

APPENDICES

APPENDIX A

LETTER AUTHORIZING PANEL



DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON, DC 20310-0103

14 AUG 1987

Professor Jack Keller
Department of Agricultural
and Irrigation Engineering
Utah State University
Logan, Utah 84322-4105

Dear Professor Keller:

I am very pleased to inform you that I am formally constituting and commissioning the Red River Chloride Control Project Evaluation Panel to assess the effectiveness of area VIII of the Red River Chloride Control project. The members of the panel are:

- > Dr. Herbert Grubb;
- > Professor Jack Keller;
- > Mr. Jack Kramer;
- > Mr. Jack Rawson; and
- > Mr. Glenn Sullivan.

You have agreed to serve as Chairman, and Mr. Rawson has agreed to serve as Vice Chairman.

I also have asked the Commander of the Southwestern Division of the Army Corps of Engineers to consult with you to arrange a meeting date in late September or October 1987 to initiate the activities of the panel. I would anticipate that the panel's first meeting would include a visit to area VIII and a first-hand viewing of the site and the works that are now in operation there.

Enclosed is information relating to the members of the panel, a copy of Section 1107 of Public Law 99-662, a charter to guide the panel's activities, and a paper containing useful background information. As indicated in the charter, the Commander of the Southwestern Division will designate a point of contact to assure that the panel receives the necessary technical and administrative support from the Corps. Major General Jerome B. Hilmes is the Commander, and his address is U.S. Army Engineer Division, Southwestern, 1114 Commerce Street, Dallas, Texas 75242-0216. Under separate cover you will receive a copy of the Corps recommendations regarding General Design Memorandum numbered 25 by the Director of Civil Works on behalf of the Chief of Engineers, dated August 8, 1977, referenced in Public Law 99-662.

I consider the assignment given to the panel to be an important one not only for the Red River Chloride Control project but for other projects of this type as well. I am sure that each of you will take your responsibilities most seriously and deliver your best professional judgment with regard to the correspondence between the actual performance of area VIII and that assumed in the Corps reanalysis of November 1980.

I extend to you my best wishes for an expeditious fulfillment of the charter given to you by Public Law 99-662.

Sincerely,

John S. Doyle, Jr.
Acting Assistant Secretary of the Army
(Civil Works)

Enclosures

Similar letter sent to Jack Rawson, Jack Kramer,
Herbert Grubb, and Glenn Sullivan

**MEMBERS
RED RIVER CHLORIDE CONTROL PROJECT
EVALUATION PANEL**

Professor Jack Keller - Chairman
Department of Agricultural
and Irrigation Engineering
Utah State University
Logan, Utah 84322-4105
801-750-2785

Mr. Jack Rawson - Vice Chairman
Water Resources Division
United States Geological Survey
649 Federal Building
300 East 8th Street
Austin, Texas 78701
512-482-5766

Dr. Herbert Grubb
Director of Planning
Texas Water Development Board
Capitol Station
Post Office Box 13231
Austin, Texas 78711-3231
512-463-7868

Mr. Jack Kramer
Texas Water Commission
Post Office Box 13087
Austin, Texas 78711
512-463-7791

Mr. Glenn Sullivan
Secretary of Natural Resources
Office of the Governor
State of Oklahoma
Oklahoma City, Oklahoma 73105
405-521-2413

ble. Except as specifically provided herein all transactions will be in accordance with existing laws and procedures.

SEC. 1107. RED RIVER CHLORIDE CONTROL

(a) The first sentence of the paragraph under the center heading "ARKANSAS AND RED RIVERS" in section 203 of the Flood Control Act of 1966 is amended by striking out "\$46,400,000" and inserting in lieu thereof "\$177,600,000".

(b) Section 201 of the Flood Control Act of 1970, as amended by section 153 of the Water Resources Development Act of 1976, is amended by striking out the last sentence under the heading "ARKANSAS-RED RIVER BASIN" and inserting in lieu therof the following: "Construction shall not be initiated on any element of such project involving the Arkansas River Basin until such element has been approved by the Secretary of the Army. The chloride control projects for the Red River Basin and the Arkansas River Basin shall be considered to be authorized as separate projects with separate authority under section 203 of the Flood Control Act of 1966.

(c) Construction of remaining elements of the project involving the Red River Basin shall be initiated in accordance with the recommendations regarding general design memorandum numbered 25 by the director of civil works on behalf of the Chief of Engineers, dated August 8, 1977. Such construction shall commence upon transmittal of a report to the Secretary and to the Committee on Environment and Public Works of the Senate and the Committee on Public Works and Transportation of the House of Representatives of a favorable finding of the effectiveness of the operation of area VIII, to be made by a panel consisting of representatives of the United States Geological Survey and the Texas Water Commission, a person selected in the National Academy of Sciences, and two other qualified persons to be appointed by the Secretary with the concurrence of the governors of Texas and Oklahoma. The panel shall assess the improvement in water quality downstream of area VIII to determine its consistency with the water quality assumed in the development of project benefits in the economic reanalysis of the project completed in November 1980. Such report shall be submitted to the Secretary and to such committees no later than three years after the date area VIII commences operation. Cost sharing for construction on the Red River Basin project initiated under this section shall be the same as the cost sharing for area VIII of the project.

SEC. 1108. ST. JOHNS RIVER BASIN, MAINE.

(a) The Secretary is authorized to implement a program of research in order to demonstrate the cropland irrigation and conservation techniques described in the report issued by the New England division engineer, dated May 1980, for the Saint John River Basin, Maine. The non-Federal share of the cost of such program shall be 85 percent.

(b) For the purposes of this section, there is authorized to be appropriated \$1,825,000 for fiscal year 1988, \$820,000 for fiscal year 1989, and \$785,000 for fiscal year 1990, such sums to remain available until expended.

SEC. 1109. PROHIBITION ON GREAT LAKES DIVERSIONS

(a) The Congress finds and declares that—

**CHARTER OF THE RED RIVER CHLORIDE
CONTROL PROJECT EVALUATION PANEL**

A. PANEL'S OFFICIAL DESIGNATION: Red River Chloride Control Project Evaluation Panel.

B. OBJECTIVES AND SCOPE: As defined in Section 1107 of Public Law (P.L.) 99-662, the panel shall assess the improvement in water quality downstream of area VIII of the Red River Chloride Control project to determine its consistency with the water quality assumed in the development of the project benefits in the economic reanalysis of the project completed in November 1980. The panel shall submit a report of its findings to the Secretary of the Army and to the Committee on Environment and Public Works of the Senate and the Committee on Public Works and Transportation of the House of Representatives.

C. DURATION: The panel has been established as the Red River Chloride Control Project Evaluation Panel under Section 1107 of P.L. 99-662. The panel will function until it submits a report of its findings to the Secretary of the Army and to the Committee on Environment and Public Works of the Senate and the Committee on Public Works and Transportation of the House of Representatives. As prescribed in P.L. 99-662, the report shall be submitted not later than three years after the date area VIII commenced operation. Area VIII commenced operation on May 11, 1987; therefore, the panel shall cease functioning not later than May 11, 1990.

D. OFFICIAL TO WHOM PANEL REPORTS: The panel will report to the Secretary of the Army, through the Assistant Secretary of the Army for Civil Works.

E. SPONSOR AND AGENCY PROVIDING SUPPORT: The United States Army Corps of Engineers will be the sponsor and will furnish secretarial, clerical, and other services as requested by the panel. The Commander, Southwestern Division, Corps of Engineers, will designate a point of contact for all matters relating to the activities of the panel. The Texas Water Commission also has agreed to provide administrative support upon request by the panel.

F. DUTIES: The evaluation panel shall assess the improvement in water quality downstream of area VIII of the Red River Chloride Control project to determine its consistency with the water quality assumed in the development of project benefits in the economic reanalysis of the project completed in November 1980. The panel shall submit a report of its findings to the Secretary of the Army and to the congressional committees not later than May 11, 1990.

G. FREQUENCY OF MEETINGS: The Commander, Southwestern Division, Corps of Engineers, after consulting with the Chairman, will convene the panel at Truscott Brine Lake or other appropriate designated location for an onsite review of the Red River Chloride Control project to be conducted by the Tulsa District of the Corps. Subsequent meetings will be convened by the Chairman at places designated by him to facilitate the work of the panel as necessary to fulfill the panel's stated objective.

H. TERMINATION DATE: The panel will terminate upon submittal of a report of its findings to the Secretary of the Army and the congressional committees not later than May 11, 1990.

I. COMPOSITION AND TERMS OF MEMBERSHIP:

1. The panel will consist of five members:

- a. Mr. Jack Rawson, representing the United States Geological Survey;
- b. Mr. Jack Kramer, representing the Texas Water Commission;
- c. Professor Jack Keller, National Academy of Engineering, selected by the Acting Assistant Secretary of the Army (Civil Works) from candidates suggested by the National Research Council;
- d. Mr. Glenn Sullivan, Secretary of Natural Resources for the State of Oklahoma; and

e. Dr. Herbert Grubb, Director of Planning for the Texas Water Development Board.

Mr. Sullivan and Dr. Grubb were selected by the Acting Assistant Secretary of the Army (Civil Works) upon the recommendation of the Governors of Oklahoma and Texas, respectively.

2. The Assistant Secretary of the Army has designated Professor Jack Keller as the Chairman and Mr. Jack Rawson as Vice Chairman.

3. The terms of office shall expire upon submittal of a report of the panel's findings to the Secretary of the Army and the congressional committees not later than May 11, 1990.

4. Panel members will not be compensated for their services. Upon their request to the Southwestern Division's point of contact, members may be reimbursed for travel expenses, subsistence, and accommodation as allowed by current regulations.

**INFORMATION FOR THE RED RIVER CHLORIDE
CONTROL PROJECT EVALUATION PANEL**

SECTION 1107 OF P.L. 99-662

Section 1107 of P.L. 99-662 states that the construction of the remaining elements of the Red River Chloride project shall be initiated in accordance with the recommendations regarding general design memorandum numbered 25 by the Director of Civil Works on behalf of the Chief of Engineers, dated August 8, 1977. Such construction may commence upon transmittal of a report to the Secretary and to the Committee on Environment and Public Works of the Senate and the Committee on Public Works and Transportation of the House of Representatives of a favorable finding of the effectiveness of the operation of Area VIII, to be made by the panel. The report shall be submitted to the Secretary and to such committees no later than three years after the date Area VIII commences operation. Cost sharing for construction on the Red River Basin project initiated under this section shall be the same as the cost sharing for Area VIII of the project. The Area VIII project was dedicated on May 11, 1987.

WATER QUALITY DATA

The final determination of the requirements and data collection stations will be made by the panel. The effectiveness of the Bateman pump station will be evaluated by monitoring the quantity and quality of stream flows and brine water pumped. Stream flow quantity and quality will be monitored by existing USGS gages located immediately upstream and downstream of the Bateman pump station and at the Benjamin gage. The quantity and quality of water pumped will be monitored at the Bateman collection point (Guthrie gage). All data collected can be evaluated to determine pump station effectiveness.

In order to assist the panel in the evaluation of the effectiveness of the operation of Area VIII, three full record stations have been installed. These stations record flow and water quality data collected in the Wichita River basin which would be affected by the operation of Bateman Pump Station. These are Guthrie gage at the Bateman Pump Station, Benjamin gage located five miles north of Benjamin, Texas, on the State Highway 6 bridge across the Southfork of the Wichita River, and Maybelle gage immediately downstream of Lake Kemp on the Big Wichita River. Flows and loads captured by pumping will be defined using gage data and the Truscott pipeline flow meter. Remaining flows and loads are measured by the downstream gage at the low-flow dam. Control system effectiveness can be demonstrated by the monthly flows and loads passing downstream with the pumping plant in operation.

Data collected during the operation of the Bateman pump station can be used to evaluate the level of chloride control during the test period, predict the level of control during comparable stream flow periods, and predict the long term level of control. The level of control during the test period will be evaluated directly from data collected. Chloride control for comparable periods will be predicted using water flow and quality data from past records. Statistical data, past water quality and stream flow records, and information obtained during the test period can be used to predict the long term level of chloride control due to Bateman pump station operation.

Total load at the Benjamin gage is 210 tons per day (T/D) through the recorded period. With Bateman operating it is expected that approximately 68 T/D will remain. Between the Bateman gage and Benjamin gage an estimated 250,000 tons of chloride are dissolved in the pore water in alluvial silt deposits. Flushing of this stored brine in the alluvium must take place for definable improvement of quality parameters at Benjamin to take place. Flushing could occur in one normally wet spring. Preparation of a report should be possible shortly after the collection period ends. A period of 18 months would be required to show load control at Benjamin gage with a greater than 50 percent chance of normal flow conditions.

Maybelle gage, located immediately below Lake Kemp, would not show an improvement in water quality parameters until initial flushing of the upstream channel and flushing of the alluvial storage mentioned in paragraph 3-03 has occurred. Stored waters in Lake Kemp will delay the effects of Bateman's load removal. Normal load at Maybelle gage has been 450 T/D over the period of record. The expected load after the full effect of Bateman would be 308 T/D due to other defined and undefined sources. Time is necessary to collect sufficient data to confidently show the estimated load reduction is occurring since the contrasts of before and after are less sharp, and the flushing must take place. For this report the data collected at Maybelle gage will probably not be used as no less than five years could elapse before the expected control could confidently be expected and demonstrated with Bateman as the only control point.

ECONOMIC REANALYSIS AND ASSUMPTIONS

The following information described in subsequent paragraphs is taken from Design Memorandum No. 25, dated November 1980 and discusses the economic reanalysis and assumptions.

The improvement of water quality in the Red River Basin would result in major benefits to the municipal and industrial user and to the agricultural user. The concepts, methodologies and procedures used in the evaluation are discussed in the Economic Reanalysis Summary section.

The municipal and industrial benefits are measured as water quality benefits, water supply benefits, or induced benefits. Water quality benefits are calculated when Red River water is used with or without the project. The benefit is a measure of the quality cost of water (either the cost of treatment to acceptable standard or the damage cost as a result of no treatment) without the project compared to with the project. The water supply benefit is calculated if Red River water is used only with the project and is the value of the least costly alternative with the project. Induced benefits result when more water is used with the project than without.

Net agricultural benefits are estimated as the average annual value of the difference in net crop returns with the project as compared with net crop returns without the project. It is necessary to project the type and amount of the various crops expected to be grown over the 100-year period with and without the project. The basic assumption behind the forecast of cropping patterns with and without the project is that they will be based on providing the maximum possible net revenue to the farmer. The combination of crops which will provide the maximum possible net revenue is the optimal crop mix. An optimal crop mix is estimated for each reach, with irrigable land (acreages of each soil type) and irrigation water as resource constraints. Differences in net revenues occur primarily from the higher yields resulting from increased irrigation with water of improved quality.

