

Pool No. 5A, 9-Ft. Channel Project
Upper Mississippi River

27-5

RESERVOIR SEDIMENTATION
DATA SUMMARY

NAME OF RESERVOIR

DATA SHEET NO.

1. OWNER Dept of Army, C of E		2. RIVER Mississippi		3. STATE Minn., Wis.			
4. SEC. 9 TWP. 107 N RANGE 7 W		5. NEAREST TOWN Winona		6. COUNTY Winona-Buffalo			
7. STREAM BED ELEV. 630		8. TOP OF DAM ELEV. 664.0		9. SPILLWAY CREST ELEV. 651.0			
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					6 July 1936	
	b. POWER						
	c. WATER SUPPLY						
	d. IRRIGATION						
	e. CONSERVATION						
f. ACTIVE Navigation	651.0	7,000	30,000	30,000	15 Dec 1936		
17. LENGTH OF RESERVOIR 9.6 (main channel mileage)		MILES		AV. WIDTH OF RESERVOIR 1.1 MILES			
18. TOTAL DRAINAGE AREA 59,100		SQ. MI.		22. MEAN ANNUAL PRECIPITATION 27.85 2/ INCHES			
19. NET SEDIMENT CONTRIBUTING AREA		SQ. MI.		23. MEAN ANNUAL RUNOFF 5.07 (17) INCHES			
20. LENGTH 115 MILES		AV. WIDTH 106 MILES		24. MEAN ANNUAL RUNOFF 15,860,000 (17) AC.-FT.			
21. MAX. ELEV. 1600		MIN. ELEV. 630		25. CLIMATIC CLASSIFICATION subhumid			
26. 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.
6 July 1936			Range (D)	35	7,000	30,000	—
Jan-Feb 1945	9.6	9.6	Range (D)	17		28,690	—
26. DATE OF SURVEY	34. PERIOD ANNUAL PRECIPITATION	35. PERIOD WATER INFLOW ACRE-FEET			36. WATER INFL. TO DATE AC.-FT.		
Jan-Feb 1945	29.22 2/	a. MEAN ANNUAL	b. MAX. ANNUAL	c. PERIOD TOTAL	a. MEAN ANNUAL	b. TOTAL TO DATE	
		18,288,000	26,080,000	182,880,000	18,288,000	182,880,000	
		3/		3/	3/	3/	
26. DATE OF SURVEY	37. PERIOD SEDIMENT DEPOSITS ACRE-FEET			38. TOTAL SED. DEPOSITS TO DATE ACRE-FEET			
Jan-Feb 1945	a. PERIOD TOTAL	b. AV. ANNUAL	c. PER SQ. MI.-YR.	a. TOTAL TO DATE	b. AV. ANNUAL	c. PER SQ. MI.-YR.	
	3,080 4/	321 4/		3,080 4/	321 4/	—	
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	
Jan-Feb 1945	90*	a. PERIOD	b. TOTAL TO DATE	a. AV. ANNUAL	b. TO DATE	a. PERIOD	b. TO DATE
		—	—	1.07 4/	10.3 4/		

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION											
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION											
<p>Note:</p> <p>1/ 1,000 ft. concrete spillway, elev. 651.0; 5-80-ft roller gates, elev. 651.0; 5 35-ft tainter gates, elev. 652.0</p> <p>2/ Average of 31 stations for Miss River basin above Guttenberg, Iowa.</p> <p>3/ For 10-year period ending with 1945 survey.</p> <p>4/ Below elevation 651.0. Amount includes 1,310 acre-feet determined by the survey plus 1,770 acre-feet of channel dredging.</p>												

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															
Jan-Feb. 1945	0.8	-22.3	-10.6	57.9	38.7	3.7	24.8	17.8	-4.8	-6.0					
Reach divisions measured along main channel. Percentages based on net sediment deposit of 1310 acre-feet. Minus signs indicates increase in storage capacity as a percentage of 1310 acre-feet. See note 4/															

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.
1935	657.54	645.60	13,370,000	1940	654.78	650.14	11,660,000
1936	658.49	645.40	14,220,000	1941	658.04	650.38	20,960,000
1937	655.18	650.10	11,760,000	1942	659.31	649.96	21,780,000
1938	659.07	649.32	21,380,000	1943	660.90	650.03	26,080,000
1939	658.44	650.44	16,640,000	1944	658.81	647.77	25,030,000
Records are for calendar year. Elevations are for tailwater gage Dam 5 (upstream end Pool No. 5A)							

46. ELEVATION-AREA-CAPACITY DATA								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY

47. Remarks: There are no tributaries of any size draining into Pool No. 5A. The drainage area between Dam No. 5 and Dam No. 5A is 260 square miles. The Chippewa River which flows into Pool No. 4 is an important contributor of bed load and suspended sediment. Lake Pepin, starting one mile upstream of the mouth of the Chippewa River is an effective sediment trap. Pool No. 1, with head of 37.9, is also effective. The channel portion of most of the Navigation project dams, including Dam No. 5A, consists of roller and Tainter gates with their sills essentially at the elevation of the stream bed. The flowlines of floods are essentially the same as natural conditions.

47. REMARKS AND REFERENCES Reports (unpublished) as follows:
 Sedimentary Characteristics of the Upper Mississippi River by the Corps of Engineers, St. Paul District Office, 6 May 1935.
 Sediment Investigations on the Mississippi River in the St. Paul U. S. Engineer District by Corps of Engineers, St. Paul District Office. August 1937.
 Investigation of Sediment Carried by Rivers of St. Paul U.S. Engineer District, 1937 and 1938 by Iowa Institute of Hydraulic Research in cooperation with Corps of Engineers, 24 September 1938.
 Sediment Investigation of Upper Mississippi River Navigation Pools above Clayton, Iowa, by Corps of Engineers, St. Paul District Office, 7 March 1947.

48. AGENCY SUPPLYING DATA Department of the Army, CE, St. Paul District

49. DATE 21 October 1949