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KANSAS-NEBRASKA BIG BLUE RIVER COMPACT

TWENTY-FIFTH ANNUAL REPORT



FISCAL 1998

FAIRBURY, NEBRASKA
MAY 21, 1998

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KANSAS-NEBRASKA BIG BLUE RIVER
COMPACT ADMINISTRATION

The Honorable William J. Clinton
President of the United States

The Honorable William Graves
Governor of Kansas

The Honorable E. Benjamin Nelson
Governor of Nebraska

Pursuant to Article VIII, Section 1 of the Rules and Regulations of the Kansas-Nebraska Big Blue River Compact Administration, I submit the Twenty-Fifth Annual Report. The report covers activities of the Administration for Fiscal Year 1998.

Respectfully,


Clayton Lukow
Compact Chairman

TABLE OF CONTENTS

| | <u>Page</u> |
|-------------------------------------|-------------|
| Membership..... | 1 |
| Minutes of Annual Meeting..... | 2 |
| Engineering Committee Report..... | 15 |
| Federal Agency Report..... | 31 |
| Water Quality Committee Report..... | 32 |
| Administration Budget Analysis..... | 35 |
| Treasurer's Report..... | 36 |
| Auditor's Report..... | 37 |

1997-1998 MEMBERSHIP

Representatives of the United States

Clayton Lukow

Kansas Representatives

David L. Pope, Topeka ¹

Terry Blaser, Waterville ²

Nebraska Representatives

J. Michael Jess, Lincoln ¹

Kenneth Regier, Aurora ³

1997-1998 OFFICERS

Clayton Lukow, Chairman
Pam Bonebright, Secretary
Denise Rolfs, Treasurer

1997-1998 COMMITTEES

Budget Committee

Don Blankenau, Chairperson
Bob Lytle

Engineering Committee

Keith Paulsen, Chairperson
Bob Lytle
Ann Bleed
Dale Mahan

Water Quality Committee

Dale Lambley, Chairperson
*
Glen Kirk
Denis Blank
Pat Rice
Mike Linder

Legal Committee

Don Blankenau, Chairperson
Leland Rolfs

1 Term continuous but coincides with duties of the state official who administers water law.

2 Term expires September 5, 1999.

3 Term expires September 19, 2001.

* Position vacant.

**MINUTES OF
KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION
TWENTY-FIFTH ANNUAL MEETING**

Call to Order

The Kansas-Nebraska Big Blue River Compact Administration annual meeting was held May 21, 1998, in the Burkley Center in Fairbury, Nebraska. The meeting was called to order at 9:00 a.m. by Clayton Lukow, Compact Chairman.

Introductions and Announcements

Introductions of attendees were made. Those in attendance were:

| | |
|-----------------|--|
| Clayton Lukow | Compact Chairman, Holstein, Nebraska |
| Michael Jess | Nebraska Commissioner |
| David Pope | Kansas Commissioner |
| Denise Rolfs | Compact Treasurer |
| Fam Bonebright | Compact Secretary |
| Kenneth Regier | Nebraska Citizen Representative |
| Don Blankenau | Nebraska Dept. Of Water Resources, Lincoln |
| Keith Paulsen | Nebraska Dept. Of Water Resources, Lincoln |
| Ann Bleed | Nebraska Dept. Of Water Resources, Lincoln |
| Terry Blaser | Kansas Citizen Representative |
| Bob Lytle | Kansas Dept. Of Agriculture, Topeka |
| Glenn Engel | U.S. Geological Survey, Lincoln |
| Mike Onnen | General Manager, Little Blue Natural Resources District, Davenport |
| Charlie Schultz | Board Member, Little Blue Natural Resources District, Fairbury |
| John Turnbull | General Manager, Upper Big Blue Natural Resources District, York |
| Ron Fleecs | General Manager, Lower Big Blue Natural Resources District, Beatrice |

Minutes of the 1997 Meeting

Chairman Lukow stated that the minutes for 1997 annual meeting had been reviewed and signed by both states and were distributed prior to the 1998 meeting. There being no additions, corrections or comments, the minutes stood approved as distributed.

Report of the Chairman

Chairman Lukow said he feels that quantity issues are not "front burner" matters needing attention of Compact officials. Instead, he said water quality is more significant. During the course of his report, it was said he was very impressed with several projects undertaken during the last year. As an example he noted a VIP tour of the Blue River basin which is intended to focus on water quality issues in both Kansas and Nebraska. Chairman Lukow also mentioned the Nebraska Legislature had recently discussed buffer strip cost-sharing which, if broadly installed, would make a significant contribution to improve water quality. Philosophically, he noted problems are not solved "on high" but are solved with a long process of people working together.

Kansas Report

Litigation

The remedies phase of the Kansas v. Colorado lawsuit concerning the Arkansas River Compact continues. The Special Master filed his Second Report with the U. S. Supreme Court in September of 1997. The Special Master found that the amount of water that Kansas was shorted between the years 1950 through 1985 was 328,505 acre-feet, and the amount from 1986 through 1994 to be 91,565 acre-feet. Two exceptions filed by Colorado were overruled by the U. S. Supreme Court without hearing. Trial began in May of 1998 to determine the amount of depletions for the 1995 through 1996 time period. There are still several important issues to be resolved. First, the form of payment to Kansas is unresolved. Kansas has asked that the damages be paid in money, while Colorado has asked to pay in water. Second, is whether pre-judgment interest should be charged against Colorado. Finally, what is the actual value of the water not received by Kansas. Briefs addressing these issues are scheduled to be filed with the Special Master by the end of 1998.

Legislation

During the 1998 Legislative Session, there were several pieces of legislation passed that concerned the protection of the water resources of the State. One of note is House Bill No. 2250 which addresses confined swine operations. It establishes more stringent criteria to prevent pollution of ground and surface water including lagoon liners and land disposal of animal waste. It also establishes greater separation distances for newly constructed facilities.

One piece of legislation that directly impacted the Kansas Division of Water Resources was House Concurrent Resolution No. 5030. This resolution required the Attorney General to bring suit against the State of Nebraska to enforce the provisions of the Republican River Compact, and on May 26, 1998, a motion was filed with the U. S. Supreme Court for the suit to be heard.

Water Rights

The Kansas Division of Water Resources continues to place emphasis on reducing the backlog of applications to appropriate water and applications to change existing water rights. However, over the past year this has been increasingly difficult because of the amount of full time positions that have been lost or not replaced in the Water Rights Unit. A point of increased emphasis is to issue certificates of appropriation for water rights that have had their time to perfect expired for several years. A certificate is the legal document that records to what extent a water right has been used and established.

The annual water use report cards were mailed in January and were due by March 1, 1998. A total of 14,824 reports were sent to water users, and as of March 31, 1998, a total of 13,969 reports had been returned, for a compliance rate of 95% thus far. In 1988, legislation was passed which allows a civil penalty to be assessed for failure to file a complete and accurate report. Prior to this legislation, compliance was only about 60%. So far, 1,220 individuals have been assessed civil penalties for filing late reports or not yet filing reports as required by law.

Water Rights Database Migration

The Division of Water Resources changed its water rights database in the Fall of 1996 from a mainframe system to a client server system. The development of the new Oracle Database continues, however, because of a lack of programming staff, the Division is not as far along as was anticipated. Currently, an integration of Oracle and Geographic Information System technology has produced a product called Water Information Management Analysis System (WIMAS). This technology will allow enhanced mapping and analysis on individual microcomputers.

Water Banking Task Force

Water banking and its potential use in Kansas was identified in the 1995 State Water Plan as a concept to be studied. As a result, a task force was formed to investigate, define and evaluate the concept of water banking, and was composed of members who represent agricultural interests, municipalities, Water Assurance Districts, Groundwater Management Districts, and the Kansas Water Office. The task force has determined water banking is a viable water management tool that would allow water users several options not currently available. The purpose of water banking is to provide water users, particularly those located in areas of the State that over-appropriated or closed to further new appropriations, the opportunity to utilize functions of a water bank to obtain the right to use water, while at the same time creating an incentive for and achieving conservation by reducing the amount of net consumptive use of water.

Water Quality

Water quality continues to be a major issue in Kansas, and Governor Graves' Water Quality Initiative established in October of 1995 continues to be ongoing. The Department of Health and Environment, in addition to a network of 250 water quality stations, continues to monitor on a bi-weekly basis 15 new sites in the Black Vermillion and Grasshopper Creek Watersheds. There are also 16 new sites on the Kansas River. This data will be used to measure improvements in water quality as best management practices continue to be implemented. The State Conservation Commission is in the second year of their pesticide incentive program. This program provides incentives to farmers to employ best management practices for atrazine.

The Kansas Corn Growers Association and the Kansas Grain Sorghum Producers have teamed with the Water Quality Initiative to conduct surveys of cropping practices in the Big Blue and Delaware Basins. Information relating to the number of acres planted, tillage practices used and the amount of fertilizers and pesticides used in the production of corn and sorghum were obtained in 1996 and 1997. The data collected in the surveys will be used to provide farmers and ranchers the information and technical assistance needed to enable them to respond independently and voluntarily to on and off farm environmental concerns.

Nebraska Report

Commissioner Jess began by thanking Mike Onnen, for assisting with finding a location for the meeting. He introduced representatives from the three Nebraska Natural Resource Districts in the Blue River Basin who were in attendance.

Legislation

Don Blankenau reported that it was a "light year" for consideration of water bills by the Legislature. Only two bills related to water were passed. The first, LB 1209, was referred to as the "Pig bill", expanded the State authority to oversee construction and operation of livestock waste water lagoons. The Department of Environmental Quality and the Department of Water Resources will play a role in approving plans and inspecting the lagoons. This bill allowed for the addition of personnel by both agencies.

