

Table 1. Irrigated Acreage, Depletion and Diversion Amounts for Tributary Irrigation Projects Using Water from Ephemeral Tributaries on Navajo Lands in the San Juan River Basin in New Mexico that are Claimed by the US Survey by Project and Quadrangle

Project and Quadrangle	Navajo Nation Trust Lands			US Survey		US Survey		Other Irrigated Acres	
	Irrigated Acres	Depletion Amount (af/yr)	Diversion Amount (af/yr)	Annual Depletion Rate Average (af/ac/yr)	Range (af/ac/yr)	Annual Diversion Rate Average (af/ac/yr)	Range (af/ac/yr)	Navajo Nation Fee Lands	Navajo Allotments
Chaco River Drainage									
<u>Tributaries Originating in Chuska Mountains:</u>									
Sanostee Project:									
Sanostee West	454.13	857.46	2,085.65	1.89		4.59			
Sanostee East	832.76	1,621.51	3,943.87	1.95		4.74			
Project Total	1,286.89	2,478.97	6,029.52	1.93	1.82-1.98	4.69	4.43-4.82		
Tocito Project:									
Sanostee West	40.33	78.98	211.66	1.91		5.25			
Sanostee East	191.03	367.96	1,011.69	1.93		5.30			
Project Total	231.37	444.94	1,223.35	1.92	1.91-1.93	5.29	5.23-5.30		
Tocito Springs Project:									
Sanostee East	60.00	117.41	210.71	1.96	1.89-1.96	3.51	3.13-3.62		
Toh AI Sissy Project:									
Little Water	276.19	544.74	1,110.85	1.97	1.97	4.02	4.01-4.03		
Tocito Lake Project:									
Old Pine Spring	42.94	59.50	161.62	1.39	1.02-1.61	3.76	1.76-5.00		
Porcupine Canyon Project:									
Old Pine Spring	4.26	7.34	13.23	1.72	1.72-1.73	3.10	3.10-3.11		
Stinking Water Project:									
Tsin-nas-kid	30.22	57.31	118.03	1.90		3.91			
Old Pine Spring	13.55	25.45	52.42	1.88		3.87			
Project Total	43.78	82.76	170.45	1.89	1.85-1.90	3.89	3.81-3.91		
Sheep Dip Reservoir Project:									
Tsin-nas-kid	70.24	133.49	266.97	1.90	1.90-1.96	3.80	3.80-3.91		
Red Rock Canyon Projects:									
Tsin-nas-kid	200.70	382.63	787.79	1.91		3.93			
Old Pine Spring	28.84	52.69	107.77	1.83		3.74			
Project Total	229.54	435.32	895.56	1.90	1.83-1.92	3.90	3.34-8.13		
Toadlena Project:									
Toadlena	74.71	137.95	477.89	1.85		6.40			
Two Grey Hills	90.84	168.77	584.52	1.86		6.43			
Tsin-nas-kid	9.05	16.96	58.84	1.87		6.50			
Project Total	174.60	323.68	1,121.25	1.85	1.82-1.88	6.42	3.60-6.51		
Toadlena NE Project:									
Tsin-nas-kid	47.96	91.82	174.58	1.91	1.91-1.92	3.64	3.35-4.08		
Sand Springs:									
Newcomb	6.42	12.31	21.57	1.92	1.92-1.95	3.36	3.41-3.36		
Upper Captain Tom Project:									
Newcomb	1,422.38	2,692.36	12,619.75	1.89	1.88-1.91	8.87	6.93-11.46		
Lower Captain Tom Project:									
Newcomb	91.33	173.67	338.07	1.90		3.70			
Newcomb SE	503.43	965.51	1,905.32	1.92		3.78			
Project Total	594.75	1,139.18	2,243.39	1.92	1.82-1.93	3.77	3.03-3.80		

Table 1. Irrigated Acreage, Depletion and Diversion Amounts for Tributary Irrigation Projects Using Water from Ephemeral Tributaries on Navajo Lands in the San Juan River Basin in New Mexico that are Claimed by the US Survey by Project and Quadrangle (continued)

Project and Quadrangle	Navajo Nation Trust Lands			US Survey		US Survey		Other Irrigated Acres	
	Irrigated Acres	Depletion Amount (af/yr)	Diversion Amount (af/yr)	Annual Depletion Rate		Annual Diversion Rate		Navajo Nation Fee Lands	Navajo Allotments
				Average (af/ac/yr)	Range (af/ac/yr)	Average (af/ac/yr)	Range (af/ac/yr)		
Two Grey Hills Project:									
Two Grey Hills	297.78	545.83	1,377.71	1.83	1.82-1.86	4.63	4.59-4.70		
Grey Mesa Project:									
Two Grey Hills	238.83	440.00	2,004.92	1.84		8.39			
Sheep Springs	341.65	632.60	6,687.64	1.85		19.57			
Project Total	580.48	1,072.60	8,692.56	1.85	1.84-1.86	14.97	7.00-19.65		
Sheep Springs Project:									
Sheep Springs	216.34	396.62	970.96	1.83	1.82-1.84	4.49	4.46-4.50		
Naschitti Northern Project:									
Naschitti	147.11	262.01	531.97	1.78	1.70-1.80	3.62	2.84-4.99		
Naschitti Drolet Project:									
Naschitti	108.59	191.19	401.92	1.76	1.69-1.78	3.70	2.81-4.22		
Naschitti Southern Project:									
Naschitti	142.41	251.94	532.65	1.77	1.77	3.74	3.73-3.75		
Long Lake Project:									
Washington Pass	44.78	78.19	235.34	1.75	1.67-1.75	5.26	2.77-6.24		
Choiska Project:									
Tohatchi	53.70	97.05	337.15	1.81		6.28			
Chuska Lake	911.92	1,730.00	14,249.71	1.90		15.63			
Project Total	965.62	1,827.05	14,586.86	1.89	1.68-1.92	15.11	3.23-16.19		
Subtotal	6,994.43	13,189.25	53,592.77	1.89		7.66		0.00	0.00
<u>Water Supply Not Associated with Chuska Mountains:</u>									
Well 14Mile:									
Chuska Lake	109.95	204.70	392.53	1.86	1.86	3.57	3.57		
Well 14A-79:									
Big Rock Hill	79.87	144.90	277.87	1.81	1.80-1.83	3.48	3.46-3.50		
R.L. Tanner:									
Tanner Lake								122.70	4.53
J.B. Tanner:									
The Pillar 3 SE	0.18	0.31	0.56	1.77	1.77	3.19	3.19	45.41	
White Rock Project:									
The Pillar 3 SE	41.54	74.67	144.07	1.80	1.80	3.47	3.47		
Lake Valley Project:									
La Vida Mission	78.25	135.80	226.61	1.74	1.70-1.79	2.90	2.83-3.17		90.93
I.K. Westbrook - Indian Creek:									
Milk Lake	73.47	119.64	199.40	1.63		2.71		518.18	0.60
Red Lake Well	67.43	112.28	187.13	1.67		2.78		60.66	
Project Total	140.90	231.92	386.53	1.65	1.63-1.67	2.74	2.71-2.78	578.83	0.60
I.K. Westbrook - Kin Kizhin Wash:									
Seven Lakes NW								206.60	
Kin Kizhin Ruins	40.47	68.48	114.13	1.69		2.82		237.01	
Project Total	40.47	68.48	114.13	1.69	1.69	2.82	2.82	443.61	

Table 1. Irrigated Acreage, Depletion and Diversion Amounts for Tributary Irrigation Projects Using Water from Ephemeral Tributaries on Navajo Lands in the San Juan River Basin in New Mexico that are Claimed by the US Survey by Project and Quadrangle (continued)

Project and Quadrangle	Navajo Nation Trust Lands			US Survey Annual Depletion Rate		US Survey Annual Diversion Rate		Other Irrigated Acres	
	Irrigated Acres	Depletion Amount (af/yr)	Diversion Amount (af/yr)	Average (af/ac/yr)	Range (af/ac/yr)	Average (af/ac/yr)	Range (af/ac/yr)	Navajo Nation Fee Lands	Navajo Allotments
Pitt Ranch:									
Seven Lakes								64.65	
Becenti Lake								175.31	
Project Total								239.96	
J.B. Farris Ranch:									
Seven Lakes	75.51	133.13	224.40	1.76	1.76	2.97	2.97		1.76
Standing Rock Project:									
Standing Rock	38.40	65.97	113.39	1.81	1.81	3.11	3.11-3.12		
Crownpoint School:									
Crownpoint	34.49	61.56	102.28	1.79	1.79	2.97	2.97		
Subtotal	637.55	1,121.44	1,982.37	1.76		3.11		1,430.51	97.81
Chaco River Drainage Total	7,631.99	14,310.69	55,575.14	1.88		7.28		1,430.51	97.81
San Juan River Drainage below Chaco River									
Beclabito Project:									
Sallies Spring	44.39	92.81	184.80	2.09	2.08-2.09	4.16	4.15-4.17		
Red Wash Project:									
Sallies Spring	39.91	85.07	182.66	2.13	2.13	4.58	4.58		
Drainage below Chaco River Total	84.30	177.88	367.46	2.11		4.36		0.00	0.00
Chinle Wash Drainage									
Whiskey Creek Project:									
Upper Wheatfields	43.38	60.62	121.68	1.40		2.81			
Toadlena	5.65	7.26	12.10	1.29		2.14			
Project Total	49.00	67.88	133.78	1.39	1.29-1.42	2.73	2.14-2.93		
Crystal Project:									
Crystal	199.56	291.98	569.18	1.46	1.40-1.50	2.85	2.72-2.93		
Lower Crystal Project:									
Crystal	175.84	254.99	458.43	1.45	1.38-1.50	2.61	2.29-2.73		
Sonsela Project:									
Sonsela Buttes	205.43	318.53	637.71	1.55		3.10			
Crystal	78.88	117.42	202.25	1.49		2.57			
Project Total	284.11	435.95	839.96	1.53	1.48-1.59	2.96	2.43-3.35		
Chinle Wash Drainage Total	708.52	1,050.80	2,001.35	1.48		2.82		0.00	0.00
San Juan River Basin Total	8,424.81	15,539.37	57,943.95					1,430.51	97.81

Notes:

There are minor differences in totals between table I-1 of the US Survey and this tabulation due to rounding. No depletion or diversion amounts are provided in table I-1 of the US Survey for lands held by the Navajo Nation in fee or for allotments. Navajo fee and tribal fee lands for Pitt Ranch are included as fee lands. The depletion and diversion amounts in this tabulation are adjusted for an apparent error in table I-1 wherein the diversion and the depletion for field number 718 (6.7927 acres) on the Long Lake Project are listed as zero. Assuming a depletion rate of 1.75 af/ac and a diversion rate of 3.42 af/ac for field number 718, the total project, Chaco River drainage and San Juan Basin totals were increased by 11.89 af of depletion and 23.23 af of diversion as compared to the total depletion and diversion amounts claimed by the US Survey. Without these adjustments, the average depletion rate for the Long Lake Project as a whole would be outside the range of the depletion rates exhibited for all other fields on the project. Also, the Inventory of Navajo Lands within the San Juan River Basin in New Mexico Irrigated by Groundwater and Tributaries of the San Juan River, prepared by Ebert and Associates and dated January 2012 (Ebert and Associates Report), at Appendix D, page D-26, claims diversions for field numbers 708-713 on the Naschitti Northern Project totaling 355.80 acre-feet, as compared to a total diversion of 151.50 acre-feet claimed for these fields in table I-1 of the US Survey, based on modified conveyance efficiencies. The Ebert and Associates Report at page 5, figure 1, renames the Sonsela Project claimed by the US Survey as the Lower Crystal Project, and renames the Lower Crystal Project claimed by the US Survey as the Coyote Wash Project. This evaluation uses the US Survey project names and descriptions for consistency with the claims filed in December 2010 by the United States on behalf of the Navajo Nation in the San Juan River Adjudication.

