

**RESERVOIR SEDIMENT  
DATA SUMMARY**

**WHITNEY RESERVOIR**  
NAME OF RESERVOIR

53 - 42

DATA SHEET NO.

<b>DAM</b>	1. OWNER Corps of Engineers			2. STREAM Brazos River			3. STATE Texas			
	4. SEC. - TWP. - RANGE -			5. NEAREST TOWN Whitney			6. COUNTY Bosque - Hill			
	7. STREAM BED ELEVATION 425.0			8. TOP OF DAM ELEVATION 584.0			9. SPILLWAY CREST ELEV. 571.01/			
<b>RESERVOIR</b>	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.		49,710 <sup>2/</sup>	1,630,500 <sup>2/</sup>	2,017,500 <sup>2/</sup>	10 Dec 1951				
	b. FLOOD CONTROL	571.0	49,820 <sup>3/</sup>	1,623,400 <sup>3/</sup>	2,013,600 <sup>3/</sup>					
	c. POWER	520.0	15,800	131,700 <sup>2/</sup>	387,000 <sup>2/</sup>					
	d.			135,100 <sup>3/</sup>	390,200 <sup>3/</sup>	16. DATE NORMAL OPER. BEGAN				
	e. IRRIGATION			255,300 <sup>2/</sup>	255,300 <sup>2/</sup>					
	f.			255,100 <sup>3/</sup>	255,100 <sup>3/</sup>	13 Apr 1954 <sup>4/</sup>				
	g. SEDIMENT	510.0	10,810	5,150 <sup>2/</sup> 5,050 <sup>3/</sup>	5,150 <sup>2/</sup> 5,050 <sup>3/</sup>					
h. INACTIVE	448.83	495 <sup>2/</sup> 543 <sup>3/</sup>								
17. LENGTH OF RESERVOIR 69 MILES AV. WIDTH OF RESERVOIR 1.1 MILES										
<b>WATERSHED</b>	18. TOTAL DRAINAGE AREA 17,656 <sup>2/</sup> SQ. MI.			22. MEAN ANNUAL PRECIPITATION 29.73 <sup>7/</sup> INCHES						
	19. NET SEDIMENT CONTRIBUTING AREA 3,480.26 <sup>2/</sup> SQ. MI.			23. MEAN ANNUAL RUNOFF 2.71 <sup>7/</sup> 1.49 <sup>8/</sup> (63) INCHES						
	20. LENGTH 245.11 <sup>7/</sup> MILES AV. WIDTH 14.57 <sup>7/</sup> MILES			24. MEAN ANNUAL RUNOFF 513,500 <sup>7/</sup> 1,401,600 <sup>8/</sup> (63) AC.-F.T.						
	21. MAX. ELEV. 1400 <sup>7/</sup> MIN. ELEV. 425.0			25. CLIMATIC CLASSIFICATION Subhumid						
<b>SURVEY DATA</b>	26. DATE OF SURVEY	27. PERIOD YEARS	28. ACCL. YEARS OF SURVEY	29. TYPE	30. NO. OF RANGES OR CONTOUR INT.	31. SURFACE AREA ACRES	32. CAPACITY ACRE-FEET	33. C/W RATIO AC.-FT. PER SQ. MI.		
	Dec 1941	-	-	Map(R)	-	49,710	2,017,500	-		
	Dec 1941 <sup>3/</sup>	-	-	Range(D)	50	49,820	2,013,600	-		
	30 Apr 1959	7.4	7.4	Range(D)	32	49,820	1,999,500	-		
	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			
	30 Apr 1959	30.86 <sup>7/</sup>	460,700 <sup>7/</sup>	1,732,350 <sup>7/</sup>	3,409,300 <sup>7/</sup>	460,700 <sup>7/</sup>	3,409,300 <sup>7/</sup>			
			1,332,600 <sup>8/</sup>	5,036,710 <sup>8/</sup>	9,861,760 <sup>8/</sup>	1,332,600 <sup>8/</sup>	9,861,760 <sup>8/</sup>			
	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			
30 Apr 1959	14,100	1,905	0.55	14,100	1,905	0.55				
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			
30 Apr 1959	62.6 (21)	749.88	749.88	0.09	0.70	4149 <sup>11/</sup>	4149 <sup>11/</sup>			
						1434 <sup>12/</sup>	1434 <sup>12/</sup>			

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION													
	146-131	131-116	116-105	105-95	95-85	85-75	75-65	65-55	55-45	45-30	30-15	15-crest		
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION														
30 Apr 1959	2.96	6.02	11.55	12.20	14.08	13.49	6.26	11.01	6.39	7.78	6.29	1.97		
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														
30 Apr 1959	7	5	10	25	31	11	6	4	.5	.5				
45. RANGE IN RESERVOIR OPERATION														
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV. #	INFLOW AC.-FT.							
1952 <sup>2/</sup>	495.04	449.74	293,700	1956	527.66	511.58	1,009,830							
1953	507.91	480.75	302,250	1957	570.25	509.52	4,618,900							
1954	521.85	507.91	827,290	1958	533.12	518.24	1,764,020							
1955	525.89	516.78	887,600	1959 <sup>2/</sup>	520.40	511.88	158,170							
						Total	9,861,760							
46. ELEVATION-AREA-CAPACITY DATA														
ELEVATION	AREA 10/	CAPACITY	ELEVATION	AREA 10/	CAPACITY	ELEVATION	AREA 10/	CAPACITY						
429	0	0	490	5,170	91,900	550	34,920	1,121,000						
440	240	1100	500	7,500	157,200	560	41,040	1,500,400						
450	510	4800	510	10,690	245,200	570	48,960	1,950,100						
460	1000	12,600	520	15,760	379,100	571	49,820	1,999,500						
470	1820	26,700	530	21,740	559,200									
480	3210	51,200	540	28,070	807,300									
47. REMARKS AND REFERENCES														
1/Top of gates in closed position. 2/Original survey data 1941. 3/Adjusted in 1963 for detailed range survey in 1951. 4/Reservoir reached top of power pool first time. 5/Does not include 8950 sq. mi. which is considered to be noncontributing to the total 26,606 sq.mi. drainage area. 6/For the 3558 sq.mi. area between Possum Kingdom & Whitney Dams, excluding 77.8 sq.mi. which is reservoir surface area at elev. 571.0. 7/For the drainage area between Possum Kingdom & Whitney Dams. 8/For area shown in item 18. 9/Partial year. 10/Areas estimated. 11/ Total sediment deposits and water inflow between Possum Kingdom and Whitney Dams. 12/ Total sediment deposits and total water inflow to Whitney.														
48. AGENCY MAKING SURVEY Dept. of the Army, CE, Fort Worth				Revised 4/30/64 & 11/5/64										
49. AGENCY SUPPLYING DATA Dept of the Army, CE, Fort Worth				80. DATE <u>September-1963-</u>										