RESERVOIR SEDIMENT
DATA SUMMARY

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

Harlan County Lake
NAME OF RESERVOIR

32-29-a
DATA SHEET NO.

DAM

1. OWNER Corps of Engineers, USA	2. STREAM Republican River	3. STATE Nebraska
4. SEC. 2, 11, 14 TWP. 1N RANGE 17W	5. NEAREST P.O. Republican City	6. COUNTY Harlan
7. LAT. 40°04'13" LONG. 099 12 59	8. TOP OF DAM ELEVATION 1982.0	9. SPILLWAY CREST ELEV. 1973.5

RESERVOIR

10. STORAGE ALLOCATION	11. ELEVATION TOP OF POOL	12. ORIGINAL SURFACE AREA, ACRES	13. ORIGINAL CAPACITY, ACRE-FEET	14. GROSS STORAGE, ACRE-FEET	15. DATE STORAGE BEGAN
a. FLOOD CONTROL	1973.5	22,800	502,700	852,700	July 1951
b. MULTIPLE USE					
c. POWER					16. DATE NORMAL OPER. BEGAN
d. WATER SUPPLY					
e. IRRIGATION	1946.0	13,600	150,000	350,000	Nov. 1952
f. CONSERVATION	1932.8	9,500	200,000	200,000	
g. INACTIVE					

WATERSHED

17. LENGTH OF RESERVOIR 15.5 MILES		AV. WIDTH OF RESERVOIR 2.3 MILES	
18. TOTAL DRAINAGE AREA 20,753 SQ. MI.		22. MEAN ANNUAL PRECIPITATION 16-25 INCHES	
19. NET SEDIMENT CONTRIBUTING AREA 7,169 (2) SQ. MI.		23. MEAN ANNUAL RUNOFF 0.39 INCHES	
20. LENGTH 250 MILES	AV. WIDTH 83 MILES	24. MEAN ANNUAL RUNOFF 419,000 AC.-FT.	
21. MAX. ELEV. 5,500	MIN. ELEV. 1875.0	25. ANNUAL TEMP MEAN 51°F RANGE 43°F-118°F	

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/I RATIO, AC.-FT. PER AC.-FT.
July 1951					22,800	852,700	2.04
Sept. 1962	11.25	11.25	Range D	37(1)	22,800	840,600	2.01
April 1972	9.67	20.92	Range D	37(1)	22,800	828,800	1.98

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
Sept. 1962	17.5"	355,450	574,660	3,998,850	355,450	3,998,850
April 1972		291,640	545,350	2,820,130	327,360	6,818,980

26. DATE OF SURVEY	37. PERIOD CAPACITY LOSS, 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
Sept. 1962	12,100	1,080	0.12	12,100	1,080	0.12
April 1972	11,800	1,220	0.16	23,900	1,140	0.14

26. DATE OF SURVEY	39. AV. DRY WGT., LBS. PER CU. FT.	40. SED. DEP., TONS PER SQ. MI.-YR		41. STOPAGE LOSS, PCT.		42. SED. INFLOW, PPM	
		a. PERIOD	b. TOTAL TO DATE	a. AV. ANN.	b. TOT. TO DATE	a. PERIOD	b. TOT. TO DATE
Sept. 1962	72 (39)	182.0	182.0	0.13	1.42	3,491	3,491
April 1972	62 (59)	188.7	189.0	0.13	2.80	3,470	3,482

ENG FORM 1787
NOV 66

PREVIOUS EDITIONS ARE OBSOLETE.

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET BELOW, AND ABOVE CREST ELEVATION											
	100-90	90-80	80-70	70-60	60-50	50-40	40-30	30-20	20-10	10-(rest)		
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION											
Sept. 1962	4	20	6	4	11	15	24	15	1	0		
April 1972	0.8	10.7	12.4	21.1	19.1	31.3	4.4	0	0	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	-125
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN REACH DESIGNATION														
Sept. 1962	10	1	24	7	1	14	30	10	3	0					
April 1972	8.6	5.7	11.6	14.4	4.7	24.4	28.6	1.0	0.5	0.1					

45. RANGE IN RESERVOIR OPERATION

WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC.-FT.
Jul-Sept 51	Run of River		463,790	1960	1955.66	1938.94	554,483
52	Run of River		408,930	61	1951.29	1941.78	279,226
53	1925.90	1889.80	226,169	62	1950.29	1941.87	574,660
54	1932.10	1922.00	131,873	63	1947.79	1937.83	294,772
55	1935.05	1927.84	122,285	64	1944.42	1933.82	214,786
56	1932.49	1925.88	93,630	65	1947.75	1933.75	383,862
57	1955.05	1925.06	498,188	66	1950.87	1945.23	545,350
58	1948.28	1944.11	359,606	67	1951.09	1943.39	409,190
59	1946.91	1938.88	286,010	68	1947.84	1939.48	217,220

46. (1972) ELEVATION-AREA-CAPACITY DATA

ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
			1950	14,582	375,958			
1880	0	0	1960	17,859	539,220			
1890	36	59	1970	21,520	751,362			
1900	1,759	9,068	1973.5	22,831	828,300			
1910	2,982	33,878	1980	26,540	989,862			
1920	5,796	80,991	1990	31,910	1,280,862			
1930	7,916	149,977	2000	38,420	1,448,712			
1940	11,283	244,724						
1946	13,338	319,787						

47. REMARKS AND REFERENCES This reservoir is a short compact-type reservoir with few shoreline indentations. In order to determine the effect on accuracy of the number and spacing of ranges, a computation was made using every other range (½ of the total number). This computation showed 11 percent more sediment than the computation using all ranges. It also shows that ranges on some of the small tributaries such as ranges 2-3, 16-17, 23-24, 40-41, and 49-50 (5 ranges) account for .00024 of 1 percent of total deposits.

(1) There are 38 ranges in reservoir but only 37 were resurveyed.

(2) Corrected for upstream reservoirs.

48. AGENCY MAKING SURVEY Corps of Engineers

49. AGENCY SUPPLYING DATA Corps of Engineers

50. DATE October 1973