

RESERVOIR SEDIMENTATION
DATA SUMMARY

Lake Waco
NAME OF RESERVOIR

53-31
DATA SHEET NO.

DAM	1. OWNER City of Waco			2. RIVER Bosque			3. STATE Texas				
	4. SEC. - TWP. - RANGE -			5. NEAREST TOWN Waco			6. COUNTY McLennan				
	7. STREAM BED ELEV. 387			8. TOP OF DAM ELEV. 442.0			9. SPILLWAY CREST ELEV. 430.0				
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					April 1930					
	b. POWER										
	c. WATER SUPPLY	430	2,801	39,378	39,378	16. DATE NORMAL OPER. BEGAN					
	d. IRRIGATION										
	e. CONSERVATION										
	f. INACTIVE					April 1930					
17. LENGTH OF RESERVOIR 7.6			MILES			AV. WIDTH OF RESERVOIR			MILES		
WATERSHED	18. TOTAL DRAINAGE AREA 1,666			SQ. MI.			22. MEAN ANNUAL PRECIPITATION 35			INCHES	
	19. NET SEDIMENT CONTRIBUTING AREA 1,662			SQ. MI.			23. MEAN ANNUAL RUNOFF			INCHES	
	20. LENGTH 90		MILES		AV. WIDTH 19		MILES		24. MEAN ANNUAL RUNOFF		AC.-FT.
	21. MAX. ELEV. 1,700		MIN. ELEV. 430		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.			
April 1930	-	-	-	-	2,801	39,378	23.6				
Feb. 1935	4.9	4.9	Range Detailed	33	2,801	33,717	20.2				
Feb. 1936	1.0	5.9	"	36	2,801	31,588	19.0				
Dec. 1947	11.8	17.7	"	35	2,742	22,026	13.2				
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					
Feb. 1935	32.4	1/ 287,300	530,000	1,408,000	287,300	1,408,000					
Feb. 1936	40.0	491,000	491,000	491,000	321,900	1,899,000					
Dec. 1947	35.3	449,900	1,006,000	5,309,000	407,200	7,208,000					
SURVEY DATA	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				
	Feb. 1935	5,661	1,155	0.695	5,661	1,155	0.695				
	Feb. 1936	2,129	2,129	1.28	7,790	1,320	0.794				
	Dec. 1947	9,562 (9,616)2/	810 (815)	0.487 (0.490)	17,352 (17,406)	980 (983)	0.590 (0.591)				
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				
Feb. 1935	58.5 *	886	886	2.93	14.38	3,770	3,770				
Feb. 1936	58.5 *	1,631	1,012	3.35	19.78	4,065	3,846				
Dec. 1947	58.5 *	621 (624)	752 (753)	2.49	44.07	1,689 (1,698)	2,257 (2,264)				

1/ Inflow data computed from records on 2 gauges several miles upstream from Lake Waco.

2/ Above-crest deposits within original flow line.

* Assumed

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION											
	43-36	36-32	32-28	28-24	24-20	20-16	16-12	12-10	10-8	8-6	6-4	4-2
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION											
Feb. 1936	3	6	11	13	11	13	18	8	5	5	3	2
Dec. 1947	1	3	5	7	10	16	23	13	10	7	3	1
	2-Crest											
Feb. 1936	2											
Dec. 1947	1											

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
410	1	2	428	2,427	16,571			
414	130	205	430	2,742	22,026			
418	373	1,222						
420	827	2,467						
422	1,240	4,651						
424	1,660	7,727						
426	2,124	11,744						

47. REMARKS AND REFERENCES
 Unpublished Report "Aspects of Sedimentation in Lake Waco" by Jones and Rogers.

In 1947 326 Ac. Ft. of water was impounded behind silt bars and represents unavailable storage.

Region 4, Soil Conservation Service
 U. S. Department of Agriculture

48. AGENCY SUPPLYING DATA Fort Worth, Texas

49. DATE August 3, 1950

**RESERVOIR SEDIMENT
DATA SUMMARY**

Lake Waco (Old)
NAME OF RESERVOIR
(Final Report)

53-31a
DATA SHEET NO.

