

RESERVOIR SEDIMENTATION
DATA SUMMARY

Roosevelt - Salt River Project

60-4

NAME OF RESERVOIR

DATA SHEET NO.

DAM	1. OWNER Salt River Valley Water Users' Association			2. RIVER Salt River & Tonto Creek			3. STATE Arizona									
	4. SEC. 20 TWP. 4N RANGE 12E			5. NEAREST TOWN Globe			6. COUNTY Gila									
	7. STREAM BED ELEV. 1902			8. TOP OF DAM ELEV. 2142			9. SPILLWAY CREST ELEV. 2136									
RESERVOIR	10. STORAGE ALLOCATION 1/		11. ELEVATION TOP OF POOL.		12. SURFACE AREA ACRES		13. STORAGE ACRE- FEET		14. ACCUMULATED ACRE- FEET		15. DATE STORAGE BEGAN					
	a. FLOOD CONTROL															
	b. POWER										May 1909 2/					
	c. WATER SUPPLY		2136		17,826				1,522,200		16. DATE NORMAL OPER. BEGAN					
	d. IRRIGATION															
	e. CONSERVATION															
	f. INACTIVE		1902-1954		Depleted		Depleted		Depleted		May 15, 1907 3/					
WATERSHED	17. LENGTH OF RESERVOIR Salt R. Arm: 11.7 MILES Tonto Cr. Arm: 10.0						18. AV. WIDTH OF RESERVOIR Salt R. Arm: 2.0 MILES Tonto Cr. Arm: 1.5									
	19. TOTAL DRAINAGE AREA 5,760 SQ. MI.						20. MEAN ANNUAL PRECIPITATION 20.26 4/ INCHES									
	21. NET SEDIMENT CONTRIBUTING AREA 5,760 SQ. MI.						22. MEAN ANNUAL RUNOFF 2.63 4/ INCHES									
	23. LENGTH 117 4/ MILES AV. WIDTH 50 MILES						24. MEAN ANNUAL RUNOFF 807,000 AC.-FT.									
	25. MAX. ELEV. 11,000 MIN. ELEV. 2,136						26. CLIMATIC CLASSIFICATION Semiarid									
SURVEY DATA	27. DATE OF SURVEY		28. PERIOD YEARS		29. ACCL. YEARS		30. TYPE OF SURVEY		31. NO. OF RANGES OR CONTOUR INT.		32. SURFACE AREA ACRES		33. CAPACITY ACRE- FEET		34. C/W RATIO AC.-FT. PER SQ. MI.	
	Gates															
	Closed 1909		0		0		Topo.		5-ft interval		17,826		1,522,200		264.27	
	Dec. 15, 1914		5.67		5.67		Range		(Not avail-)		17,787		1,495,460		259.63	
	Oct. 15, 1916		1.83		7.54		Range		able in		17,774		1,460,150		253.50	
	Sept. 1, 1925		8.90		16.44		Range		Bureau of		17,714		1,425,813		247.54	
	Jan. 1, 1935		9.33		25.77		Range		Reclamation		17,650		1,418,013		246.18	
	Jan. 1, 1939		4.00		29.77		Range		Office,		17,528		1,398,430		242.78	
	Jan. 1, 1946		7.00		36.77		Range		Denver, Colo.		17,315		1,381,580		239.86	
	26. DATE OF SURVEY		34. PERIOD ANNUAL PRECIPITATION		35. PERIOD WATER INFLOW ACRE- FEET		36. WATER INFL. TO DATE AC.-FT.									
	Gates															
	Closed 1909		-		-		-		-		-		-		-	
	Dec. 15, 1914		16.95		680,150		1,068,500		3,856,453		680,150		3,856,453			
	Oct. 15, 1916		21.61		2,321,260		2,560,905		4,247,905		1,074,849		8,104,358			
	Sept. 1, 1925		19.14		793,153		1,452,071		7,059,061		922,349		15,163,419			
Jan. 1, 1935		18.68		634,274		1,226,221		5,917,780		818,052		21,081,199				
Jan. 1, 1939		19.22		739,850		1,000,693		2,959,400		807,544		24,040,599				
Jan. 1, 1946		18.93		734,993		2,091,578		5,144,950		793,732		29,185,549				
26. DATE OF SURVEY		37. PERIOD SEDIMENT DEPOSITS ACRE- FEET		38. TOTAL SED. DEPOSITS TO DATE ACRE- FEET.												
Gates																
Closed 1909		-		-		-		-		-		-		-		
Dec. 15, 1914		26,740		4,716		0.819		26,740		4,716		0.819				
Oct. 15, 1916		35,310		19,295		3.350		62,050		8,229		1.429				
Sept. 1, 1925		34,337		3,858		0.670		96,387		5,863		1.018				
Jan. 1, 1935		7,800		836		0.145		104,187		4,043		0.702				
Jan. 1, 1939		19,583		4,896		0.850		123,770		4,158		0.722				
Jan. 1, 1946		16,850		2,407		0.418		140,620		3,824		0.664				
26. DATE OF SURVEY		39. AV. DRY WGT. LBS. PER CU. FT.		40. SED. DEP. TONS PER SQ. MI.-YR.		41. STORAGE LOSS PCT.		42. SED. INFLOW PPM								
Gates																
Closed 1909		-		-		-		-		-		-		-		
Dec. 15, 1914		70 est.		1248.65		1248.65		0.309		1.757		7779.76		7779.76		
Oct. 15, 1916		70 est.		5107.41		2178.65		0.540		4.076		9326.43		8590.45		
Sept. 1, 1925		70 est.		1021.48		1552.04		0.385		6.332		5457.68		7132.04		
Jan. 1, 1935		70 est.		221.07		1070.27		0.266		6.844		1478.86		5545.12		
Jan. 1, 1939		70 est.		1295.91		1100.76		0.273		8.131		7424.51		5776.47		
Jan. 1, 1946		70 est.		637.28		1012.33		0.251		9.238		3674.61		5405.95		