The second bill that was passed was LB 1161. Before it was finally passed, Blankenau said this bill had so many amendments added that it barely resembled its original form. In its final form the bill primarily deals with cost-sharing for water meters to be installed on wells. It was said LB 1161 was prompted by the brewing dispute in the Republican River valley. Provisions of LB 1161 include a 50-50 cost-share for meter installation on all wells drawing from alluvial aquifers in the Republican River watershed. The Legislature allotted \$1.5 million over a three year period.

Administration and Gaging

Keith Paulsen reported that 1997 stream flow was generally uniform with no significant peaks or valleys. Runoff was low, but irrigation demands were met, he said. Paulsen also reported one water appropriation was canceled in the basin during 1997. It was said there are no plans for comprehensive adjudication of existing appropriations planned for 1998.

Interstate Litigation

Commissioner Jess reported that the Nebraska v Wyoming lawsuit, concerning the North Platte River, continues to be a large undertaking for Nebraska. A trial date was set but has since been changed.

Memorandum of Agreement

A Memorandum of Agreement concerning endangered species in the Platte River valley of Nebraska has been approved and is now called the Cooperative Agreement. The Agreement was signed by the Governors of Nebraska, Colorado and Wyoming and by the Secretary of the Interior.

Commissioner Jess then asked the three Nebraska NRD representatives to give a report of their district's activities.

Mike Onnen submitted a written report which is included herein as

Exhibit M.

John Turnbull reported that DuPont Corp. had approached the three basin NRDs to set up field demonstration project sites for herbicide use and rates of application. Additional demonstration sites will be located in Kansas, he said.

Turnbull went on to review research activities of the York Ground Water Recharge Demonstrate Project which was built in 1990. The Project originally began as a water quantity project, but soon turned into a water quality project. Turnbull distributed graphs which depicted atrazine concentrations in the water of the lake. It was said atrazine concentrations peak each year as a result of spring rains which follow chemical applications done in conjunction with grain planting. Other findings indicate ground water recharge moves less than ten percent of surface water concentrations of atrazine to the ground water. The maximum contaminant level (MCL) for atrazine is three parts per billion, he said. Water samples from monitoring wells located along the project boundary show atrazine concentrations are below the MCL. The recharge rate of the lake continues to decrease. As a result, movement of atrazine has also slowed.

In a related effort, the York County Extension Educator conducted two surveys, five years apart, of the farm operators in the 8,000 acre drainage area above the York Recharge Project. According to the concluding report, Turnbull said atrazine use has been cut almost in half during the last five years. The average application rates are now around 0.8 lb. per acre.

Turnbull also stated that Ciba Gigy Corp. has funded an extensive study entitled The Fate and Transport of Atrazine in the Ground Water under the York Recharge Project. The four year effort has been conducted by researchers at the University of Nebraska. A final report is due to be published later in 1998, he said.

Turning next to water supply considerations by municipalities within the Upper Big Blue District, Turnbull said nearly half are considering adoption of well-head protection plans. He noted his board of directors had previously adopted a district-wide Ground Water Management Area to address nitrates. Among several provisions, Management Area rules prohibit the use of anhydrous ammonia on row crops prior to November 1.

In response to a question, Turnbull stated well-head protection deals with public water supplies and the regulation of farm activities nearby.

Ron Fleecs submitted a written report which is included herein as **Exhibit N.**

Federal Agency Report

Glenn Engel distributed the USGS Report. It is included herein as Exhibit P.

Engel added that Mike Slifer recently took over as the new District Chief.

Secretary's Report

There was no Secretary's Report presented.

Treasurer's Report

Denise Rolfs reported that the FY 97 audit was completed and showed the Compact was in good standing. The auditing firm employed this past year expressed interest in performing the FY 98 audit.

Rolfs distributed copies of the FY 98 Treasurer's report. The report reflected the following:

| | |
|---|--------------|
| Funds Available..... | \$ 30,725.06 |
| Total Expenditures..... | 10,816.09 |
| Balance on hand as of May 20, 1998..... | 19,908.97 |
| Estimated Additional FY98 Expenses..... | 3,465.00 |
| Estimated Additional Interest Income..... | 55.00 |
| Estimated Balance on June 30, 1998..... | \$ 16,498.97 |

Pope observed that fiscal end carryover objectives were on target.

There was no other discussion. Pope moved to accept the Treasurer's Report, Jess seconded the motion. Lukow declared the MOTION CARRIED.

Engineering Committee Report

Paulsen distributed copies of the Engineering Committee Report which is included herein as Exhibit A through L.

Because the Committee was not given any special assignments, members did not meet face to face, he said. Paulsen highlighted the report, noting there were no significant upward or downward trends in supply. Compact target flow requirements were met through the year on both the Little Blue and Big Blue River, he observed. Construction of additional high-capacity water wells was also discussed. Lukow expressed surprise that no new irrigation wells were registered within the geographic areas governed by the Compact.

Jess moved to accept the Engineering Committee Report. Pope seconded the motion. Lukow declared the MOTION CARRIED.

Water Quality Committee Report

Because Dale Lambley, Chairperson of the Water Quality Committee, was unable to attend the meeting, a written report was submitted which is included herein as Exhibit P. Pope gave a brief overview of Lambley's report. He noted that the report is very detailed, but in general emphasizes the cooperative efforts by various entities within both states. Among these are the programs referenced earlier by the Nebraska NRDs and investigations by the University of Nebraska. Both Kansas State University and the University of Nebraska as well as several state and federal agencies have been involved in these programs.

Pope highlighted Lambley's summary by noting the four primary objects the Committee had developed since 1995. Mentioned were a survey of farm practices, a monitoring program, information and outreach programs and development of Best Management Practices. Pope distributed two farm practices surveys. He indicated the Committee had been working on development of a more comprehensive monitoring program.

It was reported the new Horseshoe Creek Watershed District was formed in the lower portion of the Big Blue River Basin. While traditional watershed districts in Kansas have been involved in flood control, Pope said a new emphasis is evolving. The Horseshoe Creek District is expected to utilize nonstructural measures to deal with other issues.

Pope pointed out Lambley's reference to the upcoming Water Quality Field Tour. Pope noted that four or five years ago the Compact made water quality an issue that has been taken up by others. He characterized the Water Quality Committee report as "glowing" and praised the Committee's progress.

Pope pointed out that Ron Fox had retired and that a new member, Karl Mueldener, has been appointed to the Committee. Mueldener is the Director of the Kansas Department of Health and Environment Bureau of Water.

Jess moved to accept the Water Quality Committee Report. Pope seconded the motion. Lukow declared the MOTION CARRIED.

Budget Committee

Blankenau distributed copies of the budget report and budget analysis chart which is included herein as Exhibit Q. He highlighted a few items in the report that have generated confusion in past years.

Significant changes discussed by Blankenau included the increased costs of USGS gages and low flow measurements. He also indicated it was no longer necessary to fund activities of the Water Quality Committee. The honorarium for the treasurer was also increased from \$650 to \$750, as suggested by Pope. Adjustments for preparing the Annual Report and for the annual audit were also noted.

Lukow asked for inquiries concerning the proposed budget. Jess inquired about the contributions of each state. Blankenau responded that they would remain at \$7,000.00.

Jess moved to accept the Budget Committee Report. Pope seconded the motion. Lukow declared the MOTION CARRIED.

Old Business

Bob Lytle praised the USGS for its WEB pages which include data for the state line gages. He said Internet inclusion of the measuring station data fulfills the Compact Commissioners' past request for availability of real-time information. The real-time capabilities allow for discovery of problems in gages so that they can be repaired, Lytle said. Engle responded by saying many others are equally pleased.

New Business

Pope reiterated the Kansas changes to the Water Quality Committee membership. Jess pointed out that chairmanships of the committees switch to the Kansas members for the next two years.

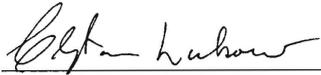
Committee membership for the upcoming year was assigned as follows:

| | |
|--------------------------|--|
| Budget Committee: | Bob Lytle, Chairperson Don Blankenau |
| Legal Committee: | Leland Rolfs, Chairperson Don Blankenau |
| Engineering Committee: | Bob Lytle, Chairperson Keith Paulsen Dale Mahan Ann Bleed |
| Water Quality Committee: | Dale Lambley, Chairperson Karl Mueldener Glen Kirk Denis Blank Pat Rice Mike Linder |

Lukow, in reviewing the minutes, noted that Ken Regier's term had expired. Whereupon, Regier said he had been confirmed for another term.

The next annual meeting was tentatively scheduled for May 20, 1999 in Marysville, Kansas.

There being no further business, Chairman Lukow adjourned the meeting at 11:05 a.m.



Clayton Lukow, Compact Chairman



David Pope, Kansas Commissioner



J. Michael Jess, Nebraska Commissioner



Big Blue River Compact Commissioners
From left:
David L. Pope, Member from Kansas,
Clayton D. Lukow, Federal Chairman,
J. Michael Jess, Member from Nebraska



From left:
Terry Blaser, Advisor from Kansas,
Denise J. Rolfs, Treasurer, David L. Pope,
Member from Kansas, Clayton D. Lukow,
Federal Chairman, J. Michael Jess, Member
from Nebraska, Pam Bonebright, Secretary,
Kenneth Regier, Advisor from Nebraska



Federal Representatives
From left:
Glen Engel, U.S. Geological Survey
Clayton D. Lukow, Federal Chairman



From left:
Don Blankenau, Legal and Budget Committees,
Nebraska
Ann Bleed, Engineering Committee, Nebraska
Keith Paulsen, Engineering Committee,
Nebraska
Robert Lytle, Engineering Committee, Kansas



From left:
Mike Onnen, Little Blue NRD
John Turnbull, Upper Big Blue NRD
Ron Fleecs, Lower Big Blue NRD

Exhibit A

REPORT OF THE ENGINEERING COMMITTEE
TO
KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION
MAY 21, 1997 - MAY 21, 1998

The Engineering Committee did not meet during the past year. The Committee was not given any special assignments from the Compact Administration.

