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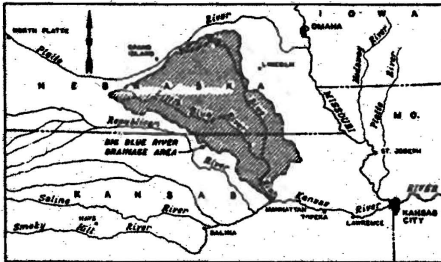
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# KANSAS-NEBRASKA BIG BLUE RIVER COMPACT

## THIRTIETH ANNUAL REPORT



FISCAL 2003

MANHATTAN, KANSAS  
MAY 15, 2003

**KANSAS-NEBRASKA BIG BLUE RIVER**

**COMPACT ADMINISTRATION**

**The Honorable George W. Bush  
President of the United States**

**The Honorable Kathleen Sebelius  
Governor of Kansas**

**The Honorable Mike Johanns  
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-Ninth Annual Report. The report covers activities of the Administration for Fiscal Year 2003.

Respectfully,



**Gary Mitchell  
Compact Chairman**

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**2002-2003 MEMBERSHIP**

Representatives of the United States

Gary Mitchell

Kansas Representatives

David L. Pope, Topeka <sup>1</sup>

Terry Blaser, Waterville <sup>2</sup>

Nebraska Representatives

Roger K. Patterson, Lincoln <sup>1</sup>

Kenneth Regier, Aurora <sup>3</sup>

**2002-2003 OFFICERS**

Gary Mitchell, Chairman  
Pam Bonebright, Secretary  
Denise Rolfs, Treasurer

**2002-2003 COMMITTEES**

Budget Committee

Keith Paulsen, Chairperson  
Bob Lytle

Engineering Committee

Jeff Shafer, Chairperson  
Bob Lytle  
Keith Paulsen  
Iona Branscum

Water Quality Committee

Dale Lambley, Chairperson  
Annette Kovar  
Glen Kirk  
Denis Blank  
Pat Rice  
Tom Stiles

Legal Committee

Leland Rolfs, Chairperson  
Jim Cook

- 
- 1 Term continuous but coincides with duties of the state official who administers water law.
  - 2 Term expires April 25, 2004.
  - 3 Term expires September 19, 2006.

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

Call to Order

The Kansas-Nebraska Big Blue River Compact Administration annual meeting was held May 15, 2003, in the Conference Room of the Farm Bureau Building, Manhattan, Kansas. The meeting was called to order at 9:00 a.m. by Gary Mitchell, Compact Chairman.

David Pope welcomed everyone to Manhattan and introduced Gary Mitchell as the new Compact Chairman. Chairman Mitchell has a long history working with Congressman and current U.S. Senator Pat Roberts and was on the Agricultural committee staff. Chairman Mitchell also served as the Kansas Secretary of Health and Environment. He has farming interests in Solomon, Kansas and is currently employed by the Solomon Corp.

Introductions and Announcements

Introductions of attendees were made. Those in attendance were:

Gary Mitchell	Compact Chairman, Holstein, Nebraska
Roger Patterson	Nebraska Commissioner
David Pope	Kansas Commissioner
Denise Rolfs	Compact Treasurer
Pam Bonebright	Compact Secretary
Kenneth Regier	Nebraska Citizen Representative
Terry Blaser	Kansas Citizen Representative
Keith Paulsen	Nebraska Department of Natural Resources, Lincoln
Jeff Shafer	Nebraska Department of Natural Resources, Lincoln
Dave Vogler	Nebraska Department of Natural Resources, Lincoln
Leland E. Rolfs	Kansas Dept. of Agriculture, Topeka
Bob Lytle	Kansas Dept. of Agriculture, Topeka
Dale Lambley	Kansas Dept. of Agriculture, Topeka
Phil Soenkson	U.S. Geological Survey, Lincoln
Ron Fleecs	General Manager, Lower Big Blue Natural Resources District, Beatrice
Dave Clabaugh	Lower Big Blue Natural Resources District, Beatrice
John Turnbull	General Manager, Upper Big Blue Natural Resources District, York
Mike Onnen	General Manager, Little Blue Natural Resources District
R.E. Pelton	Kansas River Water Assurance District #1

Kent Weatherby  
Kent Askren  
Tom Stiles

Kansas River Water Assurance District #1  
KDA/DWR Topeka Field Office  
Kansas Department of Health and Environment

Minutes of the 2003 Meeting

Chairman Mitchell stated that the minutes for the 2002 annual meeting had been reviewed and signed by both states and were distributed prior to the 2003 meeting. There was a correction made to the minutes on page nine, second paragraph third line of the Water Quality Committee Report. The line should read "requesting they examine the possibility of allowing fall and winter". Unanimous consent of the correction was sought and approved.

Report of the Chairman

Chairman Mitchell had no report as this is his first meeting.

Kansas Report

Commissioner Pope reported that Kansas is a few months into new administration with a new Governor, Kathleen Sebelius, who was elected last fall. Most people believe she has done very well. As a result of her new administration, there is a new Secretary of Agriculture, Adrian Polansky. He served for a number of years as the State Director of the USDA Farm Services Agency. Another new face is Joe Harkins who was the Director of the Kansas Water Office for a number of years, has been brought back as an interim director of the Kansas Water Office while a more extensive search is made for a long term director.

Legislation

The main issue in the legislative session was the budget and fiscal condition of the state because of reduced revenues. The legislature did pass a budget with no tax increase and just a few budget cuts in the Department of Water Resources (DWR). There was very little activity relating to water policy. A few bills concerning water issues were introduced, and one bill that cleaned up of some legislation in the water quality area was passed.

## **Litigation**

A lot of time was spent this past year negotiating the settlement to the Republican River Compact litigation. Commissioner Pope was pleased to report that the hard work ended in a settlement reached this last December. There are some key deadlines coming up in July in regards to joint computer modeling. The Kansas vs Colorado case is continuing and the parties involved are hopeful they are getting close to the final lap after 17 years of litigation. A report is expected from the Special Master at any time and at that time each state will have time to take exception on the report to the U.S. Supreme Court. A final decision is not expected for at least another year.

## **Water Administration**

In terms of current hydrologic conditions, Kansas, like Nebraska, is suffering through an extensive drought, particularly in the northern and western part of the state. There has been some relief in the Northeastern part of the state. Topeka has received near average annual rainfall. Recharge, stream flow and reservoirs levels are below normal in most of the state. In the Blue River Basin, there has been a swing from about seven feet below conservation pool at Tuttle Creek Reservoir to two or three feet into the flood pool just in the last few days. Last year there was an unprecedented amount of water rights administration to protect senior water rights and stream flows throughout the state including the Blue River Basin. Tuttle Creek Reservoir is one of the major structures used to provide flows for the Kansas River Water Assurance District.

DWR had quite a bit of enhanced effort in terms of compliance and enforcement of water rights, particularly in the water short areas of the state. DWR tries to ensure that people do not pump more than what they are authorized from groundwater sources.

Terry Blazer asked the Nebraska NRD's about a report that discussed the efficiency of the different modes of irrigation and stated that he would like to speak with them about it. He also informed the Compact Commissioners that this would be his last meeting.

Chairman Mitchell asked for and received unanimous acceptance of the Kansas report.

## **Nebraska Report**

Commissioner Patterson reported that last year was the third consecutive year of drought across the state. Nebraska experienced heavy water regulation activities in most of the state and had substantially more last year than any previous year.

The two year old settlement of the lawsuit with Wyoming is continuing to be implemented. There are special provisions that are in effect anytime there is an allocation year, and last year was an allocation year. For the most part the provisions worked well. Nebraska is also very pleased that a settlement was reached in the Kansas vs Nebraska lawsuit and are awaiting final approval from the U.S. Supreme Court.

The deadline for completion of the Cooperative Agreement in the Platte Basin is once again being extended. The Cooperative Agreement Committee have asked the National Academy of Sciences to come in and review the underlying science associated with the Agreement.

