is likely within the uncertainty of
3 the models." Do you see that?

4 A. Yes.

5 Q. Do you disagree with that?

6 A. That -- that's a hard question. I mean, we
7 don't -- we don't have a formal uncertainty analysis,
8 but I -- I think -- it depends on what differences
9 between the models we're talking about, so that's
10 number one. I -- I think the -- our model is a lot
11 less than certain than the Texas model.

12 Q. But you don't have -- you don't have any
13 uncertainty analysis for the New Mexico model,
14 correct?

15 A. Not a formal uncertainty analysis, but
16 with -- in working with it, I would -- well, in a
17 relative sense, that's all I'm saying. I -- I know
18 for certain that the New Mexico model is more certain
19 than the Texas model in terms of the results.

20 Q. What's the range of uncertainty of the New
21 Mexico model?

22 A. I don't know what the range is. I'm just
23 saying relative. It's a relative opinion.

24 Q. But we don't know what -- we don't know what
25 the range of uncertainty is regarding either of the

1 **models; isn't that correct?**

2 A. Not in a formal sense.

3 **Q. Okay.**

4 A. But I -- but I do know it in a --

5 **Q. And --**

6 A. -- development sense.

7 **Q. And both the -- do you agree with your**
8 **statements that both the New Mexico and Texas models**
9 **are numerical tools showing that pumping impacts the**
10 **project?**

11 A. We just talked about that. I don't think
12 I -- we can say that with the Texas model.

13 **Q. Well, if the Texas model is showing impacts**
14 **to the Rio Grande above the El Paso gage, isn't that**
15 **showing impacts to the project?**

16 A. I don't consider turning off water and
17 running out the bottom of the model an impact to the
18 project.

19 **Q. Does that show that the pumping -- does the**
20 **Texas model shows that pumping impacts the surface**
21 **supply of the Rio Grande?**

22 A. I would agree with that.

23 **Q. Okay. Is the surface supply of the Rio**
24 **Grande fully appropriated?**

25 **MS. THOMPSON:** Objection to the extent

1 it calls for a legal conclusion.

2 Q. (BY MR. DUBOIS) Fair enough. You can answer
3 if you can.

4 A. I don't know.

5 Q. Okay. And she says that, "Both models show
6 that cutting back pumping would improve project
7 performance." Do you see that?

8 A. I see that statement.

9 Q. Okay. Do you agree with it or disagree with
10 it?

11 A. I think -- well, it depends on what you mean
12 by project performance, I guess, is one question, but
13 I -- I don't think --

14 Q. Well, how do you use -- how do you use
15 project performance then because you used it earlier
16 today?

17 A. Well, when we were talking about the context
18 of -- of the diversion ratio, so that's -- that's what
19 we're talking about. I think -- but in general, you
20 know, project performance for the reasons we talked, I
21 just mentioned that the Texas model doesn't really
22 simulate the project. I don't -- I don't see how it
23 really can show that, that cutting that pumping
24 improves project performance in a meaningful way.

25 Q. Does the New Mexico model show that cutting

1 back pumping would improve project performance, as
2 you've defined project performance?

3 A. Yes.

4 Q. Okay. So basically what you disagree with as
5 far as Moran's Opinion 16 is that you don't feel that
6 the Texas model can precisely identify impacts on
7 project diversions or project performance; is that a
8 reasonable statement?

9 MS. THOMPSON: Objection; form.

10 A. If you want to know what I'm getting at
11 there, it's -- it's that -- it seemed to me that as a
12 conclusory opinion in Ms. Moran's report, she was
13 effectively trying to say, look, we have these two
14 uncertain models, they're both -- you know, they're
15 both -- one is as good as the other, and she was
16 trying to somehow equate them as being on the same
17 level, and -- and I feel like that's just not true at
18 all. So that's what I was trying to get at in my
19 response here, that -- that the New Mexico model is --
20 is a far more sophisticated and able tool for
21 answering the questions in this case.

22 Q. (BY MR. DUBOIS) But you agree that both
23 models do show that pumping in the Rincon and Mesilla
24 Basins impacts the flow of the Rio Grande River,
25 right?

1 A. Well, if -- if the question is just a yes/no
2 question, then we don't even hardly need models, but
3 if we need to quantify these things and -- and get
4 into the nuances, then we need to -- you know, we need
5 a tool like the one New Mexico has.

6 Q. Okay. So we don't need the model to -- we
7 don't need a model to be able to state that the
8 pumping in the Rincon and Mesilla Valley impacts the
9 Rio Grande; is that what you're saying?

10 A. Yeah, I don't think we need a model for that
11 yes/no question.

12 Q. All right. And you've said that the New
13 Mexico model does show that -- that pumping in the
14 Rincon and Mesilla impacts the surface flow available
15 to the project; is that right?

16 A. Yes.

17 Q. Okay. And the New Mexico model also shows
18 that pumping in New Mexico in the Rincon and Mesilla
19 basin valleys impacts the surface flow available to
20 the project; is that correct?

21 A. I think that's the same question, and yes.
22 My answer is yes.

23 Q. Okay. No, I was -- I had asked earlier --
24 the first question was actually broadly about the
25 Rincon and Mesilla, and I asked the second one

1 specifically about pumping in New Mexico.

2 A. Oh. Okay.

3 Q. Okay.

4 A. My answer is yes.

5 Q. Okay. And just to make sure that I'm reading
6 the spreadsheets right, can you go back to the Run 6
7 spreadsheet, please?

8 A. Okay. I see that spreadsheet now.

9 Q. Okay. I want to go over to Tab Matrix Ops.
10 It's the first little lavender one.

11 A. I think I'm there.

12 Q. All right. So we're on Matrix Ops. If you
13 would look at Column J.

14 A. Okay.

15 Q. I want to make sure I'm reading this right.
16 Okay. So Column J is your net -- this one only just
17 says surface water diversions. Is that net surface
18 water diversions to be consistent across the various
19 spreadsheets?

20 A. I'm not -- I'm not sure.

21 Q. Okay. So you don't know what surface water
22 diversions here means?

23 A. I'll have to -- well, it doesn't say, so I'm
24 not sure without doing some more ribbing around.

25 Q. Since I'm trying to understand what these

1 columns are trying to say and tell me, can you
2 determine whether this is also a net surface water
3 diversion term from what's in the spreadsheet?

4 A. Hold on.

5 Q. I'll remind you that -- let me back up a
6 second, Greg.

7 A. Okay.

8 Q. The matrix -- matrix ops, that is the values
9 produced by Run 1, isn't it?

10 A. Let's see. Yes.

11 Q. Okay. So matrix ops is the values produced
12 by Run 1 of the ILRG, and Column -- then, now, can you
13 determine whether -- and this is true for J and K, are
14 these surface water diversions net surface water
15 diversions as -- as we were describing them a bit ago?

16 A. Well, that's the question. I don't know if
17 those are the net or not.

18 Q. If they're not net, what would they be?

19 A. Well, they would be gross. So, I mean, we're
20 reporting net, and we're reporting net in the output
21 table so it's a matter of going and figuring out in
22 the summary tables what they're pointing to.

23 Q. Can you do that?

24 A. Well, I could. If you are going to be
25 questioning me tomorrow, I could do it tonight or when

1 we're done or I could take the time to go through all
2 that right now, whatever is your pleasure.

3 Q. Well, I am trying to figure out how things
4 are compared in this spreadsheet because the next --
5 the next tab over is matrix alt, which I believe is
6 the output from Run 6. Am I correct in that?

7 A. Yes.

8 Q. And then presumably in running your
9 comparison, you're -- you're comparing these two
10 tables. Is -- are these two columns, I should say,
11 and I'm trying to determine is there -- are there
12 other -- are there other operations or are there other
13 adjustments that I need to be aware of, so I guess I
14 do need to know whether these are net surface water
15 diversions in -- in both the matrix ops and matrix
16 alt.

17 A. Yeah. So just in my checking right here,
18 these should be net diversions.

19 Q. Okay. That's fine. I mean, that's -- that's
20 really all I want to know is am I trying to look at
21 apples and apples or something else. So -- okay. So
22 this is -- these are net in -- matrix ops is the net
23 surface water diversions under Run 1, and in matrix
24 alt, it is net surface water diversions in Run, here,
25 6, and I assume in all of the other scenario runs, the

1 same basic file structure is -- is in play; is that
2 correct?

3 A. Yes.

4 Q. And so in Column K, in the matrix ops, and I
5 guess they're in both matrix and in -- I mean, in ops
6 and in alt, they're both Columns K and J, so I guess
7 these questions will apply to both matrix ops and
8 matrix alt. The surface water diversions by EPCWID
9 are -- are the net surface water diversions that we
10 describe generally kind of to -- to -- to start things
11 here; is that right?

12 A. Yeah.

13 Q. So it includes the diversions by the City of
14 El Paso; is that right?

15 A. Yes.

16 Q. And it includes -- and it includes the
17 diversions by their water treatment plants; is that
18 right?

19 A. Yeah. That's the only way that the City of
20 El Paso --

21 Q. Okay. All right. And does -- does that
22 also -- for the period after 2008, does that also
23 include carryover or diversions from carryover
24 according to historic operations?

25 A. Yes.

1 Q. Okay. So that includes the carryover under
2 the operating agreement. Does it include -- does it
3 include credits like the -- the ACE credit?

4 A. I think these are just diversions, so I don't
5 think these are charges.

6 Q. Okay. All right. That's helpful. And
7 your -- and your comparison runs, your output tables
8 are basically a comparison between your surface water
9 diversions under matrix ops Run 1 and surface water
10 diversions matrix alt Run whichever, your alternative
11 run, is that the way it works?

12 A. Yes.

13 Q. Okay. And can you add and subtract different
14 spreadsheets to analyze various scenarios? Could
15 you -- could you add -- for instance, I think it's Run
16 3 is New Mexico, Rincon, Mesilla diversion -- or
17 pumping off, and Run 7 is Texas-Mesilla pumping off.
18 Can you simply add those two and get the same result
19 as Run 6 all Rincon-Mesilla pumping off?

20 A. No.

21 Q. Why?

22 A. Because the model has non-linearities in it
23 just like the system does and so the sum of the parts
24 is not necessarily equal to the all.

25 Q. What are some of the non-linear elements that

No. 141, Original

IN THE
SUPREME COURT OF THE UNITED STATES

STATE OF TEXAS,
Plaintiff,

v.

STATE OF NEW MEXICO and
STATE OF COLORADO,
Defendants.

OFFICE OF THE SPECIAL MASTER

**STATE OF NEW MEXICO'S OBJECTIONS AND RESPONSES
TO THE STATE OF TEXAS'S FIRST SET OF REQUESTS FOR ADMISSION
TO THE STATE OF NEW MEXICO**

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Pursuant to the Case Management Plan adopted on September 6, 2018, as amended (“CMP”), and Rule 36 of the Federal Rules of Civil Procedure (“FRCP”), the State of New Mexico (“New Mexico”) hereby submits the following objections and responses to the State of Texas’s (“Texas”) First Set of Requests for Admission to the State of New Mexico.

GENERAL OBJECTIONS

In addition to the objections specifically noted in the responses to each individual Request for Admission, below, New Mexico incorporates the following General Objections into its responses to each and every Request for Admission:

1. New Mexico’s responses are based on information presently available. At present, New Mexico has not yet completed its discovery, investigation, or preparation for trial, any or all of which may provide information responsive and/or relevant to these Requests.
2. New Mexico objects to Texas’s Requests for Admission, including the Definitions and Instructions contained therein, to the extent that they impose obligations on New Mexico that exceed the scope of discovery as set forth in the FRCP. New Mexico reserves all objections and rights to which it is entitled under the FRCP and applicable law and procedure.
3. New Mexico objects to each Request for Admission to the extent the request is vague, ambiguous, unintelligible, compound, conjunctive, or disjunctive, and not full and complete in and of itself.
4. New Mexico objects to each Request for Admission to the extent that the request seeks information protected by the attorney-client privilege, the work-product doctrine, or any other applicable privilege. New Mexico’s responses are not intended to, and should not be construed as, a waiver or relinquishment of any of the protections afforded by the attorney-client privilege, the work-product doctrine, or any other applicable privileges or immunities. The inadvertent disclosure of any such privileged information is not a waiver of New Mexico’s right to assert any applicable privilege or doctrine relative to any such information, or any other information, document(s), or matter, pursuant to the terms of paragraph 7.2.3 of the CMP.
5. New Mexico objects to each Request for Admission to the extent that the request seeks a legal conclusion, which is improper under FRCP 36(a)(1).
6. New Mexico objects to each Request for Admission to the extent that the request seeks expert opinion or cannot be answered without the testimony of experts.
7. New Mexico objects to each Request for Admission to the extent the request is unduly and unreasonably oppressive, harassing, annoying, burdensome, overbroad, or constitutes an abuse of the discovery process.

8. New Mexico objects to each and every Request for Admission to the extent the request is overly broad and seeks information neither relevant to the subject matter of the action, nor reasonably calculated to lead to the discovery of admissible evidence.
9. New Mexico objects to the form of each Request for Admission to the extent that it is not full and complete in and of itself and, for example, instead relies on preface and instructions.
10. New Mexico objects to each Request for Admission to the extent the request seeks information that is not in the possession, custody, or control of New Mexico.
11. New Mexico objects to this definition of “Identify” with respect to a “person” or “entity” because the terms of the definition are overly broad with respect to “person,” and because it seeks current contact information (including personal residences). Any employees of New Mexico or its contractors should be contacted through counsel for New Mexico. Further, New Mexico objects to seeking of “address” and “telephone number,” as these seek disclosure of personal and private information that is irrelevant to the subject matter of this action. New Mexico objects to the instruction to provide “the person’s present employer and occupation or business” as overbroad, unduly burdensome, irrelevant and exceeding the scope of New Mexico’s discovery obligations under Rule 26 and 36 of the FRCP.
12. New Mexico also objects to the definition of “entity” as vague, ambiguous, and overbroad.
13. New Mexico objects to the definition of “Identify” with respect to a “document” because the definition is overly broad with respect to “each document,” and to the extent that such definition demands “a brief description of the substance” of any document, and seeks disclosure of information and/or documents that are protected by attorney-client and work-product privileges. New Mexico objects to this definition because it imposes requirements beyond those found in Rule 33 of the FRCP. New Mexico also objects to this definition as overbroad, unduly burdensome, and unreasonably cumulative or duplicative.
14. New Mexico objects to the terms “Accretions,” “Allocation,” “Apportioned,” “Apportionment,” “Apportions,” “Compact Apportionment,” “Cumulative,” “Downstream Contracts,” “Return Flow,” “Ground water tributary to the Rio Grande,” “Lower Rio Grande,” and “Unimpeded,” “You” and “Yours” as vague, ambiguous and overbroad. New Mexico also objects to these terms to the extent they seek a legal conclusion, which is improper under FRCP 36(a)(1).
15. New Mexico’s response to any Request for Admission, notwithstanding its objections should not be construed as a stipulation or admission that any information provided is relevant or admissible, or as a waiver of any of New Mexico’s objections.
16. New Mexico objects to each Request for Admission on the ground that the request seeks information that is unduly burdensome and not proportional to the scope of this case.

SPECIFIC OBJECTIONS AND RESPONSES TO TEXAS’S FIRST SET OF REQUESTS FOR ADMISSION TO NEW MEXICO

REQUEST FOR ADMISSION NO. 1: Admit that the Compact Apportions Rio Grande water to Colorado.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the term “Rio Grande water” as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that the Compact apportions surface waters of the Rio Grande to the State of Colorado (“Colorado”).

REQUEST FOR ADMISSION NO. 2: Admit that the Compact Apportions Rio Grande water to New Mexico.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the term “Rio Grande water” as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that the Compact apportions surface waters of the Rio Grande to the State of New Mexico, and that this apportionment includes 57% of the Rio Grande surface water annually allocated for delivery by the Rio Grande Project, subject to the United States’ obligations to Mexico under the Convention for the Equitable Distribution of the Waters of the Rio Grande of May 21, 1906 Between the United States and Mexico, 34 Stat. 2953 (“Treaty”) (the remaining 43% being apportioned under the Compact to Texas).

REQUEST FOR ADMISSION NO. 3: Admit that the Compact Apportions Rio Grande water to Texas.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the term “Rio Grande water” as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that the Compact apportions surface waters of the Rio Grande to the State of Texas, namely 43% of the Rio Grande surface water annually allocated for delivery by the Rio Grande Project, subject to the United States’ obligations to Mexico under the Treaty (the remaining 57% being apportioned under the Compact to New Mexico).

REQUEST FOR ADMISSION NO. 4: Admit that Colorado’s Apportionment pursuant the Compact is the depletions in the Rio Grande River in Colorado as of 1938 measured by the indexed relationship described in Article III of the Compact subject to the system of credits and debits described in the Compact.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “depletions” and “Rio Grande water” as vague and ambiguous. New Mexico further objects to this

request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that Colorado's apportionment of the surface waters of the Rio Grande on the mainstem at the Colorado and New Mexico state border is defined by Article III of the Compact. The Compact speaks for itself, and New Mexico denies any inference that is inconsistent with the Compact.

REQUEST FOR ADMISSION NO. 5: Admit that New Mexico's Apportionment pursuant to the Compact is the depletions in the Rio Grande River in New Mexico above Elephant Butte Reservoir as of 1938 measured by the indexed relationship described in Article IV of the Compact subject to the system of credits and debits described in the Compact.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the terms "depletions" and "Rio Grande water," and to the phrase "as of 1938 measured by the indexed relationship described in Article IV of the Compact subject to the system of credits and debits described in the Compact" as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that part of New Mexico's apportionment of the surface waters of the Rio Grande is defined by Article IV of the Compact. The Compact speaks for itself, and New Mexico denies any inference that is inconsistent with the Compact. New Mexico specifically denies that the apportionment identified in RFA No. 5 is the only apportionment of water it receives under the Compact, and affirmatively asserts that its Compact apportionment includes 57% of Project supply. Except as aforesaid, New Mexico denies RFA No. 5.

REQUEST FOR ADMISSION NO. 6: Admit that Texas's Apportionment under the Compact is the water delivered to Elephant Butte Reservoir by New Mexico pursuant to Article IV of the Compact plus Accretions to the Rio Grande River below Elephant Butte Dam subject to the United States's [sic] treaty obligation to New Mexico and EBID's Rio Grande Project contractual right.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "delivered" and to the phrase "pursuant to Article IV of the Compact plus Accretions to the Rio Grande River below Elephant Butte Dam subject to the United States's treaty obligation to New Mexico and EBID's Rio Grande Project contractual right" as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico denies RFA No. 6.

REQUEST FOR ADMISSION NO. 7: Admit that Colorado's obligation to deliver water under the Compact is at the Colorado-New Mexico State line.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the terms "obligation," "deliver," and "water" as vague and ambiguous. New Mexico further objects to this request as seeking a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that Colorado's obligation to deliver water under the Compact is set forth in Article III of the Compact. Specifically, New Mexico admits that under

Article III, Colorado delivers surface water of the Rio Grande at the Colorado-New Mexico State line as measured at specified locations. The Compact speaks for itself, and New Mexico denies any inference that is inconsistent with the Compact.