Table 2. Irrigated Acreage, Depletion and Diversion Amounts for Non-Project Irrigation Uses in Ephemeral Tributary Drainages on Navajo Lands in the San Juan River Basin in New Mexico that are Claimed by the US Survey by Quadrangle

Quadrangle	Navajo Nation Trust Lands			US Survey		Other Irrigated Acres	
	Irrigated Acres	Depletion Amount (af/yr)	Diversion Amount (af/yr)	Average Annual Rates		Navajo Nation Fee Lands	Navajo Allotments
				Depletion (af/ac/yr)	Diversion (af/ac/yr)		
Chaco River Drainage							
Yellow Hill	1.34	2.65	4.35	1.98	3.25		
Roof Butte	4.91	7.45	12.42	1.52	2.53		
Sanostee West	40.21	73.01	121.87	1.82	3.03		
Sanostee East	32.59	63.05	104.04	1.93	3.19		
Little Water	0.75	1.49	2.44	1.98	3.24		
Newcomb NE	4.71	9.40	15.72	1.99	3.34		
Old Pine Spring	49.69	81.36	135.72	1.64	2.73		
Tsin-nas-kid	130.83	246.25	411.26	1.88	3.14		
Newcomb	29.30	55.47	92.75	1.89	3.17		
Newcomb SE	19.75	37.52	62.73	1.90	3.18		
Toadlena	177.61	245.79	409.85	1.38	2.31		
Two Grey Hills	98.75	170.79	284.85	1.73	2.88		
Sheep Springs	72.23	134.37	224.65	1.86	3.11		
Great Bend	15.87	27.64	46.09	1.74	2.90		
Washington (Narbonna) Pass	600.36	1,011.17	1,685.71	1.68	2.81		
Naschitti	36.41	62.52	104.24	1.72	2.86		
Grey Hill Spring	13.39	22.98	38.30	1.72	2.86		
The Pillar 3 SE (West of LVM)	46.75	80.31	133.94	1.72	2.86		
La Vida Mission	1.88	3.20	5.34	1.70	2.83		13.97
Chuska Peak	85.96	139.94	233.32	1.63	2.71		
Coyote Canyon NW	39.75	66.05	110.20	1.66	2.77		
Seven Lakes NE	6.11	10.02	16.69	1.64	2.73		38.07
Crevasse Canyon	1.13	1.92	3.18	1.69	2.80		
Tohatchi	177.28	321.44	537.12	1.81	3.03		
Chuska Lake	125.67	223.05	372.05	1.77	2.96		
Coyote Canyon	199.69	364.27	607.00	1.82	3.04		
Toyee	169.46	303.33	506.28	1.79	2.99		
Standing Rock	86.78	149.28	249.13	1.72	2.87		1.30
Antelope Lookout Mesa	7.13	12.70	21.22	1.78	2.98		11.39
Becenti Lake							7.51
Seven Lakes SE	4.55	7.79	13.04	1.71	2.87	20.94	6.26
Twin Lakes	513.56	896.22	1,495.47	1.75	2.91	3.02	
Big Rock Hill	364.19	636.58	1,063.16	1.75	2.92	1.69	19.94
Dalton Pass	6.78	11.52	19.20	1.70	2.83		8.32
Crownpoint	3.01	5.12	8.53	1.70	2.83		51.63
Heart Rock							50.74
Chaco River Drainage Total	3,168.38	5,485.65	9,151.86	1.73	2.89	25.66	209.14
San Juan River Drainage below Chaco River							
Sallies Spring	2.11	4.28	7.13	2.03	3.38		
Chinle Wash Drainage							
Tsalle Butte	17.93	19.21	32.05	1.07	1.79		
Old Pine Spring	7.47	7.51	12.52	1.01	1.68		
Upper Wheatfields	29.25	41.27	68.78	1.41	2.35		
Toadlena	16.52	21.32	35.54	1.29	2.15		
Sonsela Buttes	113.04	166.08	276.79	1.47	2.45		
Crystal	370.16	515.81	859.86	1.39	2.32		
Todiito Park	8.96	12.02	20.04	1.34	2.24		
Chinle Wash Drainage Total	563.33	783.22	1,305.58	1.39	2.32	0.00	0.00
San Juan River Basin Total	3,733.81	6,273.15	10,464.57			25.66	209.14

Notes:

There are minor differences in totals between table J-1 of the US Survey and this tabulation due to rounding. No depletion or diversion amounts are provided in table J-1 of the US Survey for lands held by the Navajo Nation in fee or for allotments. Table J-1 indicates that field number 763 is on the Tsalle Butte/Old Pine Spring quadrangle, and this field is included in the Old Pine Spring quadrangle totals herein. The Ebert and Associates Report at Appendix D, table D-2, claims for field number 569 on Navajo Nation trust land in the Pillar 3 SE (West of La Vida Mission) quadrangle about 12.23 acres, 21.94 acre-feet of depletion, and 36.68 acre-feet of diversion (as compared to the US Survey which claims for this field about 7.41 acres, 12.68 acre-feet of depletion, and 21.14 acre-feet of diversion). The Ebert and Associates Report also omits field numbers 232 (0.21 acres on Navajo Nation trust land in the Big Rock Hill quadrangle), 267 (0.46 acres on Navajo allotment land in the Crownpoint quadrangle), and 361 (0.65 acres on Navajo Nation trust land in the Tohatchi quadrangle).

Table 3. Summary of Irrigated Acreage, Depletion and Diversion Amounts for All Tributary Irrigation Uses of Water from Ephemeral Tributaries on Navajo Lands in the San Juan River Basin in New Mexico that are Claimed by the US Survey by Drainage

	Navajo Nation Trust Lands			US Survey		Other Irrigated Acres		Total Acres
	Irrigated Acres	Depletion Amount (af/yr)	Diversion Amount (af/yr)	Depletion Rate (af/ac/yr)	Diversion Rate (af/ac/yr)	Navajo Nation Fee Lands	Navajo Allotments	
Drainage								
Chaco River Drainage:								
Tributary Irrigation Projects	7,631.99	14,310.69	55,575.14	1.88	7.28	1,430.51	97.81	9,160.31
Non-Project Tributary Irrigation	3,168.38	5,485.65	9,151.86	1.73	2.89	25.66	209.14	3,403.17
Total	10,800.37	19,796.34	64,727.00			1,456.17	306.95	12,563.48
San Juan River Drainage below Chaco River:								
Tributary Irrigation Projects	84.30	177.88	367.46	2.11	4.36	0.00	0.00	84.30
Non-Project Tributary Irrigation	2.11	4.28	7.13	2.03	3.38	0.00	0.00	2.11
Total	86.41	182.16	374.59			0.00	0.00	86.41
Chinle Wash Drainage:								
Tributary Irrigation Projects	708.52	1,050.80	2,001.35	1.48	2.82	0.00	0.00	708.52
Non-Project Tributary Irrigation	563.33	783.22	1,305.58	1.39	2.32	0.00	0.00	563.33
Total	1,271.85	1,834.02	3,306.93			0.00	0.00	1,271.85
San Juan River Basin Total:								
Tributary Irrigation Projects	8,424.81	15,539.37	57,943.95			1,430.51	97.81	9,953.14
Non-Project Tributary Irrigation	3,733.81	6,273.15	10,464.57			25.66	209.14	3,968.61
Total	12,158.62	21,812.52	68,408.52			1,456.17	306.95	13,921.74

Notes:

Table 1 provides a breakdown of acres, depletions and diversions for tributary irrigation projects claimed by the US Survey. Total depletions and diversions for the Chaco River drainage and the San Juan River Basin were adjusted slightly for an apparent tabulation error (see table 1 notes). Table 2 provides a breakdown of acres, depletions and diversions for tributary non-project irrigation uses claimed by the US Survey. The US Survey claims summarized in tables 1-3 were not revised for changes identified by the Ebert and Associates Report that are described in the notes at the end of tables 1 and 2.

Table 4. Acreage Data for Irrigation Water Uses on Navajo Lands in New Mexico in Ephemeral Tributary Drainages to the San Juan River that are Claimed by the US Survey

Project	US Survey Acres ¹	1938 State Engineer Hydrographic Survey		1948 Secretary of the Interior ²		Annual BIA Project Crop Report ³		Annual BIA Economic Development Land Data ⁴		1970/1976 BIA Tabulated Project ⁵		1988 SCS Inventory of Navajo Irrigation Projects ⁶		1994 USBR Inventory Irrigated Acres ⁷		2000 ISC Crop Field Survey ⁸		2003 ISC Crop Survey ⁹	
		Planned Ultimate Acres	Echo Ditch Decreased Acres ²	Acres under Ditch as of 1948	Maximum Acres Irrigated, 1941-1946	Maximum Net Acres Irrigated, 1938-1958 ³	Assessable Project Acres	Maximum Acres Irrigated, 1963-1968	Tabulated Project Acres ⁵	Original Acres	1988 SCS Inventory of Navajo Irrigation Projects ⁶ Acres	1994 USBR Inventory Irrigated Acres ⁷	2000 ISC Crop Field Survey Irrigated Acres ⁸	Delineated Possible Field Acres	Potential Active Farmland Acres	2003 ISC Crop Survey ⁹ Acres	2003 ISC Crop Survey ⁹ Acres		
Chaco River Drainage																			
In or Near Chuska Mountains:																			
Mention Rock																			
Sanostee Project	1,286.88	1,000	800	581	590	800	366	150	1,000	200	200	1,000	813	484	50				
Toledo Project	231.37	250	250	148	118	250	118	250	250	120	120	250	162	58	6				
Toledo Springs Project	60.00	300	275	197	134	275	134	275	300	200	200	300	245	4	1				
Toledo Lake Project	42.84																		
Porcupine Canyon Project	4.26	50	50	32	37	40	37	40	40	10	10	50	26	4	0				
Stinking Water Project	43.78																		
Sheep Dip Reservoir Project	70.24																		
Red Rock Canyon Projects	229.54	300	275	227	214	275	214	275	300	100	100	300	202	34	2				
Toadlena Project	174.80																		
Toadlena NE Project	47.96																		
Sand Springs	6.42																		
Captain Tom Project ¹²	2,017.13	3,700	1,930	1,057	1,184	1,930	590	1,930	3,700	500	500	3,700	1,503	798	225				
Grey Mesa Project ¹³	878.26	1,000	1,000	708	709	1,000	455	905	500	250	250	500	487	245	132				
Sheep Springs Project	218.34	500	339	218	254	338	88	338	500	100	100	500							
Northern Naschitti Project	147.11	800	190	152	190	190	10	190	800	0	0	800							
Naschitti Driest Project	108.59	200	200	217	218	200	10	200	200	0	0	200							
Southern Naschitti Project	142.41	250	50	32	33	50	18	50	50	13	13	50							
Long Lake Project	44.78																		
Whiskey Lake Project ¹⁴		1,000	1,000	597	750	700	60	700	500	150	150	500	179	30	10				
Cholska Project	985.82	9,150	6,359	4,186	4,503	5,953	2,110	6,103	8,070	1,743	1,743	8,070	4,273	1,723	426				
Subtotal	6,994.43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Not Associated with Chuska Mountains:																			
Well 14/Mile-1	109.85	100	100	59	59	100	12	100	100	0	0	100	34	2	0				
Well 14A-79	79.87	40	30	22	34	32	28	32	100	0	0	100	30	0	0				
Mulholland Well ¹⁵		60	60	30	30	60		60	60	0	0	60	36	1	0				
R.L. Tanner Ranch	127.23																		
J.B. Tanner	45.59																		
White Rock Project	41.54																		
Lake Valley Project ¹⁶	169.18																		
I.K. Westbrook - Indian Creek	720.33																		
I.K. Westbrook - Kin Kizhin Wash	484.08																		
Pitt Ranch	239.96																		
Beccenti Lake																			
J.B. Farris Ranch	77.27	34	34	15	0	15		15	60	0	0	60	22	0	0				
Standing Rock Project	36.40	80	22	16	18	80		80	60	0	0	60	122	3	0				
Crownpoint School	34.49																		
Subtotal	2,165.89	1,901.2	716.7	142	171	132	40	387	320	0	0	320	22	0	0				
Miscellaneous or non-project lands	3,403.17																		
Chaco River Drainage Total	12,563.49	1,901.2	716.7	4,308	4,674	6,085	2,150	6,490	8,390	1,743	1,743	8,390	7,215	2,388	457				

Table 4. Acreage Data for Irrigation Water Uses on Navajo Lands in New Mexico in Ephemeral Tributary Drainages to the San Juan River that are Claimed by the US Survey (continued)

Project	US Survey Acres ¹	1938 State Engineer Hydrographic Survey Irrigated Acres ²		1948 Echo Ditch Decreased Acres ³		1948 Navajo Report of the Secretary of the Interior ⁴		Annual BIA Project Crop Reports ⁵		Annual BIA Economic Development Irrigation Land Data ⁶		1970/1976 BIA Tabulated Project Acres ⁷		1986 SCS Inventory of Navajo Irrigation Projects ⁸		1994 USBR Inventory Irrigated Acres ⁹		2000 ISC Crop Field Survey Irrigated Acres ¹⁰		2003 ISC Crop Survey ¹¹	
		Planned Ultimate Acres	1948 Under Ditch Acres	Maximum Acres	1948-1949 Ditch Under Ditch Acres	1949-1950 Maximum Net Acres	1950-1951 Maximum Net Acres	Assessable Project Acres	1953-1958 Maximum Acres	1953-1958 Maximum Net Acres	1958-1968 Assessable Project Acres	1963-1968 Maximum Acres	1963-1968 Maximum Net Acres	Original Acres	Farmed as of 1986 Acres	1994 Inventory Irrigated Acres	2000 Survey Irrigated Acres	Delimited Possible Field Acres	Potential Active Farmland Acres	2003 Survey Irrigated Acres	2003 Survey Potential Active Farmland Acres
San Juan River Drainage below Chaco River																					
Beclabito Project	44.39	150	72	56	56	56	56	56	56	72	0	72	80	0	-	-	-	-	0	0	0
Red Wash Project	39.81																				
Zilbetod Project	2.11																				
Miscellaneous or non-project lands																					
Drainage below Chaco River Total	88.41	150	72	56	56	56	56	56	56	72	0	72	80	0	-	-	-	-	0	0	0
Chinle Wash Drainage																					
Whiskey Creek Project	49.00	100	100	32	32	32	32	32	32	480	230	480	100	350					411	-	0
Crystal Project ¹²	483.67	600	408	275	275	275	275	275	275	480	230	480	480	350					418	-	0
Lower Crystal Project	175.84																				
Miscellaneous or non-project lands	563.33																				
Chinle Wash Drainage Total	1,271.84	700	508	307	307	307	307	307	307	480	230	480	580	350					827	473	0
San Juan River Basin Total¹³	13,921.74	10,294	7,165	4,671	4,671	4,671	4,671	4,671	4,671	6,637	2,360	7,042	9,050	2,063					8,042	2,861	457

