

RESERVOIR SEDIMENTATION
DATA SUMMARY

Loch Raven Reservoir

4 - 1a

NAME OF RESERVOIR

DATA SHEET NO.

DAM	1. OWNER <u>Dept. Public Works, Baltimore</u>		2. RIVER <u>Gunpowder Falls</u>		3. STATE <u>Maryland</u>			
	4. SEC. <u>TWP.</u> RANGE		5. NEAREST TOWN <u>Towson</u>		6. COUNTY <u>Baltimore</u>			
	7. STREAM BED ELEV. <u>171</u>		8. TOP OF DAM ELEV. <u>246</u>		9. SPILLWAY CREST ELEV. <u>240</u>			
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					1914		
	b. POWER							
	c. WATER SUPPLY	<u>240</u>	<u>2,391</u>	<u>70,169*</u>	<u>70,169*</u>	16. DATE NORMAL OPER. BEGAN		
	d. IRRIGATION					1914		
	e. CONSERVATION							
f. INACTIVE								
17. LENGTH OF RESERVOIR <u>10.5</u> MILES	AV. WIDTH OF RESERVOIR <u>.3</u> MILES							
WATERSHED	18. TOTAL DRAINAGE AREA <u>303</u> SQ. MI.		22. MEAN ANNUAL PRECIPITATION <u>42.53</u> INCHES					
	19. NET SEDIMENT CONTRIBUTING AREA <u>219.4^{1/2}</u> SQ. MI.		23. MEAN ANNUAL RUNOFF		INCHES			
	20. LENGTH <u>50</u> MILES	AV. WIDTH <u>6</u> MILES	24. MEAN ANNUAL RUNOFF		AC.-FT.			
	21. MAX. ELEV. <u>920</u>	MIN. ELEV. <u>171</u>	25. CLIMATIC CLASSIFICATION <u>Humid</u>					
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.
	<u>1914</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>2,391</u>	<u>70,169*</u>	<u>231*</u>
	<u>Oct. 1943</u>	<u>29</u>	<u>29</u>	<u>Range Recon.</u>	<u>18</u>	<u>2,337</u>	<u>64,813*</u>	<u>214*</u>
	<u>June 1961</u>	<u>18</u>	<u>47</u>	<u>Range Detail</u>	<u>24</u>	<u>2,332</u>	<u>64,072</u>	<u>211</u>
	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	
	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	
	<u>Oct. 1943</u>	<u>5,356</u>	<u>185</u>	<u>.618^{1/2}</u>	<u>5,356</u>	<u>185</u>	<u>.618^{1/2}</u>	
<u>June 1961</u>	<u>741</u>	<u>41</u>	<u>.187</u>	<u>6,097</u>	<u>130</u>	<u>.593</u>		
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	
<u>Oct. 1943</u>	<u>60**</u>	<u>808^{1/2}</u>	<u>808^{1/2}</u>	<u>.26*</u>	<u>7.63*</u>			
<u>June 1961</u>	<u>57.3</u>	<u>233</u>	<u>1740</u>	<u>.18</u>	<u>8.69</u>			

* Revised after 1961 survey
** Assumed

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION														
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION														
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														
45. RANGE IN RESERVOIR OPERATION															
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.								
46. ELEVATION-AREA-CAPACITY DATA															
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY							
47. REMARKS AND REFERENCES															
Gottschalk, L.C. Report on the sedimentation surveys of Loch Raven and Prettyboy Reservoirs, Baltimore, Maryland. U.S. Soil Conservation Service Spec. Rpt. 5, 21 pp. illus., processed, Washington, D.C. 1943															
1/ Net sediment contributing area was 299.4 sq. mi. until 1933 when Prettyboy dam was completed. This area was used in the 1943 calculations.															
48. AGENCY SUPPLYING DATA				Central Technical Unit Soil Conservation Service Beltsville, Maryland				49. DATE	Sept. 6, 1961						

RESERVOIR SEDIMENT
DATA SUMMARY

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Loch Raven Reservoir

SCS-34 Rev. 6-66

NAME OF RESERVOIR

4-1b

DATA SHEET NO.

DAM	1. OWNER Dept. Public Works-Balto.			2. STREAM Gunpowder Falls			3. STATE Maryland									
	4. SEC. TWP. RANGE			5. NEAREST P. O. Towson			6. COUNTY Baltimore									
	7. LAT. 39° 25' 50" LONG. 76° 32' 42"			8. TOP OF DAM ELEVATION 246			9. SPILLWAY CREST ELEV. 240									
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										1914					
	b. MULTIPLE USE															
	c. POWER															
	d. WATER SUPPLY		240		2391		70,169*		70,169		16. DATE NORMAL OPER. BEGAN					
	e. IRRIGATION															
	f. CONSERVATION										1914					
WATERSHED	17. LENGTH OF RESERVOIR 10.5 MILES				AV. WIDTH OF RESERVOIR 0.36 MILES											
	18. TOTAL DRAINAGE AREA 303 SQ. MI.				22. MEAN ANNUAL PRECIPITATION 42.53 INCHES											
	19. NET SEDIMENT CONTRIBUTING AREA 219.4; 299.4 ¹ SQ. MI.				23. MEAN ANNUAL RUNOFF 15.08 INCHES											
	20. LENGTH 50 MILES		AV. WIDTH 6 MILES		24. MEAN ANNUAL RUNOFF 243,678 AC.-FT.											
	21. MAX. ELEV. 920		MIN. ELEV. 171		25. ANNUAL TEMP: MEAN 50.8° RANGE -1 to 92°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.	
	1914		-		-		-		-		2,391		70,169 *		.288	
	10/43		29		29		Range (R)		18		2,337		64,813 *		.266	
	6/61		18		47		Range (D)		24		2,332		64,072		.263	
	9/72		11		58		Range (D)		24		2,320		63,105		.259	
	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			
	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			
10/43		5,356		184.69		.618		5,356		184.69		.618				
6/61		741		41		.188		6,097		129.7		.591				
9/72		967		87.91		.401		7,064		121.8		.555				
26. DATE OF SURVEY		39. AV. DRY WGT., LBS. PER CU. FT.		40. SED. DEP., TONS PERSQ. 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		
10/43		60 **		806.1		806.1		.26 *		7.63 *		-		-		
6/61		57.3		252.7		737.6		.18		8.69		-		-		
9/72		70.9		1367.3		857.0		.17		10.07		906		-		

* Revised after 1961 Survey

** Assumed

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET BELOW, AND ABOVE, CREST ELEVATION														
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION														
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														
45. RANGE IN RESERVOIR OPERATION															
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC.-FT.								
46. ELEVATION-AREA-CAPACITY DATA															
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY							
47. REMARKS AND REFERENCES															
<p>Gottschalk, L.C., Report on the Sedimentation Surveys of Loch Raven and Prettyboy Reservoirs, Baltimore, Maryland; USDA, SCS, Special Report 5, 21 pp., illus., processed. Washington, D. C. 1943.</p> <p>1/ Net sediment contributing area was 299.4 mi² until 1933 when Prettyboy dam was completed. This area was used in the 1943 calculations.</p> <p>2/ Geological Survey water resource data gauges, Little Falls and Western Run</p>															
48. AGENCY MAKING SURVEY															
49. AGENCY SUPPLYING DATA <u>Soil Conservation Service</u>															
50. DATE <u>7/13/76</u>															