Nebraska and Kansas are both involved in extremely controversial Missouri River issues. There are currently nine separate lawsuits filed. Nebraska has been pretty aggressive in intervening in the litigation filed by others. The hope is to get all issues and parties in one venue.

## **Legislation**

This spring, a Water Policy Task Force was authorized by the Nebraska Legislature. It is a group of 49 governor appointed members. They are going to examine conjunctive use laws, water leasing, water banking and water transfers. A final report with recommendations from the task force is due by the end of this calendar year. Next year Nebraska should have something positive to report from that effort.

In November, Governor Johanns was re-elected for his second term by nearly 70% of the voting public. The legislature has been dominated for the most part by the budget situation. LB 619 became the primary bill for the very limited amount of water legislation passed this year. The primary issue was sparked by an outfit out of Colorado that wanted to come into Nebraska, in the deepest part of the Ogallala aquifer, drill some wells and load the water on a train and take it to Colorado. As a result there is new legislation that recognizes the state ownership of the groundwater and reaffirms, with a few

exceptions, that the natural resources districts are the entity to manage groundwater and any interstate transfers of groundwater have to be approved by the state. The well registration fee was increased by \$10 and NRD fees were increased from \$17.50 to \$50. The biennium budget deficit is expected to be \$750 million in Nebraska. The Legislature covered half of the deficit by cuts and half with new taxes, the Governor stated he would approve no new taxes.

Commissioner Patterson reported that 2002 was the first year since the compact was signed that Nebraska had administration of junior water rights in the Big Blue River and it was the third time administration of junior water rights in the Little Blue River was necessary. Previous occurrences were in 1988 and 1991. Last year, as the flows began to drop in the Big Blue, Keith Paulsen worked with Ron Fleece to secure releases from their reservoirs. The releases resulted in ten days of exceeding the target flows on the Big Blue and Nebraska really appreciated the Lower Big Blue NRD's effort. During the summer, Nebraska closed 314 water rights for 26 days on the Little Blue Basin in July and August, and 875 water rights for 14 days on the Big Blue Basin in July and August. No groundwater wells were closed.

Ken Regier stated that recent rains have been very welcome so far even though they have slowed up the planting.

#### **Administration and Gaging**

Keith Paulsen reported that 2002 was extremely hot and dry year in the Little and Big Blue River Basins. His phone began ringing early in the irrigation season and consequently administration of surface water rights in these basins was extensive last year.

On August 8<sup>th</sup>, Jeff Shafer and Keith Paulsen attended an informational meeting hosted by the Kansas Department of Agriculture in Hanover, Kansas. Those in attendance were informed of what actions Nebraska was taking to comply with the terms of the compact.

Mr. Paulsen also stated that in southeast Nebraska it is very unusual to have so little rain for so long over an area as large as one of these basins. To have it occur in both basins at the same time indicates just how extensive the drought was in southeast Nebraska last summer.

John Turnbull submitted the report for the Upper Big Blue NRD. The written report is included as Exhibit H. He highlighted portions of the report.

Ron Fleecs from the Lower Big Blue NRD submitted a written report, which is included as Exhibit I. He highlighted portions of the report.

Mike Onnen from the Little Blue NRD submitted a written report, which is included as Exhibit J. He highlighted portions of the report.

Commissioner Patterson stated that this is the thirtieth anniversary of the creation of the NRDs. There are 23 across the state. All are governed locally with board of directors.

Commissioner Pope noted his appreciation of Keith and Jeff attending a meeting in Hanover. Kansas was getting a lot of questions and concerns about what was going on in Nebraska and they did a really good job of informing the people. He also mentioned that one question from the meeting that is still being asked, and it is what level of field observation and enforcement does Nebraska provide? Commissioner Patterson responded that when this administration occurred it was the priority for all staff. People from the survey staff and office staff were enlisted to help, but on a typical day only four or five guys were in the field.

Chairman Mitchell noted that there were 498 new well permits in Nebraska. He questioned how many Kansas had. Commissioner Pope stated that Kansas has not issued very many permits. It was noted that 25% of the permits in Nebraska are for replacement wells and that a moratorium on well construction and metering of wells is occurring in the Upper Big Blue.

Chairman Mitchell asked for and received unanimous acceptance of the Nebraska report.

#### **Federal Agency Report**

Phil Soenksen distributed the USGS report. It is included as Exhibit K. The USGS operates two gages for the compact. He highlighted portions of the report.

Chairman Mitchell asked for and received unanimous acceptance of the Federal Government's report.

**Secretary's Report**

Pam Bonebright stated she had extra copies of the annual report for anyone that wanted to take a copy with them. A copy of the letter appointing Mr. Mitchell as the new Chairman was requested and supplied by Chairman Mitchell.

**Treasurer's Report**

Denise Rolfs reported that the FY 2002 audit was completed and showed the Compact was in good standing.

Ms Rolfs distributed copies of the FY 2003 Treasurer's report. The report reflected the following:

Funds Available.....	\$ 31,139.15
Total Expenditures.....	\$ 9,617.30
Balance on hand as of July 1, 2001.....	\$ 15,057.90
Estimated Additional FY2003 Expenses.....	\$ 6,024.79
Estimated Additional Interest Income.....	\$ 9.00
Estimated Balance on June 30, 2003.....	\$ 15,506.06

Chairman Mitchell asked for and received unanimous acceptance of the Treasurer's report.

**Legal Committee**

Leland Rolfs reported on the assignment of the Legal Committee. The major issue was the Compact language article 5.1, section 4, regarding regulating certain wells drilled after November 1, 1968, within a certain area. The question was the conflict in language that talks about areas within a mile of the thread of the stream and also talked about looking at the areas delineated on Supplement No. 1. The Legal Committee and Engineering Committee concluded that the best interpretation of the Compact would be the regulatory reaches are delineated by Compact reference Exhibits A and B of Supplement No. 1 to the Report of the Engineering Committee, October 1968.

**Engineering Committee Report**

Jeff Shafer distributed copies of the Special Report of the Engineering Committee that is included as **Exhibit F**. Mr. Shafer also distributed copies of the Joint Recommendation of the Engineering and Legal Committees that is included as **Exhibit G**.

Chairman Mitchell asked for and received unanimous acceptance of the Joint Recommendations of the Engineering and Legal Committees and the Special Report of the Engineering Committee.

Jeff Shafer distributed copies of the Engineering Committee Report, which is included as **Exhibits A through E**. Commissioner Pope questioned why the flows did not stay above target with so many people being regulated. Mr. Shafer responded that there was just not enough water in the system to keep the flows above target.

Chairman Mitchell asked for and received unanimous acceptance of the Engineering report.

**Budget Committee**

Bob Lytle distributed copies of the budget analysis chart that is included as **Exhibit N**. Elimination of the low flow measurements last year has resulted in a more balanced budget.

Chairman Mitchell asked for and received unanimous acceptance of the Budget report.

**Water Quality Committee Report**

Dale Lambley submitted a written report that is included as **Exhibit L**. Mr. Lambley reported on Committee activities and highlighted portions of the report. Mr. Lambley also presented a report on Atrazine Herbicide Status Report that is included herein as **Exhibit M**. The first round of the Atrazine report focused on surface water and the second round on ground water. He stated that it could have more of an effect on Nebraska than Kansas.

Chairman Mitchell asked for and received unanimous acceptance of the Water Quality committee and Atrazine Herbicide Status report.



**Old Business**

The recommendation from the joint engineering and legal committee on the regulatory area and well administration was presented for discussion and thoughts. Commissioner Pope suggested a motion that the administration approve the methodology recommended by the Legal and Engineering Committees regarding the determination of wells subject to regulation pursuant to the Compact and that these wells be regulated by Nebraska in accordance with the criteria proposed. He also suggested that the Engineering Committee proceed with the implementation of the concepts. Commissioner Patterson also presented the possibility to adopt the recommendation of the Engineering and Legal Committees as it relates to the boundaries, regulatory reaches and methodology for regulation of irrigation wells as outlined.