The 1997 data were collected in accordance with the agreements with the U. S. Geological Survey (USGS) and the Lower Big Blue Natural Resources District (LBBNRD). The data are provided in the following exhibits.

EXHIBITS

- A. 1997 USGS daily discharge record, Big Blue River at Barneston, NE # 06882000
- B. 1997 USGS daily discharge record, Little Blue River at Hollenberg, KS # 06884025
- C. USGS annual and monthly mean discharges: Big Blue River at Barneston 1970-1997
- D. USGS annual and monthly mean discharges: Little Blue River at Hollenberg 1974-1997
- E. USGS ground water level hydrograph, Gage County, Nebraska
- F. USGS ground water level hydrograph, Jefferson County, Nebraska
- G. LBBNRD Ground water level data
- H. List of wells located in Big Blue River regulatory area
- I. List of wells located in Little Blue River regulatory area
- J. USGS Big Blue River seepage data
- K. USGS Little Blue River seepage data

REVIEW OF FLOW RECORDS

During 1997 the mean daily stream flow at both state line gages exceeded the target values established by the compact. Exhibits A and B list both the target values and the mean daily flow at each gage.

REVIEW OF GROUND WATER LEVEL HYDROGRAPHS

The ground water level hydrographs for Gage and Jefferson Counties show no definite increasing or decreasing trend.

REVIEW OF LBBNRD GROUND WATER LEVEL DATA

Both the spring and fall water level readings showed mixed results from the previous readings. On average the levels for both spring and fall were down about one-half foot from the previous year.

REVIEW OF WELLS IN THE REGULATORY REACHES

No new irrigation wells were registered along either river within the compact area in 1997.

REVIEW OF SEEPAGE MEASUREMENTS

Seepage measurements were made in October of 1997. These data indicate that streamflow is gaining in both rivers.

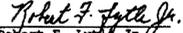
RATING TABLES FOR STATE-LINE GAGES

The USGS has provided the Engineering Committee with current rating tables for the gages at Hollenberg and Barneston.

Respectfully submitted,


Keith A. Paulsen, Chair
Nebraska


Ann Salomon Bled
Nebraska


Robert F. Lytle Jr.
Kansas


Dale E. Mahan
Kansas

| Station 06882000 BIG BLUE R AT BARNESTON NEBR | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| MEAN DISCHARGE PUBLISHED | | | | | | | | | | | | |
| Normal monthly means (All days) | | | | | | | | | | | | |
| Year | Oct | Nov | Dec | Jan | Feb | March | April | May | June | July | Sept | |
| 1970 | 219.1 | 190.7 | 174.3 | 252.1 | 284.2 | 211.6 | 229.1 | 275.6 | 544.7 | 81.3 | 339.4 | 286.2 |
| 1971 | 550.0 | 223.1 | 137.1 | 153.4 | 1596 | 2683 | 326.2 | 2274 | 472.2 | 418.6 | 166.5 | 121.5 |
| 1972 | 106.5 | 220.2 | 137.1 | 115.7 | 129.6 | 146.4 | 181.3 | 1124 | 348.1 | 717.1 | 486.6 | 235.7 |
| 1973 | 148.6 | 458.2 | 305.3 | 1596 | 960.3 | 3035 | 2742 | 1014 | 813.0 | 1082 | 235.0 | 3386 |
| 1974 | 7451 | 1014 | 497.5 | 930.2 | 1181 | 530.3 | 427.6 | 1162 | 623.2 | 130.5 | 248.8 | 121.7 |
| 1975 | 111.4 | 143.1 | 150.3 | 157.2 | 212.0 | 949.6 | 440.3 | 894.5 | 2678 | 627.6 | 231.9 | 160.2 |
| 1976 | 109.7 | 138.8 | 161.0 | 129.1 | 176.8 | 255.8 | 1027 | 433.9 | 235.5 | 238.5 | 88.3 | 66.6 |
| 1977 | 97.6 | 85.7 | 87.4 | 88.4 | 121.7 | 151.0 | 186.8 | 440.2 | 511.4 | 193.5 | 1465 | 2744 |
| 1978 | 376.1 | 464.1 | 211.9 | 135.7 | 148.4 | 491.2 | 2394 | 2436 | 1579 | 1263 | 516.9 | 967.0 |
| 1979 | 157.2 | 176.6 | 160.0 | 155.9 | 505.3 | 10560 | 961.8 | 1527 | 1231 | 1407 | 343.9 | 187.2 |
| 1980 | 172.8 | 530.8 | 207.3 | 239.4 | 886.6 | 1444 | 1263 | 305.6 | 1374 | 190.0 | 346.5 | 125.0 |
| 1981 | 247.8 | 120.3 | 132.5 | 139.2 | 151.9 | 148.6 | 165.1 | 389.0 | 149.5 | 319.6 | 649.3 | 615.5 |
| 1982 | 128.5 | 252.2 | 312.4 | 164.2 | 2307 | 1310 | 439.8 | 3765 | 3372 | 2705 | 844.6 | 452.4 |
| 1983 | 457.1 | 236.4 | 220.6 | 504.5 | 2099 | 1218 | 1352 | 1301 | 3802 | 789.9 | 324.0 | 176.7 |
| 1984 | 808.5 | 438.9 | 276.4 | 322.6 | 2876 | 1334 | 5280 | 4646 | 9445 | 1552 | 661.2 | 294.9 |
| 1985 | 369.0 | 259.4 | 846.2 | 338.7 | 693.9 | 906.4 | 339.8 | 1529 | 450.3 | 1306 | 1258 | 1572 |
| 1986 | 1221 | 355.3 | 281.8 | 314.2 | 366.4 | 743.5 | 1560 | 1247 | 789.1 | 7220 | 1896 | 1327 |
| 1987 | 4676 | 811.7 | 721.3 | 434.3 | 417.5 | 7527 | 4449 | 1659 | 3071 | 1193 | 1675 | 1048 |
| 1988 | 353.6 | 466.1 | 413.5 | 335.8 | 457.0 | 401.1 | 407.1 | 443.6 | 239.8 | 480.9 | 159.2 | 134.6 |
| 1989 | 403.8 | 190.6 | 201.5 | 208.5 | 224.4 | 402.9 | 221.6 | 192.2 | 643.6 | 877.5 | 378.7 | 1420 |
| 1990 | 227.5 | 204.4 | 199.3 | 239.2 | 211.5 | 283.8 | 238.7 | 564.3 | 2521 | 1605 | 1563 | 178.1 |
| 1991 | 145.1 | 164.8 | 171.3 | 195.5 | 464.4 | 250.5 | 496.0 | 795.4 | 2398 | 582.5 | 181.3 | 104.9 |
| 1992 | 86.8 | 146.8 | 170.9 | 190.6 | 176.1 | 352.0 | 314.8 | 417.3 | 1022 | 4075 | 1835 | 709.5 |
| 1993 | 418.8 | 562.8 | 520.1 | 246.1 | 1879 | 5914 | 1466 | 2056 | 3567 | 12270 | 1788 | 2503 |
| 1994 | 954.0 | 514.7 | 442.0 | 364.7 | 529.7 | 1232 | 376.9 | 1354 | 1004 | 1400 | 666.9 | 604.8 |
| 1995 | 272.2 | 321.5 | 339.0 | 374.7 | 397.8 | 538.1 | 566.5 | 5207 | 1655 | 975.1 | 742.0 | 287.1 |
| 1996 | 214.6 | 240.6 | 251.5 | 240.8 | 501.7 | 272.2 | 331.2 | 4909 | 2287 | 501.9 | 1034 | 417.8 |
| 1997 | 301.3 | 1501 | 429.6 | 331.9 | 615.2 | 596.0 | 622.0 | 725.0 | 1701 | 1437 | 650.1 | 256.5 |

