

**RESERVOIR SEDIMENTATION
DATA SUMMARY**

Charles Mill Reservoir

21-3

NAME OF RESERVOIR

DATA SHEET NO.

1. OWNER Dept of the Army, C. of E.		2. RIVER Black Fork		3. STATE Ohio			
4. SEC. 35 TWP. 23N RANGE 17W		5. NEAREST TOWN Mansfield		6. COUNTY Ashland			
7. STREAM BED ELEV. 982.0		8. TOP OF DAM ELEV. 1035.0		9. SPILLWAY CREST ELEV. 1020.0			
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	1020.0	6,050	80,600	88,000	1 June 1938	
	b. POWER	-	-	-	-		
	c. WATER SUPPLY	-	-	-	-		
	d. IRRIGATION	-	-	-	-	16. DATE NORMAL OPER. BEGAN	
	e. CONSERVATION	997.0	1,350	7,400	7,400		
f. INACTIVE	-	-	-	-	1 Aug 1938		
17. LENGTH OF RESERVOIR 19.8 (thalweg) MILES		AV. WIDTH OF RESERVOIR 0.77 MILES					
WATERSHED	18. TOTAL DRAINAGE AREA 216 SQ. MI.		22. MEAN ANNUAL PRECIPITATION 34.58 (10 yr) INCHES				
	19. NET SEDIMENT CONTRIBUTING AREA 207 SQ. MI.		23. MEAN ANNUAL RUNOFF 10.2 INCHES				
	20. LENGTH 27.0 MILES AV. WIDTH 8.3 MILES		24. MEAN ANNUAL RUNOFF 117,300 AC.-FT.				
	21. MAX. ELEV. 1331 MIN. ELEV. 982		25. CLIMATIC CLASSIFICATION humid				
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.
					6,050	88,000	407
1 June 1938	1/ -	-	-	-	6,050	85,885	397
1 Sep 1946	8.25	8.25	Range (D)	37	6,050		
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	
1 Sep 1946	33.62	112,200	185,792	925,584	112,200	925,584	
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.	
1 Sept 1946	2115	256	1.24	2115	256	1.24	
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
1 Sept. 1946	65%	1755	1755	0.29	2.40	2380	2380

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION												
	38-23	23-15	15-Crest										
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION													
1 Sept 1946	53	34	13										

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														
1 Sept 1946	31.4	33.7	7.6	11.6	3.6	0.6	1.8	7.2	2.5	0				

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.
1938*(4 Mo)	998.5	993.6	19,908				
1939	1002.0	996.9	100,574				
1940	1005.1	996.1	118,302				
1941	999.6	996.7	67,880				
1942	999.1	995.8	109,261				
1943	1006.8	995.7	185,792				
1944	1002.0	994.6	62,199				
1945	1003.9	995.2	130,484				
1946 (11 M)	1007.5	996.7	131,184				

46. ELEVATION-AREA-CAPACITY DATA								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
997	1350	6275						
1005	2800	21,055						
1020	6050	85,885						

47. REMARKS AND REFERENCES reference: Report on Sedimentation Survey, Charles Mill Reservoir, Muskingum Basin, Ohio, April 1948.
 Sediment varies in texture from very fine silt to coarse sand and traces of gravel, and the color runs from yellow, through brown to a dark gray.
 1/ Date storage began. No original survey made, the ranges being located and cross-sectioned during survey of 1 Sept 1946, when sediment thickness was obtained.

RESERVOIR SEDIMENT
DATA SUMMARY

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

CHARLES MILL LAKE
NAME OF RESERVOIR

21-3a
DATA SHEET NO.