Commissioner Pope moved that the administration adopt the Joint Recommendations of the Engineering and Legal Committees in the report dated May 15, 2003, such that these wells will be regulated by Nebraska in accordance with the criteria proposed. The motion was seconded by Commissioner Patterson. Chairman Mitchell declared the Recommendation of the Engineering and Legal Committee adopted, unanimous consent.

**New Business**

Chairman Mitchell announced that the next meeting of the Compact will be May 13, 2004 and that Kansas will be the host with the site to be picked at a later date. He also wished to thank the Kansas Farm Bureau for providing the meeting location today.

The commissioners moved to accept the Budget Committee's proposed budgets for FY 2004 and FY 2005, Chairman Mitchell asked for and received unanimous acceptance.

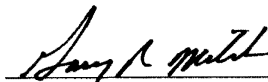
Commissioner Pope moved that the engineering committee proceed with their normal assignments of tabulating information for presentation for the next annual meeting. He also moved that they proceed as expeditiously as possible with the implementation of the concepts in the joint report regarding regulatory area wells. The motions were seconded by Commissioner Patterson. Chairman Mitchell declared the motion carried, by unanimous consent.

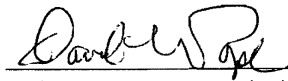
The compact administration adopted a resolution of appreciation for Clayton Lukow for his service as Chairman. A plaque was prepared to present to Mr. Lukow. Patterson passed along Mr. Lukow's message that he enjoyed his time as Chairman.

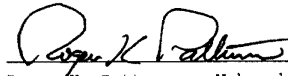
Committee membership for the upcoming year was assigned as follows:

Budget Committee:	Bob Lytle, Chairperson Keith Paulsen
Legal Committee:	Leland Rolfs, Chairperson Jim Cook
Engineering Committee:	Jeff Shafer, Chairperson Keith Paulsen Iona Branscum Bob Lytle
Water Quality Committee:	Dale Lambley, Chairperson Annette Kovar Rich Reiman (Vacant) Pat Rice Tom Stiles

Being no further business, Chairman Mitchell adjourned the meeting at 12:20 p.m.

  
\_\_\_\_\_  
Gary Mitchell, Compact Chairman

  
\_\_\_\_\_  
David Pope, Kansas Commissioner

  
\_\_\_\_\_  
Roger K. Patterson, Nebraska Commissioner

**REPORT OF THE ENGINEERING COMMITTEE  
TO THE  
KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION  
May 15, 2003**

The Engineering Committee met April 9<sup>th</sup> in Marysville in preparation for the compact meeting and to discuss with the Legal Committee the special assignment given last year.

The 2002 data were collected in accordance with the agreements with the United States Geological Survey (USGS) and the Lower Big Blue Natural Resources District (LBBNRD).

**REVIEW OF STREAMFLOW DATA**

The Compact sets forth the following stream flow targets:

	Big Blue River	Little Blue River
May	45 cfs	45 cfs
June	45 cfs	45 cfs
July	80 cfs	75 cfs
August	90 cfs	80 cfs
September	65 cfs	60 cfs

During the 2002 water year (October 1, 2001 thru September 30, 2002) the mean daily streamflow at the Barneston gage on the Big Blue River (Exhibit A) and the Hollenberg gage on the Little Blue River (Exhibit B) fell below the target flows established by the Compact multiple times.

Recent and Historical Data for the two gages can be found at the following USGS websites:

Big Blue River - [http://waterdata.usgs.gov/ne/nwis/uv/?site\\_no=06882000](http://waterdata.usgs.gov/ne/nwis/uv/?site_no=06882000)  
Little Blue River - [http://waterdata.usgs.gov/ne/nwis/uv/?site\\_no=06884025](http://waterdata.usgs.gov/ne/nwis/uv/?site_no=06884025)

**REVIEW OF GROUNDWATER DATA**

The USGS provided the data for hydrographs for two wells in Gage and Jefferson Counties (Exhibit C). The LBBNRD provided the groundwater data for the portion of the Big Blue River near Beatrice listed in Exhibit D.

**REVIEW OF WELLS IN REGULATORY REACHES**

The lists of wells within the regulatory reaches are shown in Exhibit E. The list was compiled in accordance with the recommendation submitted jointly by the Engineering and Legal Committees.

Respectively Submitted,

*Jeffrey T. Shafer*  
Jeffrey T. Shafer, Chair  
Nebraska

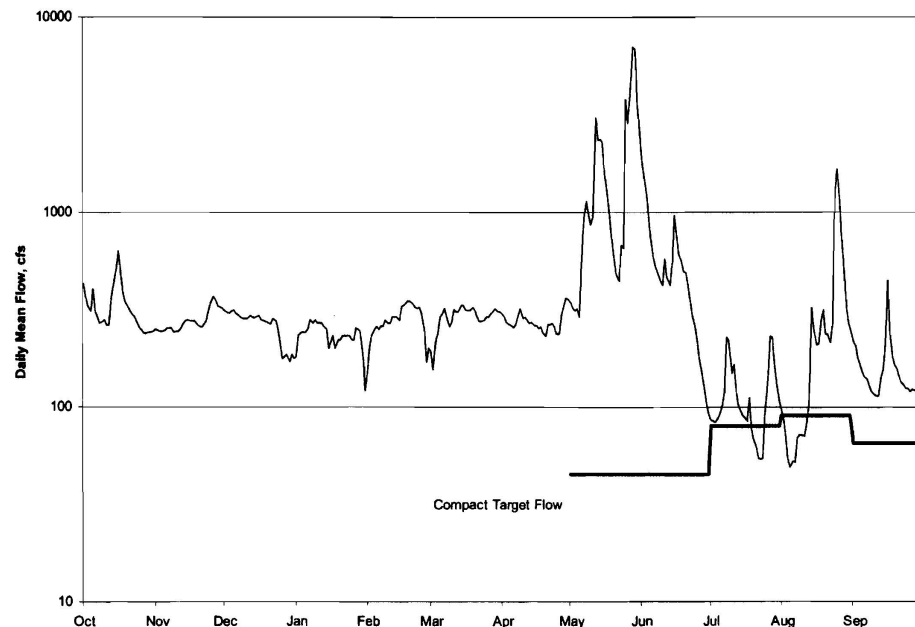
*Robert F. Lytle Jr.*  
Robert F. Lytle Jr.  
Kansas

*Keith A. Paulsen*  
Keith A. Paulsen  
Nebraska

*Iona Branscum*  
Iona Branscum  
Kansas

**Exhibit A**

**BIG BLUE RIVER AT BARNESTON, NEBRASKA - 06882000**



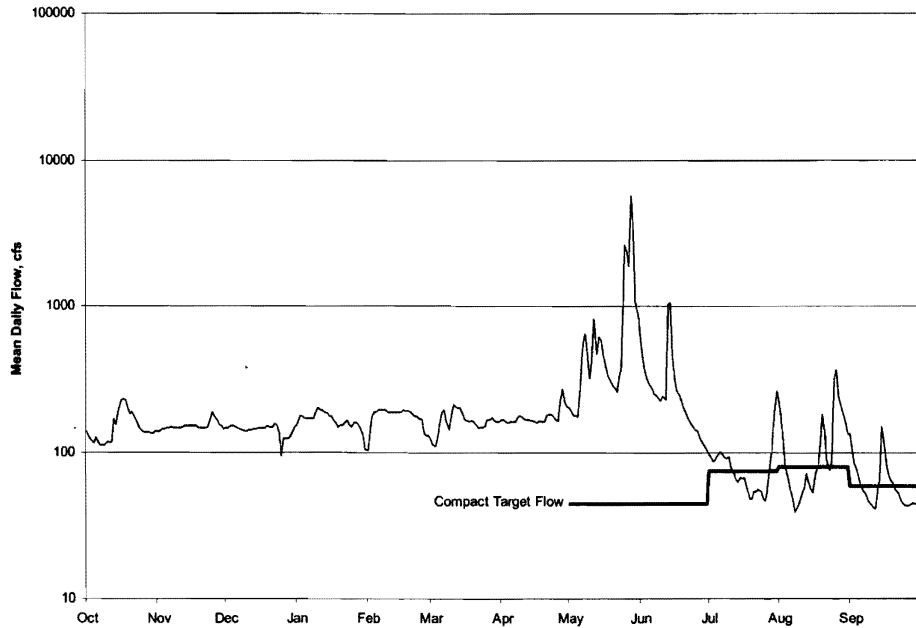
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TOTAL	10126	8276	8160	7217	7752	8956	8313	55119	16733	3600	9632	4769
MEAN	327	276	263	233	277	289	277	1778	558	116	311	159
MAX	630	368	314	280	348	333	364	7020	1910	231	1670	448
MIN	236	240	170	120	150	155	231	291	92	54	49	115
AC-FT	20080	16420	16190	14310	15380	17760	16490	109300	33190	7140	19110	9460