| Station 06884025 LITTLE BLUE R AT HOLLENSBERG, KS | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| MEAN DISCHARGE PUBLISHED | | | | | | | | | | | | |
| Normal monthly means (All days) | | | | | | | | | | | | |
| Year | Oct | Nov | Dec | Jan | Feb | March | April | May | June | July | Sept | |
| 1974 | . | . | . | . | . | 328.6 | 346.6 | 451.3 | 368.0 | 167.8 | 224.0 | 99.5 |
| 1975 | 114.3 | 133.9 | 135.3 | 128.7 | 159.6 | 825.6 | 314.9 | 359.4 | 2092 | 1474 | 339.5 | 133.0 |
| 1976 | 106.1 | 147.4 | 141.1 | 120.4 | 176.0 | 215.7 | 838.4 | 285.4 | 166.8 | 279.0 | 238.0 | 137.0 |
| 1977 | 123.5 | 111.1 | 101.8 | 98.5 | 159.0 | 152.2 | 227.8 | 733.6 | 1090 | 317.8 | 1563 | 1320 |
| 1978 | 208.3 | 238.5 | 163.6 | 113.5 | 337.8 | 2635 | 826.4 | 517.9 | 359.2 | 700.7 | 201.2 | 644.3 |
| 1979 | 117.5 | 151.5 | 163.8 | 121.1 | 835.0 | 3693 | 454.6 | 1063 | 465.7 | 497.9 | 274.3 | 130.6 |
| 1980 | 172.4 | 398.0 | 150.3 | 178.0 | 383.8 | 677.9 | 1024 | 219.6 | 485.3 | 142.2 | 132.6 | 49.2 |
| 1981 | 89.7 | 92.5 | 105.2 | 113.1 | 124.3 | 118.1 | 124.9 | 375.9 | 151.4 | 573.5 | 548.1 | 262.6 |
| 1982 | 115.4 | 244.3 | 240.0 | 244.7 | 1010 | 618.6 | 328.3 | 1945 | 908.8 | 2299 | 417.6 | 193.0 |
| 1983 | 255.3 | 150.1 | 160.3 | 206.6 | 556.1 | 389.6 | 388.6 | 858.5 | 1895 | 279.6 | 201.4 | 798.7 |
| 1984 | 1225 | 267.4 | 174.5 | 576.5 | 867.9 | 552.1 | 2040 | 2059 | 4373 | 482.3 | 252.7 | 143.4 |
| 1985 | 231.4 | 170.2 | 239.5 | 169.0 | 443.0 | 239.1 | 232.9 | 942.1 | 475.6 | 320.4 | 2572 | 822.0 |
| 1986 | 613.8 | 251.6 | 234.5 | 216.1 | 216.4 | 271.7 | 1998 | 585.1 | 339.7 | 712.1 | 827.4 | 770.9 |
| 1987 | 2143 | 389.4 | 340.4 | 253.0 | 240.0 | 3205 | 2379 | 1414 | 748.0 | 562.5 | 454.5 | 327.8 |
| 1988 | 181.0 | 206.8 | 209.3 | 213.5 | 315.3 | 219.5 | 230.2 | 189.3 | 165.6 | 237.9 | 94.5 | 117.3 |
| 1989 | 210.6 | 130.3 | 135.5 | 146.2 | 132.0 | 169.0 | 139.7 | 134.0 | 623.3 | 1289 | 356.0 | 854.4 |
| 1990 | 128.0 | 125.3 | 108.4 | 155.5 | 150.0 | 199.7 | 160.2 | 368.9 | 1612 | 294.6 | 771.9 | 113.6 |
| 1991 | 94.6 | 114.6 | 117.5 | 124.4 | 196.3 | 159.8 | 227.6 | 370.2 | 728.5 | 111.2 | 72.5 | 32.0 |
| 1992 | 45.3 | 81.1 | 101.9 | 115.4 | 115.5 | 179.8 | 163.9 | 108.5 | 344.3 | 4746 | 1088 | 725.6 |
| 1993 | 641.5 | 405.4 | 424.1 | 202.9 | 1059 | 3816 | 836.7 | 1102 | 2568 | 9014 | 1290 | 1148 |
| 1994 | 547.1 | 314.7 | 294.0 | 230.5 | 257.5 | 755.7 | 432.5 | 661.3 | 561.8 | 580.6 | 230.7 | 176.6 |
| 1995 | 149.2 | 188.8 | 191.1 | 162.6 | 169.0 | 221.9 | 244.0 | 2302 | 808.3 | 320.4 | 359.5 | 120.3 |
| 1996 | 127.1 | 149.8 | 141.5 | 119.9 | 206.6 | 185.7 | 196.1 | 1572 | 671.4 | 359.8 | 433.7 | 205.7 |
| 1997 | 145.4 | 1113 | 141.0 | 177.7 | 283.4 | 263.3 | 248.4 | 328.9 | 1197 | 429.4 | 280.7 | 197.4 |

* Indicates a no-value month

| Station 06882000 BIG BLUE R AT BARNESTON NEBR | |
|---|-------|
| MEAN DISCHARGE PUBLISHED | |
| Normal annual means (All days) | |
| Year | |
| 1970 | 256.5 |
| 1971 | 774.9 |
| 1972 | 331.0 |
| 1973 | 1312 |
| 1974 | 1200 |
| 1975 | 562.7 |
| 1976 | 254.3 |
| 1977 | 511.9 |
| 1978 | 1445 |
| 1979 | 1465 |
| 1980 | 570.4 |
| 1981 | 249.2 |
| 1982 | 1332 |
| 1983 | 1028 |
| 1984 | 2325 |
| 1985 | 765.7 |
| 1986 | 1457 |
| 1987 | 2322 |
| 1988 | 137.7 |
| 1989 | 611.5 |
| 1990 | 672.1 |
| 1991 | 484.6 |
| 1992 | 798.2 |
| 1993 | 2781 |
| 1994 | 790.8 |
| 1995 | 983.3 |
| 1996 | 937.1 |
| 1997 | 762.3 |

| Station 06884025 LITTLE BLUE R AT HOLLENSBERG, KS | |
|---|-------|
| MEAN DISCHARGE PUBLISHED | |
| Normal annual means (All days) | |
| Year | |
| 1974 | . |
| 1975 | 518.8 |
| 1976 | 235.4 |
| 1977 | 500.7 |
| 1978 | 566.1 |
| 1979 | 649.7 |
| 1980 | 332.5 |
| 1981 | 224.8 |
| 1982 | 697.7 |
| 1983 | 508.0 |
| 1984 | 1079 |
| 1985 | 574.1 |
| 1986 | 513.6 |
| 1987 | 1047 |
| 1988 | 187.9 |
| 1989 | 361.1 |
| 1990 | 348.9 |
| 1991 | 194.9 |
| 1992 | 657.7 |
| 1993 | 1891 |
| 1994 | 420.5 |
| 1995 | 441.3 |
| 1996 | 365.6 |
| 1997 | 398.2 |

