

RESERVOIR SEDIMENTATION  
DATA SUMMARY

Kanopolis Reservoir

32-2  
DATA SHEET NO.

NAME OF RESERVOIR

1. OWNER U. S. Corps of Engineers		2. RIVER Smoky Hill		3. STATE Kansas				
4. SEC. 27.34, 3 WP. 16 & 17S RANGE R6W		5. NEAREST TOWN Kanopolis, Ks.		6. COUNTY Ellsworth				
7. STREAM BED ELEV. 1406		8. TOP OF DAM ELEV. 1537		9. SPILLWAY CREST ELEV. 1507				
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	1508	13,900	397,000	450,000	29 July, 1946 <u>2</u>		
	b. POWER	none	---	---	---	16. DATE NORMAL OPER. BEGAN		
	c. WATER SUPPLY	none	---	---	---			
	d. IRRIGATION	none	---	---	---	February 1948 <u>3</u>		
	e. CONSERVATION	1459	3,550	53,000 <u>1</u>	53,000			
	f. INACTIVE	none	---	---	---			
17. LENGTH OF RESERVOIR 25.6 MILES		AV. WIDTH OF RESERVOIR 0.8 MILES						
WATERSHED	18. TOTAL DRAINAGE AREA 7,860 SQ. MI.		22. MEAN ANNUAL PRECIPITATION 21.27 INCHES					
	19. NET SEDIMENT CONTRIBUTING AREA 2,308 <u>4</u> SQ. MI.		23. MEAN ANNUAL RUNOFF (38) 0.44 INCHES					
	20. LENGTH 95 <u>5</u> MILES AV. WIDTH 24 <u>5</u> MILES		24. MEAN ANNUAL RUNOFF (38) 185,000 AC.-FT.					
	21. MAX. ELEV. 4600 MIN. ELEV. 1406		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.
July 1946					13,900	450,000	57	
Nov. 1950	4.3	4.3	Rec.	25 point observations	13,900	446,000	57	
Nov. 1951	1.0	5.3	Rec.		55 point observations	13,900	442,870	
SURVEY DATA	26. DATE OF SURVEY	34. PERIOD ANNUAL PRECIPITATION	35. PERIOD WATER INFLOW ACRE-FEET			36. WATER INFL. TO DATE AC.-FT.		
			a. MEAN ANNUAL	b. MAX. ANNUAL	c. PERIOD TOTAL	a. MEAN ANNUAL	b. TOTAL TO DATE	
	July 1946							
	Nov. 1950	21.44	276,070	429,225	1,187,090	276,070	1,187,090	
Nov. 1951	39.5	1,060,160	1,060,160	1,060,160	424,000	2,247,250		
SURVEY DATA	26. DATE OF SURVEY	37. PERIOD SEDIMENT DEPOSITS ACRE-FEET			38. TOTAL SED. DEPOSITS TO DATE ACRE-FEET			
		a. PERIOD TOTAL	b. AV. ANNUAL	c. PER SQ. MI.-YR.	a. TOTAL TO DATE	b. AV. ANNUAL	c. PER SQ. MI.-YR.	
	Nov. 1950	4,300	1,000	0.127	4,300	1,000	0.127	
Nov. 1951	2,830	2,830	1.23	7,130	1,340	0.582		
SURVEY DATA	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	
			a. PERIOD	b. TOTAL TO DATE	a. AV. ANNUAL	b. TO DATE	a. PERIOD	b. TO DATE
	Nov. 1950	50*	138	138	0.22	0.95	2,900	2,900
Nov. 1951-	58*	1,550	735	0.30	1.59	2,480	2,850	

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION													
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION													
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														
6/														

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.
1946 7/	Run of	river	45,960				
1947	"	"	271,650				
1948	1461.1	1420.8	115,495				
1949	1473.5	1458.8	271,430				
1950	1491.0	1454.4	429,225				
1951	1506.9	1458.9	1,076,460				
1952 8/	1486.6	1458.7	37,030				

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

47. REMARKS AND REFERENCES

- 1/ 53,000 acre-feet primarily to supplement low flows
- 2/ Initial closure of channel
- 3/ Start of reservoir filling in February 1948, conservation pool elevation was reached in July 1948
- 4/ 7860 prior to closure of Cedar Bluff Dam, September 1950
- 5/ Below Cedar Bluff Dam; before September 1950, length was 265 miles and average width was 30 miles
- 6/ Data not sufficient to make accurate breakdown
- 7/ August and September only
- 8/ October and November 1951 only

48. AGENCY SUPPLYING DATA Department of Army, Corps of Engineers, Kansas City District #9 DATE December 1951

RESERVOIR SEDIMENTATION  
DATA SUMMARY

Kanopolis Reservoir

32-3a

NAME OF RESERVOIR

DATA SHEET NO.