	FOR 2001 CALENDAR YEAR				FOR 2002 WATER YEAR			WATER YEARS 1933 - 2002				
ANNUAL TOTAL	426723				148653							
ANNUAL MEAN	1169				407			865				
HIGHEST ANNUAL MEAN								2781				
LOWEST ANNUAL MEAN								115				
HIGHEST DAILY MEAN	13200				Sep 17	7020		May 28	50000			
LOWEST DAILY MEAN	170				Dec 29	49		Aug 5	1.0			
ANNUAL SEVEN-DAY MINIMUM	183				Dec 25	60		Aug 3	15			
MAXIMUM PEAK FLOW								57700				
MAXIMUM PEAK STAGE								34.30				
ANNUAL RUNOFF (AC-FT)	846400				294900			626800				
10 PERCENT EXCEEDS	2730				602			1790				
50 PERCENT EXCEEDS	440				270			280				
90 PERCENT EXCEEDS	245				115			104				

Exhibit B

LITTLE BLUE RIVER AT HOLLENBERG, KANSAS - 06884025

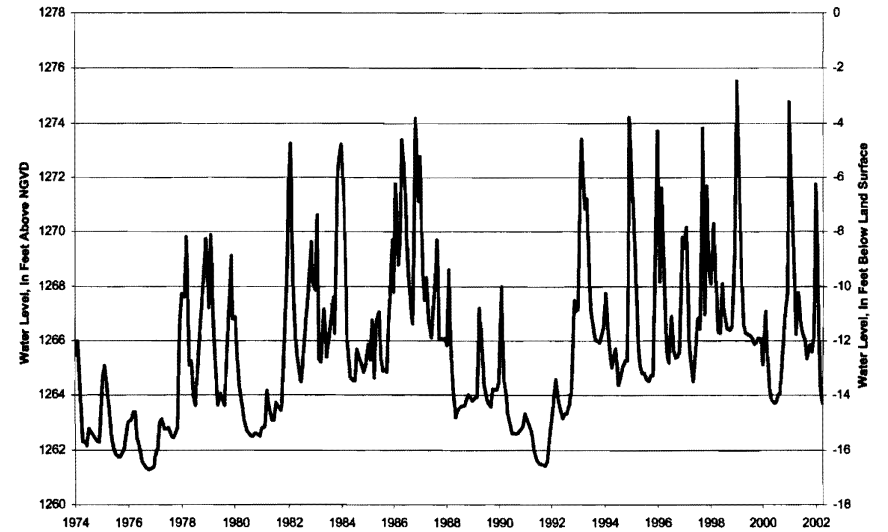


	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TOTAL	4651	4551	4413	5131	4951	5083	5306	27401	9059	2598	3744	1943
MEAN	150	152	142	166	177	164	177	884	302	83.8	121	64.8
MAX	230	188	156	200	195	213	272	5790	1070	262	369	153
MIN	112	140	95	106	104	110	159	177	106	47	40	42
AC-FT	9230	9030	8750	10180	9820	10080	10520	54350	17970	5150	7430	3850

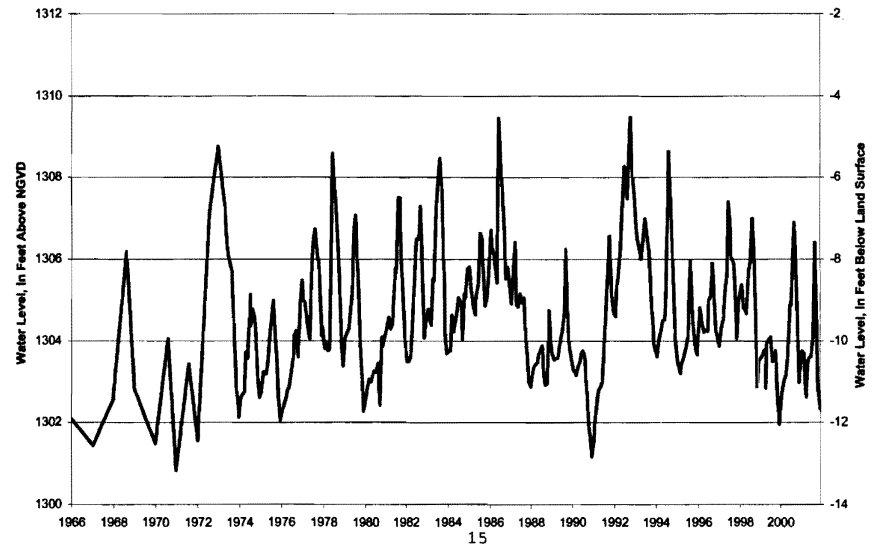
SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1975 - 2002
ANNUAL TOTAL	214571	78831	
ANNUAL MEAN	588	216	525
HIGHEST ANNUAL MEAN			1891 1993
LOWEST ANNUAL MEAN			195 1991
HIGHEST DAILY MEAN	9960	May 6	5790 May 28 39300 Jul 26 1992
LOWEST DAILY MEAN	80	Feb 3	40 Aug 8 26 Oct 1 1991
ANNUAL SEVEN-DAY MINIMUM	91	Jan 28	45 Sep 24 27 Sep 27 1991
MAXIMUM PEAK FLOW			47800 Jul 26 1992
MAXIMUM PEAK STAGE			21.21 Jul 26 1992
ANNUAL RUNOFF (AC-FT)	425600	156400	380500
10 PERCENT EXCEEDS	1160	271	870
50 PERCENT EXCEEDS	191	154	206
90 PERCENT EXCEEDS	117	59	107

Exhibit C

402155096523101 - Gage County



400813097112401 - Jefferson County



**BIG BLUE RIVER COMPACT STATIC WATER LEVELS**

LEGAL	SECTION	LOCATION	WELL	DEPTH SPRING 04/15/02	DEPTH IRR 08/14/02	DEPTH FALL 11/19/02
4N-5E	2	AAAA	OW	91.42	97.53	95.49
4N-5E	2	DDAA	IW	16.30		18.76
4N-5E	3	CDBC	IW	20.58		21.35
4N-5E	3	DAAA	IW	17.92		20.10
4N-5E	4	AAAA	OW	13.35	18.59	15.34
4N-5E	4	BBBC	IW	17.98		21.37
4N-5E	7	BBAA	IW	81.43		85.30
4N-5E	9	CBCC	IW	69.32		73.45
4N-5E	10	DDAA	IW	26.36		31.50
4N-5E	11	DACA	IW	16.53		17.34
4N-5E	12	CCCD	OW	13.98	14.96	14.55
4N-5E	14	ABBB	IW	13.39		14.75
4N-5E	14	DDDD	OW	20.42	22.40	21.50
4N-5E	22	BCCC	IW	66.07		71.15
4N-5E	25	AACD	IW	18.90		19.25
4N-6E	6	CBBB	IW	90.86		93.38
4N-6E	8	AABB	IW	91.47		94.56
4N-6E	18	DDCC	OW	6.35	6.35	6.92
5N-4E	12	ABBA	IW	18.23		19.68
5N-4E	13	BADD	IW	16.31		16.93
5N-4E	15	DBBB	IW	17.47		18.74
5N-4E	22	DCCC	IW	47.16		50.60
5N-4E	23	BABB	IW	15.39		16.32
5N-4E	24	AACD	IW	18.77		19.37
5N-4E	25	DDAA	IW	46.54		49.89
5N-5E	7	CADD	IW	60.60		64.07
5N-5E	16	CBBA	IW	72.33		79.41
5N-5E	17	ABBB	IW	41.89		48.02
5N-5E	17	CDA A	OW	64.70	87.42	70.51
5N-5E	20	BCCD	IW	20.17		20.35
5N-5E	21	DDBB	IW	50.62		56.07
5N-5E	29	CBBB	IW	11.99		14.35
5N-5E	33	AADD	IW	17.53		19.60
5N-5E	35	ABBB	IW	102.12		104.70

