FORT PECK RESERVOIR

RESERVOIR SEDIMENT DATA SUMMARY

Footnotes

1/ Average streambed elevation at the dam.

2/ Top of gates in closed position, spillway crest elevation is 2225.

3/ Flood control and multiple use.

4/ Carryover multiple use.

5/ 1937-1955 - 39,097 square miles
1956-1961 - 34,692 square miles

6/ Average annual inflow from Corps of Engineers operation study inflows, Oct. 1893 through Sept. 1961.

7/ (D) - Detailed surveys on some or all ranges.
(E) - Original profile of most ranges determined from 1934&35 plane table topography sheets and nearby channel sections surveyed in 1934.
(C) - Complete Survey.

8/ Impractical to determine for drainage area with such varying climatic conditions.

9/ Inflows determined from reservoir capacity tables by difference in daily pool elevations.

10/ Adjusted to account for 1955 change in net sediment contributing drainage area.

11/ June 1961 density was computed using 1961 sediment density probe observations and 1958 exposed deposits data. The densities of deposits for surveys prior to this were computed by correcting for consolidation using the equation $W=W_i+0.4343K\left(\frac{T}{T-1}\cdot LnT-1\right)$ which is defined in "Determination of the Unit Weight of Sediment for Use in Volume Computations" by Carl R. Miller dated February 17, 1953.

RESERVOIR SEDIMENT DATA SUMMARY

Fort Peck
NAME OF RESERVOIR

40-2
DATA SHEET NO.

DAM

1. OWNER Corps of Engineers	2. STREAM Missouri River	3. STATE Montana
4. SEC. 15-22 TWP. 26N RANGE 41E	5. NEAREST TOWN Fort Peck	6. COUNTY Valley & McCone
7. STREAM BED ELEVATION 2030 1/	8. TOP OF DAM ELEVATION 2280.5	9. SPILLWAY CREST ELEV. 2250 2/

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. MULTIPLE USE					
b. FLOOD CONTROL	2250	246,799	970,697	19,557,492	Oct. 1937
c. POWER 3/	2246	238,552	2,718,716	18,586,795	
d. WATER SUPPLY 4/	2234	214,718	11,260,816	15,868,079	16. DATE NORMAL OPER. BEGAN
e. IRRIGATION					
f. CONSERVATION					
g. SEDIMENT					≥ 1940
h. INACTIVE	2160	95,788	4,607,263	4,607,263	

17. LENGTH OF RESERVOIR 135 MILES | AV. WIDTH OF RESERVOIR 2.9 MILES

WATERSHED

18. TOTAL DRAINAGE AREA 57,725 SQ. MI.		22. MEAN ANNUAL PRECIPITATION 10 - 26 (30)	INCHES
19. NET SEDIMENT CONTRIBUTING AREA 5/ SQ. MI.		23. MEAN ANNUAL RUNOFF 2.29 6/	INCHES
20. LENGTH 536 MILES	AV. WIDTH 108 MILES	24. MEAN ANNUAL RUNOFF 7,031,000 6/	AC.-FT.
21. MAX. ELEV. 13000	MIN. ELEV. 2030	25. CLIMATIC CLASSIFICATION Semi-arid	

SURVEY DATA

26. DATE OF SURVEY	27. PERIOD YEARS	28. ACCL. YEARS	29. TYPE OF SURVEY 7/	30. NO. OF RANGES OR CONTOUR INT.	31. SURFACE AREA ACRES	32. CAPACITY ACRE-FEET	33. C/W RATIO AC.-FT. PER SQ. MI.
Oct. 1937			D&E	110	246,799	19,557,492	Upstream
June 1950	12.67	12.67	D P	84		19,233,686	reservoirs
Sept.1952	2.25	14.92	D P	24		19,186,698	control
June 1954	1.75	16.67	D P	45		19,164,369	over 25%
May 1958	3.92	20.59	D P	45		19,162,468	of drainage
June 1961	3.08	23.67	D C	96	246,919	19,138,511	area.

