

RESERVOIR SEDIMENTATION
DATA SUMMARY

Horseshoe

60-24

NAME OF RESERVOIR

DATA SHEET NO.

DAM	1. OWNER <u>Salt River Valley Water Users Association</u>			2. RIVER <u>Verde</u>		3. STATE <u>Arizona</u>			
	4. SEC. <u>2</u> TWP. <u>7N</u> RANGE <u>6E</u>		5. NEAREST TOWN <u>Phoenix</u>			6. COUNTY <u>Maricopa</u>			
	7. STREAM BED ELEV. <u>1915</u>			8. TOP OF DAM ELEV. <u>2044</u>		9. SPILLWAY CREST ELEV. <u>1/2026</u>			
RESERVOIR	10. STORAGE ALLOCATION	11. ELEVATION TOP OF POOL	12. SURFACE AREA ACRES	13. STORAGE ACRE- FEET	14. ACCUMULATED ACRE- FEET	15. DATE STORAGE BEGAN			
	a. FLOOD CONTROL					Nov. 1945			
	b. POWER								
	c. WATER SUPPLY								
	d. IRRIGATION	<u>2026</u>	<u>2,719</u>	<u>142,830</u>	<u>142,830</u>	16. DATE NORMAL OPER. BEGAN			
	e. CONSERVATION					Nov. 1945			
f. INACTIVE									
WATERSHED	17. LENGTH OF RESERVOIR <u>8.73</u> MILES			AV. WIDTH OF RESERVOIR <u>0.49</u> MILES					
	18. TOTAL DRAINAGE AREA <u>5,618</u> SQ. MI.		22. MEAN ANNUAL PRECIPITATION <u>19.49 (26)</u> INCHES						
	19. NET SEDIMENT CONTRIBUTING AREA <u>5,614</u> SQ. MI.		23. MEAN ANNUAL RUNOFF <u>0.75 (5)</u> INCHES						
	20. LENGTH <u>21.0</u> MILES	AV. WIDTH <u>26.8</u> MILES		24. MEAN ANNUAL RUNOFF <u>286,800. (5)</u> AC.-FT.					
	21. MAX. ELEV. <u>12,670</u>		MIN. ELEV. <u>1915</u>		25. CLIMATIC CLASSIFICATION <u>Semi-arid</u>				
SURVEY DATA	28. DATE OF SURVEY	27. PERIOD YEARS	28. ACCL. YEARS	29. TYPE OF SURVEY	30. NO. OF RANGES OR CONTOUR INT.	31. SURFACE AREA ACRES	32. CAPACITY ACRE- FEET	33. C/W RATIO AC.-FT. PER SQ. MI.	
	<u>Nov. 1945</u> <u>Oct. 1950</u>	<u>4.9</u>	<u>4.9</u>	<u>Aerial Range (D)</u>	<u>5 feet</u> <u>18 ranges</u>	<u>2,719</u>	<u>144,030</u> <u>142,830</u>	<u>25.4</u>	
	26. DATE OF SURVEY	34. PERIOD ANNUAL PRECIPITATION		35. PERIOD WATER INFLOW ACRE- FEET		36. WATER INFL. TO DATE AC.-FT.			
	<u>Nov. 1945</u> <u>Oct. 1950</u>	<u>18.8</u>		a. MEAN ANNUAL <u>279,400</u>	b. MAX. ANNUAL <u>497,400</u>	c. PERIOD TOTAL <u>1,369,000</u>	d. MEAN ANNUAL <u>279,400</u>	e. TOTAL TO DATE <u>1,369,000</u>	
	26. DATE OF SURVEY	37. PERIOD SEDIMENT DEPOSITS ACRE- FEET			38. TOTAL SED. DEPOSITS TO DATE ACRE- FEET.				
	<u>Nov. 1945</u> <u>Oct. 1950</u>	<u>1,200</u>			a. PERIOD TOTAL <u>1,200</u>	b. AV. ANNUAL <u>245</u>	c. PER SQ. MI.-YEAR <u>0.044</u>		
	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	
	<u>Nov. 1945</u> <u>Oct. 1950</u>			a. PERIOD	b. TOTAL TO DATE	a. AV. ANNUAL <u>0.17</u>	b. TOT. TO DATE <u>0.84</u>	c. PERIOD	d. TOT. TO DATE