OW - OBSERVATION WELLS

IW - IRRIGATION WELLS

**BLUE RIVER BASIN  
REGULATORY AREA WELLS**

Big Blue River

Registration Number	Location	Completion Date	Depth (FT)	Registration Pumping Capacity (GPM)
G-36485	4N-5E-11BC	03-28-72	82	750
G-38314	4N-5E-02DD	01-16-73	188	1,300
G-47820	4N-5E-12BB	11-01-75	117	1,200
G-50086	5N-5E-33AC	05-26-76	123	800
G-54047	4N-5E-24BB	03-01-76	84	800
G-54260	4N-5E-14AA	06-01-74	70	800
G-54261	4N-5E-14AB	05-02-70	70	800
G-56152	4N-5E-04BB	04-14-77	91	1,000
G-59128	5N-5E-29AA	04-25-77	60	400
G-59727	5N-5E-33CB	04-19-78	91	1,200
G-81769	4N-5E-13CD	04-22-94	65	250
G-100788	5N-5E-29AB	03-19-99	65	500
G-110669	4N-5E-13CC	06-29-2001	64	375
G-110847	4N-5E-03DA	07-02-2001	82	800
G-110849	5N-5E-29DD	07-02-2001	102	800

Little Blue River

Registration Number	Location	Completion Date	Depth (FT)	Registration Pumping Capacity (GPM)
G-58158	2N-2E-16AA	08-15-77	29	650
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	39	175
G-66381F	2N-2E-26AB	04-10-81	38	175

**SPECIAL REPORT OF THE ENGINEERING COMMITTEE  
TO THE  
KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION  
May 15, 2003**

**COMMITTEE ASSIGNMENT**

At the 2001 Big Blue River Compact Annual Meeting the Engineering Committee was given the assignment of reviewing the technical data in regard to the nature of the aquifer systems that exist and to examine well logs and other information to determine hydrologic connection issues.

**TECHNICAL DATA REVIEW**

Six reports or sets of data relating to the hydrologic connections between groundwater and streamflow were found for the Big and Little Blue Rivers during the Engineering Committee's review of technical data.

**Report of the Engineering Committee to the Kansas-Nebraska Big Blue River Compact Commission (1968)**

Key findings of the report include:

- Most of the groundwater is the direct result of precipitation on the land surface (page III-27)
- Groundwater contribution, from both bank storage and areal groundwater storage, to the Little Blue and Big Blue is particularly significant during times of low rainfall. The geology of the area has a great bearing on this relationship (page III-28)
- The availability of groundwater is directly related to the geology of the area. Continental glaciers, especially the Nebraskan and Kansan, advanced into Nebraska during the Pleistocene epoch. These ice sheets dammed the valleys of the eastward flowing streams causing a deposition of sand and gravel, which later were covered with windblown silt. The valley alluvium of recent age is composed chiefly of poorly sorted local materials, stratified or arranged in crossbedded deposits (page III-28)
- These valleys are very complex when viewed from a subsurface standpoint. These complexities certainly control the groundwater hydrology of the area. These basins have very restricted outlets in their eastern and southern parts in Nebraska, which is the fundamental and principle reason that the overdevelopment of groundwater in the western and central parts of the basin will result principally in depleting groundwater in storage, and will probably have a minor effect on the amount of streamflow crossing the State line (page III-28).

**Analysis of Stream-Aquifer System Interrelationships in the Big Blue and Little Blue River Basins in Gage and Jefferson Counties, Nebraska (USGS-Ellis, 1981)**

Key findings of the study are:

- Analyses of data from these seepage measurements and of available hydrogeologic data indicated that the most significant groundwater contributions to streamflow in the Big Blue and Little Blue River drainage basins in Gage and Jefferson counties, respectively, occur where a direct hydraulic connection existed between a stream and buried coarse-grained deposits of quaternary age. These deposits occur in two buried bedrock valleys that trend east northeasterly across the area (page 1).
- The largest groundwater contributions to streamflow in the Big Blue River occurred in the reaches of the river between the mouth of Mud Creek and the dam at Blue Springs (about 13 cubic feet per second) and between the mouth of Turkey Creek and the Beatrice gaging station (about 22 cubic feet per second). In the Little Blue River basin, the largest contributions to streamflow occurred between the mouths of Big Sandy and Little Sandy Creeks (about 6.5 cubic feet per second) and in the vicinity of Fairbury (about 16 cubic feet per second) (page 1).
- The report states that it is difficult to quantify seepage gains in some reaches of the rivers because of the amount of underflow at the measurement sites (page 44).
- This study also includes a table summarizing the unconfined-aquifer relationships, a portion of which is included in Table 1 (page 17).

Table 1. Summary of unconfined-aquifer system

Stratigraphic Unit	Relationship to other deposits	Relationship to streamflow	Remarks
Quaternary Exposed, coarse-grained deposits	Direct hydraulic interconnection with Dakota Sandstone and undifferentiated Permian formations along the valleys of the Big Blue and Little Blue Rivers, Quaternary fine-grained deposits along tributaries to the Big Blue and Little Blue Rivers, and Quaternary buried coarse-grained deposits where the river valleys intersect these deposits	Only deposits that have a direct relationship to streamflow. All groundwater move through these deposits.	Minor aquifer. Lowering of groundwater levels in these deposits could significantly affect streamflow; however, potential for large-scale development exists only in areas where these deposits directly overlie Quaternary buried, coarse-grained deposits.
Quaternary Fine-grained deposits	Direct hydraulic interconnection with all deposits, except the Quaternary exposed coarse-grained deposits along the Big Blue and Little Blue Rivers.	No direct relationship to streamflow, but is hydraulically interconnected with Quaternary exposed coarse-grained deposits along most tributaries to the Big Blue and Little Blue rivers	Generally not an aquifer, Greatest hydrogeologic significance is that recharge to most of the unconfined aquifer system moves through these deposits.
Quaternary Buried, coarse-grained deposits	Direct hydraulic interconnection with all of the bedrock formations, except Carlile Shale; Quaternary fine-grained deposits; and Quaternary exposed coarse-grained deposits.	No direct relationship to streamflow; however significant amounts of groundwater move from these deposits into the Quaternary exposed coarse-grained deposits thence into the streams.	Major aquifer. Lowering of groundwater levels in these deposits could significantly affect streamflow in the Big Blue and Little Blue Rivers, Rose Creek, and Big Indian Creek

**Missouri River Basin Hydrology Study Final Report (MBSA, 1983)**

In 1983 the Missouri Basin States Association developed streamflow depletion factor (SDF) curves for the Big Blue and Little Blue Rivers. SDF curves value represents the number of days it takes for 28% of a groundwater depletion to reach the river. If the aquifers average Transmissivity and Specific Yield are known, the SDF can be calculated with the following formula:

$$SDF = a^2 S_y / T$$

where:

- SDF =Streamflow depletion factor, t;
- a =Perpendicular distance from stream, L;
- S<sub>y</sub> =Unconfined aquifer specific yield, dimensionless; and
- T =Transmissivity, L<sup>2</sup>/t;

Because of the heterogeneous conditions that exist for the aquifers in the regulatory reach areas, the SDF values for each well in the regulatory reaches was found by interpolating between the SDF contours and are included in Table 2.