DAM	1. OWNER City of Waco			2. STREAM Bosque		3. STATE Texas										
	4. SEC. TWP. RANGE		5. NEAREST TOWN Waco			6. COUNTY McLennan										
	7. STREAM BED ELEVATION 387			8. TOP OF DAM ELEVATION 442.0		9. SPILLWAY CREST ELEV. 430.0										
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										April 1930					
	b. FLOOD CONTROL															
	c. POWER															
	d. WATER SUPPLY		430		2,801		39,378		39,378		16. DATE NORMAL OPER. BEGAN					
	e. IRRIGATION															
	f. CONSERVATION															
	g. SEDIMENT										April 1930					
h. INACTIVE																
17. LENGTH OF RESERVOIR 7.6 MILES					AV. WIDTH OF RESERVOIR MILES											
WATERSHED	18. TOTAL DRAINAGE AREA 1,666 - (1,649) # SQ. MI.					22. MEAN ANNUAL PRECIPITATION 35 INCHES										
	19. NET SEDIMENT CONTRIBUTING AREA 1,666 (1,645) # SQ. MI.					23. MEAN ANNUAL RUNOFF INCHES										
	20. LENGTH 90 MILES		AV. WIDTH 19 MILES		24. MEAN ANNUAL RUNOFF AC.-FT.											
	21. MAX. ELEV. 1,700			MIN. ELEV. 430		25. CLIMATIC CLASSIFICATION Humid										
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.	
	Apr 1930		-		-		-		-		2,801		39,378		23.6	
	Feb 1935		4.9		4.9		Range Detailed		33		2,801		33,717		20.2	
	Feb 1936		1.0		5.9		"		36		2,801		31,588		19.0	
	Dec 1947		11.8		17.7		"		35		2,742		22,026		13.2	
	Dec 1964		17.0		34.7		"		1 foot		2,624		15,427		9.3	
	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			
	Feb 1935		32.4		1/ 287,300		530,000		1,408,000		287,300		1,408,000			
	Feb 1936		40.0		491,000		491,000		491,000		321,900		1,899,000			
	Dec 1947		35.3		449,900		1,006,000		5,309,000		407,200		7,208,000			
	Dec 1964		Not computed													
	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			
	Feb 1935		5,661		1,155		0.695		5,661		1,155		0.695 -			
Feb 1936		2,129		2,129		1.28		7,790		1,320		0.794				
Dec 1947		9,562		810		0.487		17,352		980		0.590				
Dec 1964		(9,616) 2/		(815)		(0.490)		(17,406)		(983)		(0.591)				
Dec 1964		6,599		388		0.236		23,951		690		0.419				
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		
Feb 1935		58.5*		886		886		2.93		14.38		3,770		3,770		
Feb 1936		58.5*		1,631		1,012		3.35		19.78		4,065		3,846		
Dec 1947		58.5*		621		752		2.49		44.07		1,689		2,257		
Dec 1964		-		(624)		(753)		1.75		60.82		(1,698)		(2,264)		

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION											
	43-36	36-32	32-28	28-24	24-20	20-16	16-12	12-10	10-8	8-6	6-4	4-2
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION											
Feb 1936	3	6	11	13	11	13	18	8	5	5	3	2
Dec 1947	1	3	5	7	10	16	23	13	10	7	3	1
	2-Crest											
Feb 1936	2											
Dec 1947	1											
Dec 1964	Not determined											

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														
Dec 1964	Not determined														

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV. ♡	INFLOW AC.-FT.
Dec 1964	Not determined						

46. ELEVATION-AREA-CAPACITY DATA (December 1964)								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
410	6	10	428	2,284	10,496			
414	26	64	430	2,624	15,427			
418	79	251						
420	175	501						
422	583	1,159						
424	1,292	3,033						
426	1,944	6,252						

47. REMARKS AND REFERENCES Unpublished Report "Aspect of Sedimentation in Lake Waco" by Jones and Rogers. In 1947 326 Ac. Ft. of water was impounded behind silt bars and represents unavailable storage. 1935, 1936, and 1947 surveys by Soil Conservation Service. Data for these surveys copied from Data Sheet 53-31, dated 3 Aug 1950. 1964 Survey by Corps of Engineers, Fort Worth District. Lake Waco inundated when deliberate impoundment began in new Waco Reservoir - 26 February 1965.

1/ Inflow data computed from records on 2 gauges several miles upstream from Lake Waco.
2/ Above-crest deposits within original flow line.
* Assumed.
Latest drainage area by USGS in 1964.

48. AGENCY MAKING SURVEY Corps of Engineers, Fort Worth District
49. AGENCY SUPPLYING DATA
50. DATE February 1966