

RESERVOIR SEDIMENTATION DATA SUMMARY

Pine Flat

71-36

NAME OF RESERVOIR

DATA SHEET NO.

DAM	1. OWNER Corps of Engineers			2. RIVER Kings			3. STATE California				
	4. SEC. 2 TWP. 12-S RANGE 24-E			5. NEAREST TOWN Sanger			6. COUNTY Fresno				
	7. STREAM BED ELEV. 560.			8. TOP OF DAM ELEV. 970.0'			9. SPILLWAY CREST ELEV. 953.5'				
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	953.5	5,994	1,013,400	1,013,400	10 May 1952					
	b. POWER	-	-	-	-						
	c. WATER SUPPLY	-	-	-	-						
	d. IRRIGATION	-	-	-	-	16. DATE NORMAL OPER. BEGAN					
	e. CONSERVATION	953.5	5,994	1,013,400	1,013,400						
	f. INACTIVE	565.5	0	0	0	13 Feb 1954					
17. LENGTH OF RESERVOIR		18.75	MILES		17. AV. WIDTH OF RESERVOIR		0.5 MILES				
WATERSHED	18. TOTAL DRAINAGE AREA		1,542	SQ. MI.		22. MEAN ANNUAL PRECIPITATION		39 INCHES			
	19. NET SEDIMENT CONTRIBUTING AREA		1,542	SQ. MI.		23. MEAN ANNUAL RUNOFF		18 INCHES			
	20. LENGTH	63	MILES		24. MEAN ANNUAL RUNOFF	1,656,000 AC.-FT.					
	21. MAX. ELEV.		11,250'	MIN. ELEV.		560.0'					
					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. ML.			
	10 May 1952	0	0	Range	35	5,994	1,013,400	660			
	13 Feb 1954	1.8 (b)	1.8	Reconn.	2	5,994	1,013,290	660			
	15 Nov 1956	3 (c)	4.8	Range	20	5,994	1,011,950	660			
	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				
	10 May 1952	-	-	-	0	-	0				
	13 Feb 1954	47	2,780,000	2,850,000	5,000,000	2,780,000	5,000,000				
	15 Nov 1956	43	1,620,000	2,536,000	4,868,000	2,050,000	9,868,000				
	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. ML.-YR.	a. TOTAL TO DATE	b. AV. ANNUAL	c. PER SQ. ML.-YR.					
10 May 1952	0	0	0	0	0	0					
13 Feb 1954	110	55	0.04	110	55	0.04					
15 Nov 1956	1,340	447	0.29	1,450	302	0.20					
26. DATE OF SURVEY	39. AV. DRY WGT. LBS. PER CU. FT.	40. SED. DEP. TONS PER SQ. ML.-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				
10 May 1952	-	-	0	-	0	-	-				
13 Feb 1954	62 (Est)	54	54	0.006	0.01	-	-				
15 Nov 1956	62 (Est)	392	270	0.03	0.14	274	146				

To accompany office memorandum titled "Reservoir Sedimentation from 1955 Flood" dated 10 July 1957.

26. DATE OF SURVEY	#3. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION 951.5											
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION											
Feb 1954	0	100	0									
Nov 1956	0	8	2	15	16	20	13	24	2	0	0	

26. DATE OF SURVEY	#4. 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															
Feb 1954	100	0													
Nov 1956	8	0	4	15	22	19	11	21	0	0	0	0	0	0	0

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.
1952	728.5	565.5	2,859,100				
1953	618.5	565.5	1,143,900				
1954	832.2	565.5	1,302,900				
1955	835.10	688.59	1,107,700				
1956	940.78	692.67	2,536,200				

46. ELEVATION-AREA-CAPACITY DATA								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
570	0	0	660	951	30,025	820	3,540	383,550
580	2	10	680	1,233	51,935	840	3,880	457,750
590	36	200	700	1,529	79,555	860	4,220	538,750
600	94	850	720	2,200	154,050	880	4,580	626,750
610	166	2,150	740	2,535	201,425	900	4,920	721,750
620	314	4,550	760	2,870	255,450	920	5,320	824,150
630	475	8,475	780	3,200	316,150	940	5,710	934,400
640	639	14,065	800			960	6,130	1,052,800

47. REMARKS AND REFERENCES

(a) Top of gates in closed position

(b) Period of abnormal operation. Represents 0.3 years of sediment accumulation behind partially closed gates and 1.5 years of sediment depletion with wide open gates. Sediment value is residue at end of period.

(c) Represents sedimentation for 3 full runoff years because no significant inflow occurred from 1 Oct 1953 to 13 Feb 1954 or from 1 Oct 1956 to 15 Nov 1956.

48. AGENCY SUPPLYING DATA Sacramento Dist. Corps of Engineers 49. DATE Rev. 19 July 1962

RESERVOIR SEDIMENT
DATA SUMMARY

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

Pine Flat

NAME OF RESERVOIR

71-36a

DATA SHEET NO.