Notes:

- From tabulated summary of irrigated acreage for tributary irrigation projects claimed in the US Survey, Appendix I, table I-1 (see table 1).
- From 1938 State Engineer Hydrographic Survey map sheets. Includes veg as pasture.
- From 1948 Echo Ditch Decree.
- From "The Navajo Report," prepared by J.A. Krug, Secretary of the Interior, and dated March 1948 (1948 Navajo Report), pages 18-19.
- From BIA annual project crop reports and annual irrigated acres summaries generally available for the period 1936-1959. There are a few years of missing data for each project during the 1936-1959 period. Many of the annual BIA crop reports for the Whiskey Creek Project suggest that the project either may be located in Arizona or reported by Arizona BIA district offices, but the project the BIA reported on is the project in New Mexico.
- From BIA Branch of Land Operations or Division of Economic Development annual Irrigation Land Data reports available for the period 1963-1968 (excluding reported data for acres used during 1968 on the Choleka, Crystal, Natchitochi Drolet, Northern Natchitochi, Southern Natchitochi, Well 14A-78 and Well 14Mile-1 projects that represent the total assessable acres for each project and do not appear to represent actual acres irrigated on each project during the year).
- From letter by Billie D. Smith, Bureau of Indian Affairs, Navajo Area Office, to Earl F. Sorenson, State Engineer Office, dated June 19, 1970; or from BIA tabulation titled "Miscellaneous Projects, Shiprock Agency, 1976." The 1970 BIA letter states that the Menton Rock, Standing Rock, Juan's Lake, Becenti Lake, Crownpoint and Mulholland Well projects had been dropped from BIA records, and that the Zilbetod Project is in Arizona. See also "Navajo Water Resources Evaluation, Volume VIII, San Juan River Basin Water Supply Evaluation-1976," prepared by the BIA, table 3.1.
- From "Inventory of Navajo Indian Irrigation Projects," prepared by the Soil Conservation Service and dated August 1986 (1986 SCS Inventory). Acres not farmed as of 1986 were listed in the 1986 SCS Inventory as abandoned.
- From "San Juan Basin Water-Related Land Use Inventory for New Mexico," prepared by the Bureau of Reclamation in 1984. Includes only the Captain Tom Project and Grey Mesa Project areas.
- From Interstate Stream Commission field survey and inventory of irrigated crops (see ISC Memorandum on "Estimate of Irrigated Acreage within the Chaco River and Chinle Wash Drainages in New Mexico in 2000"), includes only the Captain Tom Project and Grey Mesa Project areas.
- From Interstate Stream Commission field survey and inventory of irrigated crops (see Memorandum on "2003 San Juan River Basin Acreage Inventory," prepared by Patricia Turney and dated September 13, 2004, last revised December 7, 2004). Base maps used were derived from, and possible field parcels were interpreted and delineated from, 1996 black and white US Geological Survey digital orthophoto quadrangles. Potential active farmland acres estimated from acres of crops, fallowed or plowed acres, on-farm pond acre or acres with native grass cover (whether or not irrigated), but exclude acres observed by field inspection to have wild native vegetation ground cover (abundant weeds or shrubs) or acres containing buildings or other features (estimated from summary tabulation prepared from 2003 acreage inventory GIS data base by the OSE Hydrographic Survey and Mapping Bureau, dated March 17, 2011).
- The US Survey acres listed for the Captain Tom Project includes 1,422.38 acres for the Upper Captain Tom Project and 564.75 acres for the Lower Captain Tom Project.
- The US Survey acres listed for the Grey Mesa Project includes 297.78 acres for the Two Grey Hills Project and 580.48 acres for the Grey Mesa Project. Both projects are supplied from the same point of diversion, with one ditch serving portions of the Two Grey Hills Project on the northwest side of Captain Tom Wash and the other ditch serving portions of the Two Grey Hills Project on the southeast side of the wash plus the Grey Mesa Project. The BIA Shiprock Agency for 1976 reported these projects as one combined "Grey Mesa (Two Grey Hills)" Project with a total project acreage of 905 acres. An apparent typographical error in the 1970 BIA letter incorrectly suggested that the Grey Mesa Project totaled only 95 acres.
- Includes lands above the Choleka Project not supplied water from Chuaska Lake.
- The United States omitted the Mulholland Well Project from the US Claims because the project is not located on lands held by the United States in trust for the Navajo Nation or Navajo allottees, and is not held by the Navajo Nation in fee.
- The Lake Valley Project identified by the US Survey appears to include the Juan's Lake Project area. The BIA data for this tabulation under the Lake Valley Project, for which other irrigated acres data are not available.
- The US Survey acres listed for the Crystal Project includes 199.56 acres for the Crystal Project and 294.11 acres for the Sonseila Project. The 1986 SCS inventory of Navajo Indian Irrigation Projects states that the Sonseila Project was never started and that there are no records of it. The US Survey places the Sonseila Project just downstream from the Crystal Project, while other documents appear to combine both projects under one Crystal Project. The annual BIA crop reports for the Crystal and Lower Crystal projects for 1941, 1943, 1944 and 1945 indicate that the Crystal Project acreage reported by the BIA and SCS includes the Lower Crystal Project. The Ebert and Associates Report refers to the Sonseila Project claimed by the US Survey as the Lower Crystal Project, and refers to the Lower Crystal Project claimed by the US Survey as the Coyote Wash Project. This analysis uses the US Survey project descriptions for consistency with the claims filed in December 2010 by the United States on behalf of the Navajo Nation in the adjudication.
- The 1965 "Colorado River Basin Comprehensive Framework Study," prepared by the Department of the Interior, included a total of 7,900 acres in the Chaco River drainage and 500 acres in the Crystal area including irrigated, fallow and idle acres on both Indian and non-Indian lands. The amount of acres irrigated as of 1965 conditions based on the Comprehensive Framework Study was 4,200 acres in the Chaco River drainage and 300 acres in the Crystal area (see "Upper Colorado Region, Type I Survey, New Mexico, Water Resources, Present Water Use, Irrigated Acreage by Evaluation Areas, Crops, and Full and Short Water Supply," spreadsheet prepared by the Soil Conservation Service and dated August 20, 1968). The irrigated acres data provided by the BIA's Division of Economic Development, Irrigation Land Data, Calendar Year 1965, illustrates that the nominal acres irrigated as of 1965 conditions used by the Comprehensive Framework Study is not indicative of the amount of acres actually irrigated in 1965 or any other year.

Table 5. Historic Acres Irrigated by Projects within Ephemeral Tributary Drainages in New Mexico in Navajo County

Year	Bureau of Indian Affairs' Annual Crop Report Data (net acres irrigated) and Annual Irrigated Acres Summaries:										Total Acres in														
	Captain Tom's	Grey Mulholland	Sanostee-Beautiful	Southern	Northern	Naschitti	Mountain	Sheep Springs	Stinking Water	Loadlena	Loco	Toh AI	Well	Well	Juan's	Scattered	Scattered	Chaco	Chino	Shoe	Game				
	Well	Mesa	Mesa	Well	Naschitti	Naschitti	Naschitti	Spring	Water	Loadlena	Loco	Sissy	14A-79	14Mile-1	Lake	School	Rock	Uses	Crystal	Crystal	Uses	Wash	Wash	Wash	
1936	650	235		28	115	121		29	157	58	21								1,193	169				169	
1937	1,039	362		44	253	130		12	23	142				17					2,010	106				106	
1938	1,007	452	666	12	428	29	0	29	167	58	25								3,172	199				199	
1940	971	35	664		69	12	0	12	190	6	25								2,539	244				244	
1941	1,057	541	709	0	167	65	33	30	205	128	23								3,753	286				286	
1942	664	529	527	8	151	135	30	30	228	108	171								3,385	274	29			315	
1943	496	27	664	30	11	38	2	31	202	60	74								1,974	260	31			305	
1944	612	250	563	3	151	133	31	334	133	28	111								2,678	251	32			292	
1945	778	598	633	20	218	152	30	371	176	148	116								3,530	232	24			275	
1946	434	244	477		81	36	32	137	0	116	0								1,584	278	23			255	
1947	445	544	410	6	165	90	31	0	151	0	151								1,971	271	22			301	
1948	1,071	741	487	12	153	89	28	234	114	39	35								3,229	219	14			293	
1949	1,184	750	564	14	217	161	32	332	170	100	68								3,899	211	11			233	
1950	48	412	104	0	16	17	3	2	0	0	0								627	203	0			211	
1951	0	0	0	0	0	0	0	0	0	0	0								54	96	12			203	
1952	847	750	566	0	89	21	0	313	264	40	221								3,278	218	24			108	
1953	54	15	128	4	12	0	0	0	17	0	0								271	166	20			243	
1954																									186
1955	0	12	92	10	0	0	0	0	0	19	0								166	215	47			282	
1956																									
1957	158	14	172	29	42	0	0	133	32	0	77								725	173	23			196	
1958	115	28	106	0	33	108	18	0	36	23	37								550	185	41			226	
1959	0	22	50	0	0	0	0	0	0	18	0								149	208	0			208	
1963	580	46	259	10	10	18	366	98	25	214	118								1,894	190				190	
1964	141	0	167	0	0	0	125	10	0	63	48								678	197				197	
1965	430	0	455	0	0	0	235	70	15	175	90								1,585	197				197	
1966	175	60	188	0	0	0	100	15	21	97	29								720	210				210	
1967	20	60	31	0	0	0	8	15	37	97	28								321	230				230	
1968	73		58		0	0	0	0	0	16	0														0

Interstate Stream Commission Field Survey Data (surveys conducted in cooperation with the Navajo Nation Department of Water Resources):

1964	260	120																	457	0	0	0	0	0	
2000	198	109																							0
2003	225	10	132	0	0	0	0	0	0	2	6	1	0	0	0	0	0	0	31	457	0	0	0	0	0

Notes:
 1 Project developed in 1915, and the remaining acreage farmed as of 1986 was about 500 acres (1986 SCS Inventory). The Captain Tom Project, located approximately 34 miles south of Shiprock near Newcomb, is about 42 river channel miles from the San Juan River. Includes the Upper and Lower Captain Tom projects identified by the US Survey.
 2 Project reportedly developed in 1940 (1986 SCS Inventory), but annual BIA crop reports for project begin as early as 1936. Remaining acreage farmed as of 1986 was about 160 acres (1986 SCS Inventory). Includes Red Willow Ditch and Farm. The Choiska Project, located approximately 66 miles south of Shiprock near Tohatchi, is about 100 river channel miles from the San Juan River.
 3 Project developed in 1933-1936, and remaining acreage farmed as of 1986 was about 250 acres (1986 SCS Inventory). The Grey Mesa Project, located approximately 36 miles south of Shiprock near Newcomb, is about 62 river channel miles from the San Juan River.
 4 Project developed in 1936, and the 1986 SCS Inventory noted that the project was abandoned. This irrigation use was from a well located approximately 62 miles south-southeast of Shiprock near Crownpoint. The Mulholland Well Project was not included in the US Survey or the US Claims.