DAM	1. OWNER U. S. Corps of Engineers		2. RIVER Smoky Hill		3. STATE Kansas			
	4. SEC-27.33, 3 <sup>rd</sup> 16&17S RANGE 6W		5. NEAREST TOWN Kanopolis, Kans		6. COUNTY Ellsworth			
	7. STREAM BED ELEV. 1406		8. TOP OF DAM ELEV. 1537		9. SPILLWAY CREST ELEV. 1507			
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	1,508	14,610 1/	397,000 1/	446,000 1/	29 July 1946		
	b. POWER	None	-	-	-	16. DATE NORMAL OPER. BEGAN		
	c. WATER SUPPLY	None	-	-	-			
	d. IRRIGATION	None	-	-	--			
	e. CONSERVATION	1,459	3,550	58,000 1/ 2/	53,000	February 1948		
	f. INACTIVE	None						
17. LENGTH OF RESERVOIR 25.6		MILES		AV. WIDTH OF RESERVOIR 0.8		MILES		
WATERSHED	18. TOTAL DRAINAGE AREA 7860		SQ. MI.		22. MEAN ANNUAL PRECIPITATION 15 - 25		INCHES	
	19. NET SEDIMENT CONTRIBUTING AREA 2560 3/		SQ. MI.		23. MEAN ANNUAL RUNOFF 0.72		INCHES	
	20. LENGTH 95 4/		MILES		AV. WIDTH 24 5/		MILES	
	24. MEAN ANNUAL RUNOFF 301,000		AC.-FT.		25. CLIMATIC CLASSIFICATION Subhumid			
	21. MAX. ELEV.		MIN. ELEV.					
SURVEY DATA	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.
	July 1946 Sept 1960	14.2	14.2	Range	39	14,610 1/ 14,610 (g)	446,000 1/ 436,320	
	26. DATE OF SURVEY	34. PERIOD ANNUAL PRECIPITATION	35. PERIOD WATER INFLOW ACRE-FEET			36. WATER INFL. TO DATE AC.-FT.		
	July 1946 Sept 1960	24.40	a. MEAN ANNUAL 301,220	b. MAX. ANNUAL 1,076,500	c. PERIOD TOTAL 4,217,010	a. MEAN ANNUAL 301,220	b. TOTAL TO DATE 4,217,010	
	26. DATE OF SURVEY	37. PERIOD SEDIMENT DEPOSITS ACRE-FEET			38. TOTAL SED. DEPOSITS TO DATE ACRE-FEET			
	July 1946 Sept 1960	a. PERIOD TOTAL 9,680	b. AV. ANNUAL 682	c. PER SQ. MI.-YR. 0.27	a. TOTAL TO DATE 9,680	b. AV. ANNUAL 682	c. PER SQ. MI.-YR. 0.27	
	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	
	July 1946 Sept 1960	50.0*	a. PERIOD 294	b. TOTAL TO DATE 294	a. AV. ANNUAL 0.15	b. TO DATE 2.17	a. PERIOD 1840	b. TO DATE 1,840
			* Assumed.					

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION											
	88-98	78-88	68-78	58-68	48-58	38-48	28-38	18-28	8-18	Crest	Crest	
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION												
	0.9	17.6	11.9	13.0	33.4	11.0	4.8	5.1	2.2	0		

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														
	27.0	9.8	20.7	19.3	13.2	3.1	4.1	2.1	0.7	0.0				

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.
1946	Run of	River	45,960	1955	1465.34	1456.66	100,488
1947	" "	" "	271,650	1956	1462.59	1458.53	49,541
1948	1464.1	1420.8	115,495	1957	1487.38	1455.64	531,737
1949	1473.5	1458.8	271,430	1958	1475.51	1458.93	410,619
1950	1491.0	1454.4	429,225	1959	1469.67	1459.89	178,178
1951	1506.9	1458.9	1,076,460	1960	1477.54	1458.74	441,081
1952	1486.6	1457.6	167,070				
1953	1462.1	1455.1	60,900				
1954	1465.0	1457.7	68,080				

46. ELEVATION-AREA-CAPACITY DATA								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
1508	14,610	436,320	1470	5030	92,340			
1500	11,910	330,240	1460	3320	51,110			
1490	8,950	228,860	1450	1980	25,720			
1480	6,840	151,350	1440	1190	10,400			
1470			1430	480	1,060			
1460			1426	0	0			

47. REMARKS AND REFERENCES

- 1/ Revised
- 2/ To supplement low flow.
- 3/ 7860 prior to closure of cedar Bluff Dam, September 1950.
- 4/ Was 57 prior to closure of Cedar Bluff Dam.
- 5/ Below Cedar Bluff Dam.

48. AGENCY SUPPLYING DATA U. S. Corps of Engineers  
 Kansas City District

49. DATE Revised in OCE  
 June 1962