APPENDIX B

**SOUTH WICHITA RIVER NEAR BENJAMIN, TEXAS
MONTHLY AND ANNUAL MEANS AND LOADS
FOR OCTOBER 1970 TO SEPTEMBER 1976**

7311600 SOUTH WICHITA RIVER NEAR BENJAMIN, TEX.

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1970 TO SEPTEMBER 1971

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCTANCE (MICRO Mhos)	SOLVED SOLIDS (MG/L)	SOLVED CHLORIDE (MG/L)	SOLVED SULFATE (MG/L)	SOLVED SULFATE (TONS)	SOLVED SULFATE (MG/L)	SOLVED HARDNESS (MG/L)
			(TONS)	(TONS)	(TONS)	(TONS)	(TONS)	(TONS)
OCT. 1970	206	22100	15000	8400	7300	9100	2300	1300
NOV. 1970	131	37000	25000	9100	11000	4600	3200	1100
DEC. 1970	155	35600	24000	10000	12000	5100	3200	1300
JAN. 1971	162	35000	24000	11000	12000	5300	3200	1450
FEB. 1971	129	35400	24000	8500	12000	4300	3200	1100
MAR. 1971	108	39200	27000	7800	14000	4000	3200	920
APR. 1971	116	32800	22000	7000	11000	3600	2800	880
MAY 1971	4306	1990	1000	16000	590	6000	300	350
JUNE 1971	768	9050	6800	14000	3000	6100	1000	2900
JULY 1971	142	5560	3900	1500	1700	630	830	320
AUG. 1971	2271	5690	3900	24000	1700	10000	870	5300
SEPT. 1971	832	12700	8800	20000	3900	6000	1700	3800
TOTAL	9348	"	"	140000	"	64000	"	24000
W.D.AVG.	26	7900	5400	"	2500	"	950	"
								1200

PROVISIONAL

Subject to Revision

7311800

SOUTH MICHITA RIVER NEAR BENJAMIN, TEX.

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1971 TO SEPTEMBER 1972

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO MHOES)	DIS- SOLVED		DIS- SOLVED		DIS- SOLVED		DIS- SOLVED	
			SOLID (MG/L)	TONS)	SOLID (MG/L)	TONS)	CHLORIDE (MG/L)	TONS)	SULFATE (MG/L)	TONS)
OCT. 1971	2478	6770	4700	31000	2000	14000	1000	6700	1200	
NOV. 1971	581	20300	14000	22000	6400	10000	2500	3900	3100	
DEC. 1971	662	17400	12000	22000	5500	9800	2200	4000	2700	
JAN. 1972	254	22900	16000	11000	7400	5100	2700	1000	3100	
FEB. 1972	225	27100	19000	11000	8900	5000	2900	1800	3300	
MAR. 1972	196	32400	22000	12000	11000	5800	3100	1600	4100	
APR. 1972	4736	2300	1600	20000	690	8000	340	4300	390	
MAY 1972	1915	4740	3300	17000	1400	7300	700	3600	310	
JUNE 1972	1476	6519	4500	18000	1900	7700	960	3800	1100	
JULY 1972	1575	4960	3400	15000	1500	6300	740	3100	950	
AUG. 1972	4346	3820	2600	31000	1100	13000	600	7000	580	
SEPT. 1972	4777	2940	2000	26000	860	11000	450	5800	310	
TOTAL	23222	**	**	240000	**	100000	**	48000	**	
WTD.AVG.	63	5449	3600	**	1700	**	760	**	300	

PROVISIONAL

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731800 SOUTH WICHITA RIVER NEAR BENJAMIN, TEX.
MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1972 TO SEPTEMBER 1973

SPECIFIC CONDUCTANCE AND DISCHARGE (CFS-DAYS)	MONTH	YEAR	DIS-			DIS-			DIS-		
			SOLVED SOLIDS (MG/L)	SOLVED (TONS)	SOLVED (MG/L)	SOLVED (TONS)	SOLVED (MG/L)	SOLVED (TONS)	SOLVED (MG/L)	SOLVED (TONS)	SOLVED (MG/L)
OCT. 1972	2526	4460	3100	21000	1300	9100	650	4400	760	4400	760
NOV. 1972	930	11400	7900	20000	3500	8700	1600	4000	1900	4000	1900
DEC. 1972	373	21500	16000	40000	6500	9500	2500	2500	2500	2500	2500
JAN. 1973	585	15800	11000	17000	4900	7700	2100	3300	3300	3300	3300
FEB. 1973	677	15300	11000	16000	4700	8600	2100	3800	3800	3800	3800
MAR. 1973	1972	8770	6100	32000	2600	19000	1300	6900	1500	6900	1500
APR. 1973	1613	9630	6700	29000	2900	13000	1400	6100	1500	6100	1500
MAY 1973	439	18800	13000	15000	5900	7000	2400	2800	2800	2800	2800
JUNE 1973	200	21400	15500	8000	6900	3700	2600	1400	3300	1400	3300
JULY 1973	470	5560	3800	4900	1700	2100	820	1000	1500	1000	1500
AUG. 1973	167	9120	6300	2800	2800	1300	1200	550	1300	550	1300
SEPT. 1973	1905	5010	3500	18000	1500	7800	700	3600	530	3600	530
TOTAL	11856	**	**	200000	**	89000	**	40000	**	40000	**
WID.AVG.	32	9130	6100	**	2800	**	1300	**	1500	**	1500

7311800

SOUTH WICHITA RIVER NEAR BENJAMIN, TEX.

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1973 TO SEPTEMBER 1974

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO MHOES)	DIS- SOLVED		DIS- SOLVED		DIS- SOLVED	
			SOLIDS (MG/L)	SOLIDS (TONS)	CHLORIDE (MG/L)	CHLORIDE (TONS)	SULFATE (MG/L)	SULFATE (TONS)
OCT. 1973	229	21100	15000	9000	6800	4200	2400	1500
NOV. 1973	607	13300	9200	15000	4200	6900	1600	2700
DEC. 1973	184	29000	20000	9900	9700	4800	3000	1500
JAN. 1974	145	31300	21000	8400	11000	4100	3100	1200
FEB. 1974	130	39600	29000	9300	12000	9200	3200	1100
MAR. 1974	150	35800	25000	10000	12000	5000	3200	1300
APR. 1974	459	10900	7500	9200	3600	4500	1100	1400
MAY 1974	947	8020	5500	14000	2400	6300	1100	2900
JUNE 1974	2351	4560	3200	20000	1300	8600	690	4400
JULY 1974	12	19900	14000	430	6300	200	2500	78
AUG. 1974	66	5430	3800	670	1600	280	830	150
SEPT. 1974	3634	3300	2300	22000	960	9400	520	5100
TOTAL	8915	**	**	130000	**	58000	**	23000
W.D.AVG.	24	7698	5300	**	2400	**	970	**
								1200

PROVISIONAL

Subject to Revision

7311600

SOUTH WICHITA RIVER NEAR BENJAMIN, TEX.

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1974 TO SEPTEMBER 1975

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCTANCE (MICRO MHO/S)	DIS-		DIS-		DIS-	
			SOLVED SOLIDS (MG/L)	(TONS)	SOLVED SOLIDS (MG/L)	(TONS)	SOLVED SOLIDS (MG/L)	(TONS)
OCT. 1974	1392	855.0	5900	21000	2600	9400	1200	4300
NOV. 1974	542	16800	12000	17000	5200	7700	2200	3200
DEC. 1974	288	25700	16000	14000	8400	6500	2900	2200
JAN. 1975	301	24700	17000	14000	8100	6500	2800	2300
FEB. 1975	762	11900	8200	17000	3600	7400	1600	3900
MAR. 1975	313	23500	16000	14000	7600	6400	2700	2300
APR. 1975	509	12800	8800	12000	4000	5500	1600	2300
MAY 1975	7012	3130	2200	41000	910	17000	500	9400
JUNE 1975	2277	6090	980	29000	2100	13000	1000	6300
JULY 1975	3859	4630	3200	33000	1400	19000	710	7900
AUG. 1975	1296	7840	5400	19000	2400	9300	1100	3900
SEPT. 1975	2252	5990	4100	25000	1800	11000	900	5500
TOTAL	20753	**	**	260000	**	110000	**	52000
WTD.AVG.	57	6630	4600	**	2000	**	940	**
								1100

PROVISIONAL

Subject to Revision

7311800

SOUTH WICHITA RIVER NEAR BENJAMIN, TEX.

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1975 TO SEPTEMBER 1976

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MHOS)	DIS- SOLVED		DIS- SOLVED		DIS- SOLVED		DIS- SOLVED	
			SOLIDS (MG/L)	SOLIDS (TONS)	CHLORIDE (MG/L)	CHLORIDE (TONS)	SULFATE (MG/L)	SULFATE (TONS)	Ca ²⁺ Mg ²⁺ (MG/L)	Ca ²⁺ Mg ²⁺ (TONS)
OCT. 1975	318	20300	14000	12000	6400	5500	2500	2100	2100	3100
NOV. 1975	1412	8450	5800	22000	2500	9700	1200	4600	4600	1100
DEC. 1975	285	23900	16000	13000	7700	5900	2600	2100	2100	3500
JAN. 1976	246	24600	17000	11000	8000	5300	2800	1900	1900	3600
FEB. 1976	245	28500	20000	13000	9400	6200	3000	2000	2000	4000
MAR. 1976	269	29900	21000	15000	10000	7300	3000	2200	2200	4200
APR. 1976	826	14800	10000	23000	4600	10000	1900	4200	4200	2300
MAY 1976	231	25700	18000	11000	8400	5300	2800	1600	1600	3700
JUNE 1976	45	29500	17000	2000	8100	970	2600	320	320	3500
JULY 1976	512	7540	5200	7200	2200	3100	1100	1600	1600	1300
AUG. 1976	1190	5370	3700	11000	1600	920	830	2500	2500	940
SEPT. 1976	771	12900	8900	19000	3900	8200	1800	3700	3700	2100
TOTAL	6299	**	**	160000	**	73000	**	29000	29000	**
WID.AVG.	17	13600	9300	**	4300	**	1700	**	2100	

PROVISIONAL

Subject to Revision

APPENDIX C

**SOUTH WICHITA RIVER NEAR GUTHRIE, TEXAS
MONTHLY AND ANNUAL MEANS AND LOADS
FOR OCTOBER 1970 TO SEPTEMBER 1976**

PROVISIONAL
Subject to Revision

Subject to Revision

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1970 TO SEPTEMBER 1971									
SPECIFIC CONDUCTANCE		DIS- SOLVED	DIS- SOLVED	DIS- SOLVED	SOLVED	SOLVED	SOLVED	SOLVED	HARDNESS
MONTH	YEAR	(MICRO-	SOLIDS	SOLIDS	CHLORIDE	CHLORIDE	SULFATE	SULFATE	(CA, Mg)
DISCHARGE (CFS-DAYS)		(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)
OCT.	1970	91	41700	29000	7200	15000	3600	3600	4700
NOV.	1970	84	41100	29000	6500	14000	3200	3600	810 4500
DEC.	1970	88	42100	29000	6900	15000	3500	3600	860 4700
JAN.	1971	67	41900	29000	7600	15000	3800	3600	950 4700
FEB.	1971	79	40600	28000	6000	14000	31000	3600	760 4500
MAR.	1971	90	43400	30000	7300	15000	3700	3700	900 4900
APR.	1971	83	43800	31000	6800	15000	3400	3700	840 4900
MAY	1971	96	41000	28000	7300	14000	3700	3600	920 4600
JUNE	1971	87	37400	26000	6100	13000	3000	3300	780 4100
JULY	1971	71	45300	32000	6100	16000	3100	3800	730 5100
AUG.	1971	1284	6670	4000	15000	2100	1300	680	2400 690
SEPT.	1971	138	34500	29000	8800	12000	4400	3100	1200 3900
TOTAL		2287	••	••	92000	••	45000	••	12000 66
WTD.AVG.		603	21600	15000	••	7400	••	1900	•• 2100

7311780

SOUTH WICHITA RIVER NEAR GUTHRIE, TX. (DISC)

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1971 TO SEPTEMBER 1972

MONTH / YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOH)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (GRAMS) (MG/L)														
										OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	TOTAL	WID-AVG.
OCT. 1971	279	25300	17000	13000	8300	6200	2400	1800	2700														
NOV. 1971	175	32300	22000	10000	11000	5100	3000	1400	3500														
DEC. 1971	174	32600	22000	10000	11000	5100	3000	1400	3500														
JAN. 1972	154	35100	24000	10000	12000	4900	3200	1300	3900														
FEB. 1972	125	37100	25000	8600	13000	4300	3300	1100	4100														
MAR. 1972	142	40300	28000	11000	14000	5400	3500	1400	4500														
APR. 1972	120	40100	28000	9000	14000	4500	3500	1100	4500														
MAY 1972	131	40700	28000	10000	14000	5000	3600	1300	4500														
JUNE 1972	162	31200	22000	9500	11000	4700	2900	1300	3500														
JULY 1972	127	41400	30000	10000	15000	5200	3700	1300	4900														
AUG. 1972	226	26300	18000	11000	8900	5400	2400	1500	2300														
SEPT. 1972	168	30700	21000	9400	10000	4600	2900	1300	3300														
TOTAL	1984	***	***	120000	***	61000	***	16000	***														
WID-AVG.	504	33300	23000	***	11000	***	3000	**	3500														

PROVISIONAL

Subject-to-Revision

7311780

SOUTH WICHITA RIVER NEAR GUTHRIE, OK. (DISC)

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1972 TO SEPTEMBER 1973

SPECIFIC CONDUCTANCE MICRO-MHOS (CCFS-DAVIS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	DIS- SOLVED HARDNESS (MG/L)	DIS- SOLVED HARDNESS (TONS)																				
									MONTH YEAR	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JULY	AUG.	SEPT.	TOTAL	WID.AVG.					
153	33100	23000	9300	11000	4500	3100	1300	3500	OCT. 1972	153	33100	23000	9300	11000	4500	3100	1300	3500	151	35100	24000	9500	12000	4500	3300	1200	4600	3500
152	33600	23000	9400	11000	4600	3100	1300	3600	NOV. 1972	152	33600	23000	9400	11000	4600	3100	1300	3600	151	35100	24000	9500	12000	4600	3300	1200	4600	3600
152	35700	24000	10000	12000	5000	3200	1300	3900	DEC. 1972	152	35700	24000	10000	12000	5000	3200	1300	3900	151	35100	24000	9500	12000	4600	3300	1200	4600	3900
156	35300	24000	10000	12000	5000	3200	1400	3900	JAN. 1973	156	35300	24000	10000	12000	5000	3200	1400	3900	151	35100	24000	9500	12000	4600	3300	1200	4600	3900
139	36400	25000	9000	12000	4500	3300	1200	4600	FEB. 1973	139	36400	25000	9000	12000	4500	3300	1200	4600	151	35100	24000	9500	12000	4600	3300	1200	4600	4600
242	28600	19000	13000	9500	6200	2700	1600	3100	MAR. 1973	242	28600	19000	13000	9500	6200	2700	1600	3100	151	35100	24000	9500	12000	4600	3300	1200	4600	3100
164	33300	21000	10000	11000	5000	3100	1200	3800	APR. 1973	164	33300	21000	10000	11000	5000	3100	1200	3800	151	35100	24000	9500	12000	4600	3300	1200	4600	3800
148	35100	24000	9600	12000	4700	3200	1700	4000	MAY 1973	148	35100	24000	9600	12000	4700	3200	1700	4000	151	35100	24000	9500	12000	4600	3300	1200	4600	4000
161	41200	29000	12000	14000	6200	3600	1600	4500	JUN. 1973	161	41200	29000	12000	14000	6200	3600	1600	4500	151	35100	24000	9500	12000	4600	3300	1200	4600	4500
192	37800	26000	14000	13000	6800	3400	1700	4200	JULY 1973	192	37800	26000	14000	13000	6800	3400	1700	4200	151	35100	24000	9500	12000	4600	3300	1200	4600	4200
192	36100	25000	13000	12000	6400	3300	1700	4000	AUG. 1973	192	36100	25000	13000	12000	6400	3300	1700	4000	151	35100	24000	9500	12000	4600	3300	1200	4600	4000
1988	**	**	130000	**	**	60000	**	**	TOTAL	1988	1988	**	130000	**	**	3200	**	**	17000	**	**	**	**	**	**	**		
5.4	35100	24000	**	12000	**	**	3200	**	WID.AVG.	5.4	35100	24000	**	12000	**	**	3200	**	**	3500	**	**	**	**	**	**	**	