Table 5. Historic Acres Irrigated by Projects within Ephemeral Tributary Drainages in New Mexico in Navajo Country

(continued)

- 6 Project developed in 1936 (1986 SCS inventory). The 1986 SCS inventory noted that the project was abandoned in 1940, but BIA crop report data indicate that acreage on the project was irrigated until at least 1957. The Naschitti Drolat Project area, located approximately 54 miles south of Shiprock near Naschitti, is about 81 river channel miles from the San Juan River.
- 7 Project developed in 1936-1939, and the 1986 SCS inventory noted that the project was abandoned with no trace of it left as of 1986. The Northern Naschitti Project area, located approximately 54 miles south of Shiprock near Naschitti, is about 81 river channel miles from the San Juan River.
- 8 Project developed in 1939, and the 1986 SCS inventory noted that the project was abandoned with no trace of it left as of 1986. The Southern Naschitti Project area, located approximately 54 miles south of Shiprock near Naschitti, is about 81 river channel miles from the San Juan River.
- 9 Project developed in 1931 (1986 SCS inventory), and includes the Beautiful Mountain Project unit referenced by the BIA in the 1930s. Remaining acreage farmed as of 1986 was about 200 acres (1986 SCS inventory). The Sanostee Project, located approximately 26 miles south-southwest of Shiprock near Sanostee, is about 51 river channel miles from the San Juan River.
- 10 Project reportedly developed in 1940 (1986 SCS inventory), but annual BIA crop reports for the project begin as early as 1936. Remaining acreage farmed as of 1986 was about 100 acres (1986 SCS inventory). The Sheep Springs Project, located approximately 45 miles south of Shiprock near Sheep Springs, is about 66 river channel miles from the San Juan River.
- 11 Project developed in 1905, and remaining acreage farmed as of 1986 was about 10 acres (1986 SCS inventory). The Stinking Water Project, located approximately 32 miles south-southwest of Shiprock near Tootito, is about 45 river channel miles from the San Juan River.
- 12 Project developed in 1935-1935, and remaining acreage farmed as of 1986 was about 100 acres (1986 SCS inventory). The Toadlena Project, located approximately 39 miles south-southwest of Shiprock near Toadlena, is about 53 river channel miles from the San Juan River. Includes the Toadlena and Toadlena NE projects identified by the US Survey.
- 13 Project reportedly developed in 1939 (1986 SCS inventory), but annual BIA crop reports for the project begin as early as 1937. Remaining acreage farmed as of 1986 was about 120 acres (1986 SCS inventory). The Tootito Project, located approximately 28 miles south-southwest of Shiprock near Tootito, is about 48 river channel miles from the San Juan River.
- 14 Project developed in 1925, and remaining acreage farmed as of 1986 was about 200 acres (1986 SCS inventory). The Toh Ai Sissy Project, located approximately 24 miles south of Shiprock near Sanostee, is about 36 river channel miles from the San Juan River.
- 15 Projects developed in 1930, and the 1986 SCS inventory noted that the projects were abandoned with no interest in irrigated farming as of 1986. These irrigation uses were from wells located over 70 miles south of Shiprock near Brimhall.
- 16 The Juan's Lake Project, located approximately 45 miles south of Farmington, is about 80 river channel miles from the San Juan River.
- 17 Project developed in 1930, and the 1986 SCS inventory noted that the project was abandoned. This irrigation use was from a well located approximately 71 miles south of Farmington near Crownpoint.
- 18 The 1948 Navajo Report indicates a maximum irrigated area of 15 acres under the Standing Rock Project for the period 1941-1946, but the project is not listed in the 1986 SCS inventory. The Standing Rock Project area is located approximately 64 miles south of Farmington near Standing Rock, and is about 130 river channel miles from the San Juan River.
- 19 Miscellaneous irrigation uses are scattered and located generally between 60 and 130 river channel miles from the San Juan River. No annual irrigated acres data are available for tributary non-project irrigation uses claimed by the US Survey.
- 20 Project developed in 1935-1936, and remaining acreage farmed as of 1986 was about 350 acres (1986 SCS inventory). A washed-out diversion dam on the Crystal Project was rebuilt in 1984 without concurrently clearing sediment from and maintaining the ditch (1986 SCS inventory). The Crystal Project, located in the headwaters of the Chinle Wash drainage near Crystal and approximately 53 miles south-southwest of Shiprock, is about 177 river channel miles from the San Juan River. Chinle Wash enters the San Juan River between Bluff and Mexican Hat, Utah. Includes the Crystal, Lower Crystal and Soneala projects identified by the US Survey.
- 21 The Whiskey Creek Project, located in the headwaters of Chinle Wash near Crystal and approximately 50 miles south-southwest of Shiprock, is about 180 river channel miles from the San Juan River. Chinle Wash enters the river below Bluff, Utah.
- 22 Miscellaneous irrigation uses are scattered and located generally between about 175 and 180 river channel miles from the San Juan River. No annual irrigated acres data are available for tributary non-project irrigation uses claimed by the US Survey.
- 23 Project developed in 1934, and the 1986 SCS inventory noted that the project was abandoned. The Beclabito Project area, located on Shoe Game Wash approximately 20 miles west-northwest of Shiprock near Beclabito, is about 5 river channel miles from the San Juan River. Shoe Game Wash enters the river above the Four Corners gage and below Red Wash.
- 24 Data for 1963 and 1964 from BIA's Branch of Land Operations are acres used and do not include idle acres, and no acres were assessed as dry farmed. Data for 1965 and 1966 from BIA's Division of Economic Development are acres irrigated and do not include dry farmed or idle acres (20 acres were assessed as dry farmed on the Southern Naschitti Project and 10 acres were assessed as dry farmed on the Well 14Mille-1 Project during 1966). Data for 1967 from BIA's Division of Economic Development are acres used and do not include idle acres (the Irrigation Land Data for 1967 did not segregate acres used into irrigated or dry farm acres). Data for 1968 shown in this table are from an undated table believed to be from the BIA's Division of Economic Development Irrigation Land Data report for 1968 (the cover sheet for the report is not available). However, the reported amounts of acres used for the Cholsika, Crystal, Naschitti Drolat, Northern Naschitti, Southern Naschitti, Well 14A-79 and Well 14Mille-1 projects for 1968 are equal to the total assessable acres for each project (see table 4), and assuming full irrigation use of the total project acres without any idle or dry farmed lands during the year would not be consistent with patterns of reported irrigated acres in other years or for other projects, other information relating to histories of irrigation use or dry farming on several of these projects, or the extremely little total crop values for each of these projects listed for the year in the report for 1968. Therefore, the reported amounts of acres used for the Cholsika, Crystal, Naschitti Drolat, Northern Naschitti, Southern Naschitti, Well 14A-79 and Well 14Mille-1 projects for 1968 were not included in this tabulation and were not used in the analyses presented in other tables of this report.

Omitted from this tabulation are the following projects:

- (1) The 1986 SCS inventory indicates that 120 acres were developed for farming under the Sheep Dip Reservoir Project in 1909, with 100 acres farmed as of 1986. However, the 1948 Navajo Report omitted the project from the Secretary of the Interior's tabulation of then-active, existing Navajo irrigation projects. No BIA data are available for this project. The Sheep Dip Reservoir Project, located approximately 36 miles south-southeast of Shiprock near Toadlena, is about 50 river channel miles from the San Juan River.
- (2) Irrigation projects in McKinley County in the Chaco River drainage that were described by the 1938 State Engineer Hydrographic Survey, including dams to spread floodwaters when available, to irrigate acreage primarily from Indian Creek, Kin Lazen (Kin Klizhin) Wash and Seven Lakes Draw. Based on the 1938 State Engineer Hydrographic Survey, about 1,901 acres of land were irrigable under these projects as of 1938 using spreader dams or diversions. The water supply available to irrigate some of these acres began declining by 1935 due to upstream stock pond developments. No irrigated acres were linked to these uses in the 2003 field crop survey conducted by the Interstate Stream Commission. The Westbrook spreader dams, located approximately 70 miles south-southeast of Shiprock in McKinley County and south of Lake Valley, are about 120 river channel miles, on average, from the San Juan River. Other spreader dams (PH Ranch) and irrigation use areas (Farris and Tanner ranches) are located similar distances from the river. The 1948 Echo Ditch Decree adjudicated water rights for Westbrook spreader dams on Indian Creek, but not for the other irrigation uses. The lands associated with the irrigation uses described by the 1938 State Engineer Hydrographic Survey have been acquired by the United States on behalf of the Navajo Nation or Navajo allottees, or have been acquired by the Navajo Nation in fee.

Table 6. Soil Conservation Service Data on Water Supply and Other Information for Tributary Irrigation Projects Using Water from Ephemeral Tributaries on Navajo Lands in the San Juan River Basin¹

Project	Year Developed	Original Acres	Acres Farmed as of 1986	Water Supply Seasonal Quantity (acre-feet) (af/orig.ac)	Diversion Rate (cfs)	Irrigation Capacity (orig.ac/cfs)	Supply Dependability	Erosion	Priority for Rehabilitation	Number of Reservoirs or Ponds	Total Storage Capacity	
											Original (acre-feet)	As of 1986 (acre-feet)
Sanostee ²	1931	1,000	200	875	0.68	10	questionable	moderate	low	10	100	20
Tocito ³	1939	250	120	450	1.80	4	adequate	moderate	medium	0	0	0
Toh AI Sissy ⁴	1925	300	200	1,800	6.00	6	questionable	moderate	medium	0	0	0
Stinking Water ⁵	1905	50	10	450	9.00	2	questionable	moderate	low	0	0	0
Sheep Dip Reservoir ⁶	1909	120	100	800	6.67	2	questionable	moderate	low	5	700	200
Toadlena ⁷	1933-1935	300	100	1,210	4.03	4	questionable	moderate	low	4	20	10
Captain Tom ⁸	1915	3,700	500	4,230	1.14	60	adequate	moderate	medium	1	1,020	800
Grey Mesa ⁹	1933-1936	500	250	900	1.80	11	questionable	moderate	medium	-	-	-
Sheep Springs ¹⁰	1940	500	100	600	1.20	2	questionable	moderate	low	0	0	0
Northern Naschitti ¹¹	1938-1939	600	0	743	1.24	1	questionable	severe	low	1	700	0
Naschitti Drolet ¹²	1936	200	0	742	3.71	1	questionable	severe	low	0	0	0
Southern Naschitti ¹³	1939	50	13	240	4.80	1	questionable	severe	medium	1	1,500	1,200
Choiska ¹⁴	1940	500	150	735	1.47	1	adequate	severe	high	2	2,500	2,100
Well 14Milie-1 ¹⁵	1930	100	0	240	2.40	1	adequate	moderate	low	1	37	-
Well 14A-79 ¹⁶	1930	100	0	240	2.40	1	adequate	moderate	high	1	37	-
Muholland Well ¹⁷	1936	60	0	95	1.58	1	adequate	moderate	medium	1	52	-
Crowpoint School ¹⁸	1930	60	0	240	4.00	1	adequate	moderate	low	0	0	0
Whiskey Creek ¹⁹	-	100	-	-	-	-	-	-	low	0	0	0
Crystal ²⁰	1935-1936	480	350	1,575	3.28	1	adequate	moderate	high	0	0	0
Beclabito ²¹	1934	80	0	147	1.84	3	questionable	moderate	low	1	15	0

Notes:

- ¹ From "Inventory of Navajo Indian Irrigation Projects," prepared by the Soil Conservation Service and dated August 1986 (1986 SCS Inventory). Acres not farmed as of 1986 are listed in the 1986 SCS Inventory as abandoned. Reservoir storage capacities are reviewed separately in this report.
- ² Source of dependable late summer water is a problem for the Sanostee Project (1986 SCS Inventory). Annual BIA crop reports for the Sanostee Project generally available for the period 1936-1959 note that in several years substantial amounts of project land were idled due to drought, no water availability or water shortages (1943, 1946, 1947, 1950, 1951, 1953, 1955), and indicate that most project lands were idled during the period 1957-1959.
- ³ Mid season water is not dependable for the Tocito Project (1986 SCS Inventory). Annual BIA crop reports for the Tocito Project generally available for the period 1938-1959 note that in several years substantial amounts of project land were idled or experienced crop failures due to drought, no water availability or water shortages (1940, 1943, 1946, 1947, 1950, 1951, 1953, 1955), and the crop report for 1959 indicates that all project lands were idled that year.
- ⁴ Late summer water is not available for the Toh AI Sissy Project (1986 SCS Inventory).
- ⁵ Annual BIA crop reports for the Stinking Water Project generally available for the period 1939-1959 note that in several years substantial amounts of project land were idled due to drought, no water availability or water shortages (1940, 1946, 1947, 1950, 1951, 1953), and indicate that all project lands were idled during the period 1955-1959.
- ⁶ The 1986 SCS Inventory indicates that fall season water is not available for the Sheep Dip Reservoir Project, and that the reservoirs do little more than moderate flow.
- ⁷ The 1986 SCS Inventory indicates that the Toadlena Project has a dependable water supply. Yet, annual BIA crop reports for the Toadlena Project generally available for the period 1936-1959 note that in several years substantial amounts of project land were idled due to drought, no water availability or water shortages (1946, 1950, 1951, 1953, 1955), and that most project lands were idled during the period 1957-1959. Appears to include the Toadlena and Toadlena NE projects identified by the US Survey.
- ⁸ Includes the Upper and Lower Captain Tom projects identified by the US Survey. Captain Tom Reservoir is an off-stream storage facility fed primarily by diversion from Captain Tom Wash. The 1986 SCS Inventory notes that the Captain Tom Project is the best project on the east slope of the Chuska Mountains. The US Survey at Appendix F, table F-3, lists Captain Tom Reservoir as having an estimated capacity of about 1,056 acre-feet. The Navajo Nation reports a storage capacity of 1,170 acre-feet for Captain Tom Reservoir, and also reported that a Water Conservation and Management Plan for the Captain Tom Project began in 2009 (see "Draft Water Resource Development Strategy for the Navajo Nation," prepared by the Navajo Nation Department of Water Resources, and dated April 6, 2008, table 3.2 and pages 104-105, respectively). Annual BIA crop reports for the Captain Tom Project generally available for the period 1936-1959 note that in several years substantial amounts of project land were idled due to drought, no water availability or water shortages (1939, 1943, 1946, 1947, 1950, 1951, 1952, 1953, 1955), and indicate that most project lands were idled during the period 1957-1959.