* Indicates a no-value year

EXHIBIT G

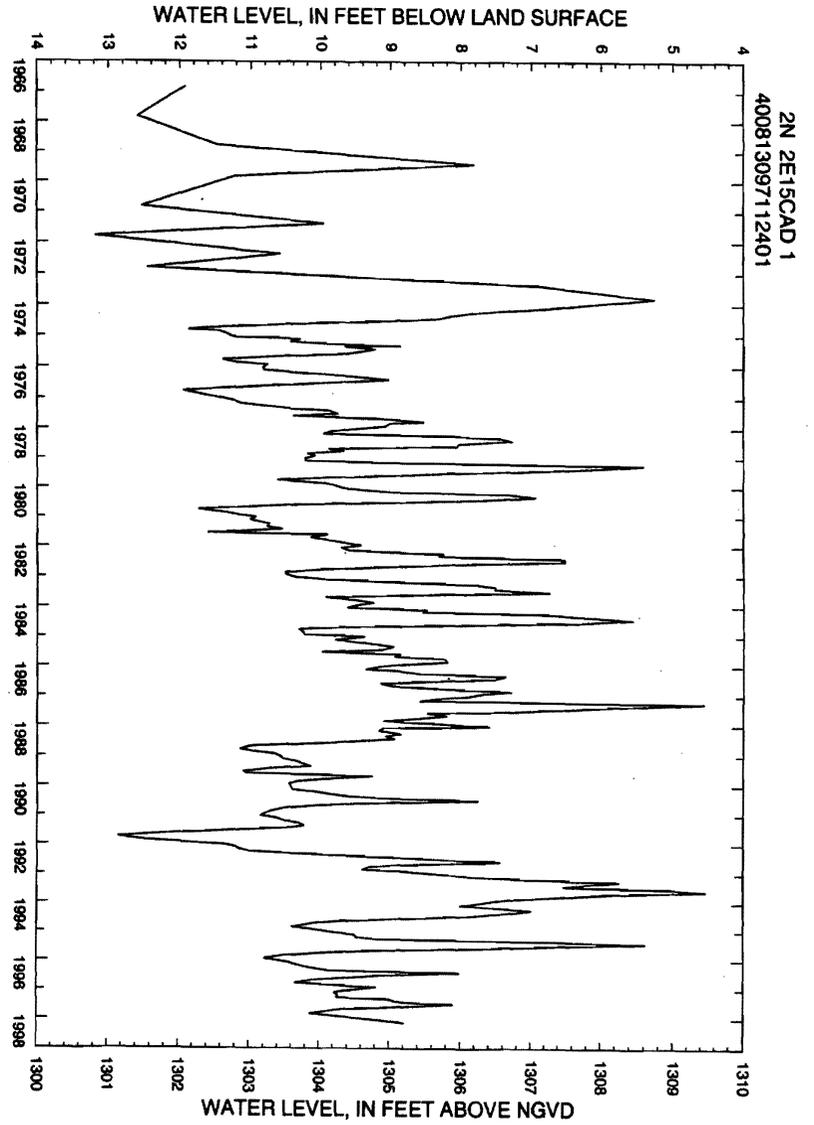


EXHIBIT F

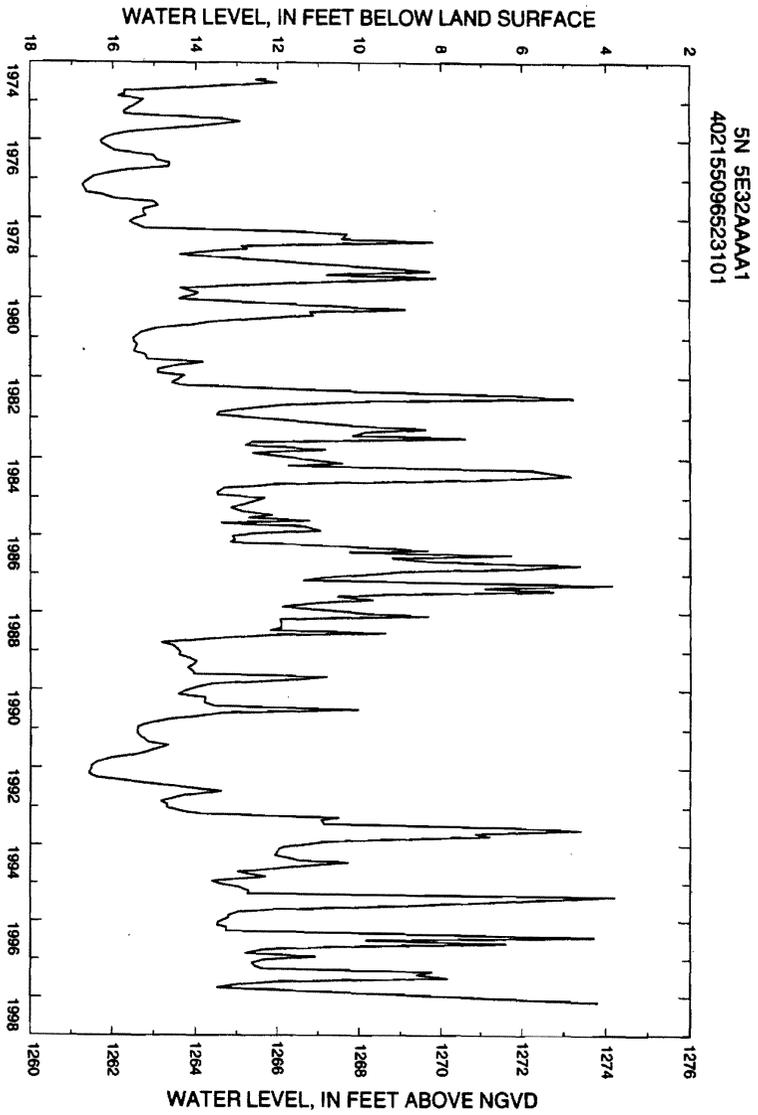


Exhibit H

STATIC WATER LEVEL MEASUREMENTS BIG BLUE COMPACT 1997

| LEGAL | SECTION | TYPE | 04-22-97 | 08-22-97 | 11-19-97 | |
|-------|---------|------|----------|----------|----------|--------|
| 4N-5E | 2 | aaaa | OW | 92.13 | 93.00 | 92.11 |
| 4N-5E | 2 | cbbb | IW | 20.59 | 20.56 | 19.36 |
| 4N-5E | 3 | cdbc | IW | 24.93 | | 24.75 |
| 4N-5E | 4 | aaa | OW | 14.14 | 16.07 | 14.81 |
| 4N-5E | 4 | bbbc | IW | 19.32 | | 20.34 |
| 4N-5E | 7 | bbaa | IW | 83.31 | | 84.83 |
| 4N-5E | 9 | cbcc | IW | 71.55 | | 73.43 |
| 4N-5E | 11 | cccc | OW | 23.52 | 25.21 | 24.28 |
| 4N-5E | 11 | daca | IW | 16.23 | | 16.44 |
| 4N-5E | 12 | bbba | IW | 25.84 | | 26.19 |
| 4N-5E | 12 | cccd | OW | 13.40 | 12.78 | 13.52 |
| 4N-5E | 14 | abbb | IW | 13.34 | | 13.76 |
| 4N-5E | 14 | dddd | OW | 20.69 | 20.50 | 20.89 |
| 4N-5E | 22 | bccc | IW | 68.18 | | 69.65 |
| 4N-5E | 25 | aacd | IW | 18.85 | | 18.60 |
| 4N-6E | 6 | cbbb | IW | 91.58 | | 92.38 |
| 4N-6E | 8 | aabb | IW | 92.73 | | 94.03 |
| 4N-6E | 18 | ddcc | OW | 5.70 | 6.46 | 6.93 |
| 5N-4E | 12 | abba | IW | 17.86 | | 18.33 |
| 5N-4E | 13 | badd | IW | 15.20 | | 14.89 |
| 5N-4E | 15 | dbbb | IW | 17.16 | | 17.32 |
| 5N-4E | 22 | dccc | IW | 47.97 | | 48.64 |
| 5N-4E | 23 | babb | IW | 15.09 | | 15.23 |
| 5N-4E | 24 | aacd | IW | 18.76 | | 18.96 |
| 5N-4E | 25 | ddaa | IW | 47.98 | | 48.69 |
| 5N-5E | 7 | cadd | IW | 60.21 | | 61.63 |
| 5N-5E | 16 | cbba | IW | 73.21 | | 76.31 |
| 5N-5E | 17 | abbb | IW | 42.68 | | 45.33 |
| 5N-5E | 17 | cdaa | OW | 65.10 | 85.24 | 67.48 |
| 5N-5E | 20 | bccd | IW | 19.78 | | 19.57 |
| 5N-5E | 21 | dabb | IW | 51.46 | | 54.82 |
| 5N-5E | 29 | cbbb | IW | 12.59 | | 13.95 |
| 5N-5E | 33 | aadd | IW | 17.71 | | 18.52 |
| 5N-5E | 35 | abbb | IW | 102.64 | | 103.31 |

OW - OBSERVATION WELL

IW - IRRIGATION WELL

Exhibit I

BIG BLUE RIVER BASIN
WELLS LOCATED IN REGULATORY AREA

| Registration Number | Location | Completion Date | Depth | Registration Pumping Capacity (GPM) |
|---------------------|------------|-----------------|-------|-------------------------------------|
| G-69638 | 2N-7E-04DD | 08-24-84 | 99 | 800 |
| G-3877M | 2N-7E-17BB | 10-20-88 | 87 | 500 |
| G-50085 | 4N-5E-01BA | 05-26-76 | 130 | 800 |
| G-38314 | 4N-5E-02DD | 01-16-73 | 188 | 1,300 |
| G-72859M | 4N-5E-02BB | 06-08-80 | 187 | 1,500 |
| G-72860M | 4N-5E-02BD | 06-08-90 | 187 | 1,500 |
| G-56152 | 4N-5E-04BB | 04-14-77 | 91 | 1,000 |
| G-34172 | 4N-5E-10AC | 05-03-70 | 91 | 750 |
| G-36485 | 4N-5E-11BC | 03-28-72 | 82 | 750 |
| G-54048 | 4N-5E-12BA | 03-01-76 | 121 | 600 |
| G-47820 | 4N-5E-12BB | 11-01-75 | 117 | 1,200 |
| G-70704I | 4N-5E-12BD | 04-25-88 | 188 | 700 |
| G-81769 | 4N-5E-13CD | 04-22-94 | 65 | 250 |
| G-54260 | 4N-5E-14AA | 06-01-74 | 70 | 800 |
| G-54261 | 4N-5E-14AB | 05-02-70 | 70 | 800 |
| G-69619 | 4N-5E-24BA | 08-16-84 | 45 | 500 |
| G-54047 | 4N-5E-24BB | 03-01-76 | 84 | 800 |
| G-68243 | 5N-5E-20CB | 06-23-82 | 52 | 1,300 |
| G-64213 | 5N-5E-21DC | 07-28-80 | 99 | 800 |
| G-59128 | 5N-5E-29AA | 04-25-77 | 60 | 400 |
| G-61085 | 5N-5E-29BC | 04-24-78 | 88 | 800 |
| G-61086 | 5N-5E-29CB | 04-23-78 | 80 | 1,000 |
| G-50086 | 5N-5E-33AC | 05-26-76 | 123 | 800 |
| G-59727 | 5N-5E-33CB | 04-19-78 | 91 | 1,200 |
| G-72465 | 5N-5E-35CC | 04-12-90 | 204 | 800 |
| G-72756 | 5N-5E-35DC | 02-20-90 | 274 | 800 |
| G-73992 | 5N-5E-30AC | 06-24-91 | 92 | 700 |

M = Municipal; not subject to regulation

I = Industrial; not subject to regulation

LITTLE BLUE RIVER BASIN
WELLS LOCATED IN REGULATORY AREA

| Registration Number | Location | Completion Date | Depth | Registration Pumping Capacity (GPM) |
|---------------------|------------|-----------------|-------|-------------------------------------|
| G-7013M | 1N-3E-04BA | 11-15-86 | 199 | 210 |
| G-69689 | 2N-2E-25AB | 12-31-84 | 108 | 500 |
| G-44015 | 2N-2E-27DB | 07-15-74 | 136 | 265 |
| G-59427 | 2N-2E-26AB | 01-30-78 | 40 | 450 |
| G-66380 | 2N-2E-26AC | 07-31-77 | 40 | 175 |
| G-66381A | 2N-2E-26AB | 04-10-81 | 40 | 175 |
| G-66381B | 2N-2E-23DC | 04-10-81 | 42 | 175 |
| G-66381C | 2N-2E-26AB | 04-10-81 | 42 | 175 |
| G-66381D | 2N-2E-23DC | 04-10-81 | 41 | 175 |
| G-66381E | 2N-2E-26AB | 04-10-81 | 38 | 175 |
| G-66381F | 2N-2E-26AB | 04-10-81 | 28 | 175 |
| G-58158 | 2N-2E-16AA | 09-15-77 | 28 | 660 |
| G-76103M | 1N-3E-17CA | 09-20-78 | 229 | 150 |
| G-76386 | 2N-2E-26DC | 07-12-79 | 40 | 480 |
| G-86458 | 2N-2E-27DB | 10-26-94 | 132 | 670 |
| G-86459 | 2N-2E-27DB | 10-25-94 | 155 | 550 |

M = Municipal; not subject to regulation

Big Blue River Seepage Investigation
Current Meter Measurements
Downstream Order

October 20, 1997
(cfs)

| | |
|--|------|
| Big Blue River 1.5 miles north of DeWitt in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ of 12-5N-4E | 171 |
| Clatonia Creek 1 mile northeast of DeWitt in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ of 17-5N5E | 1.08 |
| Turkey Creek 1.5 miles west of DeWitt in the SE $\frac{1}{4}$ NW $\frac{1}{4}$ of 15-5N-4E | 24.6 |
| Turkey Creek 0.5 miles south of DeWitt in the SE $\frac{1}{4}$ NW $\frac{1}{4}$ of 24-5N-4E | 28.2 |
| Turkey Creek 1.5 miles southeast of DeWitt in the NW $\frac{1}{4}$ SW $\frac{1}{4}$ of 29-5N-5E | 28.2 |
| Big Blue River 2.5 miles southeast of DeWitt in the NW $\frac{1}{4}$ NE $\frac{1}{4}$ of 33-5N-5E | 189 |
| Soap Creek 2.5 miles southeast of DeWitt in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ of 27-5N-5E (beaver dam) | 0.19 |
| Unnamed tributary to the Big Blue River 1 mile north of Hoag in the NW $\frac{1}{4}$ NE $\frac{1}{4}$ of 10-4N-5E | 0 |
| Snake Creek 2 miles northeast of Hoag in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ of 1-4N-5E | 0 |
| Big Blue River 1 mile est of Hoag in the NE $\frac{1}{4}$ NW $\frac{1}{4}$ of 12-4N-5E | 208 |
| Cub Creek 2 miles south of Hoag in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ of 24-4N-5E | 1.32 |
| Bottle Creek 1.5 miles northwest of Beatrice in the NW $\frac{1}{4}$ SW $\frac{1}{4}$ of 30-4N-6E | 0.08 |
| Unnamed tributary to the Big Blue River 0.5 miles northwest of Beatrice in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ of 29-4N-6E | 0.26 |
| Indian Creek in Beatrice in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ of 28-4N-6E | 4.50 |
| Big Blue River at Beatrice in the SW $\frac{1}{4}$ NW $\frac{1}{4}$ of 3-3N-6E | 219 |