PROVISIONAL

Subject to Revision

7311760 SOUTH WICHITA RIVER NEAR GUTHRIE, TX. (DISC)

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1973 TO SEPTEMBER 1974

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCTI-	DIS-		DIS-		DIS-		
			ANCE (MICRO MHOS)	SOLVED SOLIDS (MG/L)	SOLVED SOLIDS (TONS)	CHLORIDE (MG/L)	CHLORIDE (TONS)	SULFATE (MG/L)	SULFATE (TONS)
OCT. 1973	180	38400	26000	13000	6400	3400	1700	4200	
NOV. 1973	122	37700	26000	8600	13000	4300	3400	1100	4200
DEC. 1973	130	37900	26000	9200	13000	4600	3400	1200	4200
JAN. 1974	133	39800	27000	9900	14000	4900	3500	1300	4100
FEB. 1974	116	40300	28000	8700	14000	4400	3500	1100	4500
MAR. 1974	140	41000	28000	11000	14000	5400	3600	1300	4500
APR. 1974	134	42600	30000	11000	15000	5400	3700	1300	4900
MAY 1974	152	40200	28000	11000	14000	5700	3500	1400	4500
JUNE 1974	305	21000	14000	12000	6900	5700	2000	1700	2200
JULY 1974	105	43700	31000	8600	15000	4400	3700	1100	4300
AUG. 1974	98	43200	30000	8000	15000	4000	3700	980	4900
SEPT. 1974	156	32200	22000	9300	11000	4600	2900	1200	3500
TOTAL		1774	**	120000	**	60000	**	15000	**
W.D.AVG.		4.9	36300	25000	**	12000	**	3200	**
									4000

PROVISIONAL

Subject to Revision

7311780 SOUTH WICHITA RIVER NEAR GUTHRIE, OK. (DISCH)

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1974 TO SEPTEMBER 1975

SPECIFIC CONDN/C AND DIS- CHARGE (MICRO MHOES (CFS-DAYS))	DIS- CHARGE (MICRO SOLIDS (MG/L))	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED SOLIDS (TONS)	SOLVED SOLID CHLORIDE (MG/L)	SOLVED SOLID CHLORIDE (TONS)	SULFATE (MG/L)	SULFATE (TONS)	SULFATE (MG/L)	SULFATE (TONS)
						(MG/L)	(TONS)	(MG/L)	(TONS)	(MG/L)	(TONS)
OCT. 1974	179	30600	21000	10000	5000	2600	1400	3300	3300	3300	3300
NOV. 1974	149	33100	23000	8500	4100	4200	3100	1200	3500	3500	3500
DEC. 1974	142	35500	24000	9300	12000	4600	3200	1200	3300	3300	3300
JAN. 1975	130	37300	26000	9000	13000	4500	3400	1200	4100	4100	4100
FEB. 1975	112	36700	25000	7700	13000	3800	3100	1000	4000	4000	4000
MAR. 1975	164	39300	27000	11000	14000	5300	3500	1400	4400	4400	4400
APR. 1975	107	39200	28000	8000	14000	4000	3500	1000	4100	4100	4100
MAY 1975	441	17400	12000	14000	5600	6600	1700	2100	1900	1900	1900
JUNE 1975	134	27400	18000	6000	9000	3200	2600	960	2300	2300	2300
JULY 1975	180	26900	18000	8900	9000	4900	2500	1200	2300	2300	2300
AUG. 1975	164	32800	22000	9900	11000	4900	3000	1400	3500	3500	3500
SEPT. 1975	149	33800	23000	8900	11000	4900	3100	1200	3700	3700	3700
TOTAL		2018	**	**	110000	**	55000	**	150000	**	150000
WTD.AVG.	5.5	30000	20000	**	10000	**	2800	**	32000	**	32000

PROVISIONAL

Subject to Revision

7311780 SOUTH WICHITA RIVER NEAR GUTHRIE, TX. (DISC)
 MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1975 TO SEPTEMBER 1976

MONTH YEAR	SPECIFIC CONDUCTANCE (MICRO Mhos)	DISCHARGE (CFS-DAISY)	DIS-	DIS-	DIS-	SOLVED	SOLVED	SOLVED	SOLVED	DIS-
			ANCE	SOLVED SOLIDS (MG/L)	SOLVED SOLIDS (MG/L)	CHLORIDE (MG/L)	CHLORIDE (MG/L)	SULFATE (MG/L)	SULFATE (MG/L)	HARDNESS (MG/L)
OCT. 1975	127	36700	25000	8700	13000	4300	3300	1100	4000	4000
NOV. 1975	108	36900	25000	7400	13000	3700	3300	970	4100	4100
DEC. 1975	116	38200	26000	8200	13000	4100	3400	1100	4200	4200
JAN. 1976	96	39800	28000	7200	14000	3600	3500	910	4100	4100
FEB. 1976	83	40900	28000	6400	14000	3200	3600	800	4500	4500
MAR. 1976	123	41900	29000	2700	15000	4900	3600	1200	4700	4700
APR. 1976	139	39900	28000	10000	14000	5200	3500	1300	4100	4100
MAY 1976	135	41700	29000	11000	15000	5300	3600	1300	4700	4700
JUNE 1976	111	43900	31000	9200	15000	4600	3700	1100	4300	4300
JULY 1976	141	39600	27000	11000	14000	5300	3500	1300	4100	4100
AUG. 1976	145	29800	20000	8000	10000	3900	2700	1100	3200	3200
SEPT. 1976	131	35400	24000	8600	12000	4300	3200	1100	3300	3300
TOTAL	1460	••	••	110000	••	52000	••	13000	••	4300
W.D.AVG.	100	38500	27000	••	13000	••	3400	••	4300	4300

PROVISIONAL

Subject-to-Revision

APPENDIX D

**SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TEXAS
(STATION NOS. 7311782 AND 7311783)
DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTHS
MAY 1987 - APR 1988**

73175

SOUTH WICHITA RIVER AT LOW FLOW DAM NR GUTHRIE,

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF MAY 1987

73117-22

SOUTH WICHITA RIVER AT LOW FLOW DAM NR GUTHRIE,

DAILY AND RUNOFF MEANS AND LOADS FOR THE MONTH OF JUNE 1987

SPECIFIC CONDUCTANCE (MICRO-MHOES)	DISCHARGE (CFS-DAYS)	MONTH YEAR	JUNE 1987	DIS- SOLVED SOLIDS (MG/L)		DIS- SOLVED CHLORIDE (MG/L)		DIS- SOLVED SULFATE (MG/L)		DIS- SOLVED SULFATE (TONS)		HARDNESS (CA, MG) (MG/L)
				DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (TONS)	DIS- SOLVED SULFATE (TONS)	DIS- SOLVED SULFATE (TONS)	DIS- SOLVED SULFATE (TONS)	DIS- SOLVED SULFATE (TONS)	DIS- SOLVED SULFATE (TONS)	
1	2.7	12600	8100	85	3800	40	1400	14	**	**	**	
2	5.4	13000	8400	122	4000	58	1400	20	**	20	**	
3	8.6	14500	9400	216	4500	102	1500	35	**	35	**	
4	14	15700	10600	375	4900	178	1600	61	**	61	**	
5	14	16800	11000	403	5200	192	1800	64	**	64	**	
6	14	17400	11000	418	5400	199	1800	66	**	66	**	
7	13	18200	12000	422	5700	202	1900	66	**	66	**	
8	14	18900	12000	452	5900	217	1900	71	**	71	**	
9	13	19600	12000	466	6200	224	2000	73	**	73	**	
10	11	20100	13000	383	6400	184	2000	59	**	59	**	
11	3.3	16900	11000	98	5300	47	1800	16	**	16	**	
12	11	13400	8700	256	4100	121	1400	42	**	42	**	
13	13	13500	8500	304	4100	144	1400	50	**	50	**	
14	13	14200	9200	326	4400	154	1500	53	**	53	**	
15	12	15200	9900	313	4700	149	1600	51	**	51	**	
16	13	16200	11000	382	5000	182	1700	61	**	61	**	
17	12	17200	11000	356	5400	170	1800	57	**	57	**	
18	7.2	18100	12000	250	5700	120	1900	39	**	39	**	
19	11	19100	13000	371	6000	178	2000	58	**	58	**	
20	6.6	20100	13000	307	6400	148	2000	48	**	48	**	
21	13	21100	14000	499	6700	235	2100	75	**	75	**	
22	13	22100	15000	513	7100	248	2200	78	**	78	**	
23	13	22500	15000	541	7300	261	2300	82	**	82	**	
24	13	24200	16000	578	7800	280	2400	86	**	86	**	
25	9.5	23700	16000	402	7600	194	2400	60	**	60	**	
26	13	24500	16000	579	7900	281	2400	86	**	86	**	
27	11	24900	17000	485	8100	235	2500	72	**	72	**	
28	8.8	25200	17000	401	8200	195	2500	59	**	59	**	
29	11	25600	17000	501	8300	244	2500	74	**	74	**	
30	13	23600	16000	546	7600	264	2300	62	**	62	**	
TOTAL	332	* * ,	* *	11000	**	5400	**	1800	**	1800	**	
WTD. AVG.	11	19200	13000	**	6100	**	2000	**	2000	**	2000	

7311762

SOUTH WICHITA RIVER AT LOW FLOW DAM NR GUTHRIE,

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF JULY 1987

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
1	8.6	25000	17000	385	8100	167	2500	57	**		
2	12	25100	17000	539	8100	262	2500	80	**		
3	10	25400	17000	471	8200	229	2500	69	**		
4	9.7	26600	18000	464	8700	226	2600	68	**		
5	11	28200	19000	587	9300	287	2700	84	**		
6	3.8	27400	18000	187	9000	91	2700	27	**		
7	0.00	--	--	--	--	--	--	--	--		
8	0.2	27200	18000	9.4	8900	4.6	2600	1.4	**		
9	0.00	--	--	--	--	--	--	--	--		
10	3.1	28800	19000	160	9500	78	2800	23	**		
11	12	28700	19000	638	9400	312	2800	91	**		
12	12	30700	21000	693	10000	340	2900	97	**		
13	6.7	29300	20000	357	9700	175	2800	51	**		
14	13	28600	19000	661	9400	323	2700	94	**		
15	7.2	28400	19000	371	9300	181	2700	53	**		
16	10	28000	19000	517	9200	252	2700	74	**		
17	7.3	28400	19000	376	9300	184	2700	54	**		
18	0.00	--	--	--	--	--	--	--	--		
19	0.00	--	--	--	--	--	--	--	--		
20	7.9	16500	11000	229	5100	109	1700	37	**		
21	13	18400	12000	436	5800	209	1900	69	**		
22	13	21600	14000	516	6900	249	2200	79	**		
23	13	26200	18000	611	8500	297	2600	89	**		
24	7.5	27400	18000	371	9000	181	2700	54	**		
25	8.3	26000	17000	389	8500	189	2500	57	**		
26	13	27400	18000	635	9000	310	2700	92	**		
27	12	27800	19000	589	9100	288	2700	85	**		
28	10	28400	19000	518	9300	253	2700	74	**		
29	7.8	28600	19000	405	9400	198	2700	58	**		
30	7.8	29000	20000	411	9600	201	2800	58	**		
31	7.8	28500	19000	404	9400	197	2700	58	**		
TOTAL	249	**	**	12000	**	5800	**	1700	**		
WTD. AVG.	0.0	26500	18000	**	6600	**	2600	**	2800		

7311782

SOUTH WICHITA RIVER AT LOW FLOW RATE WITH THE 1E.

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF AUG. 1887

SPECIFIC CONDUCTANCE (MICROMHOS)	DISCHARGE (CFS-DAYS)	MONTH YEAR	AUG. 1987	DIS-	SOLVED	DIS-	SOLVED	DIS-	SOLVED	DIS-	SOLVED	HARDNESS (CA, MG)
				SOLIDS (MG/L)	SOLIDS (TONS)	CHLORIDE (MG/L)	SOLID CHLORIDE (TONS)	SULFATE (MG/L)	SOLID SULFATE (TONS)	(MG/L)	(TONS)	(MG/L)
1	7.0	28900	19000	410	9500	200	2800	58	**			
2	7.0	29700	26000	422	9800	207	2800	60	**			
3	7.7	30500	21000	427	10000	210	2900	60	**			
4	7.4	31300	21000	424	10000	208	2900	59	**			
5	7.4	31500	21000	426	10000	210	3000	59	**			
6	8.2	29700	20000	442	7800	217	2800	62	**			
7	3.5	29100	20000	186	9600	91	2800	26	**			
8	0.00	--	--	--	--	--	--	--	--			
9	0.00	--	--	--	--	--	--	--	--			
10	0.00	--	--	--	--	--	--	--	--			
11	7.7	31000	21000	435	10000	214	2900	61	**			
12	14	31000	21000	770	10000	378	2900	107	**			
13	9.2	31100	21000	521	10000	256	2900	73	**			
14	6.9	31300	21000	392	10000	193	2900	54	**			
15	2.9	31800	22000	171	11000	84	3000	24	**			
16	9.3	31600	21000	535	11000	263	3500	74	**			
17	10	31500	21000	577	10000	284	3000	80	**			
18	7.8	31500	21000	449	10000	221	3000	62	**			
19	7.8	31500	21000	449	10000	221	3000	62	**			
20	7.8	31500	21000	449	10000	221	3000	62	**			
21	7.8	31500	21000	449	10000	221	3000	62	**			
22	7.8	31400	21000	448	10000	220	3000	62	**			
23	7.2	31600	21000	413	11000	203	3000	57	**			
24	3.9	31600	21000	223	11000	110	3000	31	**			
25	7.1	31600	21000	411	11000	202	3000	57	**			
26	3.2	31500	21000	182	10000	90	3000	25	**			
27	6.8	31600	21000	508	11000	250	3000	70	**			
28	13	31700	21000	764	11000	376	3000	106	**			
29	12	29200	20000	650	9600	318	2900	92	**			
30	7.8	28200	19000	399	9300	195	2700	57	**			
31	7.8	31300	21000	446	10000	219	2900	62	**			
TOTAL	219	**	**	12000	**	6100	**	1700				
WTD. AVG.	7.1	30900	21000	**	10000	**	2900	**	3300			

7311762

SOUTH WICHITA RIVER AT LOW FLOW DAM NR GUTHRIE,

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF SEPT 1987

SPECIFIC CONDUCTANCE (MICRO-MHDS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
MONTH YEAR	MONTH	YEAR						
SEPT	1987							
1	7.8	31400	21000	448	10000	220	3000	**
2	7.8	31500	21000	449	10000	221	3000	62
3	7.8	31700	21000	453	11000	223	3000	62
4	7.3	30500	21000	405	10000	199	2900	63
5	7.1	30200	20000	391	10000	192	2900	57
6	7.1	29700	20000	384	9800	188	2800	55
7	6.5	31500	21000	375	10000	185	3000	54
8	7.1	31400	21000	408	10000	201	3000	52
9	9.3	31500	21000	534	10000	263	3000	52
10	7.8	31500	21000	449	10000	221	3000	57
11	7.8	31500	21000	449	10000	221	3000	57
12	7.4	31400	21000	425	10000	209	3000	59
13	7.9	31300	21000	452	10000	222	2900	63
14	7.8	31200	21000	445	10000	219	2900	62
15	13	29500	20000	671	9700	329	2800	62
16	8.7	31300	21000	495	10000	243	2900	69
17	7.8	31200	21000	445	10000	219	2900	62
18	7.8	31100	21000	443	10000	218	2900	62
19	7.6	31000	21000	442	10000	217	2900	62
20	7.8	31100	21000	443	10000	218	2900	62
21	7.8	31200	21000	445	10000	219	2900	62
22	7.8	31300	21000	446	10000	219	2900	62
23	7.8	31400	21000	448	10000	220	3000	62
24	7.8	31500	21000	449	10000	221	3000	62
25	7.8	31500	21000	449	10000	221	3000	62
26	7.8	31600	21000	451	11000	222	3000	62
27	6.2	31600	21000	357	11000	176	3000	49
28	7.4	31700	21000	427	11000	210	3000	59
29	7.1	31600	21000	411	11000	202	3000	57
30	7.1	31500	21000	409	10000	201	3000	57
TOTAL	233	**	13000	**	6500	**	1800	**
WTD. AVG.	7.8	31200	21000	**	10000	**	2900	**
								3400