Table 6. Soil Conservation Service Data on Water Supply and Other Information for Tributary Irrigation Projects Using Water from Ephemeral Tributaries on Navejo Lands in the San Juan River Basin¹
(continued)

- ⁹ The Grey Mesa Project includes the Two Grey Hills Project. Both projects are supplied by the same point of diversion, with one ditch serving portions of the Two Grey Hills Project on the northwest side of Captain Tom Wash and the other ditch serving portions of the Two Grey Hills Project on the southeast side of the wash plus the Grey Mesa Project. The 1986 SCS inventory indicates that the area is being actively farmed and that the project is an excellent one. The 1986 SCS inventory also states that storage is available to the Grey Mesa Project from the Sheep Dip Reservoirs, but this does not appear to be correct. Annual BIA crop reports for the Grey Mesa Project generally available for the period 1936-1959 note that in several years substantial amounts of project land were idled or experienced crop losses due to drought or water shortages (1943, 1951, 1952, 1953, 1955), and indicate that most project lands were idle during the period 1957-1959.
- ¹⁰ Summer water is not dependable for the Sheep Springs Project (1986 SCS inventory). Annual BIA crop reports for the Sheep Springs Project generally available for the period 1936-1959 note that in several years substantial amounts of project land were idled or experienced crop losses due to drought, no water availability or water shortages (1946, 1950, 1951, 1952, 1953, 1955), and indicate that most project lands remained idle during the period 1957-1959.
- ¹¹ The 1986 SCS inventory map of the Naschitti Northern Project site notes that there is no trace of the project left as of 1986. Annual BIA crop reports for the Naschitti Northern Project generally available for the period 1936-1959 note that in several years substantial amounts of project land were idled or experienced crop losses due to drought, no water availability or water shortages (1943, 1948, 1950, 1951, 1952, 1953, 1955), and indicate that most project lands were idle during the period 1957-1959.
- ¹² The 1986 SCS inventory notes that the Naschitti Driplet Project was abandoned. Annual BIA crop reports for the Naschitti Driplet Project generally available for the period 1936-1959, however, note that in several years substantial amounts of project land were idled or experienced crop losses due to drought, no water availability or water shortages (1939, 1943, 1948, 1950, 1951, 1952, 1953, 1955), and indicate that all project lands were idled in 1958 and 1959. The project diversion was washed out as of 1986. The SCS 1986 inventory reported that there were very few dry farms in the project area as of 1986, with much of the land having been destroyed by wind erosion.
- ¹³ Long Lake (1,500 acre-feet original capacity and 1,200 acre-feet remaining capacity as of 1986 based on the 1986 SCS inventory) reportedly served the Naschitti Southern Project diversion at one time. The 1986 SCS inventory map of the Naschitti Southern Project site notes that there is no trace of the project left as of 1986. The SCS and BIA records do not include the Long Lake Project identified by the US Survey or other acres irrigated from Long Lake. The US Survey at Appendix M, table M-3, lists Long Lake (Impoundment No. P-0042) as having a capacity of 1,200 acre-feet based on SCS records, with stock water being the reservoir's primary purpose. Annual BIA crop reports for the Naschitti Southern Project generally available for the period 1936-1953 note that in several years substantial amounts of project land were idled or experienced crop losses due to drought, no water availability or water shortages (1943, 1947, 1950, 1951, 1952, 1953).
- ¹⁴ Whiskey Lake may supply water to Chuska Lake via downstream diversion. Chuska Lake provides water for the Red Willow Ditch and Farm. The 1986 SCS inventory at page 51 lists the storage capacities for Whiskey Lake at 1,000 acre-feet original capacity and 900 acre-feet remaining capacity as of 1986, and for Chuska Lake at 1,500 acre-feet original capacity and 1,200 acre-feet remaining capacity as of 1986. However, the 1986 SCS inventory at page 221 also lists Whiskey Lake as having 8,000 acre-feet of remaining storage capacity after the abandonment of 4,000 acre-feet of capacity, or as having had an original storage capacity of 12,000 acre-feet. The SCS information on storage capacity for Whiskey Lake is internally inconsistent by a factor of nine. The US Survey at Appendix F, table F-3, lists Whiskey Lake (Impoundment No. P-0043) as having a capacity of 8,000 acre-feet and lists Chuska Lake (Impoundment No. P-1162) as having a capacity of 1,200 acre-feet. The Navajo Nation reports storage capacities of 7,458 acre-feet for Whiskey Lake and 3,345 acre-feet for Chuska Lake (see "Draft Water Resources Development Strategy for the Navajo Nation," prepared by the Navajo Nation Department of Water Resources, and dated April 6, 2008, table 3.2). Annual BIA crop reports for the Choiska Project (or Red Willow Farm) generally available for the period 1936-1959 note that in several years substantial amounts of project land were idled or experienced crop losses due to drought, no water availability or water shortages (1940, 1943, 1946, 1950, 1951, 1953, 1955), and indicate that most project lands were idle during the period 1957-1959.
- ¹⁵ Well 14Mile-1 is a flowing well completed to a depth of 1,150 feet in the Gallup Sandstone. Annual BIA crop reports for the Well 14Mile-1 Project generally available for the period 1936-1959 note that in several years substantial amounts of project land were idled or experienced crop losses due to drought or lack of available water supply (1946, 1947, 1948, 1955). In the 1986 SCS inventory, only dry farmed fields are marked on the map of the project site. The 1986 SCS inventory and the BIA crop reports for the project for 1948, 1951 and 1953 note that there is a lack of interest for full irrigation use of the project.
- ¹⁶ Well 14A-79 is a flowing well completed to a depth of 873 feet in the Dalton Pass Sandstone. The 1986 SCS inventory indicates that the project was developed in 1930. The BIA crop reports for the project note that irrigation facilities for the project were incomplete as of 1941. Annual BIA crop reports for the Well 14A-79 Project for the period 1943-1945 indicate that the full project is not utilized due to the presence of alkali soils. The 1986 SCS inventory map of the project site notes that the project is abandoned and is mostly dry farmed. The 1986 SCS inventory also noted that there was a lack of interest in irrigation on the project as of 1986. The project fields generally lie below Bass Lake. The 1986 SCS inventory gives the same project statistics for Well 14A-79 as for Well 14Mile-1.
- ¹⁷ Mulholland Well is a ground water supply. The SCS has no records on the project. The BIA crop reports for the Mulholland Well Project for 1951 and 1952 note that there was no irrigation of project land because the land is heavily alkali and too costly to reclaim. The US Survey and US Claims did not include the Mulholland Well Project.
- ¹⁸ The Crownpoint School was supplied with ground water. The SCS has no records on the project.
- ¹⁹ The 1986 SCS inventory states that the Whiskey Creek Project is in Arizona, but a map of the project site shows it located near Little White Cone Lake in New Mexico. As of 1986, the diversion for the Whiskey Creek Project was washed out and there was only dry farming on project lands (1986 SCS inventory). The SCS has no other records on the project. Annual BIA crop reports for the Whiskey Creek Project for 1946, 1948, 1951 and 1952 indicate that the ditch regularly is washed out by flash floods, thus resulting in non-irrigation of portions of the project lands.
- ²⁰ Includes the Crystal, Lower Crystal and Sonsela projects identified by the US Survey (or the Crystal, Coyote Wash and Lower Crystal projects as they are renamed, respectively, in the Ebert and Associates Report). The 1986 SCS inventory states that the Sonsela Project was to be located in Arizona and was never started, and that there are no records of it. The Sonsela Project identified by the US Survey places the project just downstream from the Crystal Project, while other documents combine both projects under one Crystal Project. Annual BIA crop reports for the Crystal Project generally available for the period 1936-1959 indicate drought or water supply shortages for irrigation on the project in several years (1950, 1951, 1952, 1953), and remarks on the crop reports for 1947 and 1950 noted that there was successful dry farming in the Crystal area. The ISC field crop survey in 2003 found alfalfa, low density grass (including native grass), and other crops being dry farmed in the Crystal Project and surrounding areas that year. The Crystal Project diversion was washed out and rebuilt in 1984 (1986 SCS inventory).
- ²¹ The 1986 SCS inventory notes that the Beclabito Project was abandoned by about 1950, and that there was no farming in the project area and little interest in the project as of 1986.

Table 7. Distribution of the Acres Claimed by the US Survey for Tributary Irrigation Non-Project Uses by Type of Irrigation Claim and Quadrangle

Quadrangle	Irrigation Method or Water Source ¹										
	Diversion	Diversion with Reservoir	Diversion with Structure	Spring	Spring with Reservoir	Well	Well with Reservoir	Channel Interception	Channel Interception from Reservoir	Floodwater	Total
Chaco River Drainage											
Yellow Hill							1.34				1.34
Roof Butte								1.33		3.58	4.91
Sanostee West	8.24	10.67						21.30			40.21
Sanostee East							20.01	12.58			32.59
Little Water							0.75				0.75
Newcomb NE	4.71							36.38			4.71
Old Pine Spring	13.31										49.69
Tsin-nae-kid	59.41			7.54	17.37			46.51			130.83
Newcomb	29.30										29.30
Newcomb SE	19.75										19.75
Toadlena	7.93			9.17	5.79			153.61		1.10	177.61
Two Grey Hills	21.94							76.81			98.75
Sheep Springs	68.38		2.20					1.63		0.02	72.23
Great Bend								12.05		3.82	15.87
Washington (Narbonna) Pass	9.59	11.76		11.98	10.33			554.93	1.78		600.36
Naschitti	6.93	1.17					0.71	27.59			36.41
Grey Hill Spring								9.26		4.13	13.39
The Pillar 3 SE (West of La Vida Mission)	23.78							19.30		3.68	46.75
La Vida Mission	13.97							1.88			15.85
Chuska Peak	7.99							77.97			85.96
Coyote Canyon NW	11.52							28.23			39.75
Seven Lakes NE	0.94							43.24			44.18
Crevasse Canyon								1.13			1.13
Tohatchi	103.36	35.52	5.24					30.70	0.91	1.55	177.28
Chuska Lake	30.57		10.70					84.39			125.67
Coyote Canyon	125.58		0.85					29.70		16.11	199.69
Toyee	90.80	0.53	5.85	2.62			9.03	65.16			169.46
Standing Rock	24.24	11.09					4.49	52.75			88.08
Antelope Lookout Mesa	7.36	4.91					0.30	5.95			18.53
Beccenti Lake								5.46		2.05	7.51
Seven Lakes SE		4.55						27.20			31.75
Twin Lakes	187.42		38.74					290.42			516.58
Big Rock Hill	202.57	28.49	14.29					140.48			385.82
Dalton Pass								15.10			15.10
Crownpoint	23.18	1.71						24.24		5.52	54.65
Heart Rock	45.17		1.53					4.04			50.74
Chaco River Drainage Total	1,147.94	110.41	79.41	31.31	33.49	13.83	41.23	1,901.31	2.69	41.55	3,403.17

Table 7. Distribution of the Acres Claimed by the US Survey for Tributary Irrigation Non-Project Uses by Type of Irrigation Claim and Quadrangle
(continued)

Quadrangle	Irrigation Method or Water Source ¹										
	Diversion	Diversion with Reservoir	Diversion with Structure	Spring	Spring with Reservoir	Well	Well with Reservoir	Channel Interception	Channel Interception from Reservoir	Floodwater	Total
San Juan River Drainage below Chaco River											
Sallies Spring								2.11			2.11
Chinle Wash Drainage											
Tsatie Butte											
Old Pine Spring	7.24							10.70			17.93
Upper Wheatfields								7.47			7.47
Toadlena								29.25			29.25
Sonsela Buttes								16.52			16.52
Crystal								104.14		8.90	113.04
Todlito Park	23.38							346.77			370.16
								8.96			8.96
Chinle Wash Drainage Total	30.62	0.00	0.00	0.00	0.00	0.00	0.00	523.81	0.00	8.90	563.33
San Juan River Basin Total	1,178.56	110.41	79.41	31.31	33.49	13.83	41.23	2,427.23	2.69	50.45	3,968.61

Notes:

¹ From US Survey ArcGIS shapefiles provided by the United States to the State of New Mexico, without revisions for changes identified by the Ebert and Associates Report that are described in the notes at the end of table 2. The types of irrigation claims identified by the US Survey are as follows:

Diversion, Spring or Well - Irrigation uses made by diversion of natural surface water, spring flow or well water, respectively.

Diversion, Spring or Well with Reservoir - Irrigation uses made by diversion of natural flows or well water, with reservoirs to regulate diversions or water deliveries.

Diversion with Structure - Irrigation uses made by diversion of storage water released from upstream reservoirs in addition to diversion of natural flows.

Channel Interception - Planting of crops across the active channels of broad ephemeral stream channels whereby intermittent flows in the channel can pass over the planted areas.

Channel Interception from Reservoir - Same as channel interception, but where the channel may contain upstream reservoir releases in addition to natural flows.

Floodwater - Planting of crops across floodplains where overbank flows can pass over the planted areas.