REQUEST FOR ADMISSION NO. 8: Admit that New Mexico’s obligation to deliver water under the Compact is at Elephant Butte Reservoir.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “obligation,” “deliver,” and “water” as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that Article IV of the Compact includes an obligation to deliver water at Elephant Butte Reservoir. The Compact speaks for itself, and New Mexico denies any inference that is inconsistent with the Compact. Except as aforesaid, New Mexico denies RFA No. 8, and specifically denies that all surface water delivered to the Rio Grande Project is apportioned to Texas.

REQUEST FOR ADMISSION NO. 9: Admit that Downstream Contracts promise Texas water districts an amount of water every year from the Project.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “promise,” “amount,” “Texas water districts,” “amount” and “water” as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that the U.S. Supreme Court stated that the: “Downstream Contracts . . . promised Texas water districts a certain amount of water every year from the Reservoir’s resources,” that “the Compact is inextricably intertwined with the Rio Grande Project and the Downstream Contracts,” and that “through the Downstream Contracts” the United States is “charged with assuring that the Compact’s equitable apportionment to Texas and part of New Mexico is in fact made.” *Texas v. New Mexico*, 138 S. Ct. 954 at 957, 959 (2018) (internal quotation marks omitted). The Downstream Contracts speak for themselves. Except as aforesaid, New Mexico denies RFA No. 9.

REQUEST FOR ADMISSION NO. 10: Admit that New Mexico may not interfere with the delivery of Texas’s Apportioned water under the Compact.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “interfere,” “delivery,” and “water,” and to this request in its entirety as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). New Mexico is unable to admit or deny this request because it does not understand its meaning; in particular, New Mexico does not understand what Texas means by “interfere” in the context of RFA No. 10. Subject to its objections, and based in part on the ambiguity of the term “interfere,” New Mexico denies RFA No. 10.

REQUEST FOR ADMISSION NO. 11: Admit that Return flows from irrigation of lands in the Lower Rio Grande are part of the water belonging to the Project.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “Return flows,” “irrigation,” “lands,” “water” and “belonging” as vague and ambiguous. New Mexico objects to this request to the extent a response necessitates expert opinion. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that the Project captures and redelivers return flows. *See, e.g.,* Order Granting the State’s Motion to Dismiss the United States’ Claims to Groundwater and Denying the United States’ Motion for Summary Judgment, LRG Adjudication (Aug. 6, 2012). Except as aforesaid, New Mexico denies RFA No. 11.

REQUEST FOR ADMISSION NO. 12: Admit that Return flows from irrigation of lands in the Lower Rio Grande are part of the water Apportioned to Texas under the Compact.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “Return flows,” “irrigation,” “lands,” “part” and “water” as vague and ambiguous. New Mexico objects to this request to the extent a response necessitates expert opinion. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that return flows may constitute a portion of the Project supply apportioned and delivered to both Texas and New Mexico under the Compact. Except as aforesaid, New Mexico denies RFA No. 12.

REQUEST FOR ADMISSION NO. 13: Admit that Groundwater tributary to the Rio Grande below Elephant Butte Reservoir is part of the water belonging to the Project.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “tributary,” “part,” “water” and “belonging,” and to the phrase “below Elephant Butte Reservoir” as vague and ambiguous. New Mexico objects to this request to the extent a response necessitates expert opinion. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico denies RFA No. 13.

REQUEST FOR ADMISSION NO. 14: Admit that Groundwater tributary to the Rio Grande below Elephant Butte Reservoir is part of the water Apportioned to Texas under the Compact.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “tributary,” “part” and “water,” and to the phrase “below Elephant Butte Reservoir” as vague and ambiguous. New Mexico objects to this request to the extent a response necessitates expert opinion. New Mexico further objects to this request as seeking a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico denies RFA No. 14.

REQUEST FOR ADMISSION NO. 15: Admit that pumping of Groundwater tributary to the Rio Grande in New Mexico includes the pumping of Project Return flows that otherwise would reach Texas.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the terms "tributary," "pumping" and "Return flows," to the phrase "that otherwise would reach," and to this request in its entirety as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico denies RFA No. 15.

REQUEST FOR ADMISSION NO. 16: Admit that groundwater pumping in New Mexico includes the pumping of Groundwater tributary to the Rio Grande that intercepts surface water flows in the Rio Grande that would otherwise reach Texas.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the terms "tributary," "groundwater pumping," "pumping" and "intercepts," to the phrase "that otherwise would reach," and to this request in its entirety as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico denies RFA No. 16.

REQUEST FOR ADMISSION NO. 17: Admit that ground water pumping in New Mexico interferes with delivery of Project Return flows that would otherwise reach Texas.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the terms "groundwater pumping," "interferes," "delivery" and "Return flows," and to the phrase "that otherwise would reach" as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico denies RFA No. 17.

REQUEST FOR ADMISSION NO. 18: Admit that the Compact's geographic boundary extends to Fort Quitman in Texas.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "extends" and to the phrase "Compact's geographic boundary" as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that the Compact, in its preamble, states that it applies to "the use of the waters of the Rio Grande above Fort Quitman, Texas" and was entered "for the purpose of effecting an equitable apportionment of such waters." The Compact speaks for itself, and New Mexico denies any inference that is inconsistent with the Compact. Except as aforesaid, New Mexico denies RFA No. 18.

REQUEST FOR ADMISSION NO. 19: Admit that pumping of Groundwater tributary to the Rio Grande in the Lower Rio Grande interferes with deliveries of Project water Allocations to Texas.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “tributary,” “pumping,” “interferes,” and “deliveries,” and to this request in its entirety as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, the location, amount and timing of groundwater pumping and associated impacts, and the response of Project operations is the subject of expert testimony in this case, and New Mexico denies any inferences that are inconsistent with its expert disclosures. Except as aforesaid, New Mexico denies RFA No. 19.

REQUEST FOR ADMISSION NO. 20: Admit that pumping of Groundwater tributary to the Rio Grande in the Lower Rio Grande interferes with deliveries of Texas’s Compact Apportionment.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “tributary,” “pumping,” “interferes,” and “deliveries” as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, the location, amount and timing of groundwater pumping and associated impacts, and the response of Project operations is the subject of expert testimony in this case, and New Mexico denies any inferences that are inconsistent with its expert disclosures. Except as aforesaid, New Mexico denies RFA No. 20.

REQUEST FOR ADMISSION NO. 21: Admit that the amount of Rio Grande water that Colorado must deliver to the Colorado-New Mexico State line is based upon flow data and conditions that existed prior to 1938.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “amount,” “Rio Grande water” and “deliver,” and to the phrase “flow data and conditions that existed prior to 1938” as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that to the extent Article III of the Compact uses data, it was necessarily available prior to the approval of the Compact. The Compact speaks for itself, and New Mexico denies any inference that is inconsistent with the Compact. Except as aforesaid, New Mexico denies RFA No. 21.

REQUEST FOR ADMISSION NO. 22: Admit that the amount of Rio Grande water that New Mexico must deliver into Elephant Butte Reservoir to satisfy the Texas Compact Apportionment is based upon flow data and conditions that existed prior to 1938.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “amount,” “Rio Grande water,” “deliver” and “satisfy,” and to the phrase “flow data and conditions that existed prior to 1938” as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that Article IV of the Compact is based upon data that was necessarily available prior to the approval of the Compact. The Compact speaks for itself, and New Mexico denies any inference that is inconsistent with the Compact. Except as aforesaid, New Mexico denies RFA No. 22.

REQUEST FOR ADMISSION NO. 23: Admit that New Mexico, at least since 1985, has known that the pumping of Groundwater tributary to the Rio Grande in the Lower Rio Grande for use in New Mexico reduced the volume of water that absent such pumping would flow into Texas.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “tributary,” “known” and “pumping,” and to the phrases “at least since 1985,” “in the Lower Rio Grande for use in New Mexico,” “reduced the volume of water” and “would flow into” as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico denies RFA No. 23.

REQUEST FOR ADMISSION NO. 24: Admit that since 1985, the volume of groundwater pumping in the Lower Rio Grande is greater than the volume of ground water pumping in the Lower Rio Grande in 1938.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “volume,” “groundwater pumping,” “ground water pumping,” “Lower Rio Grande” and “greater,” and to the phrase “since 1985” as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico admits that the volume of groundwater pumping below Elephant Butte Reservoir since 1985 is generally higher than the volume pumped in 1938.

REQUEST FOR ADMISSION NO. 25: Admit that groundwater pumping consistent with state law in New Mexico in the Lower Rio Grande must be authorized or permitted by the State of New Mexico.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “groundwater pumping,” “state law” and “Lower Rio Grande,” and to the phrases “consistent with” and “must be authorized or permitted by,” and to the request in its entirety as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that the State of New Mexico has jurisdiction over the waters within the state, and admits that groundwater pumping in the Lower Rio Grande must be “consistent with state law.” Except as aforesaid, New Mexico denies RFA No. 25.

REQUEST FOR ADMISSION NO. 26: Admit that the State of New Mexico has authorized ground water pumping in the Lower Rio Grande.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “authorized” and “ground water pumping” as vague and ambiguous. Subject to its objections, New Mexico admits that the State of New Mexico has jurisdiction over the waters within the state, and admits that groundwater pumping in the Lower Rio Grande must be consistent with state law. New Mexico further admits that since the declarations of the Lower Rio Grande Underground Water Basin, the New Mexico State Engineer has authorized certain groundwater pumping in that basin with appropriate conditions, subject to administrative rules, policies, and procedures. Except as aforesaid, New Mexico denies RFA No. 26.

REQUEST FOR ADMISSION NO. 27: Admit that the volume of pumping of Groundwater tributary to the Rio Grande in the Lower Rio Grande has increased since 1951.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the term “tributary,” and to the phrases “volume of pumping” and “increased since 1951” as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico admits that the volume of groundwater pumping in the Rio Grande basin below Elephant Butte Reservoir has increased in certain years since 1951. The location, amount and timing of groundwater pumping and associated impacts, and the response of Project operations is the subject of expert testimony in this case, and New Mexico denies any inferences that are inconsistent with its expert disclosures. Except as aforesaid, New Mexico denies RFA No. 27.

REQUEST FOR ADMISSION NO. 28: Admit that New Mexico, prior to May 22, 2018, did not provide notice to Texas of the allegations set forth in the First Claim for Relief in New Mexico’s Counterclaims filed in This Case.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the phrases “prior to May 22, 2018” and “provide notice” as vague and ambiguous. Subject to its objections, New Mexico denies RFA No. 28.

REQUEST FOR ADMISSION NO. 29: Admit that New Mexico, prior to May 22, 2018, did not provide notice to Texas of the allegations set forth in the Fourth Claim for Relief in New Mexico’s Counterclaims filed in This Case.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the phrases “prior to May 22, 2018” and “provide notice” as vague and ambiguous. Subject to its objections, New Mexico denies RFA No. 29.

REQUEST FOR ADMISSION NO. 30: Admit that well pumping of Groundwater tributary to the Rio Grande in the Mesilla and Rincon Valleys in New Mexico depletes Rio Grande surface flows.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “tributary,” “well pumping” and “depletes,” and to the phrases “Groundwater tributary to the Rio Grande in the Mesilla and Rincon Valleys in New Mexico” and “Rio Grande surface flows” as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico admits that under certain conditions, in certain years, groundwater pumping in the Mesilla and Rincon Valleys in New Mexico, and in the Mesilla and El Paso Valleys in Texas, has the potential to deplete Rio Grande surface flows. The degree to which depletions occur in any given year is the subject of expert testimony in this case, and New Mexico denies any inferences that are inconsistent with its expert disclosures. Except as aforesaid, New Mexico denies RFA No. 30.

REQUEST FOR ADMISSION NO. 31: Admit that between 1938 and 2020 the New Mexico Office of the State Engineer has never curtailed well pumping in the Lower Rio Grande to avoid depleting surface flows in the Lower Rio Grande.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “curtailed” and “well pumping,” to the phrases “between 1938 and 2020,” “has never” and “to avoid depleting surface flows,” and to this request in its entirety as vague and ambiguous. Subject to its objections, New Mexico denies RFA No. 31.

REQUEST FOR ADMISSION NO. 32: Admit that groundwater pumping by the City of Las Cruces under LRG-430 has decreased the volume of Rio Grande surface water delivered to Texas below the volume of surface water that would have been present under pre-pumping conditions.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the term “delivered,” to the phrases “groundwater pumping by the City of Las Cruces,” “decreased the volume of Rio Grande surface water,” and “below the volume of surface water that would have been present” and “under pre-pumping conditions,” and to this request in its entirety as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, the location, amount and timing of groundwater pumping and associated impacts, the degree to which depletions occur in any given year, the volume of return flows and other offsets, whether pumping under LRG-430 has decreased or contributed to an increase in the volume of the flows of the Rio Grande, and the response of Project operations, is the subject of expert testimony in this case, and New Mexico denies any inferences that are inconsistent with its expert disclosures. Except as aforesaid, New Mexico denies RFA No. 32.

REQUEST FOR ADMISSION NO. 33: Admit that pumping of Groundwater tributary to the Rio Grande in the Lower Rio Grande depletes drain flows within the Project Area.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “tributary,” “pumping,” “depletes,” “drain flows” and “within the Project Area” as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico admits that under certain conditions, in certain years, groundwater pumping in the Rio Grande basin below Elephant Butte Reservoir has the potential to deplete drain flows. The location, amount and timing of groundwater pumping, the effect, if any, on drain flows, and the response of Project operations is the subject of expert testimony in this case, and New Mexico denies any inferences that are inconsistent with its expert disclosures. Except as aforesaid, New Mexico denies RFA No. 33.

REQUEST FOR ADMISSION NO. 34: Admit that pumping of Groundwater tributary to the Rio Grande in the Lower Rio Grande has decreased the volume of Rio Grande surface water in canals below the volume of surface water that would have been present under pre-groundwater pumping conditions.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “tributary,” “pumping,” “Lower Rio Grande” and “canals,” and to the phrases “decreased the volume of” and “below the volume of surface water that would have been present under pre-groundwater pumping conditions,” and to this request in its entirety as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico admits that under certain conditions, in certain years, groundwater pumping in the Rio Grande basin below Elephant Butte Reservoir has the potential to deplete surface water in canals. The location, amount and timing of groundwater pumping, the effect, if any, on Rio Grande surface water in canals, and the response of Project operations is the subject of expert testimony in this case, and New Mexico denies any inferences that are inconsistent with its expert disclosures. Except as aforesaid, New Mexico denies RFA No. 34.

REQUEST FOR ADMISSION NO. 35: Admit that You were aware, by at least August 2005, that Texas was concerned about the impacts to Project supplies caused by New Mexico groundwater pumping.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “You,” “concerned,” “impacts” and “Project supplies,” to the phrases “were aware,” “by at least August 2005” and “New Mexico groundwater pumping,” and to this request in its entirety as vague and ambiguous. Subject to its objections, New Mexico admits that Texas discussed potential impacts of groundwater pumping with New Mexico after 2000, and at that time New Mexico raised concerns with Texas regarding the potential impacts to Project supply caused by groundwater pumping in Texas. New Mexico expressed a willingness to discuss groundwater use in both States, but Texas indicated that it no longer desired to discuss the subject. Except as aforesaid, New Mexico denies RFA No. 35.

REQUEST FOR ADMISSION NO. 36: Admit that contract interpretation is a question of law.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the phrase “contract interpretation” as vague and ambiguous. New Mexico further objects to this request as seeking a legal conclusion, which is improper under FRCP 36(a)(1).

REQUEST FOR ADMISSION NO. 37: Admit that groundwater pumping in the New Mexico Mesilla Valley from 1900 to the present has decreased the volume of Project surface water delivered to farm headgates in Texas below the volume of Project surface water that would have been delivered under pre-groundwater pumping conditions.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the phrases “groundwater pumping in the New Mexico Mesilla Valley,” “from 1900 to the present,” “decreased the volume of Project surface water delivered to farm headgates” and “below the volume of Project surface water that would have been delivered under pre-groundwater pumping conditions,” and to this request in its entirety as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, the location, amount and timing of groundwater pumping, the effect, if any, on Rio Grande surface water delivered to farm headgates, and the response of Project operations is the subject of expert testimony in this case, and New Mexico denies any inferences that are inconsistent with its expert disclosures. Except as aforesaid, New Mexico denies RFA No. 37.

REQUEST FOR ADMISSION NO. 38: Admit that groundwater pumping in the New Mexico Mesilla Valley from 1900 to the present has decreased the volume of Project Return flows in drains below the amount of Project Return flows that would have been available under pre-pumping conditions.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the phrases “groundwater pumping in the New Mexico Mesilla Valley,” “from 1900 to the present,” “decreased the volume of Project Return flows in drains below the amount of Project Return flows” and “that would have been available under pre-pumping conditions,” and to this request in its entirety as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico admits that under certain conditions, in certain years, groundwater pumping in the Rio Grande basin below Elephant Butte Reservoir has the potential to decrease the volume of return flows in drains. The location, amount and timing of groundwater pumping, the effect, if any on the volume of return flows in drains, and the response of Project operations is the subject of expert testimony in this case, and New Mexico denies any inference that is inconsistent with its expert disclosures. Except as aforesaid, New Mexico denies RFA No. 38.

REQUEST FOR ADMISSION NO. 39: Admit that You were aware in 1950-1960 of ground water pumping in the Project Area in Texas.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "You," to the phrases "were aware," "in 1950-1960" and "ground water pumping in the Project Area in Texas," and to this request in its entirety as vague and ambiguous. Subject to its objections, New Mexico admits at least some person or entity within Texas's expansive definition of "You" was aware of groundwater pumping activity within Texas's definition of "Project Area" in Texas between 1950 and 1960. Except as aforesaid, New Mexico denies RFA No. 39.

REQUEST FOR ADMISSION NO. 40: Admit that You were aware in 1960-1970 of ground water pumping in the Project Area in Texas.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "You," to the phrases "were aware," "in 1960-1970" and "ground water pumping in the Project Area in Texas," and to this request in its entirety as vague and ambiguous. Subject to its objections, New Mexico admits at least some person or entity within Texas's expansive definition of "You" was aware of groundwater pumping activity within Texas's definition of "Project Area" in Texas between 1960 and 1970. Except as aforesaid, New Mexico denies RFA No. 40.

REQUEST FOR ADMISSION NO. 41: Admit that You were aware in 1970-1980 of ground water pumping in the Project Area in Texas.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "You," to the phrases "were aware," "in 1970-1980" and "ground water pumping in the Project Area in Texas," and to this request in its entirety as vague and ambiguous. Subject to its objections, New Mexico admits at least some person or entity within Texas's expansive definition of "You" was aware of groundwater pumping activity within Texas's definition of "Project Area" in Texas between 1970 and 1980. Except as aforesaid, New Mexico denies RFA No. 41.