7311782

SOUTH WICHITA RIVER AT LOW FLOW DAM NR GUTHRIE,

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF OCT. 1987

SPECIFIC CONDUCTANCE (MICRO-MHOS)	DISCHARGE (CFS-DAYS)	MONTH YEAR	OCT. 1987	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
1	31500	21000	7.0	400	10000	197	3000	56	**	**
2	31500	21000	6.5	375	10000	184	3000	52	**	**
3	31300	21000	7.1	406	10000	200	2900	56	**	**
4	31100	21000	7.1	404	10000	198	2900	56	**	**
5	31300	21000	7.1	406	10000	200	2900	56	**	**
6	31200	21000	7.1	405	10000	199	2900	56	**	**
7	31000	21000	7.1	400	10000	197	2900	56	**	**
8	31800	22000	7.2	417	11000	205	3000	58	**	**
9	32100	22000	7.4	438	11000	215	3000	60	**	**
10	31900	22000	7.4	435	11000	214	3000	60	**	**
11	31700	21000	7.4	431	11000	212	3000	60	**	**
12	32200	22000	7.4	438	11000	216	3000	60	**	**
13	32400	22000	7.4	440	11000	217	3000	60	**	**
14	32000	22000	7.4	433	11000	213	3000	60	**	**
15	32000	22000	7.2	420	11000	207	3000	58	**	**
16	32100	22000	7.5	440	11000	217	3000	61	**	**
17	32200	22000	7.5	443	11000	218	3000	61	**	**
18	32200	22000	4.6	271	11000	134	3000	37	**	**
19	32500	22000	0.3	15	11000	7.3	3000	2.	0.	**
20	32600	22000	7.6	452	11000	223	3000	62	**	**
21	32700	22000	10	605	11000	298	3000	83	**	**
22	32600	22000	7.0	417	11000	206	3000	57	**	**
23	32000	22000	6.9	402	11000	198	3000	55	**	**
24	31900	22000	7.0	408	11000	201	3000	56	**	**
25	32000	22000	7.0	409	11000	201	3000	56	**	**
26	32100	22000	6.9	408	11000	201	3000	56	**	**
27	32200	22000	6.9	408	11000	201	3000	56	**	**
28	31900	22000	6.9	404	11000	199	3000	56	**	**
29	32100	22000	6.7	407	11000	200	3000	56	**	**
30	32100	22000	7.0	412	11000	203	3000	57	**	**
31	32000	22000	7.0	410	11000	202	3000	57	**	**
TOTAL	315	**	**	13000	**	6200	**	1700	**	
WTD. AVG.	6.9	31900	22000	**	11000	**	3000	**	3400	

7311782

SOUTH WICHITA R AT LOW FLOW DAM NR GUTHRIE, TX.

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF NOV. 1987

SPECIFIC CONDUCTANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA, MG/MG/L)
MONTH	YEAR	NOV. 1987					
1	7.5	32360	22000	444	11000	219	3000
2	7.5	32300	22000	444	11000	219	3000
3	7.5	32400	22000	446	11000	220	3000
4	7.5	32700	22000	450	11000	222	3000
5	7.5	32800	22000	451	11000	223	3100
6	7.5	32800	22000	451	11000	223	3100
7	7.5	32800	22000	451	11000	223	3100
8	7.5	32700	22000	450	11000	222	3000
9	7.4	32400	22000	440	11000	217	3000
10	6.6	32900	22000	399	11000	197	3100
11	7.4	33200	23000	451	11000	223	3100
12	7.4	32300	22000	438	11000	216	3000
13	7.4	32100	22000	435	11000	214	3000
14	7.4	32000	22000	434	11000	214	3000
15	7.4	32100	22000	435	11000	214	3000
16	7.4	32300	22000	438	11000	216	3000
17	7.3	32500	22000	435	11000	214	3000
18	7.4	32900	22000	447	11000	220	3100
19	7.3	33100	23000	444	11000	214	3000
20	7.3	32900	22000	441	11000	217	3100
21	7.3	32300	22000	432	11000	213	3000
22	7.3	32500	22000	435	11000	214	3000
23	7.3	32500	22000	435	11000	214	3000
24	7.3	32200	22000	431	11000	212	3000
25	7.3	31200	21000	416	10000	205	2900
26	6.2	29700	20000	335	9800	164	2800
27	6.9	31900	22000	403	11000	198	3000
28	6.9	32200	22000	407	11000	201	3000
29	6.9	31900	22000	403	11000	198	3000
30	6.9	31800	22000	402	11000	198	3000
TOTAL	218	**	**	13000	**	6400	**
WTD. AVG.	7.3	32300	22000	**	11000	**	3000
						1800	**
							3500

7311-582

SOUTH WICHITA R. & LOW FLOW DAM NR GUTHRIE, TX.

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF DEC. 1987

SPECIFIC CONDUCTANCE (MICRO-MHOS)	DISCHARGE (CFS-DAYS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)	
1	31600	21000	393	11000	193	3000	54	**	
2	31500	21000	398	10000	196	3000	55	**	
3	31400	21000	396	10000	195	3000	55	**	
4	31100	21000	392	10000	193	2900	55	**	
5	31400	21000	488	10000	240	3000	48	**	
6	31700	21000	470	11000	231	3000	45	**	
7	31300	21000	395	10000	194	2900	55	**	
8	7.1	31800	22000	413	11000	203	3000	57	**
9	7.4	32100	23000	435	11000	214	3000	60	**
10	7.3	32000	22000	428	11000	211	3000	59	**
11	7.4	31900	22000	432	11000	213	3000	60	**
12	7.5	31800	22000	437	11000	215	3000	60	**
13	5.9	31700	21000	342	11000	168	3000	47	**
14	6.0	31600	21000	347	11000	171	3000	48	**
15	12	31500	21000	692	10000	340	3000	96	**
16	7.9	31400	21000	454	10000	223	3000	63	**
17	7.3	31300	21000	418	10000	205	2900	58	**
18	7.3	31200	21000	416	10000	205	2900	58	**
19	7.4	31100	21000	421	10000	207	2900	59	**
20	9.7	31000	21000	549	10000	270	2900	77	**
21	7.2	31000	21000	408	10000	200	2900	57	**
22	7.2	30900	21000	406	10000	200	2900	57	**
23	7.2	30900	21000	406	10000	200	2900	57	**
24	7.4	31200	21000	422	10000	207	2900	59	**
25	11	30500	20000	608	10000	298	2900	85	**
26	4.1	30700	21000	230	10000	113	2900	32	**
27	2.8	30500	21000	156	10000	76	2900	22	**
28	12	28900	19000	630	9500	308	2800	90	**
29	12	29200	20000	637	9500	312	2800	90	**
30	9.4	29600	20000	507	9500	248	2800	72	**
31	6.9	29600	20000	372	9800	182	2800	53	**
TOTAL	238.4	**	**	13000	**	6600	**	1900	**
WTD. AVG.	7.7	31000	21000	**	10000	**	2900	**	3300

7311782

SOUTH WICHITA R AT LOW FLOW DAM NR GUTHRIE, TX.

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF JAN. 1988

MONTH	YEAR	JAN.	1988	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
1		10	29800	20000	543	9900	266	2800	77	**	
2		6.6	30200	20000	374	10000	184	2900	53	**	
3		7.9	30200	20000	435	10000	213	2900	61	**	
4		9.0	30200	20000	496	10000	243	2900	70	**	
5		6.5	30100	20000	357	10000	175	2900	50	**	
6		6.1	29900	20000	332	9900	163	2800	47	**	
7		12	30300	20000	663	10000	325	2900	93	**	
8		8.1	30100	20000	444	10000	218	2900	62	**	
9		5.0	29300	20000	267	9700	131	2800	38	**	
10		1.7	29100	20000	90	9600	44	2800	13	**	
11		0.00	--	--	--	--	--	--	--	--	
12		0.00	--	--	--	--	--	--	--	--	
13		0.00	--	--	--	--	--	--	--	--	
14		0.00	--	--	--	--	--	--	--	--	
15		0.00	--	--	--	--	--	--	--	--	
16		0.00	--	--	--	--	--	--	--	--	
17		0.00	--	--	--	--	--	--	--	--	
18		0.00	--	--	--	--	--	--	--	--	
19		0.00	--	--	--	--	--	--	--	--	
20		3.2	31000	21000	181	10000	89	2900	25	**	
21		7.4	31300	21000	424	10000	203	2900	59	**	
22		7.4	31400	21000	425	10000	209	3000	59	**	
23		9.3	31400	21000	534	10000	263	3000	74	**	
24		12	31600	21000	694	11000	341	3000	96	**	
25		7.5	31200	21000	428	10000	210	2900	59	**	
26		6.9	31400	21000	396	10000	195	3000	55	**	
27		6.9	31500	21000	398	10000	196	3000	55	**	
28		6.9	31600	22000	402	11000	198	3000	56	**	
29		6.9	31800	22000	402	11000	198	3000	56	**	
30		6.9	32100	22000	406	11000	200	3000	56	**	
31		6.8	32100	22000	400	11000	197	3000	55	**	
TOTAL		161.2	**	**	9100	**	4500	**	1300	**	
WTD. AVG.		5.2	30900	21000	**	10000	**	2900	**	3300	

7311782

SOUTH WICHITA R AT LOW FLOW DAM NR GUTHRIE, TX.

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF FEB. 1988

SPECIFIC CONDUCTANCE (MICRO-MHO)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
MONTH	YEAR	FEB. 1988						
1	7.9	32200	22000	466	11000	230	3000	64
2	8.6	31500	21000	496	10000	244	3000	69
3	7.6	32500	22000	453	11000	223	3000	62
4	7.6	32300	22000	450	11000	222	3000	62
5	7.6	32100	22000	447	11000	220	3000	62
6	7.6	31700	22000	444	11000	219	3000	61
7	7.6	32000	22000	445	11000	219	3000	61
8	7.5	31600	21000	434	11000	213	3000	60
9	5.7	31400	21000	327	10000	161	3000	45
10	7.6	31500	21000	438	10000	215	3000	61
11	9.0	31800	22000	524	11000	258	3000	72
12	7.6	31300	21000	435	10000	214	2900	60
13	7.5	31300	21000	429	10000	211	2900	60
14	7.5	31700	21000	435	11000	214	3000	60
15	7.5	32200	22000	443	11000	218	3000	61
16	9.7	31400	21000	557	10000	274	3000	77
17	7.9	31300	21000	452	10000	222	2900	63
18	3.7	32700	22000	222	11000	109	3000	30
19	0.00	--	--	--	--	--	--	--
20	2.4	33000	22000	145	11000	72	3100	20
21	7.4	33200	23000	451	11000	223	3100	62
22	6.6	33200	23000	403	11000	199	3100	55
23	7.5	33300	23000	459	11000	227	3100	63
24	9.6	33000	22000	582	11000	287	3100	79
25	12	32800	22000	722	11000	356	3100	99
26	9.0	32600	22000	542	11000	267	3100	74
27	7.3	32900	22000	441	11000	217	3100	60
28	7.3	32700	22000	438	11000	216	3000	60
29	7.3	32700	22000	438	11000	216	3000	60
TOTAL	212.1	**	**	13000	**	6200	**	1700
WTD. AVE.	7.3	32200	22000	**	11000	**	3000	**
								3500

C-1

7311782

SOUTH WICHITA R ST LOW FLOOR BAN NR GUTHRIE, TX.

DAILY AND MONTHLY MEANS AND RANGES FOR THE MONTH OF MAR 1938

7311782

SOUTH WICHITA R AT LOW FLOW DAM NR GUTHRIE, TX.

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF APR. 1988

MONTH	YEAR	APR.	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOES)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
1		7.3	34400	23000	463	12000	229	3200	62	**
2		7.4	34100	23000	465	11000	230	3100	63	**
3		7.4	33800	23000	460	11000	227	3100	62	**
4		7.4	33600	23000	457	11000	226	3100	62	**
5		7.4	33500	23000	456	11000	225	3100	62	**
6		7.4	33500	23000	456	11000	225	3100	62	**
7		7.4	33400	23000	454	11000	224	3100	62	**
8		5.9	33400	23000	362	11000	179	3100	49	**
9		5.7	33200	23000	348	11000	172	3100	47	**
10		3.0	33300	23000	184	11000	91	3100	25	**
11		6.9	33200	23000	421	11000	208	3100	57	**
12		6.9	33200	23000	421	11000	208	3100	57	**
13		8.9	33100	23000	541	11000	267	3100	74	**
14		7.9	33100	23000	480	11000	237	3100	66	**
15		7.5	33000	22000	454	11000	224	3100	62	**
16		7.5	33000	22000	454	11000	224	3100	62	**
17		7.5	32900	22000	453	11000	223	3100	62	**
18		7.5	32900	22000	453	11000	223	3100	62	**
19		7.5	32800	22000	451	11000	223	3100	62	**
20		3.6	32800	22000	217	11000	107	3100	30	**
21		0.00	--	--	--	--	--	--	--	--
22		0.00	--	--	--	--	--	--	--	--
23		0.00	--	--	--	--	--	--	--	--
24		0.00	--	--	--	--	--	--	--	--
25		0.00	--	--	--	--	--	--	--	--
26		0.00	--	--	--	--	--	--	--	--
27		0.00	--	--	--	--	--	--	--	--
28		2.2	34100	23000	138	11000	68	3100	19	**
29		10	34500	24000	636	12000	315	3200	86	**
30		12	34500	24000	763	12000	378	3200	103	**
TOTAL		162.2	**	**	10000	**	4900	**	1400	**
WTD. AVG.		5.4	33500	23000	**	11000	**	3100	**	3600

