

RESERVOIR SEDIMENT

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

DATA SUMMARY

Site No. 1, Kent Creek Watershed

SCS-34 Rev. 6-66

NAME OF RESERVOIR

50- 50

DATA SHEET NO.

DAM	1. OWNER <b>Jim Mayfield</b>			2. STREAM <b>Kent Creek</b>			3. STATE <b>Texas</b>					
	4. SEC. <b>TWP.</b> RANGE			5. NEAREST P. O. <b>Quitaque</b>			6. COUNTY <b>Brisco</b>					
	7. LAT. ° ' " LONG. ° ' "			8. TOP OF DAM ELEVATION <b>2678.0</b>			9. SPILLWAY CREST ELEV. <b>2676.0</b>					
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		<b>2676.0</b>		<b>38.81</b>		<b>327.08</b>		<b>622.01</b>		<b>4-23-64</b>	
	b. MULTIPLE USE											
	c. POWER											
	d. WATER SUPPLY										16. DATE NORMAL OPER. BEGAN	
	e. IRRIGATION											
	f. CONSERVATION		<b>2665.1 2/</b>		<b>22.87</b>		<b>41.15</b>		<b>294.93</b>			
g. Inactive		<b>2663.2</b>		<b>20.49</b>		<b>253.78</b>		<b>253.78</b>		<b>4-23-64</b>		
WATERSHED	17. LENGTH OF RESERVOIR <b>0.51</b> MILES				AV. WIDTH OF RESERVOIR <b>0.12</b> MILES							
	18. TOTAL DRAINAGE AREA <b>1.52</b> SQ. MI.				22. MEAN ANNUAL PRECIPITATION <b>22.0</b> INCHES							
	19. NET SEDIMENT CONTRIBUTING AREA <b>1.46</b> SQ. MI.				23. MEAN ANNUAL RUNOFF <b>0.5</b> INCHES							
	20. LENGTH <b>2.50</b> MILES		AV. WIDTH <b>0.61</b> MILES		24. MEAN ANNUAL RUNOFF <b>40.5</b> AC.-F T.							
	21. MAX. ELEV. <b>3200*</b>		MIN. ELEV. <b>2636.0</b>		25. ANNUAL TEMP.: MEAN RANGE <b>Semiarid</b>							
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/R RATIO, AC.-FT. PER SQ. MI.			
	4-23-64		-	-			<b>38.81</b>	<b>622.01</b>	<b>409.22</b>			
	6-10-66		2.1	2.1	Range-	15 R	<b>38.81</b>	<b>613.83</b>	<b>403.84</b>			
	4-23-64		-	-			<b>22.87</b>	<b>294.93</b>				
	6-10-66		2.1	2.1	Contour	2' CI	<b>22.87</b>	<b>286.75</b>				
	4-23-64		-	-			<b>20.49</b>	<b>253.78</b>				
	6-10-66		2.1	2.1			<b>20.49</b>	<b>245.60</b>				
	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					
6-10-66		<b>8.18</b>	<b>3.90</b>	<b>2.67</b>	<b>8.18</b>	<b>3.90</b>	<b>2.67</b>					
6-10-66		<b>8.18</b>	<b>3.90</b>	<b>2.67</b>	<b>8.18</b>	<b>3.90</b>	<b>2.67</b>					
6-10-66		<b>8.18</b>	<b>3.90</b>	<b>2.67</b>	<b>8.18</b>	<b>3.90</b>	<b>2.67</b>					
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				
6-10-66		-	-	-	<b>0.63</b>	<b>1.32</b>	-	-				
6-10-66		-	-	-	<b>1.32</b>	<b>2.77</b>	-	-				
6-10-66		<b>61.0 (2)</b>	<b>3547.</b>	<b>3547.</b>	<b>1.54</b>	<b>3.22</b>	-	-				

\*Assumed

26

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
See attached sheet.								