Table 2. SDF Values for Regulatory Area Wells.

<b>Big Blue Basin</b>		
Outside Regulatory Area	Registration Number	SDF Value
	G-036485	~ 75 days
	G-038314	~ 200 days
	G-047820	~ 100 days
	G-050086	~ 30 days
	G-054047	~ 50 days
	G-054260	~ 50 days
	G-054261	~ 100 days
	G-056152	> 500 days
	G-059128	~ 20 days
	G-059727	~ 200 days
	G-081769	< 5 days
	G-110669	~ 50 days
	G-100788	~ 30 days
	G-110847	~ 50 days
	G-110849	~ 50 days
Yes	G-034172	> 500 days
Yes	G-050085	> 500 days
Yes*	G-053566	~ 10 days
Yes	G-054048	~ 400 days
Yes*	G-060850	~ 20 days
Yes*	G-061085	~ 40 days
Yes*	G-061086	~ 200 days
Yes	G-064213	~500 days
Yes*	G-068243	~ 5 days
Yes	G-069638	~ 50 days
Yes	G-072465	~ 500 days
Yes	G-072756	> 500 days
Yes*	G-073992	~ 500 days
Yes	G-094572	> 500 days
<b>Little Blue Basin</b>		
Outside Regulatory Area	Registration Number	SDF Value
	G-058158	< 5 days
	G-066381A	~ 50 days
	G-055381B	~ 50 days
	G-066381C	~ 50 days
	G-066381D	~ 50 days
	G-066381E	~ 50 days
	G-088381F	~ 50 days
Yes	G-044015	> 500 days
Yes	G-069789	> 500 days
Yes	G-086458	> 500 days
Yes	G-086459	> 500 days
Yes	G-102220	> 500 days

\* - Wells located upstream of confluence of Turkey Creek and Big Blue River

**Stream/Aquifer Relationships Along the Big Blue River near Beatrice Nebraska (Tabidian, 1987)**

This study was conducted with the goal to describe and quantify stream/aquifer relationships and interactions as an aid to water management. Based on a hydrogeologic investigation of the area, the interrelations between the stream and aquifer were examined in detail. A finite-element computer model of the stream/aquifer system was created to better understanding of the impact of irrigation wells on the Big Blue River flow. The conclusions of the model study showed that the impact of a limited number of irrigation wells was mathematically detectable on the Big Blue River. The conclusions also state that the contribution of irrigation return flow to the streams was several times higher than the impact of the irrigation wells on the Big Blue River Flow (pages 185-186). One of the shortfalls of this model was that it did not specifically study the impact of junior alluvial wells.

**Compact Seepage Investigations (1988-2001)**

A series of fall seepage investigations were conducted from 1988 to 2001 for the BBRCA. As in the case of the USGS study, underflow at the measurement sites was not measured. Therefore it is difficult to draw any meaningful conclusions concerning groundwater – streamflow interactions.

**Well Log Review**

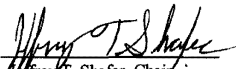
Table 3. Well Log Information from Junior Regulatory Area Wells

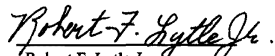
Outside Regulatory Area	Well Registration Number	Well Depth, feet	Screened Well Depth, feet	Depth to Water, Feet	Reported Capacity, gpm	Acres Irrigated	System Type
<b>Big Blue River</b>							
	G-036485	82	30-82	15	750	30	Gravity
	G-038314	190	88-127	20	1300	60	Gravity
	G-047820	117	52-117	45	1200	55	Gravity
	G-050086	127	58-123	25	800	90	Gravity
	G-054047	84	19-84	16	800	130	Pivot
	G-054260	70	31-70	26	800	80	Gravity
	G-054261	70	31-71	26	800	70	Gravity
	G-056152	91	52-91	18	1000	25	Gravity
	G-059128	60	34-60	22	400	50	Gravity
	G-059727	91	39-91	21	1200	80	Gravity
	G-081769	65	15-65	20	250		
	G-110669	64	19-64	8	675	45	Gravity
	G-100788	65	25-65	14	500	40	Gravity
	G-110847	82	??	19	800	140	Pivot
	G-110849	102	??	19	800	100	Pivot
Yes	G-034172	91	45-94	31	750	20	Gravity
Yes	G-050085	130	65-130	40	800	100	Pivot
Yes*	G-053566	68	20-68	68	600	30	Gravity
Yes	G-054048	121	56-121	82	600	15	Gravity
Yes*	G-060850	54	28-54	19	800	25	Gravity
Yes*	G-061085	88	62-88	18	800	40	Gravity
Yes*	G-061086	80	67-80	19	1000	30	Gravity
Yes	G-064213	99	60-99	55	800	50	Gravity
Yes*	G-068243	52	14-52	12	800	15	Gravity
Yes	G-069638	99	58-99	42	800	110	Pivot
Yes	G-072465	204	164-204	98	800	120	Pivot
Yes	G-072756	274	194-274	96	800	105	Pivot
Yes*	G-073992	92	60-92	22	700	90	Pivot
Yes	G-094572	123	71-123	70	700	10	Gravity


Little Blue River							
	G-058158	29	19-29	9	650	95	Gravity
	G-066381A	40	32.5-40	12	175	105	Pivot
	G-066381B	42	34.5-42	12	175		
	G-066381C	42	37-42	12	175		
	G-066381D	41	36-41	12	175		
	G-066381E	39	34-39	12	175		
	G-066381F	38	33-38	12	175		
Yes	G-044015	136	??	79	265	120	Pivot
Yes	G-069789	108	69-108	77	500	30	Gravity
Yes	G-086458	139	119-139	110	670	130	Pivot
Yes	G-086459	155	135-155	123	550		
Yes	G-102220	124	84-124	82	600	90	Pivot


\* - Wells located upstream of confluence of Turkey Creek and Big Blue River

Respectively Submitted,

  
 Jeffrey T. Shafer, Chair  
 Nebraska

  
 Robert F. Lytle Jr.  
 Kansas

  
 Keith A. Paulsen  
 Nebraska

  
 Iona Brannum  
 Kansas

**Joint Recommendation of the Engineering and Legal Committees  
 Boundaries of the Regulatory Reaches  
 and  
 Regulation of Irrigation Wells in Regulatory Areas  
 May 15, 2003**

The Engineering and Legal Committees met in Marysville, Kansas on April 9, 2003 to discuss committee assignments as directed by the Compact Administration at the Twenty-Eighth Annual Meeting. Prior to and following that meeting, the Legal Committee reviewed all available historic information concerning the geographic delineation of the "regulatory reaches", i.e. those areas within which irrigation wells installed after November 1, 1968 are subject to regulation under Article V, paragraph 5.2 (4) of the Compact. Based on that review, the Legal Committee determined that the best interpretation of the Compact is that the regulatory reaches are the areas delineated by the Compact-referenced Exhibits A and B of Supplement No. 1 to the Report of the Engineering Committee.

The Engineering Committee reviewed the available well logs and well construction information for the junior wells that fall outside of the areas delineated on Exhibits A and B. A summary of that information is included in the 2003 Engineering Committee Special Report. From that review, it appears that those wells downstream of the upper boundary of the delineated regulatory reaches produce little, if any water from the alluvium and valley side terrace deposits as described in the Compact.

Based on the finding of both committees, it is jointly recommended that the areas delineated by Exhibits A and B be established by the Administration as the areas within which irrigation wells are subject to regulation. The irrigation wells currently located within those areas are as listed in the 2003 Engineering Committee Report and are hereinafter referred to as the current "regulatory area wells."

The committees also recommend that when there is uncertainty about a new well's location relative to the delineated boundaries of the regulatory reach, the Engineering Committee should review the drilling log and well construction report for that well. From that information the committee should determine the source of the water supply and whether the well is hydraulically connected to the river. The Engineering Committee should then decide whether or not that well is considered within the regulatory reach; if it is, it will be added to the list of regulatory area wells.