DAM	1. OWNER Dept. of Army, C.of E.		2. STREAM Black Fk.of Mohican River		3. STATE Ohio				
	4. SEC. 35 TWP. 23N RANGE 17W		5. NEAREST P O Lucas		6. COUNTY Ashland				
	7. LAT 40° 44' 26" LONG. 82° 21' 47 "		8. TOP OF DAM ELEVATION 1035		9. SPILLWAY CREST ELEV. 1020				
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	1,020	6,050	80,600	88,000	1 June 1938			
	b. MULTIPLE USE								
	c. POWER								
	d. WATER SUPPLY					16. DATE NORMAL OPER. BEGAN			
	e. IRRIGATION								
	f. CONSERVATION	997	1,350	7,090	7,400	1 Aug. 1938			
	g. INACTIVE	987	149	310	310				
WATERSHED	17. LENGTH OF RESERVOIR 19.8 MILES		AV. WIDTH OF RESERVOIR 0.77 MILES						
	18. TOTAL DRAINAGE AREA 215 SQ. MI.		22. MEAN ANNUAL PRECIPITATION 37.52 INCHES						
	19. NET SEDIMENT CONTRIBUTING AREA 206 SQ. MI.		23. MEAN ANNUAL RUNOFF 12.36 INCHES						
	20. LENGTH 27 MILES	AV. WIDTH 8.3 MILES	24. MEAN ANNUAL RUNOFF 141,700 AC.-FT.						
	21. MAX. ELEV. 1331	MIN. ELEV. 980	25. ANNUAL TEMP. MEAN 48.4 RANGE						
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.	
	1 June 1938	(Date storage began)				6,050	88,000	.62	
	1 Sept. 1946	8.25	8.25	Range	37	6,050	85,886	.61	
	1 July 1954	7.83	16.08	Range	37	6,050	85,483	.60	
	3 Aug. 1975	21.09	37.17	Range	4	6,050	85,176	.60	
	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		
	1 Sept. 1946	33.62	111,600	184,300	920,700	111,600	920,700		
	1 July 1954	36.33	154,500	225,800	1,210,000	132,500	2,130,700		
	3 Aug. 1975	36.30	148,700	254,300	3,136,500	141,700	5,267,200		
	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		
	1 Sept. 1946	2,114	256	1.24	2,114	256	1.24		
	1 July 1954	403	52	0.25	2,517	157	0.76		
	3 Aug. 1975	307	15	0.07	2,824/1	76	0.37		
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. ANN.	b. TOT. TO DATE	a. PERIOD	b. TOT. TO DATE		
1 Sept. 1946	65 *	1,765	1,765	0.29	2.4	2,392	2,392		
1 July 1954	65 *	354	1,078	0.18	2.9	347	1,231		
3 Aug. 1975	65 *	100	523	0.09	3.2	102	559		
	* Assumed								

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET BELOW, AND ABOVE, CREST ELEVATION													
	Crest-15 15-23 23-38													
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION														
1 Sept. 1946	13	34	53											
1 July 1954	14	30	56											
3 Aug. 1975	Not	Computed												
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														
1 Sept. 1946	31.4	33.7	7.6	11.6	3.6	0.6	1.8	7.2	2.5	0				
1 July 1954	33.6	26.1	9.2	13.5	2.6	3.4	2.7	6.4	2.5	0				
3 Aug. 1975		Not	Computed											
45. RANGE IN RESERVOIR OPERATION														
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC.-FT.							
See Attached Sheet														
46. ELEVATION-AREA-CAPACITY DATA														
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY						
1946 Survey			1954 Resurvey			1975 Resurvey / 1								
997	1,350	6,280	997	1,350	5,990	997	1,360	5,860						
1,005	2,800	21,100	1,005	2,800	20,700	1,020	6,050	85,200						
1,020	6,050	85,900	1,020	6,050	85,500									
47. REMARKS AND REFERENCES														
1. Estimated by resurvey of 4 sediment ranges and distribution of sediment indicated by 1946 and 1954 sediment surveys.														
48. AGENCY MAKING SURVEY			U. S. Army Engineer District			50. DATE								
49. AGENCY SUPPLYING DATA			Huntington, WV			November 1976								

CHARLES MILL LAKE

RESERVOIR SEDIMENT DATA SUMMARY

45. RANGE IN RESERVOIR OPERATION

<u>Water Year</u>	<u>Max. Elev.</u>	<u>Min. Elev.</u>	<u>Inflow</u>	<u>Water Year</u>	<u>Max. Elev.</u>	<u>Min. Elev.</u>	<u>Inflow</u>
1938(Part)	-	-	21,000	1961	1006.4	996.2	129,400
1939	1002.0	996.9	101,300	1962	999.9	992.8	97,500
1940	1005.1	996.1	117,300	1963	1007.3	992.8	110,700
1941	999.6	996.7	67,300	1964	1009.5	992.9	127,600
1942	999.1	995.8	108,300	1965	999.0	993.0	86,700
1943	1006.8	995.7	184,300	1966	999.2	989.9	77,700
1944	1002.0	994.6	61,700	1967	1003.1	992.6	147,900
1945	1003.9	995.2	129,400	1968	1006.1	992.7	142,300
1946	1007.5	996.7	130,700	1969	1010.9	994.7	232,100
1947	1013.3	996.8	225,800	1970	1000.8	992.7	145,900
1948	1003.7	997.0	134,200	1971	1003.0	992.6	132,700
1949	1001.1	997.0	148,800	1972	1006.9	992.9	153,600
1950	1007.9	997.0	203,200	1973	1005.0	996.3	254,300
1951	1004.1	996.0	179,300	1974	1005.6	996.2	196,200
1952	1007.3	995.8	172,900	1975(Part)	1007.5	997.0	197,100
1953	1002.2	995.7	68,700				
1954	1004.7	991.6	78,400				
1955	1004.7	995.5	98,200				
1956	1006.8	993.0	180,400				
1957	1009.7	996.9	168,000				
1958	1001.5	997.1	143,800				
1959	1013.5	996.1	199,300				
1960	1003.7	993.8	113,200				