47. REMARKS AND REFERENCES  
 1/ All pools (up to elev. 2676.0)  
 2/ Principal Spillway crest (including sediment pool and sediment reserve to elev. 2665.1).  
 3/ Sediment pool (below port at elev. 2663.2).  
 C/I Ratio: 15.16 1/; 7.08 2/; 6.06 3/.  
 Estimated trap efficiency: 99%

48. AGENCY MAKING SURVEY  
 49. AGENCY SUPPLYING DATA  
 Soil Conservation Service  
 Temple, Texas  
 50. DATE 3-67

SITE NO. 1, KENT CREEK WATERSHED

46. Elevation - Area - Capacity Data

1964

Elevation	Area	Capacity	Elevation	Area	Capacity
2638.0	.22	.15	2656.0	15.19	126.81
2640.0	1.22	1.11	2658.0	16.45	158.46
2642.0	2.68	4.87	2660.0	17.74	192.66
2644.0	4.24	11.69	2663.2	20.49	253.78
2646.0	6.01	21.86	2665.1	22.87	294.93
2648.0	7.65	35.49	2668.0	25.99	365.74
2650.0	9.08	52.19	2670.0	28.66	420.39
2652.0	11.62	72.86	2672.0	31.85	480.90
2654.0	13.58	98.05	2674.0	35.22	547.97
			2676.0	38.81	622.01

1966

2642.0	1.74	1.16	2660.0	17.74	184.48
2644.0	3.73	6.44	2663.2	20.49	245.60
2646.0	5.40	15.51	2665.1	22.87	286.75
2648.0	7.41	28.27	2668.0	25.99	357.56
2650.0	8.78	44.44	2670.0	28.66	412.21
2652.0	11.57	64.74	2672.0	31.85	472.72
2654.0	13.58	89.87	2674.0	35.22	539.79
2656.0	15.19	118.63	2676.0	38.81	613.83
2658.0	16.45	150.28			

RESERVOIR SEDIMENT  
DATA SUMMARY  
SCS-34 Rev. 6-66

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

Site No. 1, Kent Creek

NAME OF RESERVOIR

(REVISED 1974)

50 - 50a

DATA SHEET NO.

DAM	1. OWNER <b>Jim Mayfield</b>		2. STREAM <b>Kent Creek</b>		3. STATE <b>Texas</b>			
	4. SEC. <b>TWP.</b> RANGE		5. NEAREST P. O. <b>Quitaque</b>		6. COUNTY <b>Briscoe</b>			
	7. LAT. <b>34° 23' 21"</b> LONG. <b>101° 11' 56"</b>		8. TOP OF DAM ELEVATION <b>2678.0</b>		9. SPILLWAY CREST ELEV. <b>2676.0</b>			
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		2676.0 1/	39.35	330.38	625.80	4-23-64	
	b. MULTIPLE USE							
	c. POWER							
	d. WATER SUPPLY						16. DATE NORMAL OPER. BEGAN	
	e. IRRIGATION							
	f. CONSERVATION		2665.1 2/	22.87	41.15	295.42	4-23-64	
	g. INACTIVE		2663.2 3/	20.49	254.27	254.27		
WATERSHED	17. LENGTH OF RESERVOIR <b>0.51</b> MILES			AV. WIDTH OF RESERVOIR <b>0.12</b> MILES				
	18. TOTAL DRAINAGE AREA <b>1.52</b> SQ. MI.			22. MEAN ANNUAL PRECIPITATION <b>19.85 (29)</b> INCHES				
	19. NET SEDIMENT CONTRIBUTING AREA <b>1.46</b> SQ. MI.			23. MEAN ANNUAL RUNOFF <b>0.5</b> INCHES				
	20. LENGTH <b>2.50</b> MILES		AV. WIDTH <b>0.61</b> MILES		24. MEAN ANNUAL RUNOFF <b>40.5</b> AC.-FT.			
	21. MAX. ELEV. <b>3200</b>		MIN. ELEV. <b>2636.0</b>		25. ANNUAL TEMP: MEAN <b>60°F</b> RANGE <b>26 - 94°F</b>			
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.
	1/ 4-23-64	-	-			39.35	625.80	15.44
	1/ 6-10-66	2.1	2.1	Range	15 R	39.35	617.15	15.23
	2/ 4-23-64	-	-	Contour		22.87	295.42	--
	2/ 6-10-66	2.1	2.1	(D)	2' CI	22.87	286.77	--
	3/ 4-23-64	-	-			20.49	254.27	--
	3/ 6-10-66	2.1	2.1			20.49	245.62	--
	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		
1/ 6-10-66	8.65	4.12	2.82	8.65	4.12	2.82		
2/ 6-10-66	8.65	4.12	2.78	8.65	4.12	2.78		
3/ 6-10-66	8.65	4.12	2.77	8.65	4.12	2.77		
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	
1/ 6-10-66	-	3677.8	3677.8	0.66	1.38	--	--	
2/ 6-10-66	-	-	-	1.39	2.93	--	--	
3/ 6-10-66	61.0 (2)	3677.8	3677.8	1.62	3.40	--	--	