731175

WICHITA RIVER BELOW LAW DAM NR GUTHRIE

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF MAY 1987

SPECIFIC CONDUCTANCE (MICRO-MHOE)	DISCHARGE (CFS-DAYS)	MONTH YEAR	DIS-	DIS-	DIS-	DIS-	DIS-
			SOLVED SOLIDS (MG/L)	SOLVED SOLIDS (TONS)	SOLVED CHLORIDE (MG/L)	SOLVED CHLORIDE (TONS)	SOLVED SULFATE (MG/L)
1	29700	MAY 1987	1.6	9800	0.8	2800	0.2
2	30600		2.2	10000	1.1	2900	0.3
3	30900		1.7	10000	0.8	2900	0.2
4	30500		2.2	10000	1.1	2900	0.3
5	31400		1.7	10000	0.8	3000	0.2
6	29700		1.6	9600	0.8	2600	0.2
7	31400		22	11000	11	3000	0.3
8	34000		3.1	11000	1.5	3100	0.4
9	33100		3.0	11000	1.5	3100	0.4
10	32000		3.5	11000	1.7	3000	0.5
11	31300		3.4	10000	1.7	2900	0.5
12	31600		3.5	11000	1.7	3000	0.5
13	31600		4.0	11000	2.0	3000	0.6
14	31700		4.6	11000	2.3	3000	0.6
15	31600		4.6	11000	2.3	3000	0.6
16	31400		4.6	10000	2.3	3000	0.6
17	31700		5.8	11000	2.9	3000	0.8
18	30900		5.6	10000	2.8	2900	0.8
19	28900		5.3	9500	2.4	2800	0.7
20	29400		4.8	9700	2.4	2800	0.7
21	30800		4.5	10000	2.2	2900	0.6
22	25400		4.1	8200	2.0	2500	0.6
23	67		280	7500	135	2300	42
24	25400		293	6200	142	2500	43
25	01		6.0	8300	2.9	2500	0.9
26	01		5.7	8500	2.8	2600	0.8
27	112		4250	6900	2050	2200	651
28	1030		720	2000	330	920	130
29	415		2200	2490	1000	1150	400
30	52		4100	576	1900	268	720
31	25		9250	399	2800	187	1000
TOTAL	1647		**	10000	**	4900	**
WTD. AVG.	53		3630	2350	1100	**	370
						1700	**
							360

7311783

SOUTH WICHITA RIVER BELOW LOW FLOW DAM NR GUTHRIE

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF JUNE 1987

SPECIFIC CONDUCTANCE (MICRO-MHDS)	DISCHARGE (CFS-DAYS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA, MG/MG/L)	
1	11700	7500	189	3900	89	1300	32	**	
2	12800	8300	185	3900	88	1400	31	**	
3	13700	8900	204	4200	96	1500	33	**	
4	15300	9900	102	4700	48	1600	17	**	
5	16400	11000	75	5100	36	1700	12	**	
6	17200	11000	29	5400	14	1800	4.7	**	
7	18200	12000	13	5700	6.0	1900	2.0	**	
8	19100	13000	7.8	6000	3.7	2000	1.2	**	
9	19800	13000	9.5	6300	4.6	2000	1.5	**	
10	20500	14000	438	6500	210	2100	68	**	
11	15300	9700	295	4700	140	1600	48	**	
12	14100	9100	158	4300	75	1500	26	**	
13	14500	9400	124	4500	59	1500	20	**	
14	16300	11000	163	5100	78	1700	26	**	
15	16900	11000	74	5300	36	1800	12	**	
16	17600	12000	37	5500	18	1800	5.9	**	
17	19800	13000	19	6300	8.9	2000	2.9	**	
18	20700	14000	184	6600	89	2100	28	**	
19	0.1	21700	14000	4.3	6900	2.1	2200	0.6	**
20	4.4	22600	15000	178	7200	86	2300	27	**
21	0.1	23600	16000	5.1	7600	2.5	2300	0.8	**
22	0.1	24500	16000	4.8	7900	2.3	2400	0.7	**
23	0.1	25400	17000	5.9	8200	2.9	2500	0.9	**
24	0.1	26400	18000	6.7	8600	3.2	2600	1.0	**
25	0.3	24400	16000	14	7900	6.8	2400	2.1	**
26	0.2	24800	17000	8.0	8000	3.9	2400	1.2	**
27	0.2	24800	17000	8.5	8000	4.1	2400	1.3	**
28	0.2	24700	16000	8.4	8000	4.1	2400	1.3	**
29	1.5	22900	15000	61	7300	30	2300	9.3	**
30	0.3	19900	13000	9.5	6300	4.6	2000	1.5	**
TOTAL	71	**	**	2600	**	1300	**	420	**
WTD. AVG.	3.0	16300	11000	**	5100	**	1700	**	1700

5

7311783

SOUTH WICHITA RIVER BELOW LOW FLOW DAM NR GUTHR

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF JULY 1987

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOES)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
1		20800	14000	7.0	6600	3.4	2100	1.1	**	
2		21000	14000	6.7	6700	3.2	2100	1.0	**	
3		21300	14000	6.1	6600	2.9	2200	0.9	**	
4		24800	17000	6.2	8000	3.0	2400	0.9	**	
5		27000	18000	6.8	8800	3.3	2600	1.0	**	
6		26100	17000	6.1	8500	3.0	2600	0.9	**	
7		25500	17000	83	8300	40	2500	12	**	
8		26200	18000	355	8500	173	2600	52	**	
9		26400	18000	358	8600	174	2600	52	**	
10		6.3	27300	18000	311	8900	152	2600	45	**
11		0.1	27400	18000	6.9	9000	3.4	2700	1.0	**
12		0.1	28900	19000	6.3	9500	3.1	2800	0.9	**
13		0.2	26200	18000	9.0	8500	4.4	2600	1.3	**
14		0.1	27100	18000	5.9	8900	2.9	2600	0.9	**
15		0.1	28200	19000	5.1	9300	2.5	2700	0.7	**
16		0.8	25400	17000	37	8200	18	2500	5.5	**
17		28	18800	12000	932	5900	447	1900	146	**
18		26	11600	7500	524	3500	247	1300	88	**
19		5.6	13200	8500	129	4000	61	1400	21	**
20		1.8	14200	9200	45	4400	21	1500	7.3	**
21		0.2	16800	11000	4.4	5200	2.1	1800	0.7	**
22		0.1	20300	13000	4.3	6400	2.1	2100	0.7	**
23		0.09	22500	15000	3.6	7200	1.7	2300	0.5	**
24		0.08	23900	16000	3.4	7000	1.7	2400	0.5	**
25		0.07	25000	17000	3.1	8100	1.5	2500	0.5	**
26		0.07	25600	17000	3.2	8300	1.6	2500	0.5	**
27		0.06	26000	17000	2.8	8500	1.4	2500	0.4	**
28		0.06	26400	18000	2.9	8600	1.4	2600	0.4	**
29		0.06	26600	18000	2.9	8700	1.4	2600	0.4	**
30		0.06	26800	18000	2.9	8700	1.4	2600	0.4	**
31		0.07	27200	18000	3.4	8900	1.7	2600	0.5	**
TOTAL		88	***	***	2900	***	1400	**	450	**
WTD. AVG.		2.8	18500	12000	***	5800	***	1900	**	1900

7311785

SOUTH WICHITA RIVER BELOW LOW FLOW DAM INR GUTHR

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF AUG. 1987

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- Mhos)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLID (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)	
1		27800	19000	4. 5	9100	2. 2	2700	0. 7	**	
2		28400	17000	4. 6	9300	2. 3	2700	0. 7	**	
3		29000	20000	4. 2	9600	2. 1	2800	0. 6	**	
4		29500	20000	3. 2	9700	1. 6	2800	0. 5	**	
5		29600	20000	3. 2	9800	1. 6	2800	0. 5	**	
6		29500	20000	3. 8	9700	1. 8	2800	0. 5	**	
7		29100	20000	3. 2	9600	1. 6	2800	0. 5	**	
8		28700	19000	3. 1	9400	1. 5	2800	0. 4	**	
9		30000	20000	224	9900	110	2800	32	**	
10		31000	21000	368	10000	181	2900	51	**	
11		31000	21000	374	10000	184	2900	52	**	
12		31000	21000	204	10000	100	2900	28	**	
13		30900	21000	5. 6	10000	2. 8	2900	0. 8	**	
14		31500	21000	5. 2	10000	2. 6	3000	0. 7	**	
15		30700	21000	4. 5	10000	2. 2	2900	0. 6	**	
16		30900	21000	4. 5	10000	2. 2	2900	0. 6	**	
17		30900	21000	4. 5	10000	2. 2	2900	0. 6	**	
18		30400	21000	4. 4	10000	2. 2	2900	0. 6	**	
19		30500	21000	4. 5	10000	2. 2	2900	0. 6	**	
20		30600	21000	5. 6	10000	2. 7	2900	0. 8	**	
21		30100	20000	4. 4	10000	2. 2	2900	0. 6	**	
22		29700	20000	3. 8	9800	1. 9	2800	0. 5	**	
23		29700	20000	2. 7	9800	1. 3	2800	0. 4	**	
24		29400	20000	2. 7	9700	1. 3	2800	0. 4	**	
25		29600	20000	3. 2	9800	1. 6	2800	0. 5	**	
26		29600	20000	3. 2	9800	1. 6	2800	0. 5	**	
27		26800	18000	37	8700	18	2800	5. 3	**	
28		25700	17000	3. 7	6300	1. 8	2500	0. 5	**	
29		25700	17000	4. 2	6300	2. 0	2500	0. 6	**	
30		26200	18000	4. 3	6500	2. 1	2600	0. 6	**	
31		27000	18000	3. 9	6800	1. 9	2600	0. 6	**	
TOTAL		30500	21000	**	13000	**	640	**	180	**
WTD. AVG.		0. e	30500	**	10500	**	2900	**	3300	

7311783

SOUTH WICHITA RIVER BELOW LOW FLOW DAM INR GUTHR

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF SEPT 1987

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	DIS- SOLVED SOLIDS (MG/L)		DIS- SOLVED CHLORIDE (MG/L)		DIS- SOLVED SULFATE (TONS)		DIS- SOLVED SULFATE (TONS)		HARDNESS (CA, MG) (MG/L)
				SOLVED SOLIDS (TONS)	SOLVED CHLORIDE (MG/L)	SOLVED SULFATE (MG/L)	SOLVED SULFATE (TONS)	SOLVED SULFATE (TONS)	SOLVED SULFATE (TONS)	SOLVED SULFATE (TONS)	SOLVED SULFATE (TONS)	
1		26800	0.08	18000	3.9	8700	1.9	2600	0.6	2700	0.5	***
2		28100	0.07	19000	3.6	9200	1.7	2700	0.5	2600	0.4	***
3		27200	0.08	18000	3.9	6900	1.9	2600	0.6	2500	0.4	***
4		25000	0.09	17000	4.0	8100	2.0	2500	0.6	2400	0.5	***
5		24700	0.08	16000	3.6	8000	1.7	2400	0.6	2400	0.5	***
6		23900	0.09	16000	3.9	7700	1.9	2400	0.6	2500	0.5	***
7		26000	0.07	17000	3.3	8500	1.6	2500	0.5	2600	0.4	***
8		26700	0.06	18000	2.9	8700	1.4	2600	0.5	2700	0.5	***
9		27700	0.07	19000	3.5	9100	1.7	2700	0.5	2800	0.6	***
10		28700	0.08	19000	4.2	9400	2.0	2800	0.6	2900	0.6	***
11		28700	0.06	19000	3.1	9400	1.5	2800	0.6	2900	0.6	***
12		27000	0.08	18000	3.9	8800	1.9	2600	0.6	2700	0.6	***
13		27400	0.08	18000	4.0	9000	1.9	2700	0.6	2800	0.6	***
14		26000	0.06	17000	2.8	8500	1.4	2500	0.4	2600	0.4	***
15		26700	0.06	18000	2.9	8700	1.4	2600	0.4	2700	0.4	***
16		27000	0.06	18000	2.9	8800	1.4	2600	0.4	2700	0.4	***
17		27300	0.06	18000	3.0	8900	1.4	2600	0.4	2700	0.4	***
18		27300	0.05	18000	2.5	8900	1.2	2600	0.4	2700	0.4	***
19		27300	0.06	18000	3.0	8900	1.4	2600	0.4	2700	0.4	***
20		27400	0.06	18000	3.0	9000	1.5	2700	0.4	2800	0.4	***
21		27500	0.06	18000	3.0	9000	1.5	2700	0.4	2800	0.4	***
22		27500	0.06	18000	3.0	9000	1.5	2700	0.4	2800	0.4	***
23		27600	0.05	19000	2.5	9000	1.2	2700	0.4	2800	0.4	***
24		27600	0.05	19000	2.5	9000	1.2	2700	0.4	2800	0.4	***
25		27600	0.05	19000	2.5	9000	1.2	2700	0.4	2800	0.4	***
26		27600	0.05	19000	2.5	9000	1.2	2700	0.4	2800	0.4	***
27		27700	0.05	19000	2.5	9100	1.2	2700	0.4	2800	0.4	***
28		27600	0.05	19000	2.5	9000	1.2	2700	0.4	2800	0.4	***
29		27600	0.05	19000	2.5	9000	1.2	2700	0.4	2800	0.4	***
30		27600	0.05	19000	2.5	9000	1.2	2700	0.4	2800	0.4	***
TOTAL			1.9	**	*+	94	**	46	**	14	**	
WTD. AVE.		0.06	27000	18000	**	8800	**	2600	**	2900	**	

7311743

7311783 SOUTH WICHITA RIVER BELOW LOW FLOW DAM NR GUTHR DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF OCT. 1987

SPECIFIC CONDUCTANCE (MICRO MHOES)	DISCHARGE (CFS-DAYS)	MONTH	YEAR	OCT. 1987	DIS-	SOLVED	SOLVED	SOLVED	DIS-	SOLVED	SOLVED	SOLVED	HARDNESS (CA, MG)
					SOLID	SOLID	SOLID	SOLID	CHLORIDE (MG/L)	CHLORIDE (TONS)	CHLORIDE (MG/L)	CHLORIDE (TONS)	(MG/L)
1	0.06	27100	18000		2.9	8900			1.4	2600	0.4	0.4	**
2	0.05	27100	18000		2.5	8900			1.2	2600	0.4	0.4	**
3	0.06	27200	18000		3.0	8900			1.4	2600	0.4	0.4	**
4	0.07	27100	18000		3.4	8900			1.7	2600	0.5	0.5	**
5	0.05	27000	18000		2.4	8800			1.2	2600	0.4	0.4	**
6	0.05	27100	18000		2.5	8900			1.2	2600	0.4	0.4	**
7	0.06	27000	18000		2.9	8800			1.4	2600	0.4	0.4	**
8	0.06	27300	18000		3.0	8900			1.4	2600	0.4	0.4	**
9	0.06	27600	19000		3.0	9000			1.5	2700	0.4	0.4	**
10	0.05	27600	19000		2.5	9000			1.2	2700	0.4	0.4	**
11	0.05	27600	19000		2.5	9000			1.2	2700	0.4	0.4	**
12	0.06	27600	19000		3.0	9000			1.5	2700	0.4	0.4	**
13	0.06	27500	18000		3.0	9000			1.5	2700	0.4	0.4	**
14	0.06	27500	18000		3.0	9000			1.5	2700	0.4	0.4	**
15	0.05	27400	18000		3.5	9000			1.2	2700	0.4	0.4	**
16	0.04	27300	18000		3.0	8900			1.0	2600	0.3	0.3	**
17	0.04	27400	18000		3.0	9000			1.0	2700	0.3	0.3	**
18	0.05	27400	18000		3.5	9000			1.2	2700	0.4	0.4	**
19	0.04	27500	18000		3.0	9000			1.0	2700	0.3	0.3	**
20	0.04	27800	19000		3.0	9100			1.0	2700	0.3	0.3	**
21	0.06	27800	19000		3.0	9100			1.5	2700	0.4	0.4	**
22	0.06	27800	19000		3.0	9100			1.5	2700	0.4	0.4	**
23	0.05	27900	19000		3.5	9100			1.2	2700	0.5	0.5	**
24	0.06	27900	19000		3.0	9100			1.5	2700	0.4	0.4	**
25	0.06	27800	19000		3.0	9100			1.5	2700	0.4	0.4	**
26	0.06	27800	19000		3.0	9100			1.5	2700	0.4	0.4	**
27	0.07	27900	19000		3.5	9100			1.7	2700	0.5	0.5	**
28	0.06	28000	19000		3.0	9200			1.5	2700	0.4	0.4	**
29	0.06	28100	19000		3.1	9200			2.0	2700	0.6	0.6	**
30	0.08	28100	19000		4.1	9200			1.5	2700	0.4	0.4	**
31	0.06	28200	19000		3.1	9300			1.5	2700	0.4	0.4	**
TOTAL	1.7				**				42		**	13	**
WTD. AVG.	0.06				9000				9000		2700		2700