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
Oct. 1937	8/			9/		9/
June 1950		6,320,200	10,186,300	80,077,049	6,320,200	80,077,049
Sept.1952		8,685,500	8,204,160	19,542,310	6,676,900	99,619,359
June 1954		6,182,800	7,539,150	10,819,930	6,625,000	110,439,289
May 1958		5,631,900	6,347,600	22,076,925	6,436,000	132,516,214
June 1961		6,540,800	7,446,500	20,145,575	6,449,600	152,661,789

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
Oct. 1937						
June 1950	323,806	25,557	0.65	323,806	25,557	0.65
Sept.1952	46,988	20,884	0.53	370,794	24,852	0.64
June 1954	22,329	12,759	0.33	393,123	23,583	0.60
May 1958	1,901	485	0.013	395,024	19,185	0.55 10/
June 1961	23,957	7,778	0.22	418,981	17,701	0.51 10/

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. AN.	b. TOT. TO DATE	a. PERIOD	b. TOT. TO DATE
Oct. 1937	11/						
June 1950	56.7	803 12/	803	0.131	1.66	3673	3674
Sept.1952	57.4	724	800	0.127	1.90	2211	3424
June 1954	57.9	471	757	0.121	2.01	1915	3303
May 1958	58.8	75	704	0.098	2.02	81.1	2809
June 1961	59.4	338	660	0.091	2.14	1132	2613

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION											
	220-170	170-130	130-100	100-80	80-60	60-50	50-40	40-30	30-20	20-10	10-crest	crest-30
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION											
Oct. 1937												
June 1950	15.0	33.5	16.9	11.6	6.3	3.1	4.2	7.2	2.3	0.2	-0.2	-0.1
Sept. 1952	13.2	29.4	14.8	10.2	8.0	4.2	5.3	9.9	4.9	0.8	-0.2	-0.5
June 1954	12.5	27.8	14.0	9.6	8.1	5.8	5.6	11.7	4.8	0.9	-0.0	-0.8
May 1958	12.4	29.1	17.2	16.4	9.4	5.3	4.0	5.3	2.4	-0.5	-0.3	-0.7
June 1961	11.7	27.8	16.4	15.6	12.0	7.9	4.6	4.2	1.7	-1.1	-0.2	-0.6

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	-125
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN REACH DESIGNATION														
Oct. 1937															
June 1950	19.50	18.75	15.70	7.76	8.20	4.77	16.43	7.94	0.89	0.01					
Sept. 1952	18.61	16.75	14.61	7.03	7.89	7.25	17.96	9.07	1.01	-0.22					
June 1954	17.62	15.87	13.83	6.66	7.47	8.48	20.43	9.13	1.15	-0.60					
May 1958	17.03	15.95	14.90	9.67	12.20	8.73	14.11	7.01	0.98	-0.60					
June 1961	16.26	15.19	14.03	9.12	11.82	12.17	15.35	5.90	0.71	-0.56					

45. RANGE IN RESERVOIR OPERATION

WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.
1938	2136.5	2044.2	6,209,310	1950	2234.2	2214.2	7,058,230
1939	2111.7	2069.1	5,537,600	1951	2237.5	2220.3	8,046,740
1940	2128.4	2069.8	3,807,100	1952	2237.8	2215.8	8,204,160
1941	2127.2	2100.3	3,539,043	1953	2240.0	2220.2	7,539,150
1942	2183.8	2114.7	7,359,021	1954	2228.0	2211.8	4,890,880
1943	2222.7	2170.6	9,397,902	1955	2211.7	2181.9	5,294,925
1944	2225.8	2203.2	6,506,761	1956	2181.6	2167.4	5,683,580
1945	2226.4	2209.3	5,086,502	1957	2185.2	2173.9	6,113,900
1946	2232.3	2216.4	4,968,410	1958	2198.5	2185.0	6,347,600
1947	2242.6	2223.4	8,120,280	1959	2210.0	2195.6	6,446,500
1948	2244.8	2223.9	10,186,300	1960	2217.7	2207.1	6,998,700
1949	2232.5	2218.1	7,843,120	1961	2214.4	2201.6	4,394,100

46. ELEVATION-AREA-CAPACITY DATA

ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
2033.0	0	0	2120.0	50,560	1,486,068	2210.0	170,021	10,839,108
2040.0	402	1,214	2130.0	61,391	2,046,092	2220.0	187,829	12,625,560
2050.0	1,652	11,909	2140.0	71,243	2,711,121	2230.0	206,874	14,600,031
2060.0	4,149	36,871	2150.0	81,944	3,476,772	2240.0	226,827	16,771,920
2070.0	10,672	106,808	2160.0	92,712	4,348,892	2250.0	246,919	19,138,511
2080.0	16,714	245,517	2170.0	106,393	5,338,402			
2090.0	22,966	440,752	2180.0	122,028	6,490,836			
2100.0	29,732	703,096	2190.0	136,912	7,793,772			
2110.0	38,458	1,044,304	2200.0	152,792	9,251,505			

47. REMARKS AND REFERENCES

See attached page for footnotes.

48. AGENCY MAKING SURVEY Corps of Engineers

49. AGENCY SUPPLYING DATA Corps of Engineers

50. DATE September, 1966