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION													
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION													
	Data not available													

26. DATE OF SURVEY	44. REACH DESIGNATION PERCENT OF TOTAL ORIGINAL LENGTH OF RESERVOIR														
	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														
Data not available															

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.
1946	1969.83	1921.60	214,700				
1947	1968.47	1921.05	197,000				
1948	1953.05	1915.91	236,200				
1949	1994.89	1916.22	497,400				
1950	1970.64	1919.28	237,700				

46. ELEVATION-AREA-CAPACITY DATA								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
1915	0	0	1955	743	14,520	1995	1,960	70,600
1920	99	260	1960	910	18,630	2000	2,092	80,750
1925	183	950	1965	1,110	23,670	2005	2,200	91,480
1930	278	2,140	1970	1,293	29,790	2010	2,300	102,740
1935	362	3,710	1975	1,378	36,440	2015	2,432	114,590
1940	447	5,750	1980	1,558	43,750	2020	2,550	127,030
1945	532	8,180	1985	1,738	52,020	2025	2,690	140,130
1950	632	11,110	1990	1,861	61,080	2030	2,859	153,980

47. REMARKS AND REFERENCES		
1/Top of spillway gates		
48. AGENCY SUPPLYING DATA	Bureau of Reclamation	49. DATE May 1, 1962

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET BELOW, AND ABOVE, CREST ELEVATION											
	111-106	106-96	96-86	86-76	76-66	66-56	56-46	46-36	36-26	26-16	16-6	6-Top of spillway gates
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATIONS												
Oct. 1950 Nov. 1963 4/	7	51	63	26	Data not available			4	-5	-8	-7	-6

26. DATE OF SURVEY	44. REACH DESIGNATION PERCENT OF TOTAL ORIGINAL LENGTH OF RESERVOIR													
	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	-105	-110	-115	-120
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN REACH DESIGNATION														
Data not available														

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC.-FT.
1946	1969.83	1921.60	214,700	1959	1980.20	1929.15	180,200
1947	1958.47	1921.05	197,000	1960	2025.88	1929.40	394,800
1948	1953.05	1915.91	236,200	1961	1976.07	1927.59	164,200
1949	1994.89	1916.22	497,400	1962	1979.72	1927.45	320,800
1950	1970.64	1919.28	237,700	1963	1962.20	1925.22	180,600
1951	1988.16	1916.44	211,000	1964	1970.38	1924.40	242,700
1952	2026.13	1919.65	623,600				
1953	1976.93	1919.63	197,000				
1954	1998.81	1924.34	291,700				
1955	1992.91	1924.54	212,700				
1956	1995.42	1927.33	137,300				
1957	2000.38	1927.57	353,100				
1958	2014.24	1926.19	460,500				

46. ELEVATION-AREA-CAPACITY DATA								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
1927.5	10	11	1970	1,264	25,210	2015	2,458	110,639
1930	22	50	1975	1,412	31,899	2020	2,576	123,224
1935	133	425	1980	1,563	39,336	2025	2,730	136,488
1940	247	1,373	1985	1,727	47,562	2026	2,762	139,238
1945	440	3,140	1990	1,862	56,534			
1950	619	5,797	1995	1,986	66,152			
1955	813	9,370	2000	2,111	76,394			
1960	986	13,864	2005	2,234	87,256			
1965	1,137	19,198	2010	2,331	98,668			

47. REMARKS AND REFERENCES

1/ Capacity increased 76,130 acre-feet by installation of spillway gates in June 1950. Top of the gates is elev. 2026.

2/ Temperature range is average low for January and average high for July.

3/ Contour interval was 2.5 feet below elev. 1975 and 5 feet above elev. 1975.

4/ These percentages represent the 3,592 acre-feet capacity loss for the period October 1950 to November 1963. Negative values denote gain in capacity.

48. AGENCY MAKING SURVEY Salt River Valley Water Users' Association
 49. AGENCY SUPPLYING DATA Bureau of Reclamation
 50. DATE July 22, 1966