73117-3

SOUTH WICHITA R BLW LOW FLOW DAM NR GUTHRIE, TX

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF NOV. 1987

MONTH	YEAR	NOV. 1987	SPECIFIC	DIS-	DIS-	DIS-	DIS-	DIS-	HARDNESS
			CONDUCT-	SOLVED	SOLVED	SOLVED	SOLVED	SOLVED	(CA, MG)
	DISCHARGE	SOLIDS	SOLIDS	CHLORIDE	CHLORIDE	SULFATE	SULFATE	(MG/L)	(MG/L)
	(CFS-DAYS)	(MG/L)	(TONS)	(MG/L)	(TONS)	(MG/L)	(TONS)	(MG/L)	
1			28100	19000	3.1	9200	1.5	2700	0.44 **
2			28200	19000	3.6	9300	1.7	2700	0.51 **
3			28000	19000	3.6	9200	1.7	2700	0.51 **
4			27800	19000	3.0	9100	1.5	2700	0.43 **
5			27900	19000	2.5	9100	1.2	2700	0.36 **
6			28000	19000	2.5	9200	1.2	2700	0.36 **
7			28100	19000	3.1	9200	1.5	2700	0.44 **
8			28300	19000	3.1	9300	1.5	2700	0.44 **
9			28300	19000	2.6	9300	1.3	2700	0.37 **
10			28400	19000	2.6	9300	1.3	2700	0.37 **
11			28500	19000	2.6	9400	1.3	2700	0.37 **
12			28600	19000	2.6	9400	1.3	2700	0.37 **
13			28700	19000	2.6	9400	1.3	2800	0.37 **
14			28800	19000	2.6	9500	1.3	2800	0.37 **
15			28800	19000	2.1	9500	1.0	2800	0.30 **
16			29000	20000	2.6	9600	1.3	2800	0.37 **
17			29100	20000	2.1	9600	1.0	2800	0.30 **
18			29200	20000	2.1	9600	1.0	2800	0.30 **
19			29300	20000	2.7	9700	1.3	2800	0.38 **
20			29300	20000	2.1	9700	1.0	2800	0.30 **
21			29300	20000	2.1	9700	1.0	2800	0.30 **
22			29300	20000	2.1	9700	1.0	2800	0.30 **
23			29300	20000	2.1	9700	1.0	2800	0.30 **
24			29300	20000	2.1	9700	1.0	2800	0.30 **
25			29300	20000	1.6	9700	0.78	2800	0.23 **
26			29200	20000	2.1	9600	1.0	2800	0.30 **
27			29100	20000	1.6	9600	0.78	2800	0.23 **
28			29100	20000	1.6	9600	0.78	2800	0.23 **
29			29100	20000	2.1	9600	1.0	2800	0.30 **
30			29000	20000	2.1	9600	1.0	2800	0.30 **
TOTAL			* * *	* * *	73	* * *	36	* * *	10 **
WT.D. AVE.			28700	19000	**	9400	**	2700	** 3100

7311763

SOUTH WICHITA R BLW LOW FLOW DAM NR GUTHRIE, TX

DAILY SUNDAY MONTHLY MEANS AND BAPES FOR THE MONTH BE DEC.

SPECIFIC CONDUCTANCE (MICRO-MHOES)	DISCHARGE (CFS-DAYS)	MONTH	YEAR	DEC.	DIS-	SOLVED	DIS-	SOLVED	DIS-	SOLVED	DIS-	SOLVED	HARDNESS (CA, MG)
					SOLIDS (MG/L)	CHLORIDE (MG/L)	SULFATE (MG/L)	CHLORIDE (TONS)	SULFATE (TONS)	CHLORIDE (TONS)	SULFATE (TONS)	CHLORIDE (TONS)	(MG/L)
1	0.06	28900	19000	3.2	9500	1.6	9500	0.77	2800	1.5	2800	0.45	**
2	0.03	28900	19000	1.6	9500	0.77	9500	0.77	2800	0.77	2800	0.22	**
3	0.03	28900	19000	1.6	9500	0.77	9500	0.77	2800	0.77	2800	0.22	**
4	0.03	28900	19000	1.6	9500	0.77	9500	0.77	2800	0.77	2800	0.22	**
5	0.03	28600	19000	1.6	9500	0.77	9500	0.77	2800	0.77	2800	0.22	**
6	0.03	28800	19000	1.6	9500	0.77	9500	0.77	2800	0.77	2800	0.22	**
7	0.04	28700	19000	2.1	9400	1.0	9400	1.0	2800	1.0	2800	0.30	**
8	0.03	28500	19000	1.6	9400	0.76	9400	0.76	2700	0.76	2700	0.22	**
9	0.05	28200	19000	2.6	9300	1.2	9300	1.2	2700	1.2	2700	0.37	**
10	0.05	28300	19000	2.6	9300	1.3	9300	1.3	2700	1.3	2700	0.37	**
11	0.08	28200	19000	4.1	9300	2.0	9300	2.0	2700	2.0	2700	0.59	**
12	0.03	28200	19000	4.1	9300	2.0	9300	2.0	2700	2.0	2700	0.59	**
13	0.03	28200	19000	1.5	9300	0.75	9300	0.75	2700	0.75	2700	0.22	**
14	0.03	28000	19000	1.5	9200	0.74	9200	0.74	2700	0.74	2700	0.22	**
15	0.05	28000	19000	2.5	9200	1.2	9200	1.2	2700	1.2	2700	0.36	**
16	0.06	28000	19000	3.0	9200	1.5	9200	1.5	2700	1.5	2700	0.44	**
17	0.06	27900	19000	3.0	9100	1.5	9100	1.5	2700	1.5	2700	0.44	**
18	0.06	27800	19000	3.0	9100	1.5	9100	1.5	2700	1.5	2700	0.43	**
19	0.05	27700	19000	2.5	9100	1.2	9100	1.2	2700	1.2	2700	0.36	**
20	0.04	27600	19000	2.0	9000	0.98	9000	0.98	2700	0.98	2700	0.29	**
21	0.03	27500	18000	1.5	9000	0.73	9000	0.73	2700	0.73	2700	0.22	**
22	0.03	27600	19000	1.5	9000	0.73	9000	0.73	2700	0.73	2700	0.22	**
23	0.03	27700	19000	1.5	9100	0.74	9100	0.74	2700	0.74	2700	0.22	**
24	0.02	27900	19000	1.0	9100	0.49	9100	0.49	2700	0.49	2700	0.15	**
25	0.03	28000	19000	1.5	9200	0.74	9200	0.74	2700	0.74	2700	0.22	**
26	0.03	27900	19000	1.5	9100	0.74	9100	0.74	2700	0.74	2700	0.22	**
27	6.7	29400	20000	2.7	9700	1.3	9700	1.3	2800	1.3	2800	0.38	**
28	0.05	29500	20000	2.6	9500	1.6	9700	1.6	2800	1.6	2800	0.46	**
29	0.05	28900	19000	3.2	9700	1.3	9900	1.3	2800	1.3	2800	0.23	**
30	0.06	29500	20000	1.6	9900	0.80	9900	0.80	2800	0.80	2800	0.23	**
31	0.03	29900	20000	1.6	9900	0.80	9900	0.80	2800	0.80	2800	0.23	**
TOTAL	7.48			**	420	**			210	**		28000	**
WTD. AVG.	0.26				29200	29200			29200	29200		31000	**

7311783

SOUTH WICHITA R BLW LOW FLOW DAM NR GUTHRIE, TX

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF JAN. 1988

MONTH	YEAR	JAN.	SPECIFIC	DIS-	DIS-	DIS-	DIS-	DIS-	DIS-	HARDNESS (CA, MG) (MG/L)
			CONDUCT- ANCE (MICRO- MHDS)	SOLVED SOLIDS (MG/L)	SOLVED SOLIDS (TONS)	SOLVED CHLORIDE (MG/L)	SOLVED CHLORIDE (TONS)	SOLVED SULFATE (MG/L)	SOLVED SULFATE (TONS)	
1		0.02	28600	19000	1.0	9400	0.51	2700	0.15	**
2		0.02	27900	19000	1.0	9100	0.49	2700	0.15	**
3		0.02	26100	17000	0.94	8500	0.46	2600	0.14	**
4		0.02	25800	17000	0.93	8400	0.45	2500	0.14	**
5		0.02	28400	19000	1.0	9300	0.50	2700	0.15	**
6		0.03	29700	20000	1.6	9800	0.80	2800	0.23	**
7		0.04	28800	19000	2.1	9500	1.0	2800	0.30	**
8		0.06	30000	20000	3.3	9900	1.6	2900	0.46	**
9		0.06	29700	20000	3.2	9800	1.6	2800	0.46	**
10		0.06	26800	18000	2.9	8700	1.4	2600	0.42	**
11		0.06	29400	20000	321	9700	157	2800	4.5	**
12		0.3	29200	20000	335	9600	164	2800	47	**
13		5.5	28200	19000	281	9300	137	2700	40	**
14		5.7	28100	19000	291	9200	142	2700	42	**
15		7.9	26800	18000	383	8700	186	2600	56	**
16		8.3	30100	20000	455	10000	223	2900	64	**
17		7.4	30300	20000	409	10000	201	2900	57	**
18		8.3	29500	20000	446	9700	218	2800	63	**
19		6.1	27300	18000	301	8900	147	2600	44	**
20		2.3	30300	20000	127	10000	62	2900	18	**
21		0.04	30600	21000	2.2	10000	1.1	2900	0.31	**
22		0.03	30800	21000	1.7	10000	0.83	2900	0.24	**
23		0.03	30100	20000	1.6	10000	0.81	2900	0.23	**
24		0.03	30300	20000	1.7	10000	0.81	2900	0.23	**
25		0.03	30000	20000	1.6	9900	0.80	2900	0.23	**
26		0.03	30200	20000	1.7	10000	0.81	2900	0.23	**
27		0.03	30200	20000	1.7	10000	0.81	2900	0.23	**
28		0.02	30200	20000	1.1	10000	0.54	2900	0.15	**
29		0.02	30300	20000	1.1	10000	0.54	2900	0.15	**
30		0.02	30200	20000	1.1	10000	0.54	2900	0.16	**
31		0.03	30200	20000	1.7	10000	0.81	2900	0.23	**
TOTAL		04.40	***	***	3400	***	1700	***	480	**
WT.D. AVG.		2.1	28900	19000	***	9500	***	2800	***	3100

7311783

SOUTH WICHITA R BLW LOW FLOW DAM NR GUTHRIE, TX

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF FEB. 1988

MONTH	YEAR	FEB.	1988	SPECIFIC	DIS-	DIS-	DIS-	DIS-	DIS-	DIS-	HARDNESS
				CONDUCT-	SOLVED	SOLVED	SOLVED	SOLVED	SULFATE	SULFATE	(CA, MG)
	DISCHARGE	(MICRO-	SOLIDS	SOLIDS	CHLORIDE	CHLORIDE	(TONS)	(MG/L)	(TONS)	(MG/L)	(MG/L)
	(CFS-DAYS)	MHOE)	(MG/L)	(TONS)	(MG/L)	(MG/L)	(TONS)	(MG/L)	(TONS)	(MG/L)	(MG/L)
1				0.03	30200	20000	1.7	10000	0.81	2900	**
2				0.03	30300	20000	1.7	10000	0.81	2900	0.23
3				0.03	30200	20000	1.7	10000	0.81	2900	0.23
4				0.03	30300	20000	1.7	10000	0.81	2900	0.23
5				0.03	30200	20000	1.7	10000	0.81	2900	0.23
6				0.03	30000	20000	1.6	9900	0.80	2900	0.23
7				0.03	29900	20000	1.6	9900	0.80	2800	0.23
8				0.03	29800	20000	1.6	9900	0.80	2800	0.23
9				0.03	29400	20000	1.6	9900	0.80	2800	0.23
10				0.03	29900	20000	1.6	9900	0.80	2800	0.23
11				0.03	30000	20000	1.6	9900	0.80	2900	0.23
12				0.03	30100	20000	1.6	10000	0.81	2900	0.23
13				0.03	30200	20000	1.7	10000	0.81	2900	0.23
14				0.03	30300	20000	1.7	10000	0.81	2900	0.23
15				0.03	30300	20000	1.7	10000	0.81	2900	0.23
16				0.03	30500	21000	1.7	10000	0.82	2900	0.23
17				0.03	30700	21000	1.7	10000	0.83	2900	0.24
18				0.03	30800	21000	1.7	10000	0.83	2900	0.24
19				0.03	30900	21000	1.7	10000	0.83	2900	0.24
20				3.4	33000	22000	206	11000	102	3100	28
21				0.03	32800	22000	1.8	11000	0.89	3100	**
22				0.03	32600	22000	1.8	11000	0.88	3000	0.25
23				0.03	32400	22000	1.8	11000	0.88	3000	0.25
24				0.03	32200	22000	1.8	11000	0.87	3000	0.24
25				0.03	32000	22000	1.8	11000	0.87	3000	0.24
26				0.03	31900	22000	1.8	11000	0.86	3000	0.24
27				0.03	31800	22000	1.7	11000	0.86	3000	0.24
28				0.03	31700	21000	1.7	11000	0.86	3000	0.24
29				0.03	31600	21000	1.7	11000	0.85	3000	0.24
TOTAL				4.24	**	**	250	**	120	**	35
WTD. AVE.				0.19	32600	22000	**	11000	**	3000	**
											3500