REQUEST FOR ADMISSION NO. 42: Admit that You were aware in 1980-1990 of ground water pumping in the Project Area in Texas.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "You," to the phrases "were aware," "in 1980-1990" and "ground water pumping in the Project Area in Texas," and to this request in its entirety as vague and ambiguous. Subject to its objections, New Mexico admits at least some person or entity within Texas's expansive definition of "You" was aware of groundwater pumping activity within Texas's definition of "Project Area" in Texas between 1980 and 1990. Except as aforesaid, New Mexico denies RFA No. 42.

REQUEST FOR ADMISSION NO. 43: Admit that You were aware in 1990-2000 of ground water pumping in the Project Area in Texas.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "You," to the phrases "were aware," "in 1990-2000" and "ground water pumping in the Project

Area in Texas,” and to this request in its entirety as vague and ambiguous. Subject to its objections, New Mexico admits at least some person or entity within Texas’s expansive definition of “You” was aware of groundwater pumping activity within Texas’s definition of “Project Area” in Texas between 1990 and 2000. Except as aforesaid, New Mexico denies RFA No. 43.

REQUEST FOR ADMISSION NO. 44: Admit that You were aware in 2000-2010 of ground water pumping in the Project Area in Texas.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the term “You,” to the phrases “were aware,” “in 2000-2010” and “ground water pumping in the Project Area in Texas,” and to this request in its entirety as vague and ambiguous. Subject to its objections, New Mexico admits at least some person or entity within Texas’s expansive definition of “You” was aware of groundwater pumping activity within Texas’s definition of “Project Area” in Texas between 2000 and 2010. Except as aforesaid, New Mexico denies RFA No. 44.

REQUEST FOR ADMISSION NO. 45: Admit that You were aware in 2010-present of ground water pumping in the Project Area in Texas.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the term “You,” to the phrases “were aware,” “in 2010-present” and “ground water pumping in the Project Area in Texas,” and to this request in its entirety as vague and ambiguous. Subject to its objections, New Mexico admits at least some person or entity within Texas’s expansive definition of “You” was aware of groundwater pumping activity within Texas’s definition of “Project Area” in Texas between 2010 and the present. Except as aforesaid, New Mexico denies RFA No. 45.

REQUEST FOR ADMISSION NO. 46: Admit that the farm delivery requirement for farmers in the Lower Rio Grande established by the Adjudication Court in Stream System 97-101 was 4.5 acre-feet per acre.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the term “farm delivery requirement,” and to the phrase “farmers in the Lower Rio Grande” as vague and ambiguous. Subject to its objections, New Mexico asserts that the Final Judgment in SS-97-101 speaks for itself. New Mexico denies any inference inconsistent with this judgment. Except as aforesaid, New Mexico denies RFA No. 46.

REQUEST FOR ADMISSION NO. 47: Admit that under Stream System 97-101 pecan growers could establish a right to a farm delivery requirement of 5.5 acre-feet per acre by a date certain.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “pecan growers” and “farm delivery requirement” as vague and ambiguous. Subject to its objections, New Mexico asserts that the Final Judgment in SS-97-101 speaks for itself. New

Mexico denies any inference inconsistent with this judgment. Except as aforesaid, New Mexico denies RFA No. 47.

REQUEST FOR ADMISSION NO. 48: Admit that the State of New Mexico's expert witness in Stream System 97-101, John Longworth, used a version of the Blaney-Criddle Method in determining a proposed farm delivery requirement of 3.0 acre-feet per acre.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "used," and to the phrases "a version of the Blaney-Criddle Method," "in determining a proposed farm delivery requirement" as vague and ambiguous. Subject to its objections, New Mexico admits that Mr. Longworth submitted an expert report in Case No. CV-96-888 that discussed the Modified Blaney-Criddle Method. Mr. Longworth's expert report speaks for itself. New Mexico denies that Mr. Longworth "proposed [a] farm delivery requirement of 3.0 acre-feet per acre." Except as aforesaid, New Mexico denies RFA No. 48.

REQUEST FOR ADMISSION NO. 49: Admit that the farm delivery requirement of 3.0 acre-feet per acre as proposed by the State of New Mexico in Stream System 97-101 was selected in part because of concerns about the effect of groundwater pumping on Compact deliveries to Texas.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the terms "farm delivery requirement," "concerns," "effect" and "groundwater pumping," and to the phrases "as proposed by the State of New Mexico," "was selected in part," and "Compact deliveries" as vague and ambiguous. New Mexico further objects to this request as improperly seeking information protected by attorney-client privilege. Subject to its objections, New Mexico denies RFA No. 49.

REQUEST FOR ADMISSION NO. 50: Admit that attached hereto as Exhibit B is a true and correct copy of the September 13, 1935 report of the Board of Review of the National Resource Committee Relating to water projects on the Rio Grande above El Paso.

RESPONSE: The document at Exhibit B was not authored or created by New Mexico. In addition, Exhibit B is not a document produced by New Mexico, and New Mexico does not have a copy in its records. Accordingly, New Mexico is unable to authenticate the same or to say whether this document is a true and correct copy.

REQUEST FOR ADMISSION NO. 51: Admit that attached hereto as Exhibit C is a true and correct copy of the Proceedings of the Rio Grande Compact Commission meetings of March 3 through March 18, 1938 (Including appendices).

RESPONSE: Admit.

REQUEST FOR ADMISSION NO. 52: Admit that attached hereto as Exhibit D is a true and correct copy of the Engineers Report to the Rio Grande Compact Commission dated December 27, 1937.

RESPONSE: Admit.

REQUEST FOR ADMISSION NO. 53: Admit that attached hereto as Exhibit E is a true and correct copy of the U.S. Geological Survey, Preliminary memorandum on ground-water supplies for Elephant Butte Irrigation District, New Mexico, September 1947 (known as the “Conover Report”) (at NM_00124167-193.)

RESPONSE: Admit.

REQUEST FOR ADMISSION NO. 54: Admit that the U.S. Geological Survey, Preliminary memorandum on ground-water supplies for Elephant Butte Irrigation District, New Mexico, September 1947, (NM_00124167-193) (i.e., the Conover Report) is part of the official records of the State of New Mexico Office of the State Engineer.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the phrase “official records of the State of New Mexico Office of the State Engineer” as vague and ambiguous. New Mexico is unable to determine what Texas means by the phrase “official records of the State of New Mexico Office of the State Engineer.” Subject to its objections, New Mexico admits that the Office of the State Engineer has a copy of the document marked as Exhibit E. However, New Mexico is unaware whether this Office maintains “official records” within the meaning intended by Texas. Therefore, New Mexico is unable to admit or deny whether Exhibit E “is part” of such “official records.” Except as aforesaid, New Mexico denies RFA No. 54.

REQUEST FOR ADMISSION NO. 55: Admit that the U.S. Geological Survey, Preliminary memorandum on ground-water supplies for Elephant Butte Irrigation District, New Mexico, September 1947, (NM_00124167-193) (i.e., the Conover Report) was made a part of the official records of the State of New Mexico Office of the State Engineer in or before 1950.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the phrases “was made a part of,” “the official records of the State of New Mexico Office of the State Engineer,” and “in or before 1950” as vague and ambiguous. New Mexico has made a reasonable inquiry, and based on the information known or presently available to New Mexico, New Mexico is unable to admit or deny this request.

REQUEST FOR ADMISSION NO. 56: Admit that attached hereto as Exhibit F is a true and correct copy of the 1954 USGS Water-Supply Paper 1230, Ground-Water Conditions in the Rincon and Mesilla Valleys and Adjacent Areas in New Mexico (WSP 1230).

RESPONSE: New Mexico denies that the comment embedded on Page 1 of Exhibit F is a part of the true and correct copy of the 1954 USGS Water-Supply Paper 1230, Ground-Water Conditions in the Rincon and Mesilla Valleys and Adjacent Areas in New Mexico (WSP 1230). New Mexico admits that the remainder of Exhibit F is a true and correct copy of that document.

REQUEST FOR ADMISSION NO. 57: Admit that attached hereto as Exhibit G is a true and correct copy of “Rio Grande, Elephant Butte Dam to El Paso, TX,” authored by the State of New Mexico Office of the State Engineer.

RESPONSE: The document at Exhibit G is not a document produced by New Mexico. New Mexico has made a reasonable inquiry, and based on the information known or presently available to New Mexico, New Mexico is unable to admit or deny this request.

Respectfully submitted this 2nd day of September 2020,

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No. 141, Original

IN THE
SUPREME COURT OF THE UNITED STATES

◆

STATE OF TEXAS,
Plaintiff,

v.

STATE OF NEW MEXICO and
STATE OF COLORADO,
Defendants.

◆

OFFICE OF THE SPECIAL MASTER

◆

STATE OF NEW MEXICO'S CERTIFICATE OF SERVICE

◆

This is to certify that on the September 2nd, 2020, I caused a true and correct copy of the **State of New Mexico's Responses to the State of Texas's First Set of Requests for Admission to the State of New Mexico** to be served by e-mail upon all counsel of record and interested parties on the Service List, attached hereto.

Respectfully submitted this 2nd day of September 2020.

/s/ Michael A. Kopp

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No. 141, Original

IN THE
SUPREME COURT OF THE UNITED STATES



STATE OF TEXAS,

Plaintiff,

v.

STATE OF NEW MEXICO and
STATE OF COLORADO,

Defendants.



OFFICE OF THE SPECIAL MASTER



**STATE OF NEW MEXICO'S RESPONSES TO
THE UNITED STATES' FIRST SET OF INTERROGATORIES, REQUESTS
FOR ADMISSION, AND REQUEST FOR PRODUCTION OF DOCUMENTS
TO THE STATE OF NEW MEXICO**



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Defendant and Counterclaim Plaintiff the State of New Mexico hereby responds to the United States' First Set of Interrogatories, Requests for Admission, and Request for Production of Documents to the State of New Mexico ("United States' First Set of Discovery Requests"). Responses are being made subject to, and without waiving, New Mexico's Objections to the United States' First Set of Discovery Requests ("New Mexico's Objections"). In addition, New Mexico has not yet completed its investigation and preparation for the adjudication of this action. New Mexico's answers are based upon its current knowledge and understanding. New Mexico expressly reserves its right to supplement or modify these responses with such pertinent information as it may hereafter discovery or as may be informed by the opinions of experts retained by the parties to testify in the trial of this matter. New Mexico expressly reserves the right to rely on, at any time, including trial, subsequently discovered documents and/or materials that have been produced promptly upon discovery. New Mexico will supplement or amend its responses to the interrogatories pursuant to Section 7.1 of the Case Management Plan (September 6, 2018), as amended ("CMP") and Rules 26(e) and 33 of the Federal Rules of Civil Procedure.

RESPONSES TO INTERROGATORIES

- 1. INTERROGATORY NO. 1: State all facts that support Your contention that New Mexico has sustained damages from the alleged breach of the Compact claimed in New Mexico's Second Claim for Relief.**

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions

of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that, based on New Mexico's current understanding, the following facts support New Mexico's second claim for relief:

The Court recognized that the Compact incorporates the Project and Downstream Contracts and relies on the Project to distribute apportioned water between Texas and New Mexico in the Lower Rio Grande. The Downstream Contracts and Article I(1) of the Compact require the Project to release water in accordance with irrigation demands and on the basis of irrigable Project lands in each State, delivering 57% of Project deliveries to New Mexico lands and 43% to Texas lands ("57% to 43% ratio" or "57% to 43% apportionment"). Additionally, regardless of which State or district the land was in, the allocation to Project beneficiaries was historically made on the basis of an equal allocation of water per authorized acre.

The Operating Agreement for the Rio Grande Project (2008) ("2008 Operating Agreement") and the Operating Manual implemented methods of calculating Project water deliveries that (1) reduce surface water deliveries to New Mexico Project water users and (2) increase surface water deliveries to Texas Project water users, with the result that the Project no longer makes an equal allocation of water per authorized acre of Project land in each State.

Any change in the Project's distribution of water in the 57% to 43% ratio also changes the apportionment established by the Compact. This can occur only with the consent of the Compact States. The United States has no authority under the Compact or otherwise to unilaterally change this apportionment.

To the extent the 2008 Operating Agreement alters the Project's 57% to 43% apportionment of water to New Mexico and Texas, respectively, the agreement is void. New Mexico has, therefore, been harmed by the actions of the United States in distributing less than 57% of Project surface water deliveries to New Mexico since adoption of the 2008 Operating Agreement.

Additionally, Reclamation's historical Rio Grande Project actions, including but not limited to implementing the 2008 Operating Agreement, have improperly charged New Mexico for deficiencies in Project delivery caused by others or otherwise outside New Mexico's control. These include, but are not limited to:

- a. Depletions to Project surface flows attributable to groundwater pumping in Texas.
- b. Depletions to Project surface flows attributable to groundwater pumping in Mexico.
(*See, e.g.*, Article XIV of the Compact.)
- c. Unlawful Project accounting credits to Texas
- d. Depletions to Project surface flows attributable to aggradation in the channel of the Rio Grande or excessive growth of water-consuming vegetation along the river.

New Mexico further states that the implementation of the 2008 Operating Agreement through the Rio Grande Project Water Accounting and Operations Manual ("Operations Manual") lacks transparency. The Operations Manual is altered seemingly at will by EBID, EPCWID and Reclamation, and it is extremely difficult, if not impossible, for New Mexico or the Rio Grande Compact Commission to determine what the actual Project operating, accounting, and water allocation procedures used actually are in each year, let alone whether they result in the distribution of water required by the Compact. In addition, Reclamation did not conduct NEPA analysis when changes to Project accounting and operations were made.

In addition, the 2008 Operating Agreement fails to properly calculate alleged deficiencies in Project deliveries. The 2008 Operating Agreement quantifies alleged deficiencies in Project deliveries, also known as the “diversion ratio,” as the difference between the deliveries predicted by the method of allocating Project deliveries Reclamation used between 1980 and 2006, known as the “D1/D2 method,” and the deliveries projected for present Project operations, but there are important differences in the way deliveries are calculated under the 2008 Operating Agreement and under the D1/D2 method. One important example is that when the D1/D2 method was devised, the Project charged the Districts for water diverted during the entire year. The 2008 Operating Agreement only charges the districts for diversions within the irrigation season. The Project also offers certain credits to both districts now, particularly EPCWID, defined as water that is diverted by that district but not charged against the district’s annual allocation for various reasons. When the D1/D2 method was calculated, the Project did not offer credits to either district. As a result of these errors, current Project accounting methods predict lower deliveries than the deliveries predicted by the D1/D2 method, even with the same Project releases and same conditions.

In addition to problems with the diversion ratio, the 2008 Operating Agreement changed Project operations and accounting by allowing carryover storage. Because the 2008 Operating Agreement did not reduce EPCWID’s yearly allocation, and has actually increased it, EPCWID’s annual full-supply allocation plus carryover storage allocation can be substantially greater than its irrigation demand in a given year. Furthermore, municipal use has become a major use of water in EPCWID. EPCWID’s demand has changed, and this municipal use of the Project water has driven the push from Texas to allow carryover storage. This is reflected in EPCWID’s often-large annual carryover storage balances since the 2008 Operating Agreement’s adoption. The practice of

allowing carryover storage has reduced usable water available for allocation to New Mexico and further changed the Compact's apportionment.

The changes Reclamation approved in the 2008 Operating Agreement also impact upstream Compact operations. Because the 2008 Operating Agreement allows for Project allocations significantly in excess of the annual normal release under the Compact, and allows for year-round reservoir releases as opposed to irrigation season releases, the timing of a number of Compact articles can be impacted, including, but not limited to, actual spill under Article VI, Article VII restrictions on upstream storage, and Article VIII calls for release of Accrued Debit Water.

In addition to the foregoing, see the answer to Interrogatory No. 7.

2. INTERROGATORY NO. 2: Identify all persons with knowledge regarding the damages that New Mexico sustained from the alleged breach of the Compact claimed in New Mexico's Second Claim for Relief.

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that, based on New Mexico's current understanding, the following people likely have information that supports the contention that New Mexico has been damaged from the breach of the Compact described in New Mexico's second claim for relief:

- i. Al Blair
- ii. Jesus Reyes
- iii. Phil King
- iv. Gary Esslinger
- v. Bert Cortez
- vi. Wayne Treers
- vii. Ian Ferguson
- viii. Michelle Estrada-Lopez
- ix. Rhea Graham
- x. Dagmar Llewelyn
- xi. Herman Settemeyer
- xii. Suzy Valentine
- xiii. Pat Gordon
- xiv. Curtis Seaton
- xv. Ed Archuleta
- xvi. Robert Mace
- xvii. Peggy Barroll
- xviii. Rolf Schmidt-Petersen
- xix. Nabil Shafike
- xx. John D'Antonio
- xxi. Estevan Lopez
- xxii. Scott Verhines
- xxiii. Christopher Rich
- xxiv. Larry Walkoviak
- xxv. Employees or representatives of the Bureau of Reclamation
- xxvi. Employees or representatives of EBID
- xxvii. Employees or representatives of EPCWID
- xxviii. Farmers and ranchers in the Rio Grande Valley in New Mexico and Texas

3. INTERROGATORY NO. 3: Identify all documents supporting Your contention that New Mexico has sustained damages as a consequence of the United States' alleged breach of the Compact claimed in New Mexico's Second Claim for Relief. (NM Counterclaims ¶ 83)

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions

of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that, based on New Mexico's current understanding, documents currently in its possession that support the allegation that New Mexico has sustained damages as a consequence of the United States' breach of the Compact described in New Mexico's second claim for relief include, but are not necessarily limited to, the following:

- i. Rio Grande Compact, Act of May 31, 1939, ch. 155, 54 Stat. 785
- ii. Contract between Elephant Butte Irrigation District and El Paso County Water Improvement District No. 1 (Feb. 16, 1938) ("1938 Downstream Contract")
- iii. 2008 Operating Agreement, including the Operations Manual(s)
- iv. Project accounting, including but not limited to Bureau of Reclamation, *Rio Grande Project: Summary of Allocation and Accounting Calculations*, Technical Memo. No. 86-68210-2016-04 (June 2016), TEX00283849-TEX00283915 ("2016 Accounting Memo")
- v. Annual Reports of the Rio Grande Compact Commission
- vi. Project Histories of the Rio Grande Project (1912-1988) ("Project Histories")
- vii. New Mexico filings in the *New Mexico v. United States*, No. 11-cv-691 (D.N.M.)
- viii. Letter from New Mexico Office of the State Engineer ("NMOSE") to Bureau of Reclamation re: 2008 Rio Grande Project Operating Agreement and Operations Manual (Mar. 4, 2010).
- ix. Letter from Bureau of Reclamation to New Mexico Interstate Stream Commission ("NMISC") re: Invitation to Participate as Cooperating Agency for the Supplemental Environmental Assessment for the Operating Procedures, Rio Grande Project (Mar. 30, 2012).
- x. Letter from NMISC to Bureau of Reclamation re: Response to Reclamation's April 23 Email to the NMISC Inviting Public Comment on the Scope and Concerns that Should be Included in the EA in Reference to Reclamation's Initiation of Its 2012 Environmental Assessment of the Rio Grande Project 2008 Operating Agreement (Apr. 30, 2012).
- xi. Letter from NMISC to Bureau of Reclamation re: Reclamation's Current Efforts to Prepare a Supplemental Environmental Assessment on Implementation of Rio Grande Project Operating Procedures (Nov. 6, 2012).
- xii. Letter from Texas Commission on Environmental Quality to Mike Hamman, Bureau of Reclamation, re: Invitation to Participate as

4. INTERROGATORY NO. 4: State all facts that support Your contention that New Mexico and its citizens have suffered harm because of the United States' alleged failure to follow the Water Supply Act. (NM Counterclaims ¶ 104)

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that the harm it has suffered as a result of the United States' failure to follow the Water Supply Act is the adoption of carryover storage accounts for the Project, which has resulted in a reduction in the amount of Project water allocated to lands in New Mexico below what would have been allocated to New Mexico under prior operating procedures. See the answer to Interrogatory No. 1 for additional facts relating to the harm the 2008 Operating Agreement has inflicted on New Mexico.