1/ Storage allocation breakdown not known; max. pool values are shown.
2/ Because of flood damage and loss of sediment accumulation after 1907, 1909 is listed as the date storage began.

(Footnotes continued under Item 47.)

26.	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION														
DATE OF SURVEY	Crest														
	0-20	20-40	40-60	60-80	80-100	100-120	120-140	140-160	160-180						
	Below PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION														
1946	2.86	8.56	5.48	8.24	15.48	10.5	9.96	18.60	15.28						
26.	44. REACH DESIGNATION PERCENT OF TOTAL ORIGINAL LENGTH OF RESERVOIR														
DATE OF SURVEY	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	-105	-110	-115	-120	-125
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN REACH DESIGNATION														
45.	RANGE IN RESERVOIR OPERATION														
WATER YEAR		MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR		MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.						
Note: Data for Item		45 shown on attached sheet													
46.	ELEVATION-AREA-CAPACITY DATA 6/														
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY							
1958	0	0	2030	5470	155,560	2110	14,660	958,650							
1960	64	90	2040	6235	214,220	2120	16,035	1,112,070							
1970	293	2034	2050	7410	281,620	2130	17,150	1,277,920							
1980	755	6980	2060	8720	362,590	2136	17,135	1,381,580							
1990	1540	18100	2070	10155	456,180										
2000	2425	37640	2080	11290	563,600										
2010	3400	67550	2090	12765	683,730										
2020	4410	106470	2100	13760	816,800										
47.	REMARKS AND REFERENCES														
3/ Date of project operation; date of normal dam operation not available. (Normal operation began between May 1909 and February 1911.)															
4/ Distance scaled from illustrated map and from Figure 1, University of Arizona, Technical Bulletin No. 76. Data from this publication give the precipitation average over high, medium, and low elevations for the basin.															
5/ Extended by use of 1946 survey to Elev. 2136, errors noted in original survey not corrected.															
6/ Figures obtained from the area-capacity table based on Jan. 1, 1946 reservoir survey.															
Note: The reservoir capacity shown in W.S.P. #1119, 1948, is 1,382,000 acre-ft.															
48. AGENCY SUPPLYING DATA Bureau of Reclamation					49. DATE April 15, 1952										

Range in Reservoir Operation
Roosevelt Reservoir

PROJECT

Salt River Project, Arizona

COMPILED BY D. W. H.
DATE 2/11/52

CHECKED BY
DATE

SOURCE OF DATA

Project Histories

	Water Year	Max. Elev. M.S.L.	Min. Elev. M.S.L.	Inflow acre-feet	Water Year	Max. Elev. M.S.L.	Min. Elev. M.S.L.	Inflow acre-feet
Max. W.S. Elev. 2122 feet	1910	2025	1984	454,365	1943	2125	2102	595,101
	1911	2069	1963	800,250	1944	2107	2086	427,664
	1912	2079	2051	548,027	1945	2098	2081	349,100
W.S. Elevation 2127 feet, way raised 5 feet August 1913	1913	2069	2033	401,857				
	1914	2044	2012	530,770				
	1915	2127	2012	1,782,758				
	1916	2127	2106	2,582,996				
	1917	2127	2092	816,505				
	1918	2103	2590	394,512				
	1919	2073	2036	991,274	NOTE: Inflow figures include Salt River at Intake and Tonto Creek at Roosevelt, Arizona			
	1920	2127	2072	1,890,016				
	1921	2100	2068	546,283				
	1922	2103	2072	688,488				
	1923	2080	2052	612,431				
15-foot spillway, installed December 1, 1923	1924	2105	2053	903,937				
	1925	2066	1990	328,067				
	1926	2075	1990	783,887				
	1927	2093	2038	959,292				
	1928	2068	2007	317,279				
	1929	2005	1962	471,874				
	1930	1995	1952	397,997				
	1931	2019	1952	639,182				
	1932	2114	1968	1,394,960				
	1933	2099	2076	473,897				
Max. W.S. 2142 feet, gates installed December 1, 1923	1934	2076	1975	263,624				
	1935	2071	1962	760,101				
	1936	2070	2026	689,187				
	1937	2107	2038	1,018,347				
	1938	2082	2007	398,797				
	1939	2008	1957	381,849				
	1940	1937	1955	309,658				
	1941	2136	1955	2,267,919				
	1942	2131	2117	609,213				