7311783

SOUTH WICHITA R BLW LOW FLOW DAM NR GUTHRIE, TX

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF MAR. 1988

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHO _S)	DIS- SOLVED SOLIDS (MG/L)		DIS- SOLVED CHLORIDE (MG/L)		DIS- SOLVED CHLORIDE (TONS)		DIS- SOLVED SULFATE (MG/L)		DIS- SOLVED SULFATE (TONS)		HARDNESS (CA, MG) (MG/L)	
				DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	DIS- SOLVED SULFATE (TONS)	DIS- SOLVED SULFATE (TONS)		
MAR.	1988														
1		31000	0.63	1.7	10000	0.85	3000	0.85	3000	0.84	2900	0.84	2900	0.24	
2		31400	0.63	1.7	10000	0.85	3000	0.85	3000	0.84	2900	0.84	2900	0.24	
3		31300	0.63	1.7	10000	0.84	2900	0.84	2900	0.84	2900	0.84	2900	0.24	
4		31200	0.63	1.7	10000	0.84	2900	0.84	2900	0.84	2900	0.84	2900	0.24	
5		31100	0.63	1.7	10000	0.84	2900	0.84	2900	0.84	2900	0.84	2900	0.24	
6		31000	0.63	1.7	10000	0.84	2900	0.84	2900	0.84	2900	0.84	2900	0.24	
7		30700	0.66	3.4	10000	1.7	2900	1.7	2900	1.7	2900	1.7	2900	0.24	
8		30300	0.67	3.9	10000	1.9	2900	1.9	2900	1.9	2900	1.9	2900	0.24	
9		30200	0.67	3.9	10000	1.9	2900	1.9	2900	1.9	2900	1.9	2900	0.24	
10		30200	0.69	5.0	10000	2.4	2900	2.4	2900	2.4	2900	2.4	2900	0.24	
11		30100	0.68	4.4	10000	2.2	2900	2.2	2900	2.2	2900	2.2	2900	0.24	
12		30100	0.66	3.3	10000	1.6	2900	1.6	2900	1.6	2900	1.6	2900	0.24	
13		30100	0.64	2.2	10000	1.1	2900	1.1	2900	1.1	2900	1.1	2900	0.24	
14		30000	0.64	2.2	9900	1.1	2900	1.1	2900	1.1	2900	1.1	2900	0.24	
15		30000	0.65	2.7	9900	1.3	2900	1.3	2900	1.3	2900	1.3	2900	0.24	
16		30100	0.64	2.2	10000	1.1	2900	1.1	2900	1.1	2900	1.1	2900	0.24	
17		30200	0.64	2.2	10000	1.4	2900	1.4	2900	1.4	2900	1.4	2900	0.24	
18		30200	0.63	1.7	10000	0.81	2900	0.81	2900	0.81	2900	0.81	2900	0.24	
19		30300	0.64	2.2	10000	1.1	2900	1.1	2900	1.1	2900	1.1	2900	0.24	
20		30300	0.65	2.8	10000	1.4	2900	1.4	2900	1.4	2900	1.4	2900	0.24	
21		30300	0.65	2.8	10000	1.4	2900	1.4	2900	1.4	2900	1.4	2900	0.24	
22		30400	0.66	3.3	10000	1.6	2900	1.6	2900	1.6	2900	1.6	2900	0.24	
23		30500	0.66	3.3	10000	1.6	2900	1.6	2900	1.6	2900	1.6	2900	0.24	
24		30600	0.67	3.9	10000	1.9	2900	1.9	2900	1.9	2900	1.9	2900	0.24	
25		30600	0.64	2.2	10000	1.1	2900	1.1	2900	1.1	2900	1.1	2900	0.24	
26		30700	0.64	2.2	10000	1.1	2900	1.1	2900	1.1	2900	1.1	2900	0.24	
27		30800	0.63	1.7	10000	0.83	2900	0.83	2900	0.83	2900	0.83	2900	0.24	
28		30900	0.63	1.7	10000	0.84	2900	0.84	2900	0.84	2900	0.84	2900	0.24	
29		31000	0.63	1.7	10000	0.84	2900	0.84	2900	0.84	2900	0.84	2900	0.24	
30		31100	0.63	1.7	10000	0.84	2900	0.84	2900	0.84	2900	0.84	2900	0.24	
31		31000	0.63	1.7	10000	0.84	2900	0.84	2900	0.84	2900	0.84	2900	0.24	
TOTAL		1.41	**	**	78	**	37	**	37	**	37	**	11	**	
WTD. AVG.		0.65	30500	21000	**	10000	**	10000	**	10000	**	10000	**	3300	**

7311763

SOUTH WICHITA R BLW LOW FLOW DAM NR GUTHRIE, TX

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF APR. 1988

MONTH	YEAR	APR.	1988	SPECIFIC	DIS-	DIS-	DIS-	DIS-	DIS-	DIS-	HARDNESS
				CONDUCT-	SOLVED	SOLVED	SOLVED	SOLVED	SOLVED	SULFATE	(CA, MG)
				(MICRΩ)	(MG/L)	SOLIDS	CHLORIDE	CHLORIDE	SULFATE	(TONS)	(MG/L)
1		0.03	30900	21000	1.7	10000	0.83	2900	0.24	0.24	**
2		0.03	30700	21000	1.7	10000	0.83	2900	0.24	0.24	**
3		0.02	30500	21000	1.1	10000	0.55	2900	0.16	0.16	**
4		0.02	30400	21000	1.1	10000	0.54	2900	0.16	0.16	**
5		0.02	30300	20000	1.1	10000	0.54	2900	0.16	0.16	**
6		0.02	30300	20000	1.1	10000	0.54	2900	0.16	0.16	**
7		0.02	30300	20000	1.1	10000	0.54	2900	0.16	0.16	**
8		0.02	30200	20000	1.1	10000	0.54	2900	0.15	0.15	**
9		0.02	30200	20000	1.1	10000	0.54	2900	0.15	0.15	**
10		0.02	30100	20000	1.1	10000	0.54	2900	0.15	0.15	**
11		0.02	30100	20000	1.1	10000	0.54	2900	0.15	0.15	**
12		0.02	30000	20000	1.1	9900	0.54	2900	0.15	0.15	**
13		0.03	30000	20000	1.6	9700	0.80	2900	0.23	0.23	**
14		0.03	29900	20000	1.6	9700	0.80	2800	0.23	0.23	**
15		0.03	29900	20000	1.6	9900	0.80	2800	0.23	0.23	**
16		0.03	29800	20000	1.6	9900	0.80	2800	0.23	0.23	**
17		0.02	29800	20000	1.1	9700	0.53	2800	0.15	0.15	**
18		0.02	29700	20000	1.1	9800	0.53	2800	0.15	0.15	**
19		0.04	29700	20000	2.2	9800	1.1	2800	0.31	0.31	**
20		0.03	29700	20000	1.6	9800	0.80	2800	0.23	0.23	**
21		0.06	29800	20000	3.3	9900	1.6	2800	0.46	0.46	**
22		5.8	32500	22000	346	11000	170	3000	47	47	**
23		3.2	32900	22000	193	11000	95	3100	26	26	**
24		5.5	33000	22000	212	11000	105	3100	29	29	**
25		3.2	33400	23000	196	11000	97	3100	27	27	**
26		3.1	33500	23000	191	11000	94	3100	26	26	**
27		3.1	33700	23000	192	11000	95	3100	26	26	**
28		1.9	33900	23000	119	11000	59	3100	16	16	**
29		0.03	33600	23000	1.9	11000	0.92	3100	0.25	0.25	**
30		0.03	32300	22000	1.8	11000	0.88	3000	0.24	0.24	**
TOTAL		24.41	**	**	1500	**	730	**	200	200	**
WTD. AVG.		0.81	33100	23000	**	11000	**	3100	**	3600	

APPENDIX E

**SOUTH WICHITA RIVER NEAR BENJAMIN, TEXAS
(STATION NO. 7311800)
DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTHS
MAY 1987 - APR 1988**

7311200

SOUTH WICHITA RIVER NEAR BENJAMIN, TEX.

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF MAY 1987

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRIL- MOSE)	DIS- SOLVED SOLID(S) (MG/L)	DIS- SOLVED SOLID(S) (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
1		21200	15000	311	6700	144	2600	55	***	
2		21400	15000	314	6800	145	2600	56	***	
3		21800	15000	320	7000	148	2600	56	***	
4		21900	15000	322	7000	149	2600	56	***	
5		22000	15000	319	7000	148	2600	56	***	
6		22000	15000	254	7000	118	2600	44	***	
7		22000	15000	249	7000	116	2600	44	***	
8		21900	15000	228	7000	106	2600	40	***	
9		21700	15000	222	6900	103	2600	39	***	
10		20500	14000	496	6500	228	2500	89	***	
11		20000	14000	324	6300	148	2500	59	***	
12		20000	14000	264	6300	121	2500	48	***	
13		20000	14000	327	6300	150	2500	59	***	
14		14700	10000	225	4500	100	2000	45	***	
15		19900	14000	200	6300	92	2500	36	***	
16		21500	15000	192	6900	89	2600	34	***	
17		22700	16000	186	7300	87	2700	32	***	
18		23800	15000	155	7700	73	2800	26	***	
19		21000	14000	508	6700	234	2600	90	***	
20		14700	10000	271	4500	120	2000	54	***	
21		16300	11000	155	5000	67	2200	30	***	
22		123	7990	5500	1840	2400	781	1200	405	1400
23		1090	5850	4100	11900	1700	5000	920	2710	1000
24		112	6410	4400	1340	1900	565	1000	303	1100
25		49	7640	4900	645	2100	273	1100	144	1200
26		34	7540	5200	479	2200	203	1200	106	1300
27		135	6220	4300	1570	1800	660	970	355	1100
28		1650	1380	960	4790	390	1950	230	1160	260
29		2530	2100	1500	9960	600	4070	350	2380	390
30		1440	2100	1500	5670	600	2320	350	1360	390
31		190	3600	2600	1310	1100	541	600	307	670
TOTAL		7705	***	***	45000	***	14000	***	10000	***
WTD. AVG.		247	3150	2250	***	925	***	470	***	560

7311-111

SOUTHERN KICHLITA RIVER NEAR BENJAMIN, TEX.

DAILY AND MONTHLY READING AND LOADS FOR THE MONTH OF JUNE 1957

7311200 SOUTH WICHITA RIVER NEAR BENJAMIN, TEX.

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF JULY 1987

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOES)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
JULY	1987									
1		8620	53	6000	854	2500	365	1300	186	1500
2		8820	43	6100	709	2600	303	1300	154	1500
3		8980	37	6200	621	2700	266	1400	135	1600
4		10000	32	6900	598	3000	257	1500	128	**
5		10800	30	7500	605	3200	262	1600	128	**
6		11400	27	7900	575	3400	250	1700	120	**
7		12100	24	8400	542	3700	237	1700	112	**
8		12600	22	8700	517	3800	227	1800	106	**
9		13200	21	9100	517	4000	227	1900	105	**
10		13800	20	9500	515	4200	227	1900	104	**
11		14300	19	9900	507	4400	224	2000	101	**
12		14500	20	10000	541	4400	240	2300	108	**
13		1117	6140	4300	1340	1800	565	960	304	1100
14		23	6730	4700	290	2000	122	1000	65	1200
15		20	9990	6900	373	3000	161	1500	80	1700
16		32	10000	6900	598	3000	257	1500	128	**
17		80	3300	2300	495	940	204	540	116	600
18		26	3280	2300	160	940	66	540	38	600
19		66	3450	2400	427	990	176	560	100	630
20		48	8320	5800	747	2500	318	1300	164	1400
21		44	13200	9100	1080	4000	476	1900	221	**
22		26	13300	9200	645	4000	284	1900	131	**
23		22	13300	9200	546	4000	240	1900	111	**
24		20	13400	9300	500	4100	220	1900	101	**
25		18	13400	9300	450	4100	198	1900	91	**
26		17	13600	9400	431	4100	190	1900	87	**
27		16	13700	9500	409	4200	180	1900	83	**
28		15	13810	9500	386	4200	173	1900	78	**
29		14	13800	9500	360	4200	159	1900	73	**
30		14	13900	9600	363	4200	160	1900	73	**
31		13	14000	9700	339	4300	150	1900	68	**
TOTAL		979	**	**	17000	**	7400	**	3600	**
WTD. AVG.		32	9320	6400	**	2800	**	1400	**	1600

7311HQD

SOUTH WICHITA RIVER NEAR BENJAMIN, TEX.

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF AUG. 1987

SPECIFIC CONDUCTANCE (MICRO-MHOS)	DISCHARGE (CFS-DAYS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
AUG. 1987								
1	12	14000	9700	313	4300	138	1900	63 **
2	11	14000	9700	287	4300	127	1900	58 **
3	11	14100	9700	289	4300	128	2000	58 **
4	82	11700	8100	1790	3500	780	1700	373 ***
5	129	2920	2000	706	830	290	480	167 530
6	17	9020	6200	287	2700	123	1400	62 1600
7	13	11000	7600	267	3300	116	1600	56 ***
8	11	12000	8300	246	3600	107	1700	51 ***
9	10	13000	9000	243	3700	106	1800	50 ***
10	9.7	14000	9700	253	4300	112	1900	51 ***
11	9.5	15000	10000	266	4600	118	2000	53 ***
12	9.1	15000	10000	254	4600	113	2000	50 ***
13	21	13400	9300	525	4100	231	1900	107 ***
14	9.9	8400	5800	155	2500	66	1300	34 1500
15	7.6	12500	8600	177	3800	78	1800	36 ***
16	17	12400	8600	393	3700	172	1800	81 ***
17	15	13300	9200	372	4000	164	1900	76 ***
18	7.7	11000	7600	158	3300	69	1600	33 ***
19	6.3	12000	8300	141	3600	62	1700	27 ***
20	5.7	12500	8600	133	3800	58	1800	27 ***
21	5.2	13000	9000	126	3900	55	1600	26 ***
22	4.8	13500	9300	121	4100	53	1900	24 ***
23	4.5	14000	9700	118	4300	52	1900	24 ***
24	4.3	14500	10000	116	4400	52	2000	23 ***
25	4.0	15000	10000	112	4600	50	2000	22 ***
26	18	10800	7500	363	3200	157	1600	77 ***
27	159	3600	2500	1070	1000	443	590	251 650
28	13	7100	4900	173	2100	73	1100	39 1200
29	12	8000	5500	194	2400	83	1200	43 1400
30	10	11000	7600	205	3300	87	1600	43 ***
31	9.1	12000	8300	204	3600	87	1700	42 ***
TOTAL	659	***	***	10000	***	4400	***	2100 ***
WTD. AVG.	21	8170	5700	**	2400	**	1200	** 1400

7311600

SCOTT WICHITA 61 ER NELS REA 1000

SOUTH WICHITA RIVER NEAR BENJAMIN, TEX

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF SEPT 1987

7311500

SOUTH WICHITA RIVER NEAR BENJAMIN, TEX.

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF OCT. 1987

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	DIS-			DIS-			DIS-		
			SOLVED SOLIDS (MG/L)	SOLVED CHLORIDE (TONS)	SOLVED CHLORIDE (MG/L)	SOLVED SULFATE (TONS)	SOLVED SULFATE (MG/L)	SOLVED SULFATE (TONS)	SOLVED HARDNESS (CA, MG) (MG/L)		
OCT. 1987											
1	16200	11000	48	5000	5000	22	2200	2200	2200	9.4	**
2	16300	11000	46	5000	5000	20	2200	2200	2200	8.8	**
3	16500	11060	40	5100	5100	18	2200	2200	2200	7.7	**
4	16500	11000	40	5100	5100	18	2200	2200	2200	7.7	**
5	16700	12000	40	5200	5200	18	2200	2200	2200	7.8	**
6	16900	12000	41	5200	5200	18	2200	2200	2200	7.8	**
7	16800	12000	38	5200	5200	17	2200	2200	2200	7.2	**
8	16700	12000	34	5200	5200	15	2200	2200	2200	6.6	**
9	16900	12000	35	5200	5200	16	2200	2200	2200	6.6	**
10	17100	12000	35	5300	5300	16	2300	2300	2300	6.7	**
11	17000	12000	35	5300	5300	16	2200	2200	2200	6.7	**
12	17100	12000	38	5300	5300	17	2300	2300	2300	7.3	**
13	17000	12000	44	5300	5300	20	2200	2200	2200	8.5	**
14	17000	12000	41	5300	5300	19	2200	2200	2200	7.9	**
15	16700	12000	44	5200	5200	20	2200	2200	2200	8.4	**
16	16900	12000	50	5200	5200	23	2200	2200	2200	9.6	**
17	16900	12000	54	5200	5200	24	2200	2200	2200	10	**
18	17200	12000	61	5300	5300	27	2300	2300	2300	12	**
19	16500	11000	52	5100	5100	23	2200	2200	2200	10	**
20	16700	12000	40	5200	5200	18	2200	2200	2200	7.8	**
21	16300	11000	30	5000	5000	14	2200	2200	2200	5.9	**
22	16800	12000	34	5200	5200	15	2200	2200	2200	6.6	**
23	16800	12000	38	5200	5200	17	2200	2200	2200	7.2	**
24	16900	12000	44	5200	5200	20	2200	2200	2200	8.4	**
25	16900	12000	47	5200	5200	21	2200	2200	2200	9.0	**
26	17100	12000	45	5300	5300	20	2300	2300	2300	8.5	**
27	16500	11000	40	5100	5100	18	2200	2200	2200	7.7	**
28	17100	12000	48	5300	5300	22	2300	2300	2300	9.1	**
29	17200	12000	51	5300	5300	23	2300	2300	2300	9.8	**
30	17300	12000	42	5400	5400	19	2300	2300	2300	8.0	**
31	17400	12000	30	5400	5400	13	2300	2300	2300	5.7	**
TOTAL	16800	12000	**	1300	**	590	**	2200	**	250	**
WTD. AVG.	1.3					5200	**			2700	

7311E.0

SOUTH WICHITA RIVER NEAR BENJAMIN, TEX.

