U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
SOIL AND WATER CONSERVATION RESEARCH DIVISION

RESERVOIR SEDIMENTATION DATA SUMMARY

Kahola Reservoir
NAME OF RESERVOIR

45-31
DATA SHEET NO.

DAM

1. OWNER City of Emporia, Kansas	2. RIVER Kahola Creek, trib. of Neosho River	3. STATE Kansas
4. LOCATION Sec. 33&4 Twp. 17S&18S RANGE 9E	5. NEAREST TOWN Dunlap	6. COUNTY Morris-Chase
7. STREAM BED ELEV. 1220	8. TOP OF DAM ELEV. 1280	9. SPILLWAY CREST ELEV. 1270

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					
b. POWER					12/1/36
c. WATER SUPPLY	1270	409	6,491	6,491	16. DATE NORMAL OPER. BEGAN
d. IRRIGATION					
e. CONSERVATION					
f. INACTIVE					2/1/37

17. LENGTH OF RESERVOIR 2.23 1/ MILES; AV. WIDTH OF RESERVOIR 902 FEET

WATERSHED

18. TOTAL DRAINAGE AREA 15.9 SQ. MI.		22. MEAN ANNUAL PRECIPITATION 32.4	INCHES
19. NET SEDIMENT CONTRIBUTING AREA 15.3 SQ. MI.		23. MEAN ANNUAL RUNOFF 5 2/	INCHES
20. LENGTH 6.50 MILES	AV. WIDTH 2.45 MILES	24. MEAN ANNUAL RUNOFF 4,080	AC.-FT.
21. MAX. ELEV.	MIN. ELEV. 1220	25. CLIMATIC CLASSIFICATION Humid	

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.
12/1/36	--	--	--	--	409	6,491	408
4/15/54	18.3	18.3	Range D-R	14 ranges	409	5,935	373

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
12/1/36	--					
4/15/54	--	--	--	--	--	--

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.-YEAR	a. TOTAL TO DATE	b. AV. ANNUAL	c. PER SQ. MI.-YEAR
4/15/54	556	30.4	1.99	556	30.4	1.99

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. TOT. TO DATE	a. PERIOD	b. TOT. TO DATE
4/15/54	51.6(17)	2,236	2,236	0.47	8.56	--	--

SWC Form 30
Apr 1958

1/ 6 tributaries. #1 - 0.21 miles long; #2 - 0.26 mi. long; #3 - 0.22 mi. long; #4 - 0.14 mi. long; #5 - 0.18 mi. long; #6 - 0.50 mi. long.

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION											
	45-40	40-35	35-30	30-25	25-20	20-15	15-10	10-5	5-crest			
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION											
4/15/54	0.15	0.87	2.64	5.34	9.11	12.71	16.89	22.63	29.66			

26. DATE OF SURVEY	44. REACH DESIGNATION PERCENT OF TOTAL ORIGINAL LENGH 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														
4/15/54	17.0	16.0	11.0	8.0	7.0	9.0	9.5	7.5	3.5	2.6	91.1% in the main part of the lake,				
Trib. #1	0.65% of Total Sed. @ 5.2% of total length 3/														
Trib. # 2	1.20% " " " "12.5% " " "														
Trib. #3	0.39% " " " "27.3% " " "														
Trib. #4	0.31% " " " "41.9% " " "														
Trib. #5	0.63% " " " "52.0% " " "														
Trib. #6	5.75% " " " "57.2% " " "														

45. RANGE IN RESERVOIR OPERATION

WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.
There are staff gages at the lake; data from these may be available but have not been processed.							

46. ELEVATION–AREA–CAPACITY DATA

ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
1225	0	0	1265	311.46	4174.9			
1230	3.66	8.9	1270	412.59	5934.7			
1235	17.55	60.4						
1240	46.86	217.0						
1245	83.64	534.2						
1250	138.88	1075.1						
1255	171.39	1829.2						
1260	241.09	2831.8						

47. REMARKS AND REFERENCES

2/ From USGS Circular 52, Annual Runoff in the U.S.

3/ Percent of total length as stated here refers to the position in the reservoir where the tributaries flow into the main part of the reservoir.

References: Unpublished annual reports - 1954, 1956, and 1957, USDA, ARS, Sedimentation Section, 134 So. 12th Street, Lincoln, Nebraska.

48. AGENCY SUPPLYING DATA USDA, Agricultural Research Service
Sedimentation Studies, Room 505,
134 South 12th St., Lincoln, Nebraska DATE Jan. 10, 1962