5. INTERROGATORY NO. 5: Identify all persons with knowledge supporting Your contention that New Mexico and its citizens have suffered harm because of the United States' alleged failure to follow the Water Supply Act. (NM Counterclaims ¶ 104)

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions

of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that, based on New Mexico's current understanding, the following people likely have information that supports the allegation that New Mexico has suffered harm because of the United States' failure to follow the Water Supply Act include, but are not necessarily limited to, the following: See the answer to Interrogatory No. 2, above.

6. INTERROGATORY NO. 6: Identify all documents supporting Your contention that New Mexico and its citizens have suffered harm because of the United States' alleged failure to follow the Water Supply Act. (NM Counterclaims ¶ 104)

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that, based on New Mexico's current understanding, documents currently in its possession that support the allegation that New Mexico has suffered harm because of the United States' failure to follow the Water Supply Act include, but are not necessarily limited to, the following: **see the answer to Interrogatory No. 3, above.**

7. INTERROGATORY NO. 7: State all facts that support Your contention that the United States has improperly conducted annual Project accounting. (NM Counterclaims ¶ 107)

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states as follows:

Project accounting is deficient in a number of respects, all of which work to the detriment of New Mexico. These include, but are not limited to:

- Project accounting conducted pursuant to the 2008 Operating Agreement improperly excludes non-irrigation season diversions.
- The Project now awards an increase in allocation to EPCWID for the American Canal Extension (ACE) credit. The rationale for the ACE credit was to reward EPCWID for the reduction in Project conveyance losses by extending the American Canal, thus bypassing the leaky bed of the Rio Grande. However these conveyance losses were largely attributable to pumping in Texas by the City of El Paso, EPCWID, and EPCWID members. As a result, the ACE credit rewards EPCWID for reducing losses caused by Texas entities (including EPCWID itself), and directly decreases EBID's allocation.

- The Project now awards certain other credits as part of the Project accounting process, defined as water diverted by each District, but not charged against that District's annual allocation. These credits artificially reduce the amount of total allocation charges, increasing the apparent discrepancy between deliveries predicted by the D1/D2 method and current charged deliveries, further increasing the apparent negative departure from D2, and thereby reducing the amount of water allocated to EBID.
- Project records reflect that, before groundwater pumping became widespread in Texas, Project return flows generated in Texas were redelivered to downstream Project water users in Texas and were charged as Project deliveries. Groundwater pumping in the Project area in Texas and Mexico has reduced or eliminated Project return flows available for reuse and redelivery in Texas. Project accounting fails to reflect that the reduced availability of Project return flows in Texas is due to actions by Texas and instead allows for additional releases of stored water to offset that effect.
- Project accounting under the 2008 Operating Agreement fails to properly allocate responsibility to Texas for reductions in Project delivery efficiency due to pumping or excessive diversions in Texas, or to properly allocate the effects of causes outside the control of either State, including pumping in Mexico and deficient maintenance of the river channel by the United States; instead, EBID's Project allocation is reduced to offset all such inefficiencies. *See* Article XIV of the Compact.
- Carryover accounting practices approved in the 2008 Operating Agreement change the method of annual water allocation practiced by the Project for decades in

accordance with irrigation demand, allowing one district to not use its current year allocation and carry it over into future years. This has resulted in a material alteration in the allocation of Project water between EBID and EPCWID and, hence, the apportionment between the States.

- Upon information and belief, EPCWID orders water from the Project for the purpose of selling or otherwise transferring this water to Hudspeth County Conservation and Reclamation District (“HCCRD”), even though Project water is meant to benefit lands enrolled in the Project, not lands in HCCRD. HCCRD is not a Project beneficiary and has no entitlement to receive Project water beyond operational waste.
- Monthly evaporation accounting of Rio Grande Credit Water as part of Project accounting is contrary to the explicit language of Article VI of the Compact.
- The above accounting practices and other changes to Project operations implemented in the 2008 Operating Agreement also impact upstream Compact operations in both Colorado and New Mexico, as discussed in more detail in the response to Interrogatory No. 1.

8. INTERROGATORY NO. 8: Identify all Persons with knowledge regarding Your contention that the United States has improperly conducted annual Project accounting. (NM Counterclaims ¶ 107)

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions

of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that, based on New Mexico's current understanding, the following people likely have information that supports the allegation that that the United States has improperly conducted annual Project accounting:

- i. Pat Gordon
- ii. Suzy Valentine
- iii. Curtis Seaton
- iv. Herman Settemeyer
- v. Ed Archuleta
- vi. Robert Mace
- vii. Al Blair
- viii. Phil King
- ix. Bert Cortez
- x. Wayne Treers
- xi. Ian Ferguson
- xii. Michelle Estrada-Lopez
- xiii. Mike Hamman
- xiv. Peggy Barroll
- xv. Nabil Shafike
- xvi. Rolf Schmidt-Petersen
- xvii. Mike Sullivan
- xviii. Craig Cotton
- xix. Hal Simpson
- xx. Dick Wolfe
- xxi. Steve Vandiver
- xxii. Employees or representatives of the Bureau of Reclamation

9. **INTERROGATORY NO. 9: Identify all Documents that support Your contention that the United States has improperly conducted annual Project accounting. (NM Counterclaims ¶ 107)**

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that, based on New Mexico's current understanding, documents currently in its possession that support the allegation that the United States has improperly conducted annual Project accounting include, but are not necessarily limited to, the following:

- a. Rio Grande Compact
- b. Rio Grande Compact Commission Rules and Regulations
- c. Project accounting, including but not limited to the 2016 Accounting Memo
- d. Annual Reports of the Rio Grande Compact Commission
- e. Project Histories
- f. 2008 Operating Agreement, including the Operations Manual
- g. Depositions of Johnny Stubbs, Jesus Reyes, Larry Ceballos
- h. United States Bureau of Reclamation, "Rio Grande Project Water Supply Allocation Procedures," US0167011-US0167024.
- i. Communications from New Mexico's Rio Grande Compact Commissioner and NMISC in the possession of the Bureau of Reclamation

10. INTERROGATORY NO. 10: State whether You contend that failing to account for depletions to Project surface flows caused by groundwater pumping is a violation of the United States' duties under the Compact. (NM Counterclaims ¶ 107)

ANSWER: The Project is incorporated into the Compact based on various Compact articles. The Project must make releases in accordance with irrigation demands and operate in a manner that allows for equal allocations to all Project lands during the irrigation season. Groundwater pumping has been a source of supplemental irrigation supply throughout the Project area, in Texas, Mexico,

and New Mexico, since the early 1950s. Reclamation acknowledged such groundwater pumping in the United States as a necessary component of meeting irrigation needs.

Because the Compact incorporates the Project and relies on Reclamation to deliver water apportioned between Texas and New Mexico in the LRG, the Project's deliveries are deliveries of apportioned Compact water. Article I(1) of the Compact, as well as the Compact's incorporation of the Project and the Downstream Contracts, in particular the 1938 Downstream Contract, establish the apportionment of water deliveries in the LRG as 57% to New Mexico Project lands and 43% to Texas Project lands. The United States has a duty under the Compact to deliver Project water in the proportion of 57% to New Mexico Project lands and 43% to Texas Project lands. By treating the effects of groundwater pumping differently for different parties, Reclamation violates the Compact.

One of the ways in which Project accounting conducted pursuant to the 2008 Operating Agreement violates the Compact is that it assigns responsibility for all estimated inefficiencies in Project deliveries to New Mexico and reduces EBID's allocation of Project water to offset these inefficiencies, even though a portion of these inefficiencies is caused by groundwater pumping and other diversions in Texas and Mexico. Reclamation has failed to consider these impacts and account for such pumping in its current operations. Further, by agreeing that all Project inefficiencies associated with groundwater pumping in Mexico should be borne by New Mexico, Reclamation is violating Article XII of the Rio Grande Compact.

Responsibility for inefficiencies not caused by New Mexico should not be assessed against New Mexico. The Project is operated as a unit and must be evaluated based on releases and deliveries to all Project lands. Moreover, Project gaging and accounting must be transparent, and

major operational changes must be approved by the Compacting States. Reclamation has failed to evaluate the Project operations as a unit, in violation of the Compact.

New Mexico's broader contention is that the 2008 Operating Agreement should be void because it changes historical Project allocations, and therefore Compact apportionments, without authorization by the Compact States. The United States has no authority under the Compact or otherwise to unilaterally change the apportionment of water between New Mexico and Texas in the LRG.

11. INTERROGATORY NO. 11: Identify all documents that support Your contention that failing to account for depletions to Project surface flows caused by groundwater pumping is a violation of the United States' duties under the Compact. (NM Counterclaims ¶ 107)

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that, based on New Mexico's current understanding, documents currently in its possession that support the allegation that the United States fails to properly account for depletions to Project surface flows caused by groundwater pumping or other diversions in Texas and Mexico include, but are not necessarily limited to, the following:

- a. Rio Grande Compact
- b. Rio Grande Compact Commission Rules and Regulations
- c. Project accounting, including but not limited to the 2016 Accounting Memo
- d. The Rio Grande Joint Investigation in the Upper Rio Grande Basin in Colorado, New Mexico, and Texas 1936-1937 (Feb. 1938) (“Joint Investigation”)
- e. Annual Reports of the Rio Grande Compact Commission
- f. 2008 Operating Agreement and Operating Manual
- g. United States Bureau of Reclamation, “Rio Grande Project Water Supply Allocation Procedures,” US0167011-US0167024.
- h. 1938 Downstream Contract and the other Downstream Contracts, as defined in *Texas v. New Mexico*, 138 S. Ct. 954 (2018)
- i. Communications from New Mexico’s Rio Grande Compact Commissioner and NMISC in the possession of the Bureau of Reclamation

12. INTERROGATORY NO. 12: State all facts that support Your contention that New Mexico has suffered grave and irreparable injury or damages as a result of the United States entering into Miscellaneous Purposes Act contracts. (NM Counterclaims ¶¶ 111, 114, 115)

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that it has been harmed by the execution of Miscellaneous Purposes Act (“MPA”) contracts by the United States for reasons including, but not limited to, the following:

First, the United States has agreed to changes in Project operations that primarily benefit municipal water users. These include, but are not limited to, implementation of carryover storage operations, which harm New Mexico as explained more fully in the response to Interrogatory No.

1. These also include provisions in the 2008 Operating Agreement that allow the Project to release water at any time of the year, not just the irrigation season.

Second, the United States executed MPA contracts without conducting proper analysis to ensure like amounts of Project water of like quality could continue to be delivered to other Project lands formerly dependent on return flows of water from lands acquired, leased, or otherwise dried up when their Project surface allotments were transferred to the City of El Paso. As a result, EPCWID has increased its demands for water from Project storage and reduced its reliance on return flows, reducing the amount of water in Project storage available for allocation to water users in New Mexico.

Third, it is not clear whether Reclamation tracks lands purportedly followed by El Paso and compares these lands to actual deliveries to El Paso to ensure these lands are not being irrigated and that overall deliveries to EPCWID have not increased.

Fourth, the contracts the United States has executed with the City of El Paso allow El Paso to receive 4 acre-feet or more per acre of Project water. *E.g.*, Contract between the United States of America, El Paso County Water Improvement District No. 1, and City of El Paso, Table 1 (June 11, 2001), EPCWID063918. However, the United States elsewhere defines a delivery of 3.02 acre-feet per acre as a “full supply” to authorized Project lands in the United States. Rio Grande Project: Water Supply Allocation Procedures, Para. II(b), US0167011. In other words, the City’s contracts allow it to take delivery of more Project water than Reclamation’s full allocation to each Project acre.

13. INTERROGATORY NO. 13: Identify all Persons with knowledge regarding the injuries or damages You contend New Mexico has suffered as a result of the United

States entering into Miscellaneous Purposes Act contracts. (NM Counterclaims ¶¶ 111, 114, 115)

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that, based on New Mexico's current understanding, the following people likely have information regarding the injuries or damages New Mexico has suffered as a result of the United States entering into Miscellaneous Purposes Act contracts:

- i. Pat Gordon
- ii. Al Blair
- iii. Phil King
- iv. Bert Cortez
- v. Ian Ferguson
- vi. Michelle Estrada-Lopez
- vii. Herman Settemeyer
- viii. Suzy Valentine
- ix. Curtis Seaton
- x. Ed Archuleta
- xi. Robert Mace
- xii. Peggy Barroll
- xiii. Rolf Schmidt-Petersen
- xiv. John Balliew
- xv. Employees or representatives of the Bureau of Reclamation
- xvi. Employees or representatives of EBID
- xvii. Employees or representatives of EPCWID
- xviii. Employees or representatives of the City of El Paso
- xix. Employees or representatives of El Paso Water Utilities Public Service Board

14. INTERROGATORY NO. 14: State all facts that support Your contention that the United States has breached a duty by “failing to account for depletions to Project surface flow caused by groundwater pumping and unauthorized surface diversions in Texas and groundwater pumping and surface diversions in Mexico in excess of the 60,000 acre-feet annually Mexico is allowed under the 1906 Convention. . . .” (NM Counterclaims ¶ 107)

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that, based on New Mexico’s current understanding, the following facts support New Mexico’s contention that the United States has breached a duty by failing to account for depletions to Project surface flow caused by activities in Texas and Mexico:

Because the Compact incorporates the Project and relies on it to apportion water between Texas and New Mexico in the LRG, the Project’s deliveries are deliveries of apportioned water. Article I(1) of the Compact, as well as the Compact’s incorporation of the Project and the Downstream Contracts, in particular the 1938 Downstream Contract, establish the apportionment of water in the LRG as 57% to New Mexico lands and 43% to Texas lands. The United States has a duty under the Compact to distribute Project water in the proportion of 57% to New Mexico Project water users and 43% to Texas Project water users. Charging New Mexico for deficiencies in Project delivery caused by others or that are otherwise outside New Mexico’s control alters the

Project's distribution of water and violates the United States' Compact duty to distribute Project water in the ratio of 57% to 43%. In addition, see the response to Interrogatory No. 10.

15. INTERROGATORY NO. 15: Identify all Persons with knowledge of the facts that support Your contention that the United States has breached a duty by failing to account for depletions to Project surface flow caused by groundwater pumping and unauthorized surface diversions in Texas and groundwater pumping and surface diversions in Mexico in excess of the 60,000 acre-feet annually Mexico is allowed under the 1906 Convention. (NM Counterclaims ¶ 107)

ANSWER: Estevan Lopez, as well as the individuals listed in the response to Interrogatory No. 8.

16. INTERROGATORY NO. 16: Identify all documents that support Your contention that the United States has breached a duty by failing to account for depletions to Project surface flow caused by groundwater pumping and unauthorized surface diversions in Texas and groundwater pumping and surface diversions in Mexico in excess of the 60,000 acre-feet annually Mexico is allowed under the 1906 Convention. (NM Counterclaims ¶ 107)

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal

Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that, based on New Mexico's current understanding, documents currently in its possession that support the allegation that the United States fails to properly account for depletions to Project surface flow caused by activities in Texas and Mexico as required by the Compact include, but are not necessarily limited to, the following:

- Alvarez, Henry J. and A. Wayne Buckner, 1980, Ground-water development in the El Paso region, Texas, with emphasis on the resources of the lower El Paso Valley, Texas Department of Water Resources Report 246
- Ashworth, John B., 1990, Evaluation of Ground-Water Resources in El Paso County, Texas: Texas Water Development Board Report TR-324
- Documents in the control of the United States and/or Texas, and agencies and political subdivisions thereof, reflecting new wells and groundwater use in the Rio Grande Valley in Texas
- Documents in the control of the United States and/or Mexico, and agencies and political subdivisions thereof, reflecting wells and groundwater use in the Rio Grande Valley in Mexico.
- Far West Texas Water Plan, Prepared for the Texas Water Development Board (January 2011), available at [http://www.twdb.texas.gov/waterplanning/rwp/plans/2011/E/Region_E_2011_RWP\(with_out_errata_revsions\).pdf](http://www.twdb.texas.gov/waterplanning/rwp/plans/2011/E/Region_E_2011_RWP(with_out_errata_revsions).pdf)
- Heywood, C.E. and R.M. Yager, 2003, Simulated ground-water flow in the Hueco Bolson, an alluvial-basin aquifer system near El Paso, Texas, U.S. Geological Survey Water-Resources Investigations Report 02-4108
- Hibbs, Barry J., Radu Boghici, et. al, 1997, Transboundary Aquifers of the El Paso/Ciudad Juarez/Las Cruces Region: Texas Water Development Board and the New Mexico Water Resources Research Institute in cooperation with the Comisión Nacional del Agua (CONAGUA), Junta Municipal de Agua y Saneamiento de Ciudad Juárez (JMAS), the International Water and Boundary Commission and Comisión Internacional de Límites y Aguas for the U.S. Environmental Protection Agency
- Hueco Basin Report, available at https://www.epwater.org/our_water/resources/hueco_bolson_groundwater
- Hutchison, William R., 2006, Groundwater management in El Paso, Texas: PhD Dissertation presented to University of Texas at El Paso
- Hutchinson, William R. and Barry J. Hibbs, 2008, Ground water budget analysis and cross-formational leakage in an arid basin: Groundwater, Volume 46, No. 3, pps. 384-395
- Kernoodle, J.M., 1992, Results of simulations by a preliminary numerical model of land subsidence in the El Paso, Texas area, U.S. Geological Survey Water-Resources Investigations Report 92-4037