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF NOV. 1987

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOES)	DIS- SOLVED SOLIDS (MG/L)		DIS- SOLVED SOLIDS (TONS)		DIS- SOLVED CHLORIDE (TONS)		DIS- SOLVED SULFATE (MG/L)		DIS- SOLVED SULFATE (TONS)		HARDNESS (CA, MG) (MG/L)	
				NOV.	1987	23	5400	10	2300	9.1	2300	7.9	2300	8.6	
1		0.71	17400	12000		5400	10	2300	9.1	2300	7.9	2300	8.6	4.4	
2		0.62	17500	12000	20	5500	9.1	2300	7.9	2300	9.1	2300	3.8	**	
3		0.55	17200	12000	18	5300	7.9	2300	9.6	2300	10.0	2300	4.1	**	
4		0.67	17100	12000	21	5300	9.6	2300	10.0	2300	10.0	2300	4.2	**	
5		0.69	17200	12000	22	5300	10.0	2300	8.6	2300	8.6	2300	3.6	**	
6		0.59	17300	12000	19	5400	8.6	2300	8.6	2300	8.6	2300	3.6	**	
7		0.55	17700	12000	18	5500	8.2	2300	8.2	2300	8.2	2300	3.4	**	
8		0.57	17700	12000	19	5500	8.8	2300	9.6	2300	9.6	2300	3.7	**	
9		0.66	17300	12000	21	5400	9.6	2300	9.4	2300	9.4	2300	4.0	**	
10		0.64	17400	12000	21	5400	9.4	2300	9.4	2300	9.4	2300	3.9	**	
11		0.67	17400	12000	22	5400	9.8	2300	9.8	2300	9.8	2300	4.1	**	
12		0.51	17900	12000	30	5600	14	2300	14	2300	14	2300	5.7	**	
13		1.1	18400	13000	38	5800	17	2400	17	2400	17	2400	7.0	**	
14		1.3	18900	13000	46	5900	21	2400	21	2400	21	2400	8.5	**	
15		1.4	18800	13000	49	5900	22	2400	22	2400	22	2400	9.1	**	
16		1.3	18800	13000	45	5900	21	2400	21	2400	21	2400	8.4	**	
17		1.2	18500	13000	41	5800	19	2400	19	2400	19	2400	7.7	**	
18		1.3	17900	12000	43	5600	20	2300	20	2300	20	2300	8.2	**	
19		1.2	18500	13000	41	5800	19	2400	19	2400	19	2400	7.7	**	
20		1.2	18400	13000	41	5800	19	2400	19	2400	19	2400	8.4	**	
21		1.3	18900	13000	46	5700	21	2400	21	2400	21	2400	7.7	**	
22		1.4	19200	13000	50	6000	23	2400	23	2400	23	2400	8.5	**	
23		1.5	19200	13000	54	6000	24	2400	24	2400	24	2400	9.2	**	
24		1.6	19200	13000	57	6000	26	2400	26	2400	26	2400	9.9	**	
25		1.6	19500	13000	58	6100	27	2500	27	2500	27	2500	11	**	
26		1.6	19600	14000	58	6200	27	2500	27	2500	27	2500	11	**	
27		1.7	19500	13000	62	6100	28	2500	28	2500	28	2500	11	**	
28		1.8	19500	13000	65	6100	30	2500	30	2500	30	2500	12	**	
29		1.9	19800	14000	70	6200	32	2500	32	2500	32	2500	13	**	
30		2.0	19600	14000	73	6200	33	2500	33	2500	33	2500	13	**	
TOTAL		34.25	**	**	12000	**	540	**	540	**	540	**	220	**	
WTD. AVE.		1.1	18700	13000	**	5900	**	2400	**	2400	**	2400	**	2900	

7311000

SOUTH WICHITA RIVER NEAR BENJAMIN, TEX.

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF DEC. 1987

MONTH	YEAR	DEC.	SPECIFIC	DUCT-	DIS-	DIS-	DIS-	DIS-	DIS-	HARDNESS (CA, MG) (MG/L)
			CONDUCT-	ANCE (MICRO-	SOLVED SOLIDS (MG/L)	SOLVED SOLIDS (TONS)	SOLVED CHLORIDE (MG/L)	SOLVED CHLORIDE (TONS)	SOLVED SULFATE (MG/L)	
1		1	1.9	19700	14000	70	6200	32	2500	13
		2	2.0	19500	13000	73	6100	33	2500	13
3		2	2.1	19400	13000	76	6100	35	2500	14
4		4	2.1	19400	13000	76	6100	35	2500	14
5		5	2.1	19300	13000	75	6100	34	2400	14
6		6	2.2	19300	13000	79	6100	36	2400	15
7		7	1.9	19400	13000	69	6100	31	2500	13
8		8	2.0	19500	13000	73	6100	33	2500	13
9		9	1.9	19200	13000	68	6000	31	2400	12
10		10	1.9	19500	13000	69	6100	32	2500	13
11		11	2.0	19500	13000	73	6100	33	2500	13
12		12	1.9	19500	13000	69	6100	32	2500	13
13		13	1.9	19600	14000	69	6200	32	2500	13
14		14	2.8	19600	14000	102	6200	47	2500	19
15		15	2.3	19200	13000	118	6000	54	2400	22
16		16	3.2	19300	13000	115	6100	52	2400	21
17		17	3.2	19300	13000	115	6100	52	2400	21
18		18	3.5	18800	13000	122	5900	56	2400	23
19		19	3.2	18200	13000	108	5700	49	2400	20
20		20	3.6	18100	12000	121	5700	55	2300	23
21		21	3.6	18100	12000	121	5700	55	2300	23
22		22	3.3	18100	12000	111	5700	50	2300	21
23		23	3.2	17900	12000	107	5600	48	2300	20
24		24	3.2	17900	12000	107	5600	48	2300	20
25		25	1.1	17700	12000	363	5500	164	2300	68
26		26	7.3	16600	11000	226	5100	101	2200	43
27		27	6.0	13500	9300	151	4100	67	1900	31
28		28	7.0	11600	8000	152	3500	66	1700	32
29		29	6.7	14800	10000	185	4500	82	2000	37
30		30	5.3	14400	9700	142	4400	63	2000	28
31		31	5.2	14800	10000	143	4500	64	2000	28
TOTAL			110.5	17200	12000	**	3500	**	1600	**
WTD. AVG.			3.6	17200	12000	**	5400	**	2300	**
										2700

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7311000 SOUTH WICHITA RIVER NEAR BENJAMIN, TEX.

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF JAN. 1988

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO MHOES)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
1	15300	11000	143	4700	64	2100	28	25	**
2	15200	10000	128	4700	57	2100	24	24	***
3	15200	10000	122	4700	54	2100	23	23	***
4	15500	11000	116	4800	52	2100	22	22	***
5	15500	11000	110	4800	49	2100	20	20	***
6	15400	11000	103	4700	46	2100	21	21	***
7	16600	11000	108	5100	49	2200	20	20	***
8	16000	11000	101	4900	45	2100	20	20	***
9	16000	11000	101	4900	45	2100	20	20	***
10	15900	11000	101	4900	45	2100	20	20	***
11	15300	11000	100	4700	44	2100	20	20	***
12	15500	11000	220	4800	98	2100	43	43	***
13	15800	11000	174	4900	78	2100	34	34	***
14	15800	11000	162	4900	72	2100	32	32	***
15	15800	11000	215	4900	96	2100	42	42	***
16	15800	11000	265	4900	118	2100	52	52	***
17	14800	10000	259	4500	115	2000	51	51	***
18	14200	9800	260	4300	115	2000	52	52	***
19	14500	10000	260	4400	115	2000	52	52	***
20	14500	10000	241	4400	107	2000	48	48	***
21	14400	9900	228	4400	101	2000	46	46	***
22	14300	9900	203	4400	90	2000	41	41	***
23	14800	10000	199	4500	88	2000	39	39	***
24	16400	11000	180	5100	81	2200	35	35	***
25	16700	12000	149	5200	67	2200	29	29	***
26	16500	11000	138	5100	62	2200	27	27	***
27	16300	11000	125	5000	56	2200	24	24	***
28	16030	11000	116	4900	52	2100	23	23	***
29	15800	11000	106	4900	47	2100	21	21	***
30	16100	11000	99	5000	44	2200	19	19	***
31	16400	11000	101	5100	45	2200	19	19	***
TOTAL	1721	**	**	4700	**	2200	**	2100	**
WTD. AVG.	5.6	15430	11000	**	4700	**	2100	**	2500

7311200

7311200 SOUTH WICHITA RIVER NEAR BENJAMIN, TEX.
DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF FEB. 1988

731100

SOUTH WICHITA RIVER NEAR BENJAMIN, TEX.

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF MAR. 1988

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOES)	DIS- SOLVED SOLIDS (MG/L)		DIS- SOLVED CHLORIDE (TONS)		DIS- SOLVED SULFATE (TONS)		DIS- SOLVED SULFATE (TONS)		HARDNESS (CA, MG) (MG/L)
				13000	70	5900	32	2400	13	108	1500	
1	2	18700	2.0	13000	70	5900	32	2400	13	108	1500	**
2	3	8840	3.0	6100	496	2600	212	1300	108	108	1500	**
4	5	3520	3.5	2400	86	1000	35	570	20	640	640	**
6	7	7120	4.5	4900	77	2100	33	1100	17	1300	1300	**
8	9	11000	5.2	7600	107	3300	46	1600	23	27	27	**
10	11	14600	5.0	10000	136	4500	60	2000	27	27	27	**
12	13	16800	4.5	12000	141	5200	63	2200	27	27	27	**
14	15	17300	4.0	12000	129	5400	58	2300	25	25	25	**
16	17	17400	3.4	12000	117	5400	53	2300	22	22	22	**
18	19	17900	3.3	12000	110	5600	50	2300	21	21	21	**
20	21	17800	3.0	12000	99	5600	45	2300	19	19	19	**
22	23	18000	2.5	12000	84	5600	38	2300	16	16	16	**
24	25	18360	2.2	13000	75	5700	34	2400	14	14	14	**
26	27	18500	2.3	13000	79	5800	36	2400	15	15	15	**
28	29	18400	2.3	13000	80	5800	36	2400	15	15	15	**
30	31	18600	2.3	13000	76	5800	35	2400	14	14	14	**
32	33	18050	2.7	12000	93	5600	42	2300	18	18	18	**
34	35	18030	2.7	12000	90	5600	41	2300	17	17	17	**
36	37	18030	2.7	12000	90	5600	41	2300	17	17	17	**
38	39	18300	2.5	13000	85	5700	39	2400	16	16	16	**
40	41	18400	2.5	13000	86	5800	39	2400	16	16	16	**
42	43	18600	2.3	13000	80	5800	36	2400	15	15	15	**
44	45	18900	2.3	13000	81	5900	37	2400	15	15	15	**
46	47	19130	2.0	13000	71	6000	32	2400	13	13	13	**
48	49	19100	1.7	13000	60	6000	28	2400	11	11	11	**
50	51	19500	1.5	13000	54	6100	25	2500	10.0	10.0	10.0	**
52	53	19500	1.2	13000	44	6100	20	2500	8.0	8.0	8.0	**
54	55	19600	1.3	14000	47	6200	22	2500	8.7	8.7	8.7	**
56	57	19800	1.2	14000	44	6200	20	2500	8.0	8.0	8.0	**
58	59	19900	1.1	14000	41	6300	19	2500	7.4	7.4	7.4	**
60	61	19600	1.3	14000	47	6200	22	2500	8.7	8.7	8.7	**
TOTAL		120	**	**	3600	**	1300	**	1600	**	1600	**
WTD. AVG.		3.9	13300	9200	**	4100	**	1300	**	1600	**	2200

731100

SOUTH WICHITA RIVER NEAR BENJAMIN, TEX.

DAILY AND MONTHLY MEANS AND LOADS FOR THE MONTH OF APR. 1988

MONTH YEAR	SPECIFIC CONDUT- ANCE (MICRO- MHO)	DISCHARGE (CFS-DAYS)	DIS- SOLVED SOLIDS (TONS)			DIS- SOLVED CHLORIDE (TONS)			DIS- SOLVED SULFATE (TONS)			DIS- SOLVED SULFATE (MG/L)	HARDNESS (CA, MG) (MG/L)
			APR.	1988									
1	1.7	19200	13000	61	6000	28	2400	11	15	15	11	**	**
2	2.2	19600	14000	80	6200	37	2500	14	13	14	15	**	**
3	2.1	19800	14000	77	6200	35	2500	13	12	13	14	**	**
4	1.9	19800	14000	70	6200	32	2500	12	11	12	13	**	**
5	1.8	20100	14000	67	6400	31	2500	11	11	12	12	**	**
6	1.6	20000	14000	60	6300	27	2500	10	10	10	10	**	**
7	1.5	19700	14000	55	6200	25	2500	10	10	10	10	**	**
8	1.3	20100	14000	49	6400	22	2500	8	8	8	8	**	**
9	1.3	20300	14000	49	6400	23	2500	9	9	9	9	**	**
10	1.9	19800	14000	70	6200	32	2500	13	13	13	13	**	**
11	1.6	20000	14000	60	6300	27	2500	11	11	11	11	**	**
12	1.4	20800	14000	54	6600	25	2600	7	7	7	7	**	**
13	1.4	20400	14000	53	6500	24	2500	6	6	6	6	**	**
14	1.3	20600	14000	50	6500	23	2500	9	9	9	9	**	**
15	1.2	20600	14000	46	6500	21	2500	3	3	3	3	**	**
16	1.2	20500	14000	46	6500	21	2500	2	2	2	2	**	**
17	52.50	3600	344	1500	144	830	79	940	940	940	940		
18	60.00	4200	168	1700	71	940	38	1100	1100	1100	1100		
19	6.4	8000	5500	96	2400	41	1200	21	1400	1400	1400		
20	5.0	11700	8100	109	3500	48	1700	23	23	23	23		
21	5.0	15400	11000	144	4700	64	2100	28	28	28	28		
22	4.4	16900	12000	139	5200	62	2200	27	27	27	27		
23	3.5	17200	12000	112	5300	51	2300	21	21	21	21		
24	2.7	17700	12000	89	5500	40	2300	17	17	17	17		
25	2.3	19400	13000	83	6100	38	2500	15	15	15	15		
26	2.1	19600	14000	77	6200	35	2500	14	14	14	14		
27	1.6	19100	13000	57	6000	26	2400	10	10	10	10		
28	2.3	19200	13000	82	6000	38	2400	15	15	15	15		
29	3.7	20100	14000	138	6400	63	2500	25	25	25	25		
30	4.1	20400	14000	156	6500	72	2500	28	28	28	28		
TOTAL	118.5	**	**	2700	**	1200	**	530	530	530	530	**	
WTD. AVG.	4.0	12400	8600	**	3800	**	1700	**	2000	2000	2000	2000	

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