DAM	1. OWNER Corps of Engineers			2. STREAM Kings			3. STATE California											
	4. SEC. 2 TWP. 12-S RANGE 24-E			5. NEAREST P.O. Sanger			6. COUNTY Fresno											
	7. LAT 36° 49' 55" LONG. 119° 19' 25"			8. TOP OF DAM ELEVATION 970.0'			9. SPILLWAY CREST ELEV. 951.5'											
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		953.5		5,994		1,013,400		1,013,400		10 May 1952							
	b. MULTIPLE USE		-		-		-		-									
	c. POWER		-		-		-		-									
	d. WATER SUPPLY		-		-		-		-									
	e. IRRIGATION		-		-		-		-		16. DATE NORMAL OPER. BEGAN							
	f. CONSERVATION		953.5		5,994		1,013,400		1,013,400									
	g. INACTIVE		565.5		0		0		0		13 Feb 1954							
17. LENGTH OF RESERVOIR		18.75		MILES		AV. WIDTH OF RESERVOIR		0.5		MILES								
WATERSHED	18. TOTAL DRAINAGE AREA			1,542			SQ. MI.			22. MEAN ANNUAL PRECIPITATION			39			INCHES		
	19. NET SEDIMENT CONTRIBUTING AREA			1,542			SQ. MI.			23. MEAN ANNUAL RUNOFF						INCHES		
	20. LENGTH			63			MILES			AV. WIDTH			25			MILES		
	24. MEAN ANNUAL RUNOFF			1,656,000			AC.-FT.			25. ANNUAL TEMP MEAN			RANGE					
	21. MAX. ELEV.			14,250'			MIN. ELEV.			560.'								
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.			
	10 May 1952		0		0		Range		35		5,994		1,013,400		660			
	13 Feb 1954		2		2		Reconn.		2		5,994		1,013,290		660			
	Nov 1956		3		5		Range		20		5,994		1,011,950		660			
	Jun 1973		17		21		Range		17		5,994		1,008,280		660			
	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					
	10 May 1952		-		-		-		0		-		0		0			
	13 Feb 1954		47		2,002,000		2,850,000		5,100,000		2,002,000		5,000,000					
	Nov 1956		43		1,647,000		2,536,000		4,868,000		1,790,000		9,968,000					
Jun 1973		19-43		1,590,000		4,144,000		27,032,000		1,325,000		35,991,000						
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 May 1952		0		0		0		0		0		0		0				
13 Feb 1954		110		55		0.04		110		55		0.04						
Nov 1956		1,340 ^{1/2}		447		0.29		1,450 ^{1/2}		290		0.19						
Jun 1973		3,670 ^{1/2}		216		0.14		5,120 ^{1/2}		243		0.16						
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				
10 May 1952		-		0		0		-		0		-		-				
13 Feb 1954		62 (Est)		48		48		0.006		0.01		Not known		Not known				
Nov 1956		62 (Est)		392		254		0.03		0.15		280		280				
Jun 1973		62 (Est)		189		216		0.0002		0.005		135		141				

26. DATE OF SURVEY	43 DEPTH DESIGNATION RANGE IN FEET BELOW, AND ABOVE, CREST ELEVATION 951.5										
	360-320	320-280	280-240	240-200	200-160	160-120	120-80	80-40	40-CST	CST-20	

PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION											
Jun 1973*	13	7	1	13	47	0 ^{2/}	0 ^{2/}	0 ^{2/}	15	4	

26. DATE OF SURVEY	44 REACH DESIGNATION PERCENT OF TOTAL ORIGINAL LENGTH OF RESERVOIR													
	0-10	10-30	20-50	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														
Jun 1973	0	34	10 ^{2/}	17 ^{2/}	18	21	0	0	0	0 ^{2/}	0	0	0	0

45. RANGE IN RESERVOIR OPERATION

WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC.-FT.
1952	728.5	565.5	2,859,100	1964	894.34	756.18	909,439
1953	618.5	565.5	1,143,900	1965	904.59	755.26	1,949,312
1954	832.2	565.5	1,302,900	1966	894.92	763.82	1,199,018
1955	835.10	688.59	1,107,700	1967	952.76	762.67	3,207,134
1956	940.78	692.67	2,536,200	1968	903.51	796.99	903,873
1957	933.66	792.22	1,245,474	1969	951.17	796.99	4,144,084
1958	951.31	789.97	2,330,433	1970	931.81	850.38	1,396,900
1959	897.65	798.20	881,102	1971	917.80	815.79	1,116,400
1960	850.83	771.56	720,807	1972	874.64	757.18	819,626
1961	827.98	718.23	552,479	1973	945.99	763.22	2,031,842
1962	886.71	717.66	1,797,219				
1963	941.30	776.66	1,827,849				

46. ELEVATION-AREA-CAPACITY DATA

ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
600	101	423	680	1,238	51,373	820	3,544	383,196
610	210	1,958	700	1,550	79,248	840	3,884	457,481
620	337	4,677	720	1,868	113,424	880	4,570	626,484
630	476	8,735	740	2,193	154,021	900	4,929	721,441
640	623	14,228	760	2,525	201,186	920	5,309	823,775
650	774	21,214	780	2,863	255,055	960	6,136	1,052,440
660	928	29,723	800	3,204	315,716			

47. REMARKS AND REFERENCES

- 1/ Scour was indicated in ranges 5, 7, 8 and 21 and are included in these amounts.
- 2/ Scour is indicated in these areas and are disregarded for purposes of the sediment study.
The improved methods of sounding and control account for the indication of Scour.
- * Data from the 10 May 1952 survey is not available, percent of sediment is based on November 1956 survey.