Little Blue River Seepage Investigation
Current Meter Measurements
Downstream Order

October 10, 1997
(cfs)

| | |
|--|------|
| Little Blue River 2.7 miles south of Alexandria in SE 4 SE 4 of 23-3N-1W | 90.0 |
| Big Sandy Creek 0.8 mile south of Alexandria in SE 4 SE 4 of 11-3N-1W | 22.7 |
| Big Sandy Creek 1.2 miles west of Powell in SE 4 SE 4 of 16-3N-1E | 27.1 |
| Little Blue River 1.2 miles southwest of Powell in SE 4 SE 4 of 22-3N-1E | 122 |
| Little Sandy Creek 2.0 miles east of Powell in NW 4 NE 4 of 19-3N-2E | 1.06 |
| Whiskey Creek 2.1 miles northwest of Fairbury in SW 4 SE 4 of 33-3N-2E | 0.13 |
| Little Blue River 1.3 miles northwest of Fairbury in NW 4 NE 4 of 9-2N-2E | 125 |
| Tributary to Little Blue River 0.8 miles southwest of Fairbury in NE 4 SW 4 of 22-2N-2E | 0 |
| Little Blue River 0.8 miles south of Fairbury in NW 4 NE 4 of 26-2N-2E | 122 |
| Brawner Creek 0.4 miles southeast of Fairbury in SE 4 NE 4 of 23-2N-2E | 0 |
| Rose Creek 0.4 miles southwest of Endicott in NW 4 NW 4 of 12-1N-2E | 8.64 |
| Smith Creek 0.2 miles northwest of Endicott in NW 4 SE 4 of 5-1N-3E | 0.15 |
| Little Blue River 0.3 miles southeast of Endicott in SE 4 SW 4 of 4-1N-3E | 142 |
| Rock Creek 0.3 miles southeast of Endicott in SE 4 SE 4 of 4-1N-3E | 0.13 |
| Coon Creek 2.6 miles northwest of Steele City in NW 4 NE 4 of 15-1N-3E | 0.53 |
| Little Blue River 0.5 miles south of Steele City in NW 4 NW 4 of 30-1N-4E | 148 |
| Little Blue River 0.6 miles west of Hollenberg in NE 4 SW 4 of 8-15N-4E | 138 |

REPORT TO THE LITTLE BLUE RIVER COMPACT**Water Quality Activities**

The Mid-Nebraska Water Quality Demonstration Project continues to be one of the main tools for educating producers about nitrogen management techniques, irrigation management and new ag. technologies. The district has participated in arrangements, funding and tours for project sites.

The district implemented its Ground Water Management plan in 1996 consisting of well permits, additional water well monitoring activities and educational opportunities. A 20 square mile area near Bruning has experienced elevated nitrates, we believe. As a result of agricultural practices and livestock production. Nitrate levels exceeding 10 ppm in Bruning's municipal wells have resulted in an administrative order from the Nebraska Health and Human Service Office. The district has conducted a public meeting in the area and plans to implement the next level of control within the next year, to focus on additional well sampling and source determinations, operator training, and best management practices. We have conducted several local meetings and are working with the Village, which has taken action to pursue a wellhead protection area. The district is currently considering changes in our management plan to address livestock waste issues which was omitted in our previous plan.

The district has been working with the City of Hastings, which is also considering a wellhead protection area because of nitrates. We installed an automatic surface water sampler on Pawnee Creek, west of Hastings, to determine what ag runoff contributes to the nitrate problems. Our well monitoring network will be expanded this summer in the area northwest of Hastings.

Rural Water District Under Construction

The construction of the Little Blue Public Water Project - South began in April of this year. This rural water project is unique in that it serves rural domestic water needs of residents in both Kansas and Nebraska. We currently have 126 water user sign-ups, 63 in Kansas and 63 in Nebraska. The City of Fairbury is the source of water. The project consists of approximately 120 miles of pipeline, one new 75,000 water tower, one new booster station and rehabilitation of an existing booster station. Total cost of the project is about \$2.1 million. Construction is expected to be completed by November with service provided for some early hookups by August.

The project is truly a symbiotic one; neither state could have constructed the project without the help of the other. Nebraska was able to take advantage of the Kansas user income levels to secure a 55% construction grant and Kansas needed the user numbers to justify a project at all. Each state provides one half of the local water advisory board, both states are picking up their respective costs of construction through USDA Rural Development, and Kansas secured a CDBG grant to help offset some of the costs experienced by the NRD for administering the development of the project.

Little Sandy Watershed

Hydraulic studies and economic analysis were completed for 31 structure sites in the Little Sandy Creek Watershed located in Jefferson, Thayer, Fillmore and Saline Counties. The district conducted a public meeting in March and is now gathering public input on specific sites. The district plans to make site selection, prepare an application to the Nebraska Resources Development Fund and work with the NRCS for design work of the selected sites.

Conservation Practices

The district continues to provide significant financial contributions to land treatment practices, well abandonment's, chemigation inspections and irrigation water management practices within our drainage. We received additional support this year in the form of a rebate from the Nebraska fertilizer fees (amounting to about \$160,000) which was used to upgrade ground water equipment and computer needs and apply toward various irrigation improvement and water quality practice. The district is also wrapping up three Environmental Trust Projects designed to enhance water quality in existing watershed dams.

ACTIVITIES IN LOWER BIG BLUE NRD 1997-98

After several years of studies, the entire Lower Big Blue NRD was declared a Groundwater Management Area on February 3, 1997, to deal with non-point source contamination of groundwater. The NRD issued a three phase approach that is based on: (1) levels of contaminants in the groundwater; (2) to deal with groundwater quality problems; (3) preventing and reducing nitrate-nitrogen levels of any well that will pump over 50 gpm. The Phase I area relies on educational and voluntary efforts to prevent and reduce possible contamination. Phase II and III areas have mandatory requirements of landowners for educational training, soil and water sampling and reporting the best management practices.

The district currently has 60 square miles under the Phase II requirements. Over one hundred operators have been certified as required, and have filed reports of best management practices. In the Phase II area, the application of commercial fertilizer is prohibited until after November 1st.

Construction of the final structures in Swan Creek watershed has begun. This will complete the seventeen structures planned in this 160,000 acre watershed. This flood control project began in 1983 and will store 5,564 acre-feet (AF) of sediments and have 19,138 AF of flood storage. To date 180 flood control structures have been built with 22,150 AF of sediment storage and 94,810 AF of flood storage.

Following an EPA Clean Lakes study, an application from the Nebraska Environmental Trust was approved for Big Indian Lake in April of 1997. The Trust provides money from the state lottery for environmental projects. The \$32,000 grant money will be used to correct shoreline erosion problems identified in the Clean Lakes study.

In the Lower Turkey Creek, 120,000 acres have been approved for a second year as one of the twelve priority areas in the state for EQIP, \$276,250 has been allocated for this project. Emphasis in this project area will be on erosion control, flood prevention and increased efficiency in nutrient and pesticide usage to protect surface and groundwater. There have been 32 applications received for the 98-99 EQIP priority area sign-up with 122 applications located outside the priority area. There were 59 contracts approved in 1997-98.

Sicily Creek is a 19,000 acre sub-drainage of the Big Indian watershed in Gage County that has been targeted for conservation practices using whole farm planning. Currently 10 plans have been developed with conservation practices being installed. Allocated by the NRCS for this watershed was \$35,000.

Horseshoe Creek consists of 67,000 acres, 15,000 acres in Nebraska and the rest in Kansas, has been approved for 1998-99. Gage County has received fourteen applications for assistance in the Nebraska portion of this watershed. The two Kansas counties have received six applications.

Surface water monitoring with Blue River Water Quality Monitoring Project

BRC Well Monitoring - 34 wells averaged +1.74 ft NRD wells +1.06 ft

KANSAS-NEBRASKA BIG BLUE RIVER COMPACT

U.S. Geological Survey - 1997 Water Year
May 21, 1998

The U.S. Geological Survey is presently operating two streamflow gaging stations for the Compact Administration: The Big Blue River at Barneston, NE, and the Little Blue River near Hollenberg, KS. Daily discharge records were computed at the two sites. Dataloggers were upgraded to real-time data collection platforms in October 1996, at the request of the Compact Administration, and are being maintained for transmission of gage heights. The two sites are on the Nebraska District's Homepage on the Internet for viewing of the previous seven days. The Internet address of the streamflow is:

http://www-ne.cr.usgs.gov/rt-cgi/gen_tbl_pg

Low-flow measurements or inspections of zero flow were made at sites in the Big Blue River and Little Blue River basins in October 1997. Flows were less than the long-term mean for October in both basins—Big Blue River at Beatrice (mean=498 cfs, 1997 meas.=219 cfs), Little Blue River at Hollenberg, KS (mean=339 cfs, 1997 meas.=138 cfs).

The mean daily discharge of the Big Blue River at Barneston for the 1997 water year was 762 cfs, as compared to the mean discharge for the 1996 water year of 937 cfs and to the mean discharge for the period of record (1933-96) of 866 cfs. The minimum daily discharge during water-year 1997 was 171 cfs on September 21. Daily flows were greater than the compact flow schedule May through September.