Table 8. Comparison of Irrigation Depletion Rates and Diversion Rates Estimated by the US Survey to Those Estimated by Extrapolation of the 1938 State Engineer Hydrographic Survey Data for Tributary Irrigation Projects Using Water from Ephemeral Tributaries on Navajo Lands in the San Juan River Basin in New Mexico

Project	Irrigation Depletions				Irrigation Diversions				
	US Survey		1938 State	Difference ³ (percent)	US Survey		1938 State Engineer		Difference ⁷ (percent)
	Average (af/ac/yr)	Range (af/ac/yr)	Engineer Hydrosurvey CIR ² (af/ac/yr)		Annual Diversion Rate ⁴ Average (af/ac/yr)	Range (af/ac/yr)	Annual FDR ⁵ (af/ac/yr)	Annual PDR ⁶ (af/ac/yr)	
<u>Chaco River Drainage</u>									
<u>Tributaries Originating in Chuska Mountains:</u>									
Sanostee Project	1.93	1.82-1.98	1.90	2%	4.69	4.43-4.82	3.02	5.03	-7%
Tocito Project	1.92	1.91-1.93	1.90	1%	5.29	5.23-5.30	3.02	5.03	5%
Tocito Springs Project	1.96	1.89-1.98	1.90	3%	3.51	3.13-3.62	3.02	5.03	-43%
Toh Al Sissy Project	1.97	1.97	1.90	4%	4.02	4.01-4.03	3.02	5.03	-25%
Tocito Lake Project	1.39	1.02-1.61	1.70	-22%	3.76	1.76-5.00	2.70	4.50	-20%
Porcupine Canyon Project	1.72	1.72-1.73	1.80	-5%	3.10	3.10-3.11	2.86	4.76	-54%
Stinking Water Project	1.89	1.85-1.90	1.80	5%	3.89	3.81-3.91	2.86	4.76	-22%
Sheep Dip Reservoir Project	1.90	1.90-1.96	1.80	5%	3.80	3.80-3.91	2.86	4.76	-25%
Red Rock Canyon Projects	1.90	1.83-1.92	1.80	5%	3.90	3.34-8.13	2.86	4.76	-22%
Toadlena Project	1.85	1.82-1.88	1.80	3%	6.42	3.60-6.51	2.86	4.76	26%
Toadlena NE Project	1.91	1.91-1.92	1.80	6%	3.64	3.35-4.08	2.86	4.76	-31%
Sand Springs	1.92	1.92-1.95	1.80	6%	3.36	3.41-3.36	2.86	4.76	-42%
Upper Captain Tom Project	1.89	1.88-1.91	1.80	5%	8.87	6.93-11.46	2.86	4.76	46%
Lower Captain Tom Project	1.92	1.82-1.93	1.80	6%	3.77	3.03-3.80	2.86	4.76	-26%
Two Grey Hills Project	1.83	1.82-1.86	1.80	2%	4.63	4.59-4.70	2.86	4.76	-3%
Grey Mesa Project	1.85	1.84-1.86	1.80	3%	14.97	7.00-19.65	2.86	4.76	68%
Sheep Springs Project	1.83	1.82-1.84	1.80	2%	4.49	4.46-4.50	2.86	4.76	-6%
Naschitti Northern Project	1.78	1.70-1.80	1.70	4%	3.62	2.84-4.99	2.70	4.50	-24%
Naschitti Drolet Project	1.76	1.69-1.78	1.70	3%	3.70	2.81-4.22	2.70	4.50	-22%
Naschitti Southern Project	1.77	1.77	1.70	4%	3.74	3.73-3.75	2.70	4.50	-20%
Long Lake Project	1.75	1.67-1.75	1.70	3%	5.26	2.77-6.24	2.70	4.50	14%
Choiska Project	1.89	1.68-1.92	1.60	15%	15.11	3.23-16.19	2.54	4.23	72%
<u>Water Supply Not Associated with Chuska Mountains:</u>									
Well 14Mile	1.86	1.86	1.60	14%	3.57	3.57	2.54	2.54	29%
Well 14A-79	1.81	1.80-1.83	1.60	12%	3.48	3.46-3.50	2.54	2.54	27%
R.L. Tanner			1.75				2.78	2.78	
J.B. Tanner	1.77	1.77	1.70	4%	3.19	3.19	2.70	2.70	15%
White Rock Project	1.80	1.80	1.70	6%	3.47	3.47	2.70	4.50	-30%
Lake Valley Project	1.74	1.70-1.79	1.70	2%	2.90	2.83-3.17	2.70	4.50	-55%
I.K. Westbrook - Indian Creek	1.65	1.63-1.67	1.65	0%	2.74	2.71-2.78	2.62	2.62	4%
I.K. Westbrook - Kin Klizhin Wash	1.69	1.69	1.70	-1%	2.82	2.82	2.70	2.70	4%
Pitt Ranch			1.60				2.54	2.54	
J.B. Farris Ranch	1.76	1.76	1.58	10%	2.97	2.97	2.51	2.51	15%
Standing Rock Project	1.81	1.81	1.50	17%	3.11	3.11-3.12	2.38	3.97	-28%
Crownpoint School	1.79	1.79	1.50	16%	2.97	2.97	2.38	2.38	20%
<u>San Juan River Drainage below Chaco River</u>									
Beclabito Project	2.09	2.08-2.09	2.30	-10%	4.16	4.15-4.17	3.65	6.08	-46%
Red Wash Project	2.13	2.13	2.30	-8%	4.58	4.58	3.65	6.08	-33%
<u>Chinle Wash Drainage</u>									
Whiskey Creek Project	1.39	1.29-1.42	1.60	-15%	2.73	2.14-2.93	2.54	4.23	-55%
Crystal Project	1.46	1.40-1.50	1.60	-10%	2.85	2.72-2.93	2.54	4.23	-49%
Lower Crystal Project	1.45	1.38-1.50	1.60	-10%	2.61	2.29-2.73	2.54	4.23	-62%
Sonsela Project	1.53	1.46-1.59	1.60	-5%	2.96	2.43-3.35	2.54	4.23	-43%

Table 8. Comparison of Irrigation Depletion Rates and Diversion Rates Estimated by the US Survey to Those Estimated by Extrapolation of the 1938 State Engineer Hydrographic Survey Data for Tributary Irrigation Projects Using Water from Ephemeral Tributaries on Navajo Lands in the San Juan River Basin in New Mexico

(continued)

Notes:

- ¹ From table 1. Estimated for each irrigated field or tract location based on interpolation of consumptive irrigation requirements (CIRs) between lines of equal irrigation requirement shown in the 1938 State Engineer Hydrographic Survey report at map file no. C-4, or by extrapolation of the lines of equal irrigation requirement based on a relationship developed between CIRs determined using the Lowry-Johnson method and mean annual precipitation and temperature (see "Navajo San Juan Tributary Consumptive Irrigation Requirements," prepared by Keller-Bliesner Engineering, LLC, and dated January 12, 2012). The irrigation depletion requirements shown include CIR plus incidental irrigation depletions, which for surface water irrigation uses other than by spreader dams was assumed for the US Survey to average 5 percent of the CIR based on estimated evaporation or evapotranspiration losses from the water delivery systems.
- ² Consumptive irrigation requirements (CIRs) estimated based on project locations and simple extrapolation of lines of equal irrigation requirement of water in feet shown in the 1938 State Engineer Hydrographic Survey report at map file no. C-4. For the spreader dam uses that were included in the 1938 State Engineer Hydrographic Survey (namely, the Westbrook, Pitt Ranch, Farris Ranch, J.B. Tanner and J.L. Tanner irrigation uses), the estimates shown herein for CIR are directly from the table of consumptive use of water by ditches at page 23 of the Hydrographic Survey report. Actual depletions by spreader dams are assumed to be limited to annual water application rates of up to about 6 inches per acre, depending upon water availability.
- ³ Percentage difference between the average full supply depletion rate for a project claimed by the US Survey and the CIR for the project estimated by simple extrapolation of the 1938 State Engineer Hydrographic Survey CIRs. Positive differences for quantifying Navajo Nation depletion rights, as opposed to CIRs, appear to reflect, on average, the 5 percent incidental irrigation depletions factor applied by the US Survey. Incidental depletions along the canal systems in these areas of about 5 percent of crop consumptive use may be reasonable based on the similar incidental irrigation depletion rate used by the OSE Water Use and Conservation Bureau for canal losses to estimate irrigation depletions in the San Juan River Basin in New Mexico.
- ⁴ From table 1. Estimated based on the US Survey depletion rates and assessments of diversion and irrigation efficiencies for each irrigation subarea within each project. The US Survey in assessing diversion rates gave consideration to canal lengths and use of natural channels to convey water between subareas or to deliver storage water. Considering changes to the diversion amounts for field numbers 708-713 on the Naschitti Northern Project from a total of 151.50 acre-feet claimed by the US Survey to 355.80 acre-feet claimed by the Ebert and Associates Report (see notes at the end of table 1), the average annual diversion rate estimated for the project would be about 5.00 acre-feet per acre.
- ⁵ Farm delivery requirements assume an on-farm irrigation efficiency of 63 percent for flood irrigation uses per the 1938 State Engineer Hydrographic Survey. Actual farm deliveries by spreader dams are assumed to be limited to annual water application rates of up to about 6 inches per acre, depending upon water availability.
- ⁶ Project diversion requirements assume a canal delivery efficiency of 60 percent for surface water ditch delivery systems per the 1938 State Engineer Hydrographic Survey. Actual diversions by spreader dams are assumed to be limited to annual water application rates of up to about 6 inches per acre, depending upon water availability.
- ⁷ Percentage difference between the average project diversion requirement for a project claimed by the US Survey and the PDR for the project estimated using the 1938 State Engineer Hydrographic Survey CIRs (extrapolated) and irrigation/canal efficiencies.

Table 8. Historic Full Supply At-Site Irrigation Depletions by Projects on Navajo Lands within Ephemeral Tributary Drainages in New Mexico
(Units: acre-feet)

Year	Sonsata-										Total															
	Captain Tom ¹ (1.80 a/acre)	Chosika (1.88 a/acre)	Grey Mesa ² (1.64 a/acre)	Muholland Well ³ (1.65 a/acre)	Nesohilli Driplet (1.78 a/acre)	Nesohilli (1.78 a/acre)	Nesohilli (1.72 a/acre)	Southern Nesohilli (1.77 a/acre)	Southern Mountain (1.83 a/acre)	Sheep Springs (1.83 a/acre)	Stinking Water (1.89 a/acre)	Toadlena ⁴ (1.87 a/acre)	Tocabo (1.82 a/acre)	Toh Ai Slay (1.87 a/acre)	Well 14A-78 (1.81 a/acre)	Well 14Mile-1 (1.88 a/acre)	Juan's Lake ⁵ (1.74 a/acre)	Crowpoint School (1.79 a/acre)	Standing Rock (1.81 a/acre)	Scattered Uses ⁶ (1.80 a/acre)	Chaco River Drainage (acre-feet)	Whiskey Creek (1.38 a/acre)	Scattered Uses ⁷ (1.50 a/acre)	Chile Wash below Chico: Beclabito Drainage (acre-feet)	San Juan River Basin (acre-feet)	
1938	1,235	444			48				222	221	47	40					30			2,255	252		252	252	2,507	
1937	1,974	684			77			488	238	43	273									3,807	158		158	158	4,078	
1939	1,913	854	1,225	22	246	0	0	826	246	55	284	111	254	31	110	0	32			5,974	287		287	287	6,315	
1940	1,845	68	1,222	0	121	0	0	868	23	23	355	12	81	40	83	0	25			4,780	364		364	364	5,190	
1941	2,008	1,022	1,305	0	284	151	58	1,019	57	383	246	388	388	0	106	0	29	0	0	7,087	428	40	468	468	7,850	
1942	1,282	1,000	970	15	268	240	53	1,121	317	57	426	207	337	0	15	52	21	0	0	6,359	408	43	451	451	6,923	
1943	941	51	1,222	56	19	68	4	407	178	59	378	115	148	11	28	23	23	0	0	3,700	387	44	432	432	4,132	
1944	1,163	473	1,036	6	268	237	55	845	243	53	352	182	219	9	82	23	23	0	0	5,012	374	33	407	407	5,418	
1945	1,474	1,111	1,165	37	384	271	53	716	389	60	328	284	228	25	52	18	0	0	0	6,907	348	32	378	378	6,985	
1946	825	481	878	107	107	62	57	284	0	217	0	0	0	22	56	11	11	0	0	2,959	414	32	448	448	3,408	
1947	848	1,028	754	11	280	180	55	0	141	0	282	0	0	25	52	18	18	0	0	3,863	404	31	434	434	4,098	
1948	2,035	1,400	886	22	289	158	50	452	209	60	282	75	89	25	33	20	20	0	0	6,056	326	19	346	346	6,402	
1949	2,250	1,418	1,038	26	382	287	57	841	434	70	318	182	134	20	19	21	21	0	0	7,304	314	314	314	7,618		
1950	87	778	181	0	28	30	5	4	0	0	0	0	0	31	2	18	18	0	0	1,174	302	0	302	302	1,478	
1951	0	0	0	0	5	0	0	0	0	0	0	0	0	42	33	18	18	0	0	86	143	17	160	160	258	
1952	1,908	1,418	1,023	0	157	37	0	804	465	78	413	227	65	62	65	65	65	0	0	6,155	326	33	360	360	6,515	
1953	103	28	232	7	21	0	6	0	0	0	32	0	0	52	20	20	20	0	0	502	247	28	275	275	777	
1955	0	23	189	18	18	0	0	0	0	0	36	0	0	40	20	20	20	0	0	305	320	85	386	386	691	
1957	296	28	316	51	75	0	257	59	59	0	144	79	79	51	33	2	2	0	0	1,356	258	32	290	290	1,845	
1958	218	53	195	0	59	0	203	33	33	0	67	44	73	51	33	33	33	0	0	1,035	278	57	333	333	1,388	
1959	0	42	82	0	0	0	57	0	0	0	34	0	0	18	33	33	33	0	0	274	310	0	310	310	584	
1983	1,121	87	477	18	18	18	32	708	178	47	400	227	187	51	22	22	22	0	0	3,581	283	283	283	283	3,888	
1984	286	0	307	0	241	0	0	241	18	18	89	82	264	0	0	0	0	0	0	1,290	284	284	284	284	1,584	
1985	817	0	837	0	0	0	0	454	128	28	327	173	227	0	0	0	0	0	0	2,991	284	284	284	284	3,284	
1988	333	113	348	0	0	0	0	183	27	40	181	58	68	0	0	0	0	0	0	1,356	313	313	313	313	1,671	
1987	38	113	57	107	0	0	0	12	27	70	181	58	51	0	0	0	0	0	0	608	343	343	343	343	948	
1988	139		107					0	0	0	0	30	0	0	0	0	0	0	0						0	
1984	484		221																							
2000	376		201																							
2003	428	19	243	0	0	0	0	97	0	0	4	12	2	0	0	0	0	0	0	56	859	0	0	0	859	