- Knorr, D.B., and Cliett, T., 1985, Proposed groundwater recharge at El Paso, Texas, in Asano, Takashi., ed., *Artificial recharge of groundwater*: Boston, Butterworth Publishers, (pps. 425-480)
- Knowles, Tommy R., and Henry J. Alvarez, 1979, Simulated effects of ground-water pumping in portions of the Hueco Bolson in Texas and Mexico during the period 1973 through 2029: Texas Department of Water Resources LP-104
- Land, L. F. and C. A. Armstrong, 1985, A preliminary assessment of land-surface subsidence in the El Paso area, Texas: U.S. Geological Survey Water Resource Investigation Report 85-4155
- Leggat, E.R., 1962, Development of ground water in the El Paso District, Texas, 1955-1960 Progress Report No. 8: Texas Water Commission Bulletin 6204
- Lloyd, W.J and R.A. Marston, 1985, Municipal and industrial water supply in Ciudad Juarez, Mexico, Water Resources Bulletin AWWA, Volume 21, Number 5
- Marston, R.A. and W.J. Lloyd, 2005, Geographical hydrology of the El Paso-Cuidad Juarez border region: *Water for Texas*, edited by Jim Norwine, John R. Giardino, and Sushma Krishnamurthy, Texas A&M University Press, pps. 242-248
- Meyer, W.R., 1976, Digital model for simulated effects of ground-water pumping in the Hueco Bolson, El Paso Area, Texas, New Mexico, and Mexico: U.S. Geological Survey Water Resource Investigation Report 58-75
- National Resources Committee, 1938, Regional Planning, Part VI-The Rio Grande Joint Investigation in the Upper Rio Grande Basin in Colorado, New Mexico, and Texas, 1936-1937
- Petrossian, R., George, P., Bradley, R.G., Backhouse, S., Boghici, R., Olden, M.O., *Transborder Aquifers: A Summary of Aquifer Properties, Policies, and Planning Approaches for Texas, Surrounding States, and Mexico*, Texas Water Development Board, Groundwater Management Report 17-01 (April 2017), at http://www.twdb.texas.gov/groundwater/docs/GMR_reports/GMR17-01_TransborderAquifers.pdf?d=25815.44503217803
- Preston, Richard D., Douglas Coker, and Raymond C. Matthews, Jr., 1998, Changes in groundwater conditions in El Paso County, Texas 1988-1998: Texas Water Development Board Open File Report 98-02
- *Priority Groundwater Management Areas and Groundwater Conservation Districts*, Report to the 85th Texas Legislature (January 2017), at https://www.tceq.texas.gov/assets/public/comm_exec/pubs/sfr/053-10.pdf
- Sheng, Zhuping, 2005, An aquifer storage and recovery system with reclaimed wastewater to preserve native groundwater resources in El Paso, Texas, *Journal of Environmental Management* 75:4 (pps. 367-377)
- Sheng, Zhuping and J. Devere, 2005, Systematic management for a stressed transboundary aquifer: the Hueco Bolson in the Paso del Norte region, *Journal of Hydrogeology* 13:5-6 (pps. 813-825)
- Sheng, Z., *Impacts of groundwater pumping and climate variability on groundwater availability in the Rio Grande Basin*, *ESA Ecosphere*, V4, Issue 1 (Jan. 2013) at <https://esajournals.onlinelibrary.wiley.com/doi/10.1890/ES12-00270.1>
- United States Bureau of Reclamation, 1912 to 1988, *Rio Grande Project Histories* (Annual)
- United States Bureau of Reclamation, drain flow data

- United States Department of the Interior, Bureau of Reclamation, *Legal and Institutional Framework for Rio Grande Project Water Supply and Use . . . a Legal Hydrograph* (1995).
- Water Data Interactive provided by the Texas Water Development Board, available at <https://www2.twdb.texas.gov/apps/WaterDataInteractive/GroundWaterDataViewer>
- White, D.E., Baker, E.T., Jr., and Sperka, R., 1997, Hydrology of the shallow aquifer and uppermost semiconfined aquifer near El Paso, Texas: U.S. Geological Survey Water-Resources Investigations Report 97-4263
- White, D.E., 1983, Summary of hydrologic information in the El Paso, Texas area, with emphasis on ground-water studies, 1903-1980: U.S. Geological Survey Open-File Report 83-775

17. INTERROGATORY NO. 17: State all facts that support Your contention that accounting practices of the United States “artificially inflate the amount of Project water allocated to Texas.” (NM Counterclaims ¶ 107)

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that, based on New Mexico’s current understanding, the following facts support New Mexico’s contention that accounting practices of the United States artificially inflate the amount of Project water allocated to Texas:

See the answer to Interrogatory No. 7. In addition, New Mexico states, upon information and belief, that EPCWID calls for the delivery of Project water that is not used on Project lands in Texas but is, instead, sold or transferred to non-Project lands in HCCRD. *E.g.*, EPCWID_063855, EPCWID_182324. HCCRD and its members are not Project beneficiaries and have no right or entitlement to receive deliveries of Project water. *Bean v. United States*, 163 F. Supp. 838 (Ct. Cl.

1958); *see also* EPCWID_063637. The Compact and the 1938 Downstream Contract require that Project water be allocated and delivered “in accordance with irrigation demands” from Project acres in both States, in the proportion 57% to 43%. The United States cannot allocate and deliver Project water to Texas for use in HCCRD, or any other location outside EPCWID, without violating the Compact.

18. INTERROGATORY NO. 18: Identify all Persons with knowledge of the facts that support Your contention that accounting practices of the United States “artificially inflate the amount of Project water allocated to Texas.” (NM Counterclaims ¶ 107)

ANSWER: See the answer to Interrogatory No. 8.

19. INTERROGATORY NO. 19: Identify all documents that support Your contention that the United States has a duty to account for depletions to Project surface flows caused by groundwater pumping in Texas or Mexico. (NM Counterclaims ¶ 107)

ANSWER: See the answer to Interrogatory No. 16.

20. INTERROGATORY NO. 20: Identify all documents that You contend describe, define, or relate to what You contend is the United States’ “responsibility to properly maintain the Project,” including but not limited to those describing or defining what constitutes proper maintenance of the Project for which You contend that the United States is responsible. (NM Counterclaims ¶ 121)

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that, based on New Mexico's current understanding, documents currently in its possession that describe, define, or relate to the United States' responsibility to maintain the Project include, but are not necessarily limited to, the following:

- a. Act of June 4, 1936, Pub. L. 74-648, 49 Stat. 1463 ("1936 Act")
- b. Convention Concerning the Rectification of the Rio Grande of February 1, 1933, United States-Mexico, 48 Stat 1621, T S 864
- c. October 9, 1935 Memorandum of Agreement between United States Department of State and the United States Department of the Interior pursuant to May 21, 1930 Act of Congress
- d. 22 U.S.C. § 277b(a)
- e. Contract Between the United States of America and the El Paso County Water Improvement District No. 1 for Adjustment of Project Construction Charges and Other Purposes (Nov. 10, 1937) , EPCWID048304, and Contract Between the United States of America and the El Paso County Water Improvement District No. 1 for Adjustment of Project Construction Charges and Other Purposes (Nov. 9, 1937), US0285093 ("1937 Downstream Contracts")
- f. Contract Between the United States of America Department of the Interior Water and Power Resources Service and El Paso County Water Improvement District No. 1 for the Transfer of the Operation and Maintenance of Project Works (Mar. 14, 1980), CO022368
- g. Contract Between the United States of America Department of the Interior, Bureau of Reclamation and Elephant Butte Irrigation District for the Transfer of the Operation and Maintenance of Project Works (Feb. 15, 1979), US0356453
- h. Record of Decision on the River Management Alternatives for the Rio Grande Canalization Project (2009), US0076617
- i. USIBWC Canalization River Management Plan (last Updated December 8, 2016), US0127726
- j. USDOI Final Biological Opinion for USIBWC Long Term River Management of the Rio Grande Canalization Project, New Mexico, August 16, 2017

21. INTERROGATORY NO. 21: Identify all Persons with knowledge of the facts that support Your contention that the United States has failed in its “responsibility to properly maintain the Project.” (NM Counterclaims ¶ 121)

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that, based on New Mexico’s current understanding, the following people likely have information regarding the United States’ failure to properly maintain the Project:

- a. Pat Gordon
- b. Al Blair
- c. Phil King
- d. Jesus Reyes
- e. Gary Esslinger
- f. Henry Magallenes
- g. EBID Farmers
- h. EPCWID Farmers
- i. Employees or representatives of the International Boundary and Water Commission
- j. Ed Drusina
- k. Carlos Pena
- l. Billy Finn
- m. Bert Cortez
- n. Ian Ferguson
- o. Michelle Estrada-Lopez
- p. Wayne Treers
- q. Employees or representatives of the Bureau of Reclamation
- r. Rio Grande Compact Commission Engineer Advisers

22. INTERROGATORY NO. 22: Identify all Persons with knowledge of the facts that support Your contention that pumping in Mexico of groundwater tributary to the Rio

Grande “has reduced Project efficiency, impacted Project releases and reduced return flows” to the Project. (NM Counterclaims ¶ 126)

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that, based on New Mexico’s current understanding, the following people likely have information regarding the impacts of groundwater pumping in Mexico on Project releases and return flows:

- a. Pat Gordon
- b. Herman Settemeyer
- c. Suzy Valentine
- d. Curtis Seaton
- e. Ed Archuleta
- f. Bill Hutchinson
- g. Robert Mace
- h. Al Blair
- i. Phil King
- j. Jesus Reyes
- k. Gary Esslinger
- l. EBID Farmers
- m. EPCWID Farmers
- n. Bert Cortez
- o. Ian Ferguson
- p. Michelle Estrada-Lopez
- q. Carlos Pena
- r. Billy Finn
- s. Edward Drusina
- t. John Balliew
- u. Employees or representatives of the Texas Commission on Environmental Quality
- v. Employees or representatives of the Texas Water Development Board
- w. Employees or representatives of the City of El Paso
- x. Persons involved in the Transboundary Aquifer Program, to be identified
- y. Peggy Barroll
- z. Rolf Schmidt-Petersen

aa. Estevan Lopez

23. INTERROGATORY NO. 23: Identify all documents that support Your contention that pumping in Mexico of groundwater tributary to the Rio Grande “has reduced Project efficiency, impacted Project releases and reduced return flows” to the Project. (NM Counterclaims ¶ 126)

ANSWER: See the response to Interrogatory No. 16.

24. INTERROGATORY NO. 24: State all facts that support Your contention that “groundwater pumping and unauthorized surface diversions in the Project area in Texas and Mexico cause or materially contribute to the United States’ alleged injury regarding water delivery of water.” (NM Answer to United States’ Complaint in Intervention ¶ 34)

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that, based on New Mexico’s current understanding, the following facts support New Mexico’s contention that groundwater pumping in Texas and Mexico is reducing Project efficiency and reducing Project return flows:

Numerous wells have been drilled into the Hueco Bolson aquifer and the Rio Grande alluvium in Texas and Mexico to provide water for municipal, industrial, and agricultural purposes. In particular, the El Paso-Ciudad Juarez metropolitan area, with an estimated combined population of over 2.7 million, obtains a significant portion of its municipal water supply from groundwater, with almost all water for Ciudad Juarez, with a population of approximately 1.5 million, coming from groundwater. The City of El Paso receives a large portion of its municipal and industrial supply from groundwater pumped from the Hueco Bolson in Texas, serving on the order of 700,000 citizens. Additionally, Mexico and Texas pump water from the Mesilla Bolson for their municipal and industrial demands. The sustained, high-volume groundwater pumping in both Texas and Mexico has induced significant water-level declines in the Hueco Bolson.

Groundwater depletions reduced the supply at drains in EPCWID. This reduces the water available for Project beneficiaries in Texas both by intercepting Project deliveries and reducing the amount of Project return flows, causing those beneficiaries to call for additional water from Project storage. Pumping from the Hueco Bolson in Texas and Mexico also has reduced the amount of fresh water in the Hueco Bolson aquifer and likely contributes to the alleged increase in the salinity of drain water downstream, as does EPCWID's use of wastewater returns from the City of El Paso.

In addition to the foregoing, see the answer to Interrogatory No. 14.

25. INTERROGATORY NO. 25: Identify all Persons with knowledge of the facts that support Your contention that “groundwater pumping and unauthorized surface diversions in the Project area in Texas and Mexico cause or materially contribute to

the United States’ alleged injury regarding water delivery of water.” (NM Answer to United States’ Complaint in Intervention ¶ 34)

ANSWER: See the answer to Interrogatory No. 22.

26. INTERROGATORY NO. 26: Identify all documents that support Your contention that “groundwater pumping and unauthorized surface diversions in the Project area in Texas and Mexico cause or materially contribute to the United States’ alleged injury regarding water delivery of water.” (NM Answer to United States’ Complaint in Intervention ¶ 34)

ANSWER: See the answers to Interrogatory Nos. 9, 11, 16, and 23.

27. INTERROGATORY NO. 27: Identify all Persons with knowledge regarding Your contention that “[i]mproper accounting for Project return flows and deliveries, storage or release of Project water in excess of amounts needed to annually serve or deliver water to Project lands, and unauthorized release of Project water for purposes other than to deliver water to Project lands or Mexico have caused or materially contributed to the United States’ alleged injury, for which it now seeks to hold New Mexico liable.” (NM Answer to United States’ Complaint in Intervention ¶ 35)

ANSWER: See the answer to Interrogatory No. 8.

28. INTERROGATORY NO. 28: Identify all documents that support Your contention that “[i]mproper accounting for Project return flows and deliveries, storage or release of Project water in excess of amounts needed to annually serve or deliver water to Project lands, and unauthorized release of Project water for purposes other than to deliver water to Project lands or Mexico have caused or materially contributed to the United States’ alleged injury, for which it now seeks to hold New Mexico liable.” (NM Answer to United States’ Complaint in Intervention ¶ 35)

ANSWER: See the answer to Interrogatory Nos. 9, 11, 16, and 19.

29. INTERROGATORY NO. 29: Identify all Persons with knowledge regarding the standards or criteria to which You contend the United States must adhere to “properly maintain the Project” as alleged in NM Answer to United States’ Complaint in Intervention, Third Affirmative Defense ¶ 28.

ANSWER: See the answer to Interrogatory No. 21.

30. INTERROGATORY NO. 30: Identify all Persons with knowledge of facts that support Your contention that “[t]he United States has ... failed to properly maintain the Project, including failing to eliminate growth of phreatophytic vegetation in and along the bed of the Rio Grande and allowing the buildup of sediment in the bed of the Rio Grande in the Project area.” (NM Answer to United States’ Complaint in Intervention, Third Affirmative Defense ¶ 28).

ANSWER: See the answer to Interrogatory No. 21.

31. INTERROGATORY NO. 31: Identify all documents that support Your contention that “[t]he United States has ... failed to properly maintain the Project, including failing to eliminate growth of phreatophytic vegetation in and along the bed of the Rio Grande and allowing the buildup of sediment in the bed of the Rio Grande in the Project area.” (NM Answer to United States’ Complaint in Intervention, Third Affirmative Defense ¶ 28).

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that, based on New Mexico’s current understanding, documents currently in its possession that describe, define, or relate to the United States’ responsibility to maintain the Project include, but are not necessarily limited to, the following:

- a. Annual reports of the International Boundary and Water Commission to the Rio Grande Compact Commission
- b. Annual reports of the International Boundary and Water Commission to the Engineer Advisers to the Rio Grande Compact Commission
- c. See also the answer to Interrogatory No. 20.

32. INTERROGATORY NO. 32: Identify all documents that support Your contention that “[d]efficient maintenance of Project infrastructure and the river channel have

increased delivery losses by increasing evapotranspiration of water and increasing seepage losses from the riverbed. (NM Answer to United States' Complaint in Intervention, Third Affirmative Defense ¶ 28).

ANSWER: See the answer to Interrogatory No. 31.

33. INTERROGATORY NO. 33: Identify all Persons with knowledge of facts that support Your contention that “[d]efficient maintenance of Project infrastructure and the river channel have increased delivery losses by increasing evapotranspiration of water and increasing seepage losses from the riverbed. (NM Answer to United States' Complaint in Intervention, Third Affirmative Defense ¶ 28)

ANSWER: See the answer to Interrogatory No. 21.

34. INTERROGATORY NO. 34: State all facts that support Your contention that “the United States, via the Bureau of Reclamation and its officers, encouraged Project beneficiaries to drill wells, particularly during drought years with low surface water supplies.” (NM Answer to United States' Complaint in Intervention, Sixth Affirmative Defense ¶ 38).

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as

required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that:

Since the Compact was adopted, the United States Bureau of Reclamation (“BOR”), through its employees and representatives, was aware that Project beneficiaries relied upon groundwater as a supplemental source of water on lands located within the Project. Despite its knowledge of widespread groundwater pumping in both EBID and EPCWID, BOR historically made no attempt to prohibit or limit groundwater use. Rather, BOR encouraged Project beneficiaries to use wells and rely on groundwater to maximize production. For example, the Project Histories reflect that during times of drought, BOR supported reliance on groundwater to supplement low Project supplies, encouraging farmers with groundwater wells to transfer their surface allotments to farmers without wells, and even requesting that farmers with wells pump water into Project canals to convey to neighboring farmers without wells. *E.g.*, W.F. Resch, Project Manager, “Rio Grande Project - New Mexico-Texas: Water Announcement” (June 21, 1954), *found in* Bureau of Reclamation, United States Department of the Interior, *Annual Project History: Vol. 43* (1954); *see also* W.F. Resch, Project Manager, “Rio Grande Project – New Mexico-Texas: Water Announcement” (March 1, 1954), *found in id.*

In addition, the United States has taken a number of steps to facilitate the extraction of groundwater on Project lands. The United States admitted that BOR granted permission for “several hundred irrigation wells” to be drilled on Reclamation right of way within EBID starting in the early 1950s. United States’ Memorandum in Support of Cross-Motion for Partial Summary Judgment at 4, *Mestas v. Elephant Butte Irrigation District*, No. 78-cv-138 (D.N.M. Nov. 22, 1978) (“*Mestas*”). The United States even assisted EBID with several wells EBID drilled in the mid-1970s, admitting that the “Project Superintendent assisted in the selection of well sites” and that the “Bureau of Reclamation furnished technical engineering assistance to the district” related to drilling these wells. Brief in

Support of Plaintiffs’ Motion for Partial Summary Judgment 3, *Mestas* (D.N.M. Nov. 1, 1978).¹ The United States also authorized the use of Project infrastructure for the transportation of groundwater between Project water users, Federal Defendants’ Response to Plaintiffs’ Request for Admissions of Fact at 2, *Mestas* (D.N.M. Jan. 4, 1979), and allowed Project water users to “take additional amounts of surface water delivered from the Reservoir, and offset such amounts by water pumped from [EBID] wells,” Federal Defendants’ Requested Findings of Fact and Conclusions of Law at 2, *Mestas* (D.N.M. Mar 1, 1979).

More recently, BOR became a signatory to the 2008 Operating Agreement that forces reliance on groundwater pumping, particularly in New Mexico. While the 2008 Operating Agreement does not specifically encourage groundwater pumping, the United States has acknowledged that the effect of the agreement is that “EBID generally receives a decrease in project allocation compared to prior operating practices,” at least in years when the Project’s delivery efficiency is lower compared to the historical baseline. Bureau of Reclamation, United States Department of the Interior, “Continued Implementation of the 2008 Operating Agreement for the Rio Grande Project, New Mexico and Texas, Final Environmental Impact Statement” at 7 (Sept. 30, 2016). The United States further acknowledges that, “a decrease in RGP allocation and diversions to either district is expected to decrease groundwater recharge in the district and increase groundwater demand for supplemental irrigation.” *Id.* at 25. The United States executed the 2008 Operating Agreement knowing that it would decrease surface allocations and increase the reliance on groundwater extraction in EBID.