The mean daily discharge of the Little Blue River near Hollenberg, KS for the 1997 water year was 398 cfs, as compared to the mean discharge for the 1996 water year of 366 cfs and compared to the mean discharge for the period of record (1975-96) of 560 cfs. The minimum daily discharge during water year 1997 was 100 cfs on September 20-21. Daily flows were greater than the compact flow schedule for May through September.

The daily records for the two gaging stations, the hydrographs of the two ground-water observation wells in Gage and Jefferson Counties, Nebraska, and a listing of the low-flow measurements were provided to the Compact's Engineering Committee. Current stage-discharge rating tables for the two stream gages and tables of monthly mean flows for each year for the gaging stations since 1970 were also provided.

The estimate of the Compact Administration's share of the cost to operate the two streamflow gaging stations for the period July 1, 1999 to June 30, 2000 and the cost for making the low-flow measurements in the fall of 1999 were given to the Budget Committee.

**KANSAS-NEBRASKA BLUE RIVER
COMPACT ADMINISTRATION
REPORT**

**Water Quality Committee
May 21, 1998**

The Water Quality Committee and affiliated work groups have, since mid-1995, been pursuing four (4) primary objectives. These are to:

- 1) develop and conduct a baseline survey of farm practices and pesticide and nutrient use in the Big Blue River Basin;
- 2) design and implement a basin wide water quality monitoring program;
- 3) initiate and conduct a water quality stewardship information and outreach program; and,
- 4) develop Best Management Practices (BMPs) and farm practices economics program support information.

The following is an overview of progress made toward achieving these initial objectives.

Farm Practices Survey: A basin wide farm practices survey has been conducted and results were published during March 1998. Information obtained by the survey will be used to guide future on-farm water quality protection educational efforts, BMP research, and incentive programs in the Big Blue River Basin. Although the survey was conducted throughout the total of the basin and utilizing a standardized survey questionnaire instrument, Farm Practices Survey Workgroup members believed that stewardship educational and outreach programs in the basin would be best served by issuance of separate Kansas/Nebraska focused survey results publications. Copies of the two (2) survey results publications are included with this report.

Water Quality Monitoring: A basin wide water quality monitoring program was put into place and water sampling began in the second week of April, 1997. Sampling has continued to date. Special recognition needs to be given to the Nebraska Department of Environmental Quality (NDEQ) and Kansas State University (KSU) for work done by their staffs in the Big Blue River Basin sampling effort. The first year's samples have been analyzed and review of findings is now beginning. Phil Barnes (KSU) and Dale Lambley (Kansas Department of Agriculture) have been invited to Lincoln, Nebraska on May 13, 1998 to participate as NDEQ staff review first year water quality data from the various Nebraska headwaters sites.

Also during the year, the Kansas aquatic life support standard for atrazine was changed to 3 ug/l, from 1 ug/l. The change has received subsequent approval from the U.S. Environmental Protection Agency.

Education and Research: A wide variety of education, incentive, and research projects are now underway. Efforts are being made to coordinate these activities between Kansas and Nebraska and within each state. KSU and the University of Nebraska at Lincoln (UNL) extension and research specialists are meeting on a periodic basis to plan and coordinate research and educational activities within the Big Blue River Basin. The partnership between the two states appears to be enhancing our opportunities for findings outside funding for Big Blue River Basin water quality activities.

**Water Quality Committee Report
Page 2**

KSU and UNL were the recent recipients of a United States Department of Agriculture (USDA) Fund For Rural America Grant to examine water quality best management practices in the basin. This is a joint KSU/UNL grant which was funded both because of the strength of the proposal and because of the two state partnership. Funding from this grant will allow at least two (2) integrated agricultural management systems research sites to be established in the basin. The KSU/UNL proposal faced stiff competition from over a thousand other grant proposals nationwide. This is also the second year of the United States Geological Survey (USGS) Water Resources Grant which was awarded to KSU and UNL to conduct water quality research. Under this grant, UNL is taking the lead in conducting water quality research related to irrigation practices and KSU is leading in dryland farming water quality research.

Several Section 319 funded projects are also underway in the basin. Section 319 grants are made by state water quality lead agencies utilizing funds granted by the United States Environmental Protection Agency (EPA) under the federal Clean Water Act. Fred Roth and Tom Franti, UNL, were awarded a Section 319 grant "Atrazine Management in the Blue River Basin" to conduct water quality protection educational programs in select targeted watersheds. BMP demonstration fields will also be initiated in the targeted watersheds, including demonstration of atrazine alternatives. KSU received a Section 319 grant to intensify education efforts in "Reducing Atrazine Runoff in the Big Blue and Delaware River Basins in Kansas". The Kansas Corn Growers received approval and funding for "The Tuttle Creek/Blue River Pesticide Education Project". This project is designed to develop enhanced educational tools for use by extension, private sector partners or other groups in conducting farmer water quality educational training. Protection of adverse water quality impacts from field applied herbicides and nutrients will be the focal point of educational tools developed. Kansas Farm Bureau also received a small Section 319 grant which it is utilizing to match funding from DuPont and initiate field demonstrations of "atrazine alternatives". A similar set of demonstrations are being developed by the Nebraska Farm Bureau and DuPont in Nebraska portions of the basin.

This is also the second year of the Nebraska Corn Growers Buffer Initiative. The initiative is an incentive program designed to encourage the reestablishment of vegetative buffer strips along river and stream banks. In January 1998, Kansas Governor Bill Graves proposed establishment of a similar effort in Kansas. The Governor's Buffer Initiative was enacted by the 1998 session of the Kansas Legislature. This is a statewide program which is designed to encourage reestablishment of stream bank vegetation and is to be coordinated with and used to enhance USDA stream bank protection programs. The first round of Kansas project approvals and funding will likely be initiated during September 1998. The Black Vermillion watersheds of the Big Blue River Basin will be one priority focus of the Kansas Governor's Buffer Initiative.

A Buffer Strip Act (LB1126) was also passed during the 1998 session of the Nebraska Legislature. The Act is to be administered by Nebraska Department of Agriculture (NDA) and the Natural Resource Districts. To provide funding support, the Act provides that NDA will collect a \$90 per product pesticide registration fee, \$60 of which will be dedicated to the Buffer Strip Incentive Fund. NDA is to prepare a statewide buffer strip plan for presentation to the state legislature by December 1, 1998.

| EXPENDITURES | 97 | | FY98 | | FY99 | | FY2000 |
|-----------------------------|-----------|---------------------|------------------------|---------------------|-----------|---------------------|-----------|
| | Actual | Adopted May 1997 | Estimated (To Date) | Adopted May 1997 | Proposed | Adopted May 1998 | Proposed |
| Operations | 14,450.00 | 9,770.00 | 9,770.00 | 10,210.00 | 10,210.00 | 10,210.00 | 10,650.00 |
| Stairline Gages | 1,125.00 | 1,140.00 | 1,140.00 | 1,140.00 | 1,140.00 | 1,140.00 | 1,140.00 |
| Observation Wells | 1,060.00 | 1,100.00 | 1,100.00 | 1,150.00 | 1,150.00 | 1,150.00 | 1,200.00 |
| Low-Flow Measurements | 0.00 | 2,000.00 | 0.00 | 2,000.00 | 0.00 | 0.00 | 0.00 |
| Water Quality Committee | 0.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Fidelity Bond | 750.00 | 750.00 | 750.00 | 750.00 | 750.00 | 750.00 | 750.00 |
| Secretary Honorarium | 650.00 | 650.00 | 750.00 | 650.00 | 750.00 | 750.00 | 750.00 |
| Treasurer Honorarium | 117.17 | 200.00 | 200.00 | 200.00 | 200.00 | 200.00 | 200.00 |
| Staff Travel Expenses | 279.19 | 125.00 | 150.00 | 125.00 | 200.00 | 200.00 | 200.00 |
| Annual Report | 350.00 | 500.00 | 350.00 | 500.00 | 500.00 | 500.00 | 500.00 |
| Annual Audit | 94.14 | 100.00 | 71.09 | 100.00 | 100.00 | 100.00 | 100.00 |
| Postage and Office | 0.00 | 100.00 | 0.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Supplies | 18,875.50 | 16,535.00 | 14,381.09 | 17,025.00 | 15,200.00 | 15,200.00 | 15,690.00 |
| Miscellaneous Expenses | | | | | | | |
| Total Expenses | | | | | | | |
| INCOME AND CARRY OVER | | | | | | | |
| Assessments (Both States) | 14,000.00 | 14,000.00 | 14,000.00 | 14,000.00 | 14,000.00 | 14,000.00 | 14,000.00 |
| Interest Earned | 428.49 | 380.00 | 400.00 | 380.00 | 400.00 | 400.00 | 400.00 |
| Carry Over from Prior Year | 20,836.82 | 16,197.67 | 16,389.81 | 14,042.67 | 16,408.72 | 16,408.72 | 15,608.72 |
| Total Income and Carry Over | 35,265.30 | 30,577.67 | 30,789.81 | 28,422.67 | 30,808.72 | 30,808.72 | 30,008.72 |
| Balance End of Year | 16,389.81 | 14,042.67 | 16,408.72 | 11,397.67 | 15,608.72 | 15,608.72 | 14,318.72 |

Water Quality Committee Report
Page 3

A new watershed district has been formed in the lower portion of the Big Blue River Basin. The Horseshoe Creek Watershed is located in northwestern Marshall County, Kansas near the Kansas-Nebraska border. The Kansas Water Office and State Conservation Commission have provided funding to the district to support inclusion of water quality protection measures in initial plans developed for the watershed.

Because of the diversity of agricultural water quality protection activities and projects, Kansas has formed an "Atrazine Education Projects Group". This group is chaired by Dan Devlin, KSU Extension Specialist and Environmental Quality Coordinator and was formed for the purpose of coordinating the various agricultural pesticide and water quality education and demonstration projects being put into place in the Kansas portion of the lower basin. The group has held quarterly meetings throughout the past year. A similar interdisciplinary group has been established at UNL since 1996, led by Tom Franti and Kyle Hoagland, UNL.

