

Enclosed sediments
K
Archean schist, gneiss, granite
BUREAU OF RECLAMATION

UNITED STATES
DEPARTMENT OF THE INTERIOR

RESERVOIR SEDIMENTATION
DATA SUMMARY

Tongue River

NAME OF RESERVOIR

42-2

DATA SHEET NO.

DAM	1. OWNER Montana State Water Conservation Board			2. RIVER Tongue			3. STATE Montana									
	4. SEC. 13&18 TWP. 8S RANGE 40E, 41E			5. NEAREST TOWN Decker, Mont.			6. COUNTY Big Horn									
	7. STREAM BED ELEV. 3352			8. TOP OF DAM ELEV. 3424.4			9. SPILLWAY CREST ELEV. 3424.4									
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		3424.4		3,497		21,089 (1948)		72,510		May 12, 1939					
	b. POWER															
	c. WATER SUPPLY										16. DATE NORMAL OPER. BEGAN					
	d. IRRIGATION															
	e. CONSERVATION															
	f. INACTIVE										1939					
WATERSHED	17. LENGTH OF RESERVOIR 16.1 2/ MILES				AV. WIDTH OF RESERVOIR 0.35 MILES											
	18. TOTAL DRAINAGE AREA 1,740 SQ. MI.				22. MEAN ANNUAL PRECIPITATION 16.35, 29.23 1/ INCHES											
	19. NET SEDIMENT CONTRIBUTING AREA 1734.5 4/ SQ. MI.				23. MEAN ANNUAL RUNOFF 3.34 INCHES											
	20. LENGTH 58 MILES		AV. WIDTH 30 MILES		24. MEAN ANNUAL RUNOFF 292,560 3/ AC.-FT.											
	21. MAX. ELEV. 11570		MIN. ELEV. 3424.4 2/		25. CLIMATIC CLASSIFICATION Semi-arid at dam <i>submitted in mtrs.</i>											
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.	
	May 1939 6/		0.0		0.0		contour		10-ft. contour		3,497		72,510		41.67	
	Oct. 11, 1948		9.42		9.42		detailed range and contour		34 ranges 5-ft. int.		3,497		69,439		39.91	
	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. TOTAL TO DATE	
	May 1939															
	Oct. 12, 1948		see 1/		310,176		554,000 (1944)		2,921,856		310,176		2,921,856			
	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	
	May 1939															
	Oct. 12, 1948		3,071		326.01		0.188		3,071		326.01		0.188			
	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. TOT. TO DATE		c. PER SQ. MI.-YEAR	
May 1939																
Oct. 12, 1948		70.5		288.7		288.7		0.45		4.24		1187.5		1187.5		

1/ Precipitation at Sheridan, Wyo. (1917-46)=16.35; Dome Lake, Wyo. (1925-42)=29.23
 2/ Thalweg length
 3/ Period 1940-1946, max. flow 5,710 cfs (6-5-44)
 4/ Net area is less than the lake area of 5.5 sq mi
 5/ Spillway crest elevation
 6/ Effective date, orig. survey in July 1939

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION												
	crest-	10-	20-	30-	40-	50-	60-	70-					
	10	20	30	40	50	60	70	78.2					
	below PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION												
Oct. 1948	1.59	13.34	28.60	18.75	18.22	8.02	10.07	1.39					

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. 1948	13.31	9.30	6.61	6.87	14.22	18.41	15.82	5.69	8.25	1.52					

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.
1939(May)	3415.6	3396.15	112,000	1948	3419.7	3388.4	
1940	3414.4	3374.4	158,400				
1941	3419.8	3373.6	174,500				
1942	3425.7	3401.0	339,300				
1943	3413.4	3376.4	393,000				
1944	3426.2	3393.4	550,500				
1945	3413.9	3389.65	370,600				
1946	3414.1	3388.8	422,800				
1947	3413.6	3380.4	451,500				

46. ELEVATION-AREA-CAPACITY DATA								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
3424.4	3,497	69,439	3380.0	375	3,064			
3420.0	2,912	55,360	3375.0	231	1,565			
3415.0	2,253	42,483	3374.4	217	1,400			
3410.0	1,838	32,273	3370.0	135	661			
3405.0	1,467	24,027	3365.0	62	181			
3400.0	1,136	17,537	3360.0	10	21			
3395.0	922	12,403	3355.0	0.5	0.1			
3390.0	683	8,407	3354.4	0	0			
3385.0	544	5,348						

47. REMARKS AND REFERENCES

Sedimentation Survey of Tongue River Reservoir, L. M. Seavy, Hydrology Division, Bureau of Reclamation, Denver, Colorado

7/ Runoff as recorded at Decker, Montana. - will induce slight error

48. AGENCY SUPPLYING DATA Bureau of Reclamation

49. DATE 9/29/50