In addition, New Mexico states that discovery is ongoing; this response may be supplemented as additional responsive facts are identified.

¹ The United States admitted that it “agree[d] with the statement of facts included in the plaintiffs’ Brief in Support of their Motion for Partial Summary Judgment, at least insofar as those facts concern actions of federal officials.” United States’ Memorandum in Support of Cross-Motion for Partial Summary Judgment, *Mestas* (D.N.M. Nov. 22, 1978).

35. INTERROGATORY NO. 35: Identify all documents that support Your contention that “the United States, via the Bureau of Reclamation and its officers, encouraged Project beneficiaries to drill wells, particularly during drought years with low surface water supplies.” (NM Answer to United States’ Complaint in Intervention, Sixth Affirmative Defense ¶ 38).

ANSWER: New Mexico objects to this interrogatory to the extent that it is properly the subject of expert testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure. Subject to, and without waiving this objection, New Mexico states that documents that support its contention that the United States encouraged Project beneficiaries to drill and utilize wells include, but are not limited to, the following:

- a. Project Histories for the Rio Grande Project
- b. Pleadings, affidavits, and documents filed in *Mestas v. Elephant Butte Irrigation District*, No. 78-cv-138 (Dist. of NM)
- c. Bureau of Reclamation, United States Department of the Interior, “Continued Implementation of the 2008 Operating Agreement for the Rio Grande Project, New Mexico and Texas, Final Environmental Impact Statement” (Sept. 30, 2016).
- d. Esslinger, G. (moderator), *How We Dealt with the Drought of the ‘50s*, 1999 WRI Conference Proceedings

36. INTERROGATORY NO. 36: To the extent that Your response to any of Request for Admission Nos. 1 – 13 are anything other than an unqualified admission, state the factual basis for any such denial or partial denial.

ANSWER: Where New Mexico has denied or admitted with qualifications a Request for Admission, the reasons for the denial or qualified admission are given in the response to the relevant Request for Admission.

RESPONSES TO REQUESTS FOR ADMISSION

- 1. REQUEST FOR ADMISSION NO. 1: Admit that the only entity in New Mexico with a contract to receive water from the Rio Grande Project is the Elephant Butte Irrigation District (“EBID”).**

ANSWER: : New Mexico objects to RFA No. 1 as vague and ambiguous due to the use of the phrase “only entity in New Mexico with a contract to receive water from the Rio Grande Project.” Subject to, and without waiving this objection, New Mexico admits that Elephant Butte Irrigation District (“EBID”) is currently under contract with the Bureau of Reclamation (“Reclamation”) to take delivery of water from the Rio Grande Project (“Project”) in New Mexico and then to distribute that water to individual Project water users within New Mexico. New Mexico further asserts that prior to Reclamation’s title transfer of Project canals and drains to EBID and El Paso County Water Improvement District No. 1 (EPCWID) in the 1980s, Reclamation delivered Project water directly to Project water users in New Mexico and Texas.

- 2. REQUEST FOR ADMISSION NO. 2: Admit that the only citizens of New Mexico that are entitled to receive water from the Rio Grande Project under the contract**

between the United States and EBID are owners or lessees of irrigated land within EBID.

ANSWER: New Mexico objects to RFA No. 2 as vague and ambiguous due to the use of the phrases “entitled to receive water” and “contract” because it does not define which “contract” is being referenced between the United States and EBID. Subject to, and without waiving this objection, New Mexico admits that farmers within EBID that own or lease irrigable land can order and receive Project surface water from EBID. However, because the Project is incorporated into the Compact and the Compact apportionment water to the States, New Mexico has an entitlement to Compact water.

3. REQUEST FOR ADMISSION NO. 3: Admit that the only parties to the 2008 Operating Agreement for the Project are the United States, EBID, and El Paso County Water Improvement District No. 1 (“EPCWID”).

ANSWER: New Mexico admits RFA No. 2, but affirmatively states that the 2008 Operating Agreement violates the Rio Grande Compact by altering the apportionment between the States.

4. REQUEST FOR ADMISSION NO. 4: Admit that the Quaternary alluvium aquifer of the Rio Grande, the Upper member of the Santa Fe Group aquifer, and the Middle member of the Santa Fe Group aquifer, as defined in Open File Report 2018-1091 (relevant portion is attached hereto as Exhibit 1), below Elephant Butte Reservoir are all hydrologically connected to the Rio Grande.

ANSWER: New Mexico objects to RFA No. 4 as vague and ambiguous due to the use of the phrases “below Elephant Butte Reservoir” and “hydrologically connected to the Rio Grande.” Subject to, and without waiving this objection, New Mexico admits that certain groundwater aquifers underlying the Rio Grande below Elephant Butte Reservoir in New Mexico and Texas, including those identified in RFA No. 4, have varying degrees of hydrological connectivity to the Rio Grande. Beyond this, New Mexico states that more detailed analysis of the characteristics of each aquifer and the nature of its connectivity to the Rio Grande, including the extent to which pumping from each aquifer impacts surface flows in the river, are properly the subject of expert analysis and testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure.

5. REQUEST FOR ADMISSION NO. 5: Admit that between 1950 and 1990 the alluvial aquifer of the Rio Grande, the Upper Santa Fe Aquifer, and the Middle Santa Fe Aquifer, as defined in Exhibit 1, below Elephant Butte Reservoir were all hydrologically connected to the Rio Grande.

ANSWER: New Mexico objects to RFA No. 5 as vague and ambiguous due to the use of the phrases “below Elephant Butte Reservoir” and “hydrologically connected to the Rio Grande.” Subject to, and without waiving this objection, New Mexico admits that certain groundwater aquifers underlying the Rio Grande below Elephant Butte Reservoir in New Mexico and Texas,

including those identified in RFA No. 5, have varying degrees of hydrological connectivity to the Rio Grande. Beyond this, New Mexico states that more detailed analysis of the characteristics of each aquifer and the nature of its connectivity to the Rio Grande, including the extent to which pumping from each aquifer impacts surface flows in the river, are properly the subject of expert analysis and testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure.

6. REQUEST FOR ADMISSION NO. 6: Admit that withdrawal of hydrologically connected groundwater from the alluvial aquifer of the Rio Grande, the Upper Santa Fe Aquifer, and the Middle Santa Fe Aquifer, as defined in Exhibit 1, below Elephant Butte Reservoir in the State of New Mexico between the years 1980 and 2016 has decreased the flows available to the Project diversion canals.

ANSWER: New Mexico objects to RFA No. 6 as vague and ambiguous due to the use of the phrases “hydrologically connected,” “below Elephant Butte Reservoir,” and “decreased the flows available to the Project diversion canals.” Subject to, and without waiving this objection, New Mexico admits that certain groundwater aquifers underlying the Rio Grande below Elephant Butte Reservoir in New Mexico and Texas have varying degrees of hydrological connectivity to the Rio Grande. New Mexico further admits that withdrawal of hydrologically connected groundwater in New Mexico and Texas may impact flows available to Project diversion canals. Beyond this, New Mexico states that more detailed analysis of the characteristics of each aquifer and the nature of

its connectivity to the Rio Grande, including the extent to which pumping from each aquifer impacts flows available to Project diversion canals, are properly the subject of expert analysis and testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure.

7. REQUEST FOR ADMISSION NO. 7: Admit that withdrawal of hydrologically connected groundwater from the alluvial aquifer of the Rio Grande, the Upper Santa Fe Aquifer, and the Middle Santa Fe Aquifer, as defined in Exhibit 1, below Elephant Butte Reservoir in the State of New Mexico between the years 1980 and 2016 has decreased the flows in the Rio Grande in New Mexico.

ANSWER: New Mexico objects to RFA No. 7 as vague and ambiguous due to the use of the phrases “hydrologically connected,” “below Elephant Butte Reservoir,” and “decreased the flows in the Rio Grande in New Mexico.” Subject to, and without waiving this objection, New Mexico admits that certain groundwater aquifers underlying the Rio Grande below Elephant Butte Reservoir in New Mexico and Texas have varying degrees of hydrological connectivity to the Rio Grande. New Mexico further admits that withdrawal of hydrologically connected groundwater in New Mexico and Texas may impact Rio Grande surface flows. Beyond this, New Mexico states that more detailed analysis of the characteristics of each aquifer and the nature of its connectivity to the Rio Grande, including the extent to which pumping from each aquifer impacts surface flows in the river, are properly the subject of expert analysis and testimony. New Mexico will disclose

and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure.

8. REQUEST FOR ADMISSION NO. 8: Admit that withdrawal of groundwater in New Mexico in the Mesilla and Rincon basins since 1980 has decreased the flows of the Rio Grande between Elephant Butte Reservoir and the American Canal headgate.

ANSWER: New Mexico objects to RFA No. 8 as vague and ambiguous due to the use of the phrase “decreased the flows of the Rio Grande between Elephant Butte Reservoir and the American Canal headgate.” Subject to, and without waiving this objection, New Mexico admits that withdrawal of hydrologically connected groundwater in New Mexico and Texas may impact Rio Grande surface flows. Beyond this, New Mexico states that more detailed analysis of the characteristics of each aquifer and the nature of its connectivity to the Rio Grande, including the extent to which pumping from each aquifer impacts surface flows in the river, are properly the subject of expert analysis and testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure.

9. REQUEST FOR ADMISSION NO. 9: Admit that withdrawal of groundwater in New Mexico in the Mesilla and Rincon basins since 1980 depleted the flows of the Rio Grande between Elephant Butte Reservoir and the American Canal headgate.

ANSWER: New Mexico objects to RFA No. 9 as vague and ambiguous due to the use of the phrase “decreased the flows of the Rio Grande between Elephant Butte Reservoir and the American Canal headgate.” Subject to, and without waiving this objection, New Mexico admits that withdrawal of hydrologically connected groundwater in New Mexico and Texas may impact Rio Grande surface flows. Beyond this, New Mexico states that more detailed analysis of the characteristics of each aquifer and the nature of its connectivity to the Rio Grande, including the extent to which pumping from each aquifer impacts surface flows in the river, are properly the subject of expert analysis and testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure.

10. REQUEST FOR ADMISSION NO. 10: Admit that the Rio Grande Project was designed to deliver more water at Project headgates and canals than is released from storage.

ANSWER: New Mexico objects to RFA No. 10 as vague and ambiguous. This request seeks an admission regarding deliveries at an undefined point that may, in fact, be multiple points: “Project headgates and canals.” Conveyance losses occur and have always occurred between farm headgates and the point of diversion from the river, and the answer to this request depends heavily on whether it seeks an admission regarding the amount of water “delivered” to the river diversions, the amount “delivered” to farm headgates, or the amount of water measured at some point in

between. Subject to, and without waiving this objection, New Mexico generally admits that the Project delivers more water to the river diversions (combined) than it releases.

11. REQUEST FOR ADMISSION NO. 11: Admit that average groundwater elevation in the Rincon Valley decreased between 1995 and 2017.

ANSWER: New Mexico objects to RFA No. 11 as vague and ambiguous due to the use of the term “average groundwater elevation.” It is not clear whether this calls for a comparison of annual averages, a running average, or some other comparison. New Mexico further states that groundwater elevations vary throughout the Rincon Valley and fluctuate depending on the time of year, annual precipitation, and surface flows in the Rio Grande. Subject to, and without waiving these objections, New Mexico denies RFA No. 11 on the basis that a response to this request for admission requires expert analysis and testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure.

12. REQUEST FOR ADMISSION NO. 12: Admit that average groundwater elevation in the Mesilla Valley decreased between 1995 and 2017.

ANSWER: New Mexico objects to RFA No. 12 as vague and ambiguous due to the use of the term “average groundwater elevation.” It is not clear whether this calls for a comparison of annual averages, a running average, or some other comparison. New Mexico further states that

groundwater elevations vary throughout the Mesilla Valley and fluctuate depending on the time of year, annual precipitation, and surface flows in the Rio Grande. Subject to, and without waiving these objections, New Mexico denies RFA No. 12 on the basis that a response to this request for admission requires expert analysis and testimony. New Mexico will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure.

13. REQUEST FOR ADMISSION NO. 13: Admit that between 1980 and 2016 the average annual pumping of groundwater in New Mexico from the aquifers hydrologically connected to the Rio Grande increased (by volume).

ANSWER: New Mexico objects to RFA No. 13 as vague and ambiguous due to the use of the terms “average annual pumping of groundwater,” “in New Mexico,” and “aquifers hydrologically connected to the Rio Grande.” It is not clear whether this calls for a comparison of annual averages, a running average, or some other comparison. New Mexico further states that groundwater pumping fluctuates from year-to-year based on a number of factors, including but not limited to precipitation and the Project’s annual allocations and deliveries. Pumping volumes are generally higher in drier than average years and lower in wetter than average years. New Mexico also objects to RFA No. 13 to the extent it seeks information about groundwater pumping anywhere in New Mexico outside the basin of the Rio Grande south of Elephant Butte Reservoir. Subject to, and without waiving these objections, New Mexico denies RFA No. 13 on the basis that a response to this request for admission requires expert analysis and testimony. New Mexico

will disclose and permit discovery in connection with the opinions of the experts that it intends to call at trial, and the sources relied upon by those experts, only as required by the schedule established by the CMP and in accordance with Rule 26 of the Federal Rules of Civil Procedure.

New Mexico will state that, in general, groundwater pumping for irrigation purposes in New Mexico south of Elephant Butte Dam between 1980 and 2002 fluctuated from year to year, but annual irrigation pumping volumes did not generally increase during this time. After 2002, the drought and the 2008 Operating Agreement caused some annual increase in irrigation groundwater pumping. Groundwater pumping for municipal and industrial purposes in the area south of Elephant Butte Dam has generally increased between 1980 and 2016, although the volume of any increase and the extent to which the groundwater pumped impacted the Rio Grande requires expert analysis and testimony.

RESPONSE TO REQUESTS FOR PRODUCTION

The documents identified in New Mexico's responses to Interrogatory Nos. 3, 6, 9, 11, 16, 19, 20, 23, 26, 28, 31, 32, and 35, as well as the documents or analyses that support New Mexico's content that pumping in Mexico of groundwater tributary to the Rio Grande has reduced Project efficiency, impacted Project releases and reduced return flows to the Project either have already been disclosed, are already in the possession of the United States, or will be disclosed in conjunction with New Mexico's expert disclosures on October 31, 2019, as required by the CMP.

Respectfully submitted,

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No. 141, Original

IN THE
SUPREME COURT OF THE UNITED STATES



STATE OF TEXAS,

Plaintiff,

v.

STATE OF NEW MEXICO and
STATE OF COLORADO,

Defendants.



OFFICE OF THE SPECIAL MASTER



STATE OF NEW MEXICO'S CERTIFICATE OF SERVICE



This is to certify that on the 13th of August, 2019, I caused a true and correct copy of the **State of New Mexico's Responses to the United States' First Set of Interrogatories, Requests for Admission, and Request for Production of Documents to the State of New Mexico** to be served by e-mail upon all counsel of record and interested parties on the Service List, attached hereto.

Respectfully submitted this 13th day of August, 2019.

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No. 141, Original

IN THE
SUPREME COURT OF THE UNITED STATES

STATE OF TEXAS,
Plaintiff,

v.

STATE OF NEW MEXICO and
STATE OF COLORADO,
Defendants.

OFFICE OF THE SPECIAL MASTER

**STATE OF NEW MEXICO'S OBJECTIONS AND SUPPLEMENTAL RESPONSES
TO THE STATE OF TEXAS'S FIRST SET OF REQUESTS FOR ADMISSION
TO THE STATE OF NEW MEXICO**

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Pursuant to the Case Management Plan adopted on September 6, 2018, as amended (“CMP”), and Rule 36 of the Federal Rules of Civil Procedure (“FRCP”), the State of New Mexico (“New Mexico”) hereby submits the following objections and responses to the State of Texas’s (“Texas”) First Set of Requests for Admission to the State of New Mexico.

GENERAL OBJECTIONS

In addition to the objections specifically noted in the responses to each individual Request for Admission, below, New Mexico incorporates the following General Objections into its responses to each and every Request for Admission:

1. New Mexico’s responses are based on information presently available. At present, New Mexico has not yet completed its discovery, investigation, or preparation for trial, any or all of which may provide information responsive and/or relevant to these Requests.
2. New Mexico objects to Texas’s Requests for Admission, including the Definitions and Instructions contained therein, to the extent that they impose obligations on New Mexico that exceed the scope of discovery as set forth in the FRCP. New Mexico reserves all objections and rights to which it is entitled under the FRCP and applicable law and procedure.
3. New Mexico objects to each Request for Admission to the extent the request is vague, ambiguous, unintelligible, compound, conjunctive, or disjunctive, and not full and complete in and of itself.
4. New Mexico objects to each Request for Admission to the extent that the request seeks information protected by the attorney-client privilege, the work-product doctrine, or any other applicable privilege. New Mexico’s responses are not intended to, and should not be construed as, a waiver or relinquishment of any of the protections afforded by the attorney-client privilege, the work-product doctrine, or any other applicable privileges or immunities. The inadvertent disclosure of any such privileged information is not a waiver of New Mexico’s right to assert any applicable privilege or doctrine relative to any such information, or any other information, document(s), or matter, pursuant to the terms of paragraph 7.2.3 of the CMP.
5. New Mexico objects to each Request for Admission to the extent that the request seeks a legal conclusion, which is improper under FRCP 36(a)(1).
6. New Mexico objects to each Request for Admission to the extent that the request seeks expert opinion or cannot be answered without the testimony of experts.
7. New Mexico objects to each Request for Admission to the extent the request is unduly and unreasonably oppressive, harassing, annoying, burdensome, overbroad, or constitutes an abuse of the discovery process.

8. New Mexico objects to each and every Request for Admission to the extent the request is overly broad and seeks information neither relevant to the subject matter of the action, nor reasonably calculated to lead to the discovery of admissible evidence.
9. New Mexico objects to the form of each Request for Admission to the extent that it is not full and complete in and of itself and, for example, instead relies on preface and instructions.
10. New Mexico objects to each Request for Admission to the extent the request seeks information that is not in the possession, custody, or control of New Mexico.
11. New Mexico objects to this definition of “Identify” with respect to a “person” or “entity” because the terms of the definition are overly broad with respect to “person,” and because it seeks current contact information (including personal residences). Any employees of New Mexico or its contractors should be contacted through counsel for New Mexico. Further, New Mexico objects to seeking of “address” and “telephone number,” as these seek disclosure of personal and private information that is irrelevant to the subject matter of this action. New Mexico objects to the instruction to provide “the person’s present employer and occupation or business” as overbroad, unduly burdensome, irrelevant and exceeding the scope of New Mexico’s discovery obligations under Rule 26 and 36 of the FRCP.
12. New Mexico also objects to the definition of “entity” as vague, ambiguous, and overbroad.
13. New Mexico objects to the definition of “Identify” with respect to a “document” because the definition is overly broad with respect to “each document,” and to the extent that such definition demands “a brief description of the substance” of any document, and seeks disclosure of information and/or documents that are protected by attorney-client and work-product privileges. New Mexico objects to this definition because it imposes requirements beyond those found in Rule 33 of the FRCP. New Mexico also objects to this definition as overbroad, unduly burdensome, and unreasonably cumulative or duplicative.
14. New Mexico objects to the terms “Accretions,” “Allocation,” “Apportioned,” “Apportionment,” “Apportions,” “Compact Apportionment,” “Cumulative,” “Downstream Contracts,” “Return Flow,” “Ground water tributary to the Rio Grande,” “Lower Rio Grande,” and “Unimpeded,” “You” and “Yours” as vague, ambiguous and overbroad. New Mexico also objects to these terms to the extent they seek a legal conclusion, which is improper under FRCP 36(a)(1).
15. New Mexico’s response to any Request for Admission, notwithstanding its objections should not be construed as a stipulation or admission that any information provided is relevant or admissible, or as a waiver of any of New Mexico’s objections.
16. New Mexico objects to each Request for Admission on the ground that the request seeks information that is unduly burdensome and not proportional to the scope of this case.