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
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN REACH DESIGNATION														

45. ELEVATION-AREA-CAPACITY DATA					
Elevation	Area	Capacity	Elevation	Area	Capacity
<u>Original Capacity</u>					
2638.0	0.22	0.15	2658.0	16.45	158.94
2640.0	1.22	1.45	2660.0	17.74	193.14
2642.0	2.68	5.26	2663.2	20.49	254.27
2644.0	4.24	12.12	2665.1	22.87	295.42
2646.0	6.01	22.32	2668.0	25.99	366.24
2648.0	7.65	35.95	2670.0	28.80	421.11
2650.0	9.08	52.67	2672.0	32.43	482.42
2652.0	11.62	73.33	2674.0	35.79	550.65
2654.0	13.58	98.52	2676.0	39.35	625.80
2656.0	15.19	127.29			

46. ELEVATION-AREA-CAPACITY DATA								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
<u>1966 Survey</u>								
2642.0	1.74	1.16	2654.0	13.58	89.97	2668.0	25.99	357.59
2644.0	3.73	6.51	2656.0	15.19	118.74	2670.0	28.88	412.46
2646.0	5.40	15.59	2658.0	16.45	150.29	2672.0	32.43	473.77
2648.0	7.41	28.35	2660.0	17.74	184.49	2674.0	35.79	542.00
2650.0	8.78	44.53	2663.2	20.49	245.62	2676.0	39.35	617.15
2652.0	11.57	64.83	2665.1	22.87	286.77			

47. REMARKS AND REFERENCES

1/ Total reservoir up to emergency spillway crest elevation (2676.0')

2/ Principal spillway crest (includes sediment pool and sediment reserve to elev. 2665.1)

3/ Sediment pool only (to elev. 2663.2)

Estimated trap efficiency 97%

Revision due to extending 4 top contours up canyon to crest elevation, thereby increasing total surface area and total gross storage.

48. AGENCY MAKING SURVEY Soil Conservation Service

49. AGENCY SUPPLYING DATA Temple, Texas

50. DATE Revised January 1974

RESERVOIR SEDIMENT  
DATA SUMMARY

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

Site No. 1, Kent Creek

SCS-34 Rev. 6-66

NAME OF RESERVOIR

50 - 50a

DATA SHEET NO.