Notes:

- Based on average annual depletion rates for projects identified by the US Survey (see tables 1 and 6). The Sheep Dip Reservoir Project is not included in this evaluation of historic depletions because there are no BIA historic use data for it and there is no evidence of irrigation use, as opposed to stock use, on the project during the 1940s or 1950s. Also, although the available BIA annual crop report summaries explicitly indicate that no acres were irrigated on the Standing Rock Project in 1941, 1942 or 1945, the 1948 Navajo Report of the Secretary of the Interior indicates that a maximum of 15 acres was irrigated on the project during the period 1941-1946. Thus, up to about 27 acre-feet of additional depletion may have been made by irrigation uses on the Standing Rock Project in some years during the 1940s, assuming no water supply shortages to the irrigation uses made. No irrigation was led to the Sheep Dip Reservoir or Standing Rock projects by the ISC's 2003 crop field survey. For the spreader dam and other projects within McKinley County in the Chaco River drainage that were included in the 1938 State Engineer Hydrographic Survey, their survey found that 1,901 acres of land with crops, including native grass pasture, were irrigable as of 1936 conditions by spreading floodwaters when available or making diversions to irrigate acreage from Indian Creek, Kin Lazen (Kin Kibbin) Wash, Seven Lakes Draw and at Turner Ranch. Assuming a full water supply, irrigation uses by these spreader dams and projects at that time may have been able to deplete a total of about 3,230 acre-feet/year at an average depletion rate of about 1.7 acre-feet per acre. However, actual depletions by spreader dam uses on a total of up to about 1,845 acres of land on the Westbrook and Pit ranches as identified by the 1938 State Engineer Hydrographic Survey are assumed to be limited to annual water application rates of up to about 6 inches per acre, depending upon availability of floodwaters. No irrigated acres were linked to these spreader dam or other irrigation projects in the 2003 crop field survey. The US Survey asserts that the lands served by these projects in McKinley County have been acquired by the Navajo Nation in fee or by the United States to be held in trust on behalf of the Navajo Nation or Navajo allottees. The Red Wash Project is not included in this evaluation because there are no annual irrigated acres data for the project and there is no evidence that irrigation uses were made on project lands after 1935.
- Weighted average depletion rate for the Upper and Lower Captain Tom projects combined.
- Weighted average depletion rate for the Grey Mesa and Two Grey Hills projects combined.
- Assumed average depletion rate for the Mulholland Well Project based on depletion rate for the Well 14Mile-1 Project (the Mulholland Well Project was not included in the US Survey).
- Weighted average depletion rate for the Toadlena and Toadlena NE projects combined.
- Average depletion rate for the Lako Valley Project identified by the US Survey.
- Assumed average depletion rate for scattered non-project Navajo irrigation uses in the Chaco River drainage based on the locations of most non-project acres, which are generally scattered along the eastern base of the Chuska Mountains or in the southern portion of the San Juan River Basin in McKinley County (see map titled "San Juan River (NM) HSR, Tributary Projects and Non-Project Irrigation," provided by the Navajo Nation on September 7, 2011).
- Weighted average depletion rate for the Crystal, Lower Crystal and Sonsalia projects identified by the US Survey combined (or for the Crystal, Coyote Wash and Lower Crystal projects identified by the Ebert and Associates Report combined).
- Assumed average depletion rate for scattered non-project Navajo irrigation uses in the Chile Wash drainage based on the locations of most non-project acres, which are generally scattered throughout the drainage in New Mexico (see map titled "San Juan River (NM) HSR, Tributary Projects and Non-Project Irrigation," provided by the Navajo Nation on September 7, 2011).

Table 10. Historic Shorted At-Site Irrigation Depletions by Projects on Navajo Lands within Ephemeral Tributary Drainages in New Mexico¹
(Units: acre-feet)

Year	Captain Tour ²	Choskita ¹	Grey Mesa	Muholland Well	Neschtli Doodl	Northern Neschtli	Southern Neschtli	Sawtooth- Mountain	Sheep Bedona	Sinking Water	Toadna Toadna	Ton Al Shaw	Well 14A-78	Well 14Mile-1	Juan's Lake	Crownpoint School	Standing Rock	Scattered Uses	Total Depletion In Chico River Drainage	Whiskey Creek	Scattered Uses	Total Depletion In SJR Drainage Chino Wash below Chico: Beckabito	Total Depletion In Chino Wash below Chico: Beckabito	San Juan River Basin
1938	618	222																						
1937	987	342																						
1939	957	427	813	22	123			413	27	147	56	127	31	110	0	32						148	22	3,255
1940	922	33	611		61	0	444	11	178	6	45	40	93	0	25							182	23	2,674
1941	1,004	511	652	0	147	76	29	510	28	192	123	194	0	108	0	28	0			20		233	58	3,892
1942	631	500	485	15	133	120	27	561	28	213	104	166	0	15	26	21	0					228	58	3,487
1943	470	26	611	58	10	34	2	204	88	29	189	58	73	11	26	23						204	0	2,124
1944	581	238	518	6	133	118	27	322	122	28	176	91	109	9	52	23						216	0	2,755
1945	737	556	582	37	192	135	27	358	169	30	185	114	25	52	18	0						189	0	3,559
1946	412	231	439	54	31	28	132	0	108	0	0	11	22	58	11							223	0	1,747
1947	423	514	377	11	145	80	27	0	70	0	141	0	25	52	18							217	0	2,102
1948	1,017	700	448	22	135	79	25	226	104	30	141	37	34	25	33	20						173	0	3,251
1949	1,125	708	519	28	191	143	28	320	217	35	158	98	87	20	19	21						163	0	3,852
1950	44	389	86	0	14	15	3	2	0	0	0	0	0	31	2	16						157	0	762
1951	0	0	0	0	0	0	0	0	0	0	0	0	42	33	18							151	0	176
1952	805	708	512	0	78	18	0	302	232	38	207	113	62	65	62							80	0	3,321
1953	51	14	116		4	11	0	3	0	0	16	0	52	20	20							180	0	425
1955	0	11	85		9	0	0	0	0	0	18	0	40	20								183	33	376
1957	148	13	158		28	37	0	128	29	0	72	38	51	2								145	16	849
1958	109	28	98		0	28	0	104	18	0	34	22	36	51	33							166	28	728
1959	0	21	46		0	0	28	0	0	0	17	0	0	16	33							155	0	317
1963	581	43	238		9	8	18	353	80	24	200	113	89	51	22							142	17	1,988
1964	134	0	154		0	0	0	121	9	0	50	46	132	0	0							147	0	792
1965	409	0	418		0	0	0	227	64	14	184	86	113	0	0							147	0	1,842
1966	196	57	173		0	0	97	14	20	91	28	34	0	0	0							156	0	835
1967	19	57	29		0	0	6	14	35	81	28	28	0	0								171	0	474
1968	88		53		0	0	0	0	0	0	15	0	0	0								0	0	
1994	247		110																			183	33	376
2000	188		100																			145	16	849
2003	214	9	121		0	0	0	0	0	0	2	6	1	0	0							166	28	728
																						155	0	317
																						142	17	1,988
																						147	0	792
																						147	0	1,842
																						156	0	835
																						171	0	474
																						183	33	376
																						145	16	849
																						166	28	728
																						155	0	317
																						142	17	1,988
																						147	0	792
																						147	0	1,842
																						156	0	835
																						171	0	474

Notes:

¹ Based on historic full supply at-site irrigation depletions (see table 8), an assumed average annual water supply shortage of 50 percent for the irrigation uses made from surface water sources, and no shortages for the Mutholland Well, Well 14A-78, Well 14Mile-1, and Crownpoint School projects supplied from ground water. Also, up to about 14 acre-feet of additional shorted depletion may have been made by irrigation uses on the Standing Rock Project in some years during the 1940s after shortages. The irrigation projects in McKinley County that were included in the 1938 State Engineer Hydrographic Survey may have depleted up to approximately 829 acre-feet per year assuming actual depletions by spreader dams were limited by supply to an annual water application rate of up to about 6 inches/acre in years when sufficient floodwaters were available and assuming floodwaters were available for effective irrigation use in about 50 percent of the years on average (1,945 acres x 0.5 feet x 50%), and assuming an average water supply shortage or following of 50 percent for other irrigation projects (256 acres x 1.7 acre-feet/acre x 50%). No irrigation was tied to these projects by the ISC's 2003 crop field survey. The US Survey asserts that the irrigated lands associated with these spreader dams or other irrigation uses are lands now owned by the Navajo Nation in fee or held by the United States in trust on behalf of the Navajo Nation or allottees. See table 11 for information regarding the lack of adequacy of water supply for specific BIA projects.

² If water supply conditions permit, the Captain Tom and Choskita projects may store significant amounts of water relative to the amount of acres historically irrigated (see table 6), and in some years the reservoirs may be operated to lessen water supply shortages after the spring runoff from the Chuska Mountains recedes. However, Captain Tom Reservoir and Chuska Lake appear to be supplied primarily as off-stream reservoirs, and Chuska Lake at present is used primarily for recreational and fishery purposes. Also, according to the US Survey, these two projects have substantially greater average annual diversion requirements (6.87 acre-feet per acre for the Upper Captain Tom area and 15.11 acre-feet per acre for the Choskita Project) than all other projects except the Gray Mesa Project (see table 8).

Table 11. Assumed Percentage Impact on San Juan River Flow of At-Site Irrigation Depletions on Navajo Lands in Ephemeral Tributary Drainages

Source of Water Supply	Approx. Miles to San Juan River	Original Project Size (acres) ¹	Diversion Capacity (cfs) ²	Irrigation Reservoir Storage Capacity ³		Depletion of San Juan River Flow in Percent of At-Site Depletion ⁴		
				Reservoir Name	Original (af)		As of 1986 (af)	
Chaco River Drainage:								
Captain Tom	Captain Tom and Todilhil Washes	42	3,700	60	Captain Tom Reservoir ⁵	1,020	800	45%
Choiska ⁶	Red Willow Wash and tributary	100	500	unknown	Whiskey and Chuska Lakes ⁷	2,500	2,100	0%
Crownpoint School	Well 15B-6 (1196' depth)	NA	22	NA	NA	0	0	0%
Grey Mesa ⁸	Captain Tom Wash and tributaries	52	500	11	several ponds ⁹	0	0	25%
Mulholland Well	Well 15B-10 (1680' depth, Mesa Verde)	NA	60	NA	NA	0	0	0%
Naschitti Drolet	Naschitti Wash	81	200	1	none	0	0	0%
Naschitti Northern	Coyote Wash tributary	81	600	1	Naschitti Reservoir ¹⁰	700	0	0%
Naschitti Southern	Naschitti Wash tributary	81	50	1	Long Lake ¹¹	1,500	1,200	0%
Sanostee-Beautiful Mountain	Sanostee Wash	51	1,000	10	10 ponds ⁹	100	20	25%
Sheep Dip Reservoir	Tobilhaskidi and Tseyaatohi Washes	50	120	2	5 reservoirs ¹²	700	200	25%
Sheep Springs	Tuntsa Wash	65	500	2	none	0	0	25%
Standing Rock	Standing Rock Wash	130	34	unknown	none	0	0	0%
Stinking Water	Tohilchoni Wash tributary	45	50	2	none	0	0	25%
Toadlena	Todilhil Wash	53	300	4	4 ponds ⁹	20	10	25%
Tocito	Tocito Wash	48	250	4	none	0	0	25%
Toh Al Sissy	Sanostee Wash	36	300	6	none	0	0	50%
Well 14A-79	Well 14A-79 (873' depth, Dalton SS)	NA	100	NA	Bass Lake	5	5	0%
Well 14Mile-1	Well 14Mile-1 (1150' depth, Gallup SS)	NA	100	NA	NA	0	0	0%
1938 Hydrographic Survey ¹³	Chaco River tributaries	120	1,901	NA	Tanner Lake, Farris Lake	unknown	unknown	0%
Scattered Irrigation Uses ¹⁴	-----	60-130	-----	-----	-----	-----	-----	0%
Chinle Wash Drainage:								
Crystal ¹⁵	Crystal Creek	177	480	unknown	none	0	0	0%
Whiskey Creek	Little Whiskey Creek	180	100	unknown	none	0	0	0%
Scattered Irrigation Uses ¹⁶	-----	175-180	-----	-----	-----	-----	-----	0%
San Juan River Drainage below Chaco River:								
Beclabito	Shoe Game Wash	5	80	3	unnamed ¹⁷	15	0	90%
Red Wash	Red Wash	1	30	unknown	none	0	0	100%

'NA' means that distance from the San Juan River, diversion capacity, or reservoir storage, as indicated, is not applicable to this analysis.