Article V, paragraph 5.2 (4) of the Compact states that if it is determined, following Administration authorized investigations, that the regulation of the wells in a regulatory reach fails to yield any measurable increase in flows at a state-line gaging station, the regulation of such wells shall be discontinued.

The Engineering Committee has reviewed the results of previous investigations and other available information pertaining to the effects of groundwater pumping on state-line flows. Also reviewed were previous references in the Compact Administration records concerning the usefulness and accuracy of those investigations. No consensus was reached in the past by the Administration as to how to deal with the varying lag times between when wells are pumped and when that pumping

affects the stream.


The Engineering and Legal Committees have agreed that a useful tool for determining streamflow depletions is the streamflow depletion factor methodology described in the Missouri River Basin Hydrology Study Final Report and in the 2003 Engineering Committee Report. If that tool is to be used by the Compact Administration, a standard or measure needs to be established for determining if regulation of the regulatory area wells is merited. Until a more accurate or otherwise preferable methodology is proposed by the Engineering Committee, the following methodology for making the determination of streamflow effects and what to do in response to those effects is hereby proposed:

When the state-line flow on the Big Blue or Little Blue River falls below the minimum mean-daily flow value as prescribed in the Compact, Nebraska will determine, subject to review by the Engineering Committee, whether regulation of irrigation wells within the appropriate regulatory reach would yield a measurable increase in state-line flow, and if so, when that increase would occur.

To make those determinations, Nebraska shall calculate the streamflow depletion factor for each regulatory area well using the methodology described in the Engineering Committee Report. When determining the amount of streamflow depletion, the time in which the regulatory area well began pumping shall be established. Additionally, the amount of depletion for each well will be calculated regardless of whether the streamflow depletion factor threshold value of 28 percent identified in the Engineering Report is reached. Should it be determined that the calculated cumulative increase in streamflow that would be gained at the State line by the end of September of that year by regulating the regulatory area wells would equal 3 cfs or more, each well for which regulation would contribute to that increase should be regulated until the minimum state-line streamflow is occurring or until October 1 of that year, whichever date is earlier.

Finally, it is recommended by the Legal Committee and the Engineering Committee that serious consideration be given to the construction of additional storage reservoirs along tributaries to the Big and Little Blue Rivers. The release of additional stored surface water could be a more effective remedy for achieving the minimum mean daily flows than regulation of irrigation wells.

Respectfully submitted,

  
Leland Rolfs,  
Legal Committee Chair


  
Jeffrey T. Shafer,  
Engineering Committee  
Chair

Exhibit H

Kansas-Nebraska Big Blue River Compact  
Nebraska Report - Upper Big Blue NRD  
Rod DeBuhr, Water Department Manager  
May 15, 2003

#### Well Drilling Activities

One hundred and seventy-two permits were issued for irrigation wells (113 new & 59 replacement) in 2002. At the end of 2002 there were 11,356 active irrigation wells in the District.

#### Well Decommissioning

To date the District has provided cost-share for the proper decommissioning of eighty (80) wells during Fiscal Year 2003. A total of 909 wells have been decommissioned since the program began in 1992.

#### Ground Water Level Changes

The average groundwater level change for the District from Spring 2002 to Spring 2003 was a decline of 2.96 feet. This is the third consecutive year of declines totaling 6.98 feet. The attached map shows the area of greatest changes and the county averages. With this change, the average ground water level is 6.71 feet above the allocation trigger. The District is currently reviewing its ground water supply regulations.

#### Groundwater Nitrates

The district is divided into twelve management zones for ground water quality management. The primary ground water quality management concern is nitrate. In April 2003 a six township area in central York county (Zone 5) was designated a Phase II management area to address increased ground water nitrate levels. The median ground water nitrate level in Zone 5 is 9.5 ppm based on 2002 sampling. The trigger level for phase II management is 9 ppm. Phase II management requires farm operators to attend a training session on best management practices related to fertilizer and irrigation management. It also requires deep (36") soil sampling, irrigation scheduling and annual BMP reports. The rest of the district remains in phase I management for groundwater nitrates. Under phase I management the application of anhydrous ammonia may not occur until November 1, while application of dry and liquid nitrogen fertilizers must wait until March 1. In 2002 the District has adopted a change to the groundwater management area action plan for a special management phase for the wellhead protection areas of public water



systems. As yet, no community has requested such a designation.

The district completed the first year of a new program titled the "Rural Ground Water Quality Awareness Program". Each rural domestic well in a designated area of the NRD will be sampled for nitrate. The rural residents will be provided with information about living with nitrates and BMPs that can help to reduce nitrate contamination. Zone 2 management area in central Hamilton county has been selected for 2002-2004 because it has the fastest rate of increase in nitrates in the District.

#### Soil and Water Conservation Activities

The District provided cost-share for 144 soil and water conservation projects in fiscal year 2002. The total cost for these projects was \$317,4972, of which \$186,041 were district funds and \$131,455 were state funds provided through the Nebraska Soil and Water Conservation Program. The projects included; Irrigation surge valves (7), Irrigation water return lines (2), Pitless irrigation reuse systems (1), Renozzling of pivots for low or medium pressure (21), Underground Water Supply Lines to pivots (44), Grade stabilization structures (1), Grassed waterways (2), Sediment control basins (2), Terrace systems (33), Water impoundment dams(6), Windbreak plantings (13), Windbreak renovations(1), Drip Irrigation systems (2), Pasture plantings (4), Planned gazing systems (5).

#### Wellhead Protection Area (WHPA) Assistance Program

The WHPA Assistance Program started approximately two and one-half years ago. The goal of the program is to encourage and assist communities in the District to develop WHPA management plans to protect public water systems from contamination and to have a contingency plan in place should contamination occur. One full time NRD staff member is assigned to this program. There are approximately 40 communities in the NRD. In 2002 the Village of Benedict was the first community in the District to complete their plan. The NRD is currently working with 16 other communities on plan preparation. This program is partially funded by a Clean Water Act 319 grant.