DAM	1. OWNER <b>Jim Mayfield</b>			2. STREAM <b>Kent Creek</b>			3. STATE <b>Texas</b>					
	4. SEC. TWP. RANGE			5. NFAREST P. O. <b>Quitaque</b>			6. COUNTY <b>Briscoe</b>					
	7. LAT. <b>N31° 23' 21" LONG. <b>W101° 4' 56"</b></b>			8. TOP OF DAM ELEVATION <b>2678.0</b>			9. SPILLWAY CREST ELEV. <b>2676.0</b>					
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		2676.0 1/		39.35		330.38		625.80		4-23-64	
	b. MULTIPLE USE											
	c. POWER											
	d. WATER SUPPLY										16. DATE NORMAL OPER. BEGAN	
	e. IRRIGATION											
	f. CONSERVATION		2665.1 2/		22.87		41.15		295.42		4-23-64	
	g. INACTIVE		2663.2 3/		20.49		254.27		254.27			
WATERSHED	17. LENGTH OF RESERVOIR <b>0.51</b> MILES				AV. WIDTH OF RESERVOIR <b>0.12</b> MILES							
	18. TOTAL DRAINAGE AREA <b>1.52</b> SQ. MI.				22. MEAN ANNUAL PRECIPITATION <b>19.85 (29)</b> INCHES							
	19. NET SEDIMENT CONTRIBUTING AREA <b>1.46</b> SQ. MI.				23. MEAN ANNUAL RUNOFF <b>0.5</b> INCHES							
	20. LENGTH <b>2.50</b> MILES		AV. WIDTH <b>0.61</b> MILES		24. MEAN ANNUAL RUNOFF <b>40.53</b> AC.-F.T.							
	21. MAX. ELEV. <b>3200</b>		MIN. ELEV. <b>2636.0</b>		25. ANNUAL TEMP: MEAN <b>60°F</b> RANGE <b>26 - 94°F</b>							
SURVEY	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.			
	4-23-64		-	-	Range	15 R	39.35	625.80	15.44			
	6-10-66		2.1	2.1	Contour		39.35	617.15	15.23			
	9-20-74		8.3	10.4	(D)	2' CI	39.35	541.21	13.35			
	4-23-64		-	-			22.87	295.42	--			
	6-10-66		2.1	2.1			22.87	286.77	--			
	9-20-74		8.3	10.4			22.37	212.76	--			
	<del>XXXXXXXXXX SURVEY</del>		<del>XXXXXXXXXX PERIOD</del>	<del>XXXXXXXXXX ACCL.</del>	<del>XXXXXXXXXX TYPE</del>	<del>XXXXXXXXXX RANGES</del>	<del>XXXXXXXXXX SURFACE</del>	<del>XXXXXXXXXX CAPACITY</del>	<del>XXXXXXXXXX C/I. RATIO</del>			
	4-23-64		-	-			20.49	254.27	--			
	6-10-66		2.1	2.1			20.49	245.62	--			
9-20-74		8.3	10.4			19.58	172.96	--				
SURVEY	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		
	9-20-74		75.94	9.15	6.27	84.59		8.13		5.57		
	9-20-74		74.01	8.92	6.11	82.66		7.95		5.44		
9-20-74		72.66	8.75	6.00	81.31		7.82		5.35			
SURVEY	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
	9-20-74		-		9194.58		8095.36		1.30		13.52	--
	9-20-74		67 *		162.57		131.33		2.69		27.98	--
	9-20-74		66.0 (4)		8696.92		7690.52		3.08		31.98	--
9-20-74		96.6 (3)		335.09		273.51		-		-	--	

\* Weighted average

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
2650.0	4.09	2.73	2665.1	22.37	212.76			
2652.0	6.95	13.65	2668.0	25.50	282.15			
2654.0	11.15	31.59	2670.0	28.88	336.52			
2656.0	13.18	55.90	2672.0	32.43	379.83			
2658.0	14.66	83.74	2674.0	35.79	466.06			
2660.0	16.65	115.04	2676.0	39.35	541.21			
2663.2	19.58	172.96						

47. REMARKS AND REFERENCES

1/ Total reservoir below emergency spillway crest elevation (2676.0)

2/ Principal spillway crest (including sediment pool and sediment reserve to elev. 2665.1)

3/ Sediment pool (elevation 2663.2)

4/ Detention pool (between elev. 2665.1 & 2676.0)

Estimated trap efficiency - 97%

Geology - Quartermaster formation of Upper Permian Age and Dockum Group of Triassic Age.

Land Resource Area - Central Rolling Red Plains

Land Use - Rangeland 92%, Cultivated 6%, Miscellaneous 2%

48. AGENCY MAKING SURVEY      Soil Conservation Service

49. AGENCY SUPPLYING DATA      Temple, Texas

50. DATE      January 1975