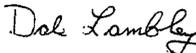
Economics Studies: Only minimal progress has been made in assessing agricultural water quality BMP economics, largely because initial emphasis has been upon planning, establishing and finding funding support for grower education and water quality monitoring programs. More efforts will be directed toward economic assessments as our work continues.

Other Information: Karl Mueldeiner has been appointed by the Kansas Department of Health and Environment to serve as their representative to the Compact's Water Quality Committee. Karl is Director of KDHE's Bureau of Water. Karl will replace Ron Fox, who retired.

KSU and UNL are in the process of preparing a Water Quality Field Tour of the Big Blue River Basin. The purpose of the tour is to educate and inform elected officials, heads of agencies and other partners on water quality improvement efforts underway in the basin. The tentative dates for the tour are July 29 and 30, with those going the entire route having an overnight stay in Beatrice, NE or Marysville, KS. Members of the Big Blue River Compact Administration will receive an invitation to attend.

Finally, the Water Quality Committee would like to end this report by recognizing a number of entities for their participation in Big Blue River Basin water quality improvement efforts. Special recognition is due NOVARTIS Crop Protection and EPA, Region VII. NOVARTIS provided automatic samplers and funding support for the water quality monitoring program. EPA, Region VII has provided substantial funding, a portion of which allowed NDEQ to significantly enhance the monitoring framework in the upper basin. The strong support (both financial and in kind) and leadership shown by private sector partners such as the Kansas and Nebraska Corn Growers, Grain Sorghum Producers and Farm Bureau organizations is most heartening and helpful.

Respectfully Submitted,



Dale Lambley, Chairperson
Report prepared 5/12/98

**KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION
TREASURER'S REPORT
FISCAL YEAR 1998**

Balance on hand July 1, 1997: \$16,389.81

Receipts during fiscal year 1998:

| | | |
|-----------------------|--------------------|---------------------------|
| State of Nebraska | \$ 7,000.00 | |
| State of Kansas | \$ 7,000.00 | |
| Interest Earned | <u>\$ 384.94</u> | |
| Total receipts | \$14,384.94 | <u>\$14,384.94</u> |

Total funds available: \$30,774.75

Disbursement by the Administration July 1, 1997 to June 30, 1998:

| <u>Date</u> | <u>Voucher No.</u> | <u>Payee and Purpose</u> | <u>Amount</u> |
|----------------------------|--------------------|--|---------------------------|
| 7-30-97 | 258 | Brier Payne Meade Insurance(Bond) | \$ 100.00 |
| 12-2-97 | 259 | U.S. Geological Survey, Operations | 2,375.00 |
| 2-23-98 | 260 | U.S. Geological Survey, Operations | 3,565.00 |
| 2-23-98 | 261 | Lower Big Blue NRD | 1,140.00 |
| 4-15-98 | 262 | U.S. Geological Survey, Operations | 2,465.00 |
| 4-16-98 | 263 | Barbara Hasterlo, Postage | 71.09 |
| 4-24-98 | 264 | Barbara Hasterlo, Honorarium | 750.00 |
| 5-7-98 | 265 | Kennedy & Coe (FY97 Audit) | 350.00 |
| 5-22-98 | 266 | Denise J. Rolfs, Travel Expenses | 54.07 |
| 5-27-98 | 268 | NE Dept. Of Water Resources(Printing Annual Rpt) | 150.00 |
| 5-27-98 | 269 | Pamela Bonebright, Travel | 104.05 |
| 5-28-98 | 267 | Denise J. Rolfs, Honorarium | 750.00 |
| 6-9-98 | 270 | U.S. Geological Survey, Operations | <u>2,465.00</u> |
| Total disbursements | | | <u>\$14,339.21</u> |

Funds available in Fiscal Year 1998: \$30,774.75

Disbursements 14,339.21

Balance on hand July 1, 1998: \$16,435.54

KENNEDY AND COE, LLC

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NEBRASKA
OKLAHOMA
COLORADO

INDEPENDENT AUDITORS' REPORT ON FINANCIAL STATEMENTS

To the Chairman
Kansas - Nebraska Big Blue River Compact Administration

We have audited the accompanying statement of financial position of the Kansas - Nebraska Big Blue River Compact Administration, as of June 30, 1998, and the related statements of activities, cash flows, and revenues and expenses compared to budget for the year then ended. These financial statements are the responsibility of the Administration's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Kansas - Nebraska Big Blue River Compact Administration as of June 30, 1998, and the changes in its net assets and its cash flows for the year then ended in conformity with generally accepted accounting principles.

Respectfully submitted,


Kennedy and Coe, LLC

Topeka, Kansas
February 6, 1999

MEMBERS OF: AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS
SEC PRACTICE SECTION AND PRIVATE COMPANIES PRACTICE
SECTION OF THE AICPA DIVISION FOR CPA FIRMS

**KANSAS - NEBRASKA BIG BLUE RIVER
COMPACT ADMINISTRATION
Topeka, Kansas**

**Statement of Financial Position
June 30, 1998**

| Assets | |
|-----------------------------------|------------------|
| Cash in bank | <u>\$ 16,436</u> |
| Liabilities and Net Assets | |
| Net assets - unrestricted | <u>\$ 16,436</u> |
| Total liabilities and net assets | <u>\$ 16,436</u> |

The accompanying notes are an integral part of these financial statements.

**KANSAS - NEBRASKA BIG BLUE RIVER
COMPACT ADMINISTRATION
Topeka, Kansas**

Statement of Activities
Year Ended June 30, 1998

Unrestricted Net Assets

| | |
|--|------------------|
| Revenues: | |
| Kansas contribution | \$ 7,000 |
| Nebraska contribution | 7,000 |
| Interest | 385 |
| Total revenues | <u>14,385</u> |
| Expenses: | |
| Surface and ground water investigations | 12,010 |
| Water quality committee | - |
| Staff travel | 158 |
| Auditing and accounting services | 350 |
| Printing annual report | 150 |
| Fidelity bond | 100 |
| Secretary - Treasurer services | 1,500 |
| Office supplies and postage | 71 |
| Miscellaneous | - |
| Total expenses | <u>14,339</u> |
| Increase (decrease) in unrestricted net assets | 46 |
| Net assets, beginning of year | 16,390 |
| Net assets, end of year | <u>\$ 16,436</u> |

The accompanying notes are an integral part of these financial statements.

**KANSAS - NEBRASKA BIG BLUE RIVER
COMPACT ADMINISTRATION
Topeka, Kansas**

Statement of Cash Flows
Year Ended June 30, 1998

| | |
|---|------------------|
| Cash flows from operating activities: | |
| Increase (decrease) in net assets | \$ 46 |
| Net cash (used) by operating activities | <u>46</u> |
| Cash flows from investing activities | - |
| Cash flows from financing activities | - |
| Net (decrease) in cash | <u>46</u> |
| Cash, beginning of year | 16,390 |
| Cash, end of year | <u>\$ 16,436</u> |

The accompanying notes are an integral part of these financial statements.

**KANSAS - NEBRASKA BIG BLUE RIVER
COMPACT ADMINISTRATION
Topeka, Kansas**

**Statement of Revenues and Expenses Compared to Budget
Year Ended June 30, 1998**

| | Budget | Actual | Variance Favorable (Unfavorable) |
|---|-------------------|---------------|--|
| Revenues: | | | |
| Kansas contributions | \$ 7,000 | \$ 7,000 | \$ - |
| Nebraska contributions | 7,000 | 7,000 | - |
| Interest | 380 | 385 | 5 |
| Total revenues | <u>14,380</u> | <u>14,385</u> | <u>5</u> |
| Expenses: | | | |
| Surface and ground water investigations | 12,010 | 12,010 | - |
| Water quality committee | 2,000 | - | 2,000 |
| Staff travel | 200 | 158 | 42 |
| Auditing and accounting services | 500 | 350 | 150 |
| Printing annual report | 125 | 150 | (25) |
| Fidelity bond | 100 | 100 | - |
| Secretary - Treasurer services | 1,400 | 1,500 | (100) |
| Office supplies and postage | 100 | 71 | 29 |
| Miscellaneous | 100 | - | 100 |
| Total expenses | <u>16,535</u> | <u>14,339</u> | <u>2,196</u> |
| Excess (deficit) of revenues over expenses | <u>\$ (2,155)</u> | <u>\$ 46</u> | <u>\$ 2,201</u> |

The accompanying notes are an integral part of these financial statements.

**KANSAS - NEBRASKA BIG BLUE RIVER
COMPACT ADMINISTRATION
Topeka, Kansas**

**Notes to Financial Statements
Year Ended June 30, 1998**

Note A - Summary of Significant Accounting Policies

The Kansas - Nebraska Big Blue River Compact Administration (the Administration) is an interstate administrative agency established, upon adoption of rules and regulations pursuant to Article III (3,4) of the Kansas - Nebraska Big Blue River Compact on April 24, 1973, to administer the Compact.

The following is a summary of the more significant policies:

1) Basis of Accounting

The financial statements have been prepared on the accrual basis financial accounting in accordance with generally accepted accounting principles. All activities of the Administration are classified as unrestricted for financial reporting purposes.

2) Function

The major function of the Administration is to establish "such stream-gaging stations, ground water observation wells, and other data-collection facilities as are necessary for administering the compact".

The purpose of the compact is to:

- A) Promote interstate comity between the States of Nebraska and Kansas.
- B) To achieve equitable apportionment of the waters of the Big Blue River Basin between the two states and to promote orderly development thereof.
- C) To encourage continuation of the active pollution-abatement programs of the waters of the Big Blue River Basin.

3) Estimates

The preparation of financial statements in conformity with generally accepted accounting principles may require the management to make estimates and assumptions that affect certain reported amounts and disclosures.