SPECIFIC OBJECTIONS AND RESPONSES TO TEXAS'S FIRST SET OF REQUESTS FOR ADMISSION TO NEW MEXICO

REQUEST FOR ADMISSION NO. 1: Admit that the Compact Apportions Rio Grande water to Colorado.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "Rio Grande water" as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that the Compact apportions surface waters of the Rio Grande to the State of Colorado ("Colorado").

REQUEST FOR ADMISSION NO. 2: Admit that the Compact Apportions Rio Grande water to New Mexico.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "Rio Grande water" as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that the Compact apportions surface waters of the Rio Grande to the State of New Mexico, and that this apportionment includes 57% of the Rio Grande surface water annually allocated for delivery by the Rio Grande Project, subject to the United States' obligations to Mexico under the Convention for the Equitable Distribution of the Waters of the Rio Grande of May 21, 1906 Between the United States and Mexico, 34 Stat. 2953 ("Treaty") (the remaining 43% being apportioned under the Compact to Texas).

REQUEST FOR ADMISSION NO. 3: Admit that the Compact Apportions Rio Grande water to Texas.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "Rio Grande water" as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that the Compact apportions surface waters of the Rio Grande to the State of Texas, namely 43% of the Rio Grande surface water annually allocated for delivery by the Rio Grande Project, subject to the United States' obligations to Mexico under the Treaty (the remaining 57% being apportioned under the Compact to New Mexico).

REQUEST FOR ADMISSION NO. 4: Admit that Colorado's Apportionment pursuant the Compact is the depletions in the Rio Grande River in Colorado as of 1938 measured by the indexed relationship described in Article III of the Compact subject to the system of credits and debits described in the Compact.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the terms "depletions" and "Rio Grande water" as vague and ambiguous. New Mexico further objects to this

request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that Colorado's apportionment of the surface waters of the Rio Grande on the mainstem at the Colorado and New Mexico state border is defined by Article III of the Compact. The Compact speaks for itself, and New Mexico denies any inference that is inconsistent with the Compact.

SUPPLEMENTAL RESPONSE: Subject to its objections, New Mexico admits the Compact allows Colorado the right to use the waters of the Rio Grande consistent with its Article III obligation, as modified by Article VI.

REQUEST FOR ADMISSION NO. 5: Admit that New Mexico's Apportionment pursuant to the Compact is the depletions in the Rio Grande River in New Mexico above Elephant Butte Reservoir as of 1938 measured by the indexed relationship described in Article IV of the Compact subject to the system of credits and debits described in the Compact.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the terms "depletions" and "Rio Grande water," and to the phrase "as of 1938 measured by the indexed relationship described in Article IV of the Compact subject to the system of credits and debits described in the Compact" as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that part of New Mexico's apportionment of the surface waters of the Rio Grande is defined by Article IV of the Compact. The Compact speaks for itself, and New Mexico denies any inference that is inconsistent with the Compact. New Mexico specifically denies that the apportionment identified in RFA No. 5 is the only apportionment of water it receives under the Compact, and affirmatively asserts that its Compact apportionment includes 57% of Project supply. Except as aforesaid, New Mexico denies RFA No. 5.

REQUEST FOR ADMISSION NO. 6: Admit that Texas's Apportionment under the Compact is the water delivered to Elephant Butte Reservoir by New Mexico pursuant to Article IV of the Compact plus Accretions to the Rio Grande River below Elephant Butte Dam subject to the United States's [sic] treaty obligation to New Mexico and EBID's Rio Grande Project contractual right.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "delivered" and to the phrase "pursuant to Article IV of the Compact plus Accretions to the Rio Grande River below Elephant Butte Dam subject to the United States's treaty obligation to New Mexico and EBID's Rio Grande Project contractual right" as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico denies RFA No. 6.

REQUEST FOR ADMISSION NO. 7: Admit that Colorado's obligation to deliver water under the Compact is at the Colorado-New Mexico State line.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the

terms “obligation,” “deliver,” and “water” as vague and ambiguous. New Mexico further objects to this request as seeking a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that Colorado’s obligation to deliver water under the Compact is set forth in Article III of the Compact. Specifically, New Mexico admits that under Article III, Colorado delivers surface water of the Rio Grande at the Colorado-New Mexico State line as measured at specified locations. The Compact speaks for itself, and New Mexico denies any inference that is inconsistent with the Compact.

REQUEST FOR ADMISSION NO. 8: Admit that New Mexico’s obligation to deliver water under the Compact is at Elephant Butte Reservoir.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “obligation,” “deliver,” and “water” as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that Article IV of the Compact includes an obligation to deliver water at Elephant Butte Reservoir. The Compact speaks for itself, and New Mexico denies any inference that is inconsistent with the Compact. Except as aforesaid, New Mexico denies RFA No. 8, and specifically denies that all surface water delivered to the Rio Grande Project is apportioned to Texas.

SUPPLEMENTAL RESPONSE: Subject to its objections, New Mexico rephrases its response as follows: New Mexico admits that New Mexico has an obligation to deliver water under Article IV of the Compact at Elephant Butte Reservoir.

REQUEST FOR ADMISSION NO. 9: Admit that Downstream Contracts promise Texas water districts an amount of water every year from the Project.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “promise,” “amount,” “Texas water districts,” “amount” and “water” as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that the U.S. Supreme Court stated that the: “Downstream Contracts . . . promised Texas water districts a certain amount of water every year from the Reservoir’s resources,” that “the Compact is inextricably intertwined with the Rio Grande Project and the Downstream Contracts,” and that “through the Downstream Contracts” the United States is “charged with assuring that the Compact’s equitable apportionment to Texas and part of New Mexico is in fact made.” *Texas v. New Mexico*, 138 S. Ct. 954 at 957, 959 (2018) (internal quotation marks omitted). The Downstream Contracts speak for themselves. Except as aforesaid, New Mexico denies RFA No. 9.

SUPPLEMENTAL RESPONSE: Subject to its objections, New Mexico rephrases its response as follows: New Mexico admits that, consistent with the Court’s 2018 opinion, the “Downstream Contracts . . . promised Texas water districts a certain amount of water every year from the Reservoir’s resources,” that “the Compact is inextricably intertwined with the Rio Grande Project

and the Downstream Contracts,” and that “through the Downstream Contracts” the United States is “charged with assuring that the Compact’s equitable apportionment to Texas and part of New Mexico is in fact made.” *Texas v. New Mexico*, 138 S. Ct. 954 at 957, 959 (2018) (internal quotation marks omitted).

REQUEST FOR ADMISSION NO. 10: Admit that New Mexico may not interfere with the delivery of Texas’s Apportioned water under the Compact.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “interfere,” “delivery,” and “water,” and to this request in its entirety as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). New Mexico is unable to admit or deny this request because it does not understand its meaning; in particular, New Mexico does not understand what Texas means by “interfere” in the context of RFA No. 10. Subject to its objections, and based in part on the ambiguity of the term “interfere,” New Mexico denies RFA No. 10.

SUPPLEMENTAL RESPONSE: Subject to its objections, New Mexico rephrases its response as follows: New Mexico denies this request. The Project uses and reuses return flows and other sources of water to deliver apportioned water to Texas, and New Mexico denies that even if it “take[s] action, or refrain[s] from action, in a way that hinders, blocks, slows, impedes or depletes” specific molecules of water, which New Mexico does not admit, this does not necessarily constitute “inference” with delivery of Texas’s Compact apportionment, as defined by Texas.

REQUEST FOR ADMISSION NO. 11: Admit that Return flows from irrigation of lands in the Lower Rio Grande are part of the water belonging to the Project.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “Return flows,” “irrigation,” “lands,” “water” and “belonging” as vague and ambiguous. New Mexico objects to this request to the extent a response necessitates expert opinion. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that the Project captures and redelivers return flows. *See, e.g.,* Order Granting the State’s Motion to Dismiss the United States’ Claims to Groundwater and Denying the United States’ Motion for Summary Judgment, LRG Adjudication (Aug. 6, 2012). Except as aforesaid, New Mexico denies RFA No. 11.

REQUEST FOR ADMISSION NO. 12: Admit that Return flows from irrigation of lands in the Lower Rio Grande are part of the water Apportioned to Texas under the Compact.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “Return flows,” “irrigation,” “lands,” “part” and “water” as vague and ambiguous. New Mexico objects to this request to the extent a response necessitates expert opinion. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under

FRCP 36(a)(1). Subject to its objections, New Mexico admits that return flows may constitute a portion of the Project supply apportioned and delivered to both Texas and New Mexico under the Compact. Except as aforesaid, New Mexico denies RFA No. 12.

REQUEST FOR ADMISSION NO. 13: Admit that Groundwater tributary to the Rio Grande below Elephant Butte Reservoir is part of the water belonging to the Project.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “tributary,” “part,” “water” and “belonging,” and to the phrase “below Elephant Butte Reservoir” as vague and ambiguous. New Mexico objects to this request to the extent a response necessitates expert opinion. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico denies RFA No. 13.

REQUEST FOR ADMISSION NO. 14: Admit that Groundwater tributary to the Rio Grande below Elephant Butte Reservoir is part of the water Apportioned to Texas under the Compact.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “tributary,” “part” and “water,” and to the phrase “below Elephant Butte Reservoir” as vague and ambiguous. New Mexico objects to this request to the extent a response necessitates expert opinion. New Mexico further objects to this request as seeking a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico denies RFA No. 14.

REQUEST FOR ADMISSION NO. 15: Admit that pumping of Groundwater tributary to the Rio Grande in New Mexico includes the pumping of Project Return flows that otherwise would reach Texas.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “tributary,” “pumping” and “Return flows,” to the phrase “that otherwise would reach,” and to this request in its entirety as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico denies RFA No. 15.

REQUEST FOR ADMISSION NO. 16: Admit that groundwater pumping in New Mexico includes the pumping of Groundwater tributary to the Rio Grande that intercepts surface water flows in the Rio Grande that would otherwise reach Texas.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “tributary,” “groundwater pumping,” “pumping” and “intercepts,” to the phrase “that otherwise would reach,” and to this request in its entirety as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico denies RFA No. 16.

REQUEST FOR ADMISSION NO. 17: Admit that ground water pumping in New Mexico interferes with delivery of Project Return flows that would otherwise reach Texas.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “groundwater pumping,” “interferes,” “delivery” and “Return flows,” and to the phrase “that otherwise would reach” as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico denies RFA No. 17.

REQUEST FOR ADMISSION NO. 18: Admit that the Compact’s geographic boundary extends to Fort Quitman in Texas.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the term “extends” and to the phrase “Compact’s geographic boundary” as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that the Compact, in its preamble, states that it applies to “the use of the waters of the Rio Grande above Fort Quitman, Texas” and was entered “for the purpose of effecting an equitable apportionment of such waters.” The Compact speaks for itself, and New Mexico denies any inference that is inconsistent with the Compact. Except as aforesaid, New Mexico denies RFA No. 18.

REQUEST FOR ADMISSION NO. 19: Admit that pumping of Groundwater tributary to the Rio Grande in the Lower Rio Grande interferes with deliveries of Project water Allocations to Texas.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “tributary,” “pumping,” “interferes,” and “deliveries,” and to this request in its entirety as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, the location, amount and timing of groundwater pumping and associated impacts, and the response of Project operations is the subject of expert testimony in this case, and New Mexico denies any inferences that are inconsistent with its expert disclosures. Except as aforesaid, New Mexico denies RFA No. 19.

REQUEST FOR ADMISSION NO. 20: Admit that pumping of Groundwater tributary to the Rio Grande in the Lower Rio Grande interferes with deliveries of Texas’s Compact Apportionment.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “tributary,” “pumping,” “interferes,” and “deliveries” as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. New

Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, the location, amount and timing of groundwater pumping and associated impacts, and the response of Project operations is the subject of expert testimony in this case, and New Mexico denies any inferences that are inconsistent with its expert disclosures. Except as aforesaid, New Mexico denies RFA No. 20.

REQUEST FOR ADMISSION NO. 21: Admit that the amount of Rio Grande water that Colorado must deliver to the Colorado-New Mexico State line is based upon flow data and conditions that existed prior to 1938.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “amount,” “Rio Grande water” and “deliver,” and to the phrase “flow data and conditions that existed prior to 1938” as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that to the extent Article III of the Compact uses data, it was necessarily available prior to the approval of the Compact. The Compact speaks for itself, and New Mexico denies any inference that is inconsistent with the Compact. Except as aforesaid, New Mexico denies RFA No. 21.

REQUEST FOR ADMISSION NO. 22: Admit that the amount of Rio Grande water that New Mexico must deliver into Elephant Butte Reservoir to satisfy the Texas Compact Apportionment is based upon flow data and conditions that existed prior to 1938.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “amount,” “Rio Grande water,” “deliver” and “satisfy,” and to the phrase “flow data and conditions that existed prior to 1938” as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that Article IV of the Compact is based upon data that was necessarily available prior to the approval of the Compact. The Compact speaks for itself, and New Mexico denies any inference that is inconsistent with the Compact. Except as aforesaid, New Mexico denies RFA No. 22.

REQUEST FOR ADMISSION NO. 23: Admit that New Mexico, at least since 1985, has known that the pumping of Groundwater tributary to the Rio Grande in the Lower Rio Grande for use in New Mexico reduced the volume of water that absent such pumping would flow into Texas.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “tributary,” “known” and “pumping,” and to the phrases “at least since 1985,” “in the Lower Rio Grande for use in New Mexico,” “reduced the volume of water” and “would flow into” as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico denies RFA No. 23.

REQUEST FOR ADMISSION NO. 24: Admit that since 1985, the volume of groundwater pumping in the Lower Rio Grande is greater than the volume of ground water pumping in the Lower Rio Grande in 1938.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “volume,” “groundwater pumping,” “ground water pumping,” “Lower Rio Grande” and “greater,” and to the phrase “since 1985” as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico admits that the volume of groundwater pumping below Elephant Butte Reservoir since 1985 is generally higher than the volume pumped in 1938.

SUPPLEMENTAL RESPONSE: Subject to its objections, New Mexico rephrases its response as follows: New Mexico admits that, since 1985, the volume of groundwater pumping in the Lower Rio Grande is generally greater than the volume of ground water pumping in the Lower Rio Grande in 1938. New Mexico further asserts that, since 1985, the volume of groundwater pumping in the Compact area in Texas is generally greater than the volume of ground water pumping in the Compact area in Texas in 1938.

REQUEST FOR ADMISSION NO. 25: Admit that groundwater pumping consistent with state law in New Mexico in the Lower Rio Grande must be authorized or permitted by the State of New Mexico.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “groundwater pumping,” “state law” and “Lower Rio Grande,” and to the phrases “consistent with” and “must be authorized or permitted by,” and to the request in its entirety as vague and ambiguous. New Mexico further objects to this request to the extent it seeks a legal conclusion, which is improper under FRCP 36(a)(1). Subject to its objections, New Mexico admits that the State of New Mexico has jurisdiction over the waters within the state, and admits that groundwater pumping in the Lower Rio Grande must be “consistent with state law.” Except as aforesaid, New Mexico denies RFA No. 25.

REQUEST FOR ADMISSION NO. 26: Admit that the State of New Mexico has authorized ground water pumping in the Lower Rio Grande.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “authorized” and “ground water pumping” as vague and ambiguous. Subject to its objections, New Mexico admits that the State of New Mexico has jurisdiction over the waters within the state, and admits that groundwater pumping in the Lower Rio Grande must be consistent with state law. New Mexico further admits that since the declarations of the Lower Rio Grande Underground Water Basin, the New Mexico State Engineer has authorized certain groundwater pumping in that basin with appropriate conditions, subject to administrative rules, policies, and procedures. Except as aforesaid, New Mexico denies RFA No. 26.

REQUEST FOR ADMISSION NO. 27: Admit that the volume of pumping of Groundwater tributary to the Rio Grande in the Lower Rio Grande has increased since 1951.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "tributary," and to the phrases "volume of pumping" and "increased since 1951" as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico admits that the volume of groundwater pumping in the Rio Grande basin below Elephant Butte Reservoir has increased in certain years since 1951. The location, amount and timing of groundwater pumping and associated impacts, and the response of Project operations is the subject of expert testimony in this case, and New Mexico denies any inferences that are inconsistent with its expert disclosures. Except as aforesaid, New Mexico denies RFA No. 27.

SUPPLEMENTAL RESPONSE: Subject to its objections, New Mexico admits that the volume of pumping of Groundwater hydrologically connected to the Rio Grande in the Lower Rio Grande in New Mexico, as well the volume of pumping of Groundwater hydrologically connected to the Rio Grande in Texas, has increased in certain years since 1951.

REQUEST FOR ADMISSION NO. 28: Admit that New Mexico, prior to May 22, 2018, did not provide notice to Texas of the allegations set forth in the First Claim for Relief in New Mexico's Counterclaims filed in This Case.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the phrases "prior to May 22, 2018" and "provide notice" as vague and ambiguous. Subject to its objections, New Mexico denies RFA No. 28.

REQUEST FOR ADMISSION NO. 29: Admit that New Mexico, prior to May 22, 2018, did not provide notice to Texas of the allegations set forth in the Fourth Claim for Relief in New Mexico's Counterclaims filed in This Case.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the phrases "prior to May 22, 2018" and "provide notice" as vague and ambiguous. Subject to its objections, New Mexico denies RFA No. 29.

REQUEST FOR ADMISSION NO. 30: Admit that well pumping of Groundwater tributary to the Rio Grande in the Mesilla and Rincon Valleys in New Mexico depletes Rio Grande surface flows.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the terms "tributary," "well pumping" and "depletes," and to the phrases "Groundwater tributary to the Rio Grande in the Mesilla and Rincon Valleys in New Mexico" and "Rio Grande surface flows" as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico admits that under certain

conditions, in certain years, groundwater pumping in the Mesilla and Rincon Valleys in New Mexico, and in the Mesilla and El Paso Valleys in Texas, has the potential to deplete Rio Grande surface flows. The degree to which depletions occur in any given year is the subject of expert testimony in this case, and New Mexico denies any inferences that are inconsistent with its expert disclosures. Except as aforesaid, New Mexico denies RFA No. 30.