Notes:

- ¹ The original project acres for Navajo tributary irrigation projects are from "Inventory of Navajo Indian Irrigation Projects," prepared by the SCS and dated August 1986 (1986 SCS Inventory); except, that data for the Crownpoint School and Standing Rock Project are from the 1948 Navajo Report of the Secretary of the Interior, and the total project acres for irrigation uses described by the 1938 State Engineer Hydrographic Survey are from that survey's map sheets.
- ² For the Sanostee and Toadlena projects, it is not clear whether the diversion information from the SCS reflects diversion capacities, number of diversions, or number of farm delivery take outs. The diversion quantity shown is equal to the number of ponds for each project. For the Choiska and Crystal projects, the 1986 SCS Inventory indicates 1 for the diversion quantity, and it is not clear whether this relates to 1 cfs diversion for the original project acreages of about 500 acres each. The US Survey did not report or evaluate ditch diversion capacities or normal diversion rates.
- ³ Reservoir data for Navajo tributary irrigation projects are as reported in the 1986 SCS Inventory; except, for Bass Lake is from US Survey. Actual reservoir capacities are reviewed separately in this report.
- ⁴ Assumed based on the average channel loss rate for Morgan Lake releases (about 0.4 cfs per mile for a continuous flow of 22 cfs) and the river channel mileage between the project diversion and the San Juan River (see figure 1). The tributary irrigation projects generally are small with limited diversion capability. For the Captain Tom Project, the river depletion impact is assumed based on: (1) weighting the river depletion impacts from figure 1 for the Upper Captain Tom project unit located in the Newcomb quadrangle and the Lower Captain Tom project unit located mostly in the Newcomb SE quadrangle by the amounts of acres for each project unit claimed by the US Survey (32 percent); and (2) adding over 10 percent to the resulting weighted river depletion impact in recognition that Captain Tom Reservoir during the irrigation season may supply a relatively small but significant amount of the project diversion demand each year from storage water that was diverted from Captain Tom Wash during periods of spring snowmelt runoff from the Chuska Mountains when flows were reaching the river prior to the irrigation season. For the Beclabito Project, the river depletion impact was assumed based on its location at the corner of the Sallies Spring and Beclabito quadrangles.
- ⁵ Captain Tom Reservoir is an off-stream storage facility used to store water diverted from Captain Tom Wash for irrigation use on the project. The ability to store water in the reservoir is limited by the diversion capability for the project in addition to seasonal lack of stream flows. The Captain Tom Project also receives water from To-dil-hil Wash, a tributary of Captain Tom Wash. Different estimates of the reservoir capacity range from about 1,056 acre-feet (US Survey) to 1,170 acre-feet (Navajo Nation Department of Water Resources). The capacity for the reservoir is evaluated in the section of this report reviewing reservoir storage.

Table 11. Assumed Percentage Impact on San Juan River Flow of At-Site Irrigation Depletions on Navajo Lands in Ephemeral Tributary Drainages
(continued)

Notes (continued):

- ⁶ While large-scale maps show Willow Creek/Red Willow Wash as a continuous watercourse from Whiskey Lake to the Chaco River, detailed US Geological Survey topographic mapping suggests that the wash flows into a small dry lake bed below the Choiska Project with a stream channel then beginning again about a mile downstream of the lake bed.
- ⁷ Whiskey Lake in the Chuska Mountains is used for recreational purposes and irrigation. The storage capacity of the lake (1,000 acre-feet original and 900 acre-feet as of 1986 according to the 1986 SCS Inventory) is to a significant extent on top of natural lake storage and reflects man-made storage created by constructing a dam to increase the size of the lake (see map of "Whiskey Lake, Proposed Reservoir Site," prepared by the US Indian Service and dated June 29, 1950). Outflow from the lake may be used to irrigate a small amount of acres along Red Willow Wash above Red Willow Ditch. Chuska Lake had an original storage capacity of 1,500 acre-feet and as of 1986 had a storage capacity of 1,200 acre-feet (1986 SCS Inventory). Water from Chuska Lake serves the Choiska Project (Red Willow Ditch), and the reservoir is used for recreational purposes and irrigation. Different estimates of the reservoir capacity for Whiskey Lake range from 8,000 acre-feet (US Survey) to 7,458 acre-feet (Navajo Nation Department of Water Resources), and the Navajo Nation reports a reservoir capacity of about 3,345 acre-feet for Chuska Lake (see table 6, note 14). Reservoir capacities for Whiskey and Chuska lakes are evaluated separately in this report.
- ⁸ Project data for the Grey Mesa Project covers also the Two Grey Hills Project, which projects share a common point of diversion from Captain Tom Wash.
- ⁹ The small storage ponds on the Grey Mesa, Sanostee and Toadlena projects appear to be off-stream or on-farm ponds used possibly as much for stock watering purposes as on-farm irrigation. The Sanostee Project includes the Beautiful Mountain project unit.
- ¹⁰ The 1986 SCS Inventory notes that the Naschitti Northern Project diversion was washed out, the Naschitti Reservoir was abandoned along with the project, and there was no longer any trace of the project in the field as of 1986.
- ¹¹ Long Lake in the Chuska Mountains may be used for recreational purposes as well as irrigation. Some Navajos have expressed a desire to construct a pipeline from Long Lake to the Naschitti Southern Project area in order to be able to effectively deliver storage water. The 1986 SCS Inventory notes that as of 1986, there was no longer any trace of the Naschitti Southern Project in the field. The reservoir capacity for Long Lake is evaluated separately in this report.
- ¹² The Sheep Dip Reservoir Project reservoirs do little more than moderate flow, and do not store sufficient water for fall season irrigation on the project (1986 SCS Inventory).
- ¹³ Includes spreader dam irrigation and other irrigation uses from Indian Creek, Kin Lazen (Kin Klizhin) Wash, Seven Lakes Draw and other drainages that were included in the 1938 State Engineer Hydrographic Survey.
- ¹⁴ Includes small irrigation uses scattered in the Chaco River drainage that are not associated with Navajo Nation or BIA irrigation projects. The amount of acres and water use for any particular scattered irrigation use in the drainage is small. The scattered uses are located in the range of 30-80 miles south of the San Juan River, are generally situated along the eastern base of the Chuska Mountains and in McKinley County along the southern portion of the Chaco River drainage, and are generally associated with small surface water diversions, springs or well water.
- ¹⁵ Project data for the Crystal Project appears to cover also the Lower Crystal and Sonsela projects identified by the US Survey (or the Coyote Wash and Lower Crystal projects identified by the Ebert and Associates Report, respectively). These projects are in proximity to each other on the same stream system.
- ¹⁶ Includes small irrigation uses scattered in the Chinle Wash drainage that are not associated with Navajo Nation or BIA irrigation projects. The amount of acres and water use for any particular scattered irrigation use in the drainage is very small. The scattered uses are located throughout the drainage in New Mexico, and are generally associated with small surface water diversions, springs or well water.
- ¹⁷ The small storage reservoir for the Beclabito project was abandoned along with the project by or about 1950 (1986 SCS Inventory).

Table 12. Historic Depletions of San Juan River Flows by Projects on Navajo Lands within Ephemeral Tributary Drainages in New Mexico¹
(Units: acre-feet)

Year	Captain Tom (45%)	Chokisa (0%)	Grey Mesa (20%)	Muholland Well (0%)	Naschilli Driplet (0%)	Northern Naschilli (0%)	Southern Naschilli (0%)	Sawtooth-Bearhill Mountain (25%)	Sheep Springs (25%)	Stinking Water (25%)	Tadilana (25%)	Tootbo (25%)	Toh-Ai Slay (50%)	Well 14A-79 (0%)	Well 14Mile-1 (0%)	Juan's Lake ^a (0%)	Crownpoint School (0%)	Standing Rock (0%)	Scattered Uses (0%)	Total Depletion in Chaco River Drainage (acre-feet)	Whiskey Creek (0%)	Scattered Uses (0%)	Depletion in Chiricahua Drainage (acre-feet)	Total Depletion in San Juan River Basin (acre-feet)	
																									344
1836	278	0	0	0	0	0	28	28	0	0	6	5	5	0	0	0	0	0	0	344	0	0	0	344	
1837	444	0	0	0	0	0	61	30	0	0	5	34	34	0	0	0	0	0	574	0	0	0	574		
1839	430	0	153	0	0	0	103	7	37	14	14	14	64	0	0	0	0	0	808	0	0	0	808		
1940	415	0	153	0	0	0	111	3	44	1	23	0	23	0	0	0	0	0	750	0	0	0	750		
1941	452	0	183	0	0	0	127	7	48	31	97	0	97	0	0	0	0	0	825	0	0	0	825		
1942	284	0	121	0	0	0	140	40	7	53	28	64	64	0	0	0	0	0	825	0	0	0	825		
1943	212	0	153	0	0	0	0	22	7	47	14	36	36	0	0	0	0	0	795	0	0	0	795		
1944	282	0	128	0	0	0	81	30	7	44	23	55	55	0	0	0	0	0	630	0	0	0	630		
1945	332	0	146	0	0	0	90	50	8	41	36	57	57	0	0	0	0	0	758	0	0	0	758		
1946	188	0	110	0	0	0	33	0	0	27	0	0	0	0	0	0	0	0	355	0	0	0	355		
1947	190	0	94	0	0	0	0	16	0	35	0	0	0	0	0	0	0	0	337	0	0	0	337		
1948	456	0	112	0	0	0	56	26	8	35	9	17	17	0	0	0	0	0	722	0	0	0	722		
1949	506	0	130	0	0	0	0	80	54	9	40	24	33	0	0	0	0	0	876	0	0	0	876		
1950	20	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44	0	0	0	44		
1951	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1952	362	0	128	0	0	0	76	58	9	52	28	28	28	0	0	0	0	0	713	0	0	0	713		
1953	23	0	28	0	0	0	1	0	0	4	0	0	0	0	0	0	0	0	57	0	0	0	57		
1955	0	0	21	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	26	0	0	0	26		
1957	67	0	40	0	0	0	32	7	0	18	10	10	10	0	0	0	0	0	173	0	0	0	173		
1958	49	0	24	0	0	0	26	4	0	8	6	6	18	0	0	0	0	0	136	0	0	0	136		
1959	0	0	12	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	16	0	0	0	16		
1963	252	0	60	0	0	0	88	22	6	50	28	28	49	0	0	0	0	0	566	0	0	0	566		
1964	60	0	36	0	0	0	30	2	0	12	12	12	66	0	0	0	0	0	221	0	0	0	221		
1965	184	0	105	0	0	0	57	16	4	41	22	22	57	0	0	0	0	0	484	0	0	0	484		
1966	75	0	43	0	0	0	24	3	5	23	7	7	17	0	0	0	0	0	197	0	0	0	197		
1967	9	0	7	0	0	0	1	3	9	23	7	7	13	0	0	0	0	0	72	0	0	0	72		
1968	31	0	13	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0		
1994	111	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	141	0	0	0	141		
2000	85	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2003	96	0	30	0	0	0	12	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0		

Notes:
¹ Based on the shared at-irrigation depletions for each project (see table 10) and the average percentage impact on San Juan River flows of irrigation diversions and uses for each project (percentage impacts shown are from table 11). Depletions of San Juan River flows by irrigation uses shown herein do not include impacts caused by evaporation from water supply reservoirs or on-farm ponds, or impacts caused by stock uses from associated reservoirs or farm ponds. Also, spreader dam and other irrigation uses within McKinley County in the Chaco River drainage are assumed to have no measurable depletion impact on San Juan River flows.