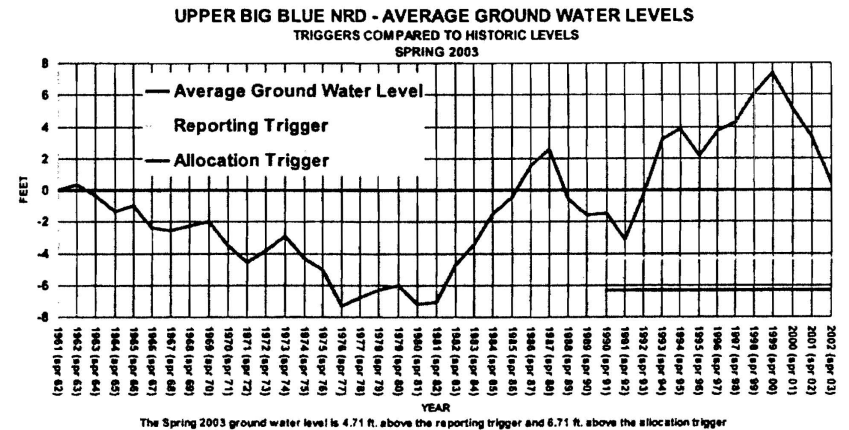
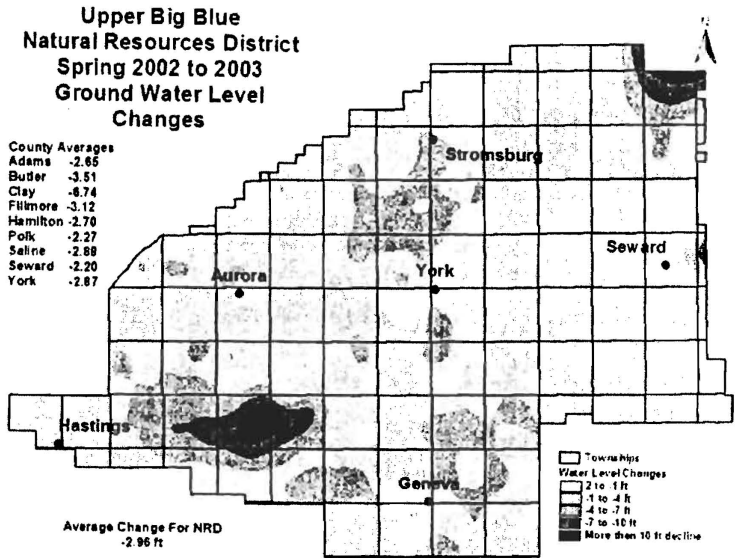
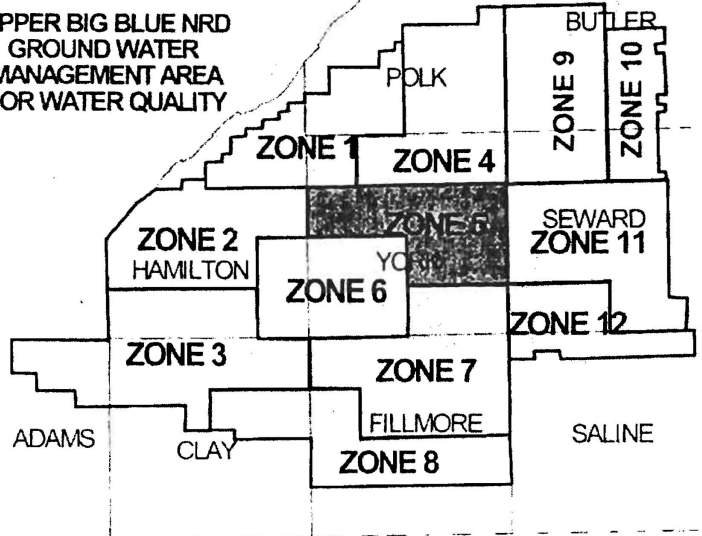


Exhibit I Lower Big Blue NRD Highlights of 2002-2003

UPPER BIG BLUE NRD  
GROUND WATER  
MANAGEMENT AREA  
FOR WATER QUALITY



**Water Quality & Quantity**

- Decommissioned 59 wells last year.
  - Average cost \$447/well – Average cost-share \$251/well
  - 383 wells have been decommissioned since 1992
  - Water quality sampling – 450 wells – nitrate/nitrogen 6.55 ppm average
  - Groundwater levels – 59 wells measured
    - > Spring 2002 to Spring 2003 showed a decrease of 1.81 ft.
    - > Fall of 2002 to Spring 2003 showed an increase of 2.44 ft.
- Blue River Compact Well Readings
  - > Fall 2001 to Fall 2002 averaged 2.29 ft. lower.
  - > Spring 2002 to Spring 2003 averaged 1.50 ft. lower.
  - > Spring 2002 to Irrigation 2002 averaged 7.81 ft. lower.
  - > Irrigation 2002 to Fall 2002 increased 5.29 ft.
  - > Fall 2002 to Spring 2003 increased 1.20 ft.

**Land Treatment** – 70% of NRD Treated

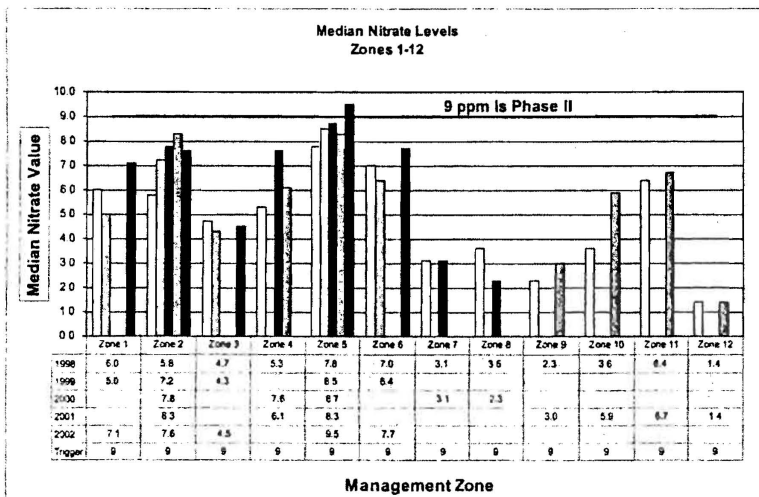
- NSWCP – NRD funds: \$125,000, State: \$111,628 NRD = \$236,628 total funds
  - 245 applications requesting \$786,206
  - Approved 108 applications for \$236,628
  - Since 1978 installed:
    - 1,368 miles of terraces
    - 87 miles of tile outlets
    - 2,615 acres grassed waterways
- Buffer Strips 189 contracts - 1282 acres
- Small Dam Cost-Share Program
  - Initiated in 1997
  - Constructed 8 dams
  - 3 have been let for construction this summer, all in Lower Turkey Creek

**Surface Water Release – July 2002**

- Commencing July 22<sup>nd</sup>, over a four-day period to meet Blue River Basin Compact flows at the Kansas-Nebraska state line, the NRD released 394 acre feet of water from four dams above Barneston. The release prevented the state from issuing cease irrigation notices to 475 permit holders in the Big Blue River Basin. The action allowed irrigators an extra two weeks before a shut-off notice was issued on August 5<sup>th</sup> for one week. This NRD release was estimated to have an economic value of \$1 million, or \$2,538/acre foot

**Flood Control**

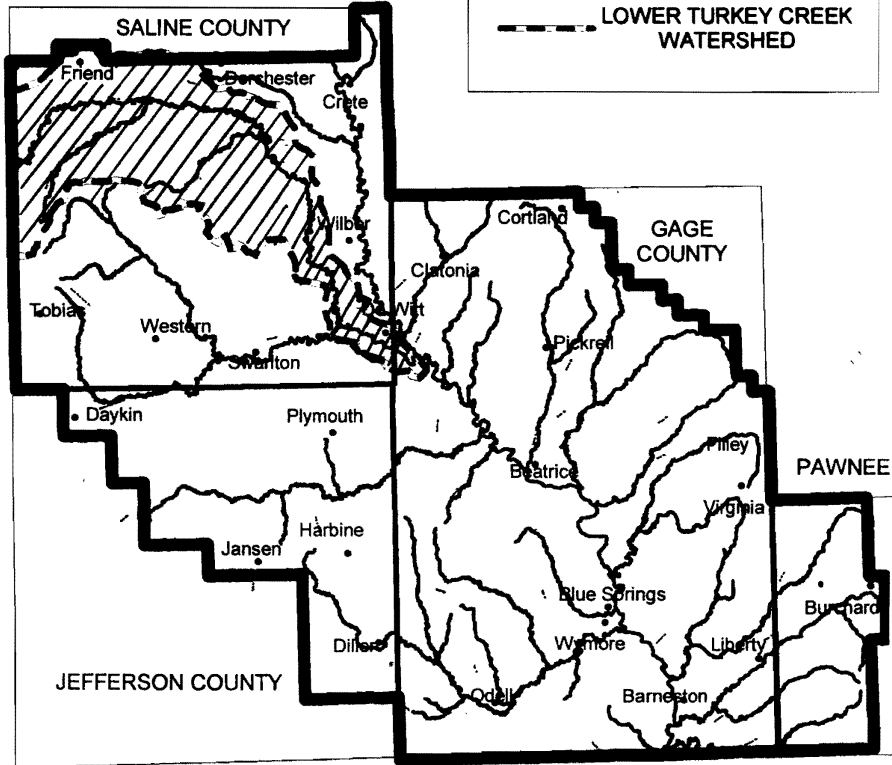
- Project Map of Lower Turkey Creek



# LOWER BIG BLUE NRD LOWER TURKEY CREEK WATERSHED

## LEGEND

--- LOWER TURKEY CREEK WATERSHED