REQUEST FOR ADMISSION NO. 31: Admit that between 1938 and 2020 the New Mexico Office of the State Engineer has never curtailed well pumping in the Lower Rio Grande to avoid depleting surface flows in the Lower Rio Grande.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “curtailed” and “well pumping,” to the phrases “between 1938 and 2020,” “has never” and “to avoid depleting surface flows,” and to this request in its entirety as vague and ambiguous. Subject to its objections, New Mexico denies RFA No. 31.

REQUEST FOR ADMISSION NO. 32: Admit that groundwater pumping by the City of Las Cruces under LRG-430 has decreased the volume of Rio Grande surface water delivered to Texas below the volume of surface water that would have been present under pre-pumping conditions.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the term “delivered,” to the phrases “groundwater pumping by the City of Las Cruces,” “decreased the volume of Rio Grande surface water,” and “below the volume of surface water that would have been present” and “under pre-pumping conditions,” and to this request in its entirety as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, the location, amount and timing of groundwater pumping and associated impacts, the degree to which depletions occur in any given year, the volume of return flows and other offsets, whether pumping under LRG-430 has decreased or contributed to an increase in the volume of the flows of the Rio Grande, and the response of Project operations, is the subject of expert testimony in this case, and New Mexico denies any inferences that are inconsistent with its expert disclosures. Except as aforesaid, New Mexico denies RFA No. 32.

REQUEST FOR ADMISSION NO. 33: Admit that pumping of Groundwater tributary to the Rio Grande in the Lower Rio Grande depletes drain flows within the Project Area.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the terms “tributary,” “pumping,” “depletes,” “drain flows” and “within the Project Area” as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico admits that under certain conditions, in certain years, groundwater pumping in the Rio Grande basin below Elephant Butte Reservoir has the potential to deplete drain flows. The location, amount and timing of groundwater pumping, the effect, if any, on drain flows, and the response of Project operations is the subject of expert testimony in this case, and New Mexico denies any inferences that are inconsistent with its expert disclosures. Except as aforesaid, New Mexico denies RFA No. 33.

SUPPLEMENTAL RESPONSE: Subject to its objections, New Mexico admits that, under certain conditions, in certain years, pumping of Groundwater hydrologically connected to the Rio Grande in the Lower Rio Grande, as well as pumping of Groundwater hydrologically connected to the Rio Grande in Texas, has the potential to deplete drain flows within the Project area.

REQUEST FOR ADMISSION NO. 34: Admit that pumping of Groundwater tributary to the Rio Grande in the Lower Rio Grande has decreased the volume of Rio Grande surface water in canals below the volume of surface water that would have been present under pre-groundwater pumping conditions.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the terms "tributary," "pumping," "Lower Rio Grande" and "canals," and to the phrases "decreased the volume of" and "below the volume of surface water that would have been present under pre-groundwater pumping conditions," and to this request in its entirety as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico admits that under certain conditions, in certain years, groundwater pumping in the Rio Grande basin below Elephant Butte Reservoir has the potential to deplete surface water in canals. The location, amount and timing of groundwater pumping, the effect, if any, on Rio Grande surface water in canals, and the response of Project operations is the subject of expert testimony in this case, and New Mexico denies any inferences that are inconsistent with its expert disclosures. Except as aforesaid, New Mexico denies RFA No. 34.

SUPPLEMENTAL RESPONSE: Subject to its objections, New Mexico admits that, under certain conditions, in certain years, pumping of Groundwater hydrologically connected to the Rio Grande in the Lower Rio Grande, as well as pumping of Groundwater hydrologically connected to the Rio Grande in Texas, has the potential to decrease the volume of Rio Grande surface water in canals below the volume of surface water that would have been present under pre-groundwater pumping conditions.

REQUEST FOR ADMISSION NO. 35: Admit that You were aware, by at least August 2005, that Texas was concerned about the impacts to Project supplies caused by New Mexico groundwater pumping.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the terms "You," "concerned," "impacts" and "Project supplies," to the phrases "were aware," "by at least August 2005" and "New Mexico groundwater pumping," and to this request in its entirety as vague and ambiguous. Subject to its objections, New Mexico admits that Texas discussed potential impacts of groundwater pumping with New Mexico after 2000, and at that time New Mexico raised concerns with Texas regarding the potential impacts to Project supply caused by groundwater pumping in Texas. New Mexico expressed a willingness to discuss groundwater use in both States, but Texas indicated that it no longer desired to discuss the subject. Except as aforesaid, New Mexico denies RFA No. 35.

REQUEST FOR ADMISSION NO. 36: Admit that contract interpretation is a question of law.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the phrase “contract interpretation” as vague and ambiguous. New Mexico further objects to this request as seeking a legal conclusion, which is improper under FRCP 36(a)(1).

REQUEST FOR ADMISSION NO. 37: Admit that groundwater pumping in the New Mexico Mesilla Valley from 1900 to the present has decreased the volume of Project surface water delivered to farm headgates in Texas below the volume of Project surface water that would have been delivered under pre-groundwater pumping conditions.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the phrases “groundwater pumping in the New Mexico Mesilla Valley,” “from 1900 to the present,” “decreased the volume of Project surface water delivered to farm headgates” and “below the volume of Project surface water that would have been delivered under pre-groundwater pumping conditions,” and to this request in its entirety as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, the location, amount and timing of groundwater pumping, the effect, if any, on Rio Grande surface water delivered to farm headgates, and the response of Project operations is the subject of expert testimony in this case, and New Mexico denies any inferences that are inconsistent with its expert disclosures. Except as aforesaid, New Mexico denies RFA No. 37.

REQUEST FOR ADMISSION NO. 38: Admit that groundwater pumping in the New Mexico Mesilla Valley from 1900 to the present has decreased the volume of Project Return flows in drains below the amount of Project Return flows that would have been available under pre-pumping conditions.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the phrases “groundwater pumping in the New Mexico Mesilla Valley,” “from 1900 to the present,” “decreased the volume of Project Return flows in drains below the amount of Project Return flows” and “that would have been available under pre-pumping conditions,” and to this request in its entirety as vague and ambiguous. New Mexico further objects to this request to the extent a response necessitates expert opinion. Subject to its objections, New Mexico admits that under certain conditions, in certain years, groundwater pumping in the Rio Grande basin below Elephant Butte Reservoir has the potential to decrease the volume of return flows in drains. The location, amount and timing of groundwater pumping, the effect, if any on the volume of return flows in drains, and the response of Project operations is the subject of expert testimony in this case, and New Mexico denies any inference that is inconsistent with its expert disclosures. Except as aforesaid, New Mexico denies RFA No. 38.

SUPPLEMENTAL RESPONSE: Subject to its objections, New Mexico admits that, under certain conditions, in certain years, groundwater pumping in the New Mexico Mesilla Valley, as well as in the Mesilla and El Paso Valleys in Texas, from 1900 to the present has decreased the volume of Project Return flows in drains below the amount of Project Return flows that would have been available under pre-pumping conditions.

REQUEST FOR ADMISSION NO. 39: Admit that You were aware in 1950-1960 of ground water pumping in the Project Area in Texas.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "You," to the phrases "were aware," "in 1950-1960" and "ground water pumping in the Project Area in Texas," and to this request in its entirety as vague and ambiguous. Subject to its objections, New Mexico admits at least some person or entity within Texas's expansive definition of "You" was aware of groundwater pumping activity within Texas's definition of "Project Area" in Texas between 1950 and 1960. Except as aforesaid, New Mexico denies RFA No. 39.

REQUEST FOR ADMISSION NO. 40: Admit that You were aware in 1960-1970 of ground water pumping in the Project Area in Texas.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "You," to the phrases "were aware," "in 1960-1970" and "ground water pumping in the Project Area in Texas," and to this request in its entirety as vague and ambiguous. Subject to its objections, New Mexico admits at least some person or entity within Texas's expansive definition of "You" was aware of groundwater pumping activity within Texas's definition of "Project Area" in Texas between 1960 and 1970. Except as aforesaid, New Mexico denies RFA No. 40.

REQUEST FOR ADMISSION NO. 41: Admit that You were aware in 1970-1980 of ground water pumping in the Project Area in Texas.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "You," to the phrases "were aware," "in 1970-1980" and "ground water pumping in the Project Area in Texas," and to this request in its entirety as vague and ambiguous. Subject to its objections, New Mexico admits at least some person or entity within Texas's expansive definition of "You" was aware of groundwater pumping activity within Texas's definition of "Project Area" in Texas between 1970 and 1980. Except as aforesaid, New Mexico denies RFA No. 41.

REQUEST FOR ADMISSION NO. 42: Admit that You were aware in 1980-1990 of ground water pumping in the Project Area in Texas.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "You," to the phrases "were aware," "in 1980-1990" and "ground water pumping in the Project Area in Texas," and to this request in its entirety as vague and ambiguous. Subject to its objections, New Mexico admits at least some person or entity within Texas's expansive definition of "You" was aware of groundwater pumping activity within Texas's definition of "Project Area" in Texas between 1980 and 1990. Except as aforesaid, New Mexico denies RFA No. 42.

REQUEST FOR ADMISSION NO. 43: Admit that You were aware in 1990-2000 of ground water pumping in the Project Area in Texas.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "You," to the phrases "were aware," "in 1990-2000" and "ground water pumping in the Project Area in Texas," and to this request in its entirety as vague and ambiguous. Subject to its objections, New Mexico admits at least some person or entity within Texas's expansive definition of "You" was aware of groundwater pumping activity within Texas's definition of "Project Area" in Texas between 1990 and 2000. Except as aforesaid, New Mexico denies RFA No. 43.

REQUEST FOR ADMISSION NO. 44: Admit that You were aware in 2000-2010 of ground water pumping in the Project Area in Texas.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "You," to the phrases "were aware," "in 2000-2010" and "ground water pumping in the Project Area in Texas," and to this request in its entirety as vague and ambiguous. Subject to its objections, New Mexico admits at least some person or entity within Texas's expansive definition of "You" was aware of groundwater pumping activity within Texas's definition of "Project Area" in Texas between 2000 and 2010. Except as aforesaid, New Mexico denies RFA No. 44.

REQUEST FOR ADMISSION NO. 45: Admit that You were aware in 2010-present of ground water pumping in the Project Area in Texas.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "You," to the phrases "were aware," "in 2010-present" and "ground water pumping in the Project Area in Texas," and to this request in its entirety as vague and ambiguous. Subject to its objections, New Mexico admits at least some person or entity within Texas's expansive definition of "You" was aware of groundwater pumping activity within Texas's definition of "Project Area" in Texas between 2010 and the present. Except as aforesaid, New Mexico denies RFA No. 45.

REQUEST FOR ADMISSION NO. 46: Admit that the farm delivery requirement for farmers in the Lower Rio Grande established by the Adjudication Court in Stream System 97-101 was 4.5 acre-feet per acre.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "farm delivery requirement," and to the phrase "farmers in the Lower Rio Grande" as vague and ambiguous. Subject to its objections, New Mexico asserts that the Final Judgment in SS-97-101 speaks for itself. New Mexico denies any inference inconsistent with this judgment. Except as aforesaid, New Mexico denies RFA No. 46.

SUPPLEMENTAL RESPONSE: Subject to its objections, New Mexico denies that the final judgment in SS-97-101 approved a farm delivery requirement ("FDR") of 4.5 acre-feet per acre for all irrigated acres in the Lower Rio Grande. The final judgment approved an FDR of 3.024 acre-

feet per acre for lands irrigated with surface water only, up to 4.5 acre-feet per acre for combined surface and groundwater acres, and up to 4.5 acre-feet per acre for groundwater-only acres.

REQUEST FOR ADMISSION NO. 47: Admit that under Stream System 97-101 pecan growers could establish a right to a farm delivery requirement of 5.5 acre-feet per acre by a date certain.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the terms "pecan growers" and "farm delivery requirement" as vague and ambiguous. Subject to its objections, New Mexico asserts that the Final Judgment in SS-97-101 speaks for itself. New Mexico denies any inference inconsistent with this judgment. Except as aforesaid, New Mexico denies RFA No. 47.

SUPPLEMENTAL RESPONSE: Subject to its objections, New Mexico admits that the final judgment in SS-97-101 allowed certain farmers to submit evidence to support a farm delivery requirement of up to 5.5 acre-feet per acre. Few farmers took advantage of this process, and the window for making such submissions has closed.

REQUEST FOR ADMISSION NO. 48: Admit that the State of New Mexico's expert witness in Stream System 97-101, John Longworth, used a version of the Blaney-Criddle Method in determining a proposed farm delivery requirement of 3.0 acre-feet per acre.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the term "used," and to the phrases "a version of the Blaney-Criddle Method," "in determining a proposed farm delivery requirement" as vague and ambiguous. Subject to its objections, New Mexico admits that Mr. Longworth submitted an expert report in Case No. CV-96-888 that discussed the Modified Blaney-Criddle Method. Mr. Longworth's expert report speaks for itself. New Mexico denies that Mr. Longworth "proposed [a] farm delivery requirement of 3.0 acre-feet per acre." Except as aforesaid, New Mexico denies RFA No. 48.

REQUEST FOR ADMISSION NO. 49: Admit that the farm delivery requirement of 3.0 acre-feet per acre as proposed by the State of New Mexico in Stream System 97-101 was selected in part because of concerns about the effect of groundwater pumping on Compact deliveries to Texas.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the terms "farm delivery requirement," "concerns," "effect" and "groundwater pumping," and to the phrases "as proposed by the State of New Mexico," "was selected in part," and "Compact deliveries" as vague and ambiguous. New Mexico further objects to this request as improperly seeking information protected by attorney-client privilege. Subject to its objections, New Mexico denies RFA No. 49.

REQUEST FOR ADMISSION NO. 50: Admit that attached hereto as Exhibit B is a true and correct copy of the September 13, 1935 report of the Board of Review of the National Resource Committee Relating to water projects on the Rio Grande above El Paso.

RESPONSE: The document at Exhibit B was not authored or created by New Mexico. In addition, Exhibit B is not a document produced by New Mexico, and New Mexico does not have a copy in its records. Accordingly, New Mexico is unable to authenticate the same or to say whether this document is a true and correct copy.

SUPPLEMENTAL RESPONSE: Subject to its objections, New Mexico further asserts that the information New Mexico knows or can readily obtain is insufficient to enable it to admit or deny Texas's request.

REQUEST FOR ADMISSION NO. 51: Admit that attached hereto as Exhibit C is a true and correct copy of the Proceedings of the Rio Grande Compact Commission meetings of March 3 through March 18, 1938 (Including appendices).

RESPONSE: Admit.

REQUEST FOR ADMISSION NO. 52: Admit that attached hereto as Exhibit D is a true and correct copy of the Engineers Report to the Rio Grande Compact Commission dated December 27, 1937.

RESPONSE: Admit.

REQUEST FOR ADMISSION NO. 53: Admit that attached hereto as Exhibit E is a true and correct copy of the U.S. Geological Survey, Preliminary memorandum on ground-water supplies for Elephant Butte Irrigation District, New Mexico, September 1947 (known as the "Conover Report") (at NM_00124167-193.)

RESPONSE: Admit.

REQUEST FOR ADMISSION NO. 54: Admit that the U.S. Geological Survey, Preliminary memorandum on ground-water supplies for Elephant Butte Irrigation District, New Mexico, September 1947, (NM_00124167-193) (i.e., the Conover Report) is part of the official records of the State of New Mexico Office of the State Engineer.

RESPONSE: In addition to New Mexico's General Objections, New Mexico objects to the phrase "official records of the State of New Mexico Office of the State Engineer" as vague and ambiguous. New Mexico is unable to determine what Texas means by the phrase "official records of the State of New Mexico Office of the State Engineer." Subject to its objections, New Mexico admits that the Office of the State Engineer has a copy of the document marked as Exhibit E.

However, New Mexico is unaware whether this Office maintains “official records” within the meaning intended by Texas. Therefore, New Mexico is unable to admit or deny whether Exhibit E “is part” of such “official records.” Except as aforesaid, New Mexico denies RFA No. 54.

SUPPLEMENTAL RESPONSE: Subject to its objections, New Mexico admits that, under the expansive definition of “official records” proffered by Texas, the Office of the State Engineer has a copy of Exhibit E in its “official records.” New Mexico denies this has any legal significance.

REQUEST FOR ADMISSION NO. 55: Admit that the U.S. Geological Survey, Preliminary memorandum on ground-water supplies for Elephant Butte Irrigation District, New Mexico, September 1947, (NM_00124167-193) (i.e., the Conover Report) was made a part of the official records of the State of New Mexico Office of the State Engineer in or before 1950.

RESPONSE: In addition to New Mexico’s General Objections, New Mexico objects to the phrases “was made a part of,” “the official records of the State of New Mexico Office of the State Engineer,” and “in or before 1950” as vague and ambiguous. New Mexico has made a reasonable inquiry, and based on the information known or presently available to New Mexico, New Mexico is unable to admit or deny this request.

SUPPLEMENTAL RESPONSE: Subject to its objections, New Mexico further asserts that the information New Mexico knows or can readily obtain is insufficient to enable it to admit or deny Texas’s request.

REQUEST FOR ADMISSION NO. 56: Admit that attached hereto as Exhibit F is a true and correct copy of the 1954 USGS Water-Supply Paper 1230, Ground-Water Conditions in the Rincon and Mesilla Valleys and Adjacent Areas in New Mexico (WSP 1230).

RESPONSE: New Mexico denies that the comment embedded on Page 1 of Exhibit F is a part of the true and correct copy of the 1954 USGS Water-Supply Paper 1230, Ground-Water Conditions in the Rincon and Mesilla Valleys and Adjacent Areas in New Mexico (WSP 1230). New Mexico admits that the remainder of Exhibit F is a true and correct copy of that document.

REQUEST FOR ADMISSION NO. 57: Admit that attached hereto as Exhibit G is a true and correct copy of “Rio Grande, Elephant Butte Dam to El Paso, TX,” authored by the State of New Mexico Office of the State Engineer.

RESPONSE: The document at Exhibit G is not a document produced by New Mexico. New Mexico has made a reasonable inquiry, and based on the information known or presently available to New Mexico, New Mexico is unable to admit or deny this request.

SUPPLEMENTAL RESPONSE: Subject to its objections, New Mexico further asserts that the information New Mexico knows or can readily obtain is insufficient to enable it to admit or deny Texas’s request.

Respectfully submitted this 30th day of October 2020,

/s/ Jeffrey Wechsler

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No. 141, Original

IN THE
SUPREME COURT OF THE UNITED STATES

◆

STATE OF TEXAS,
Plaintiff,

v.

STATE OF NEW MEXICO and
STATE OF COLORADO,
Defendants.

◆

OFFICE OF THE SPECIAL MASTER

◆

STATE OF NEW MEXICO'S CERTIFICATE OF SERVICE

◆

This is to certify that on October 30th, 2020, I caused a true and correct copy of the **State of New Mexico's Supplemental Responses to the State of Texas's First Set of Requests for Admission to the State of New Mexico** to be served by e-mail upon all counsel of record and interested parties on the Service List, attached hereto.

Respectfully submitted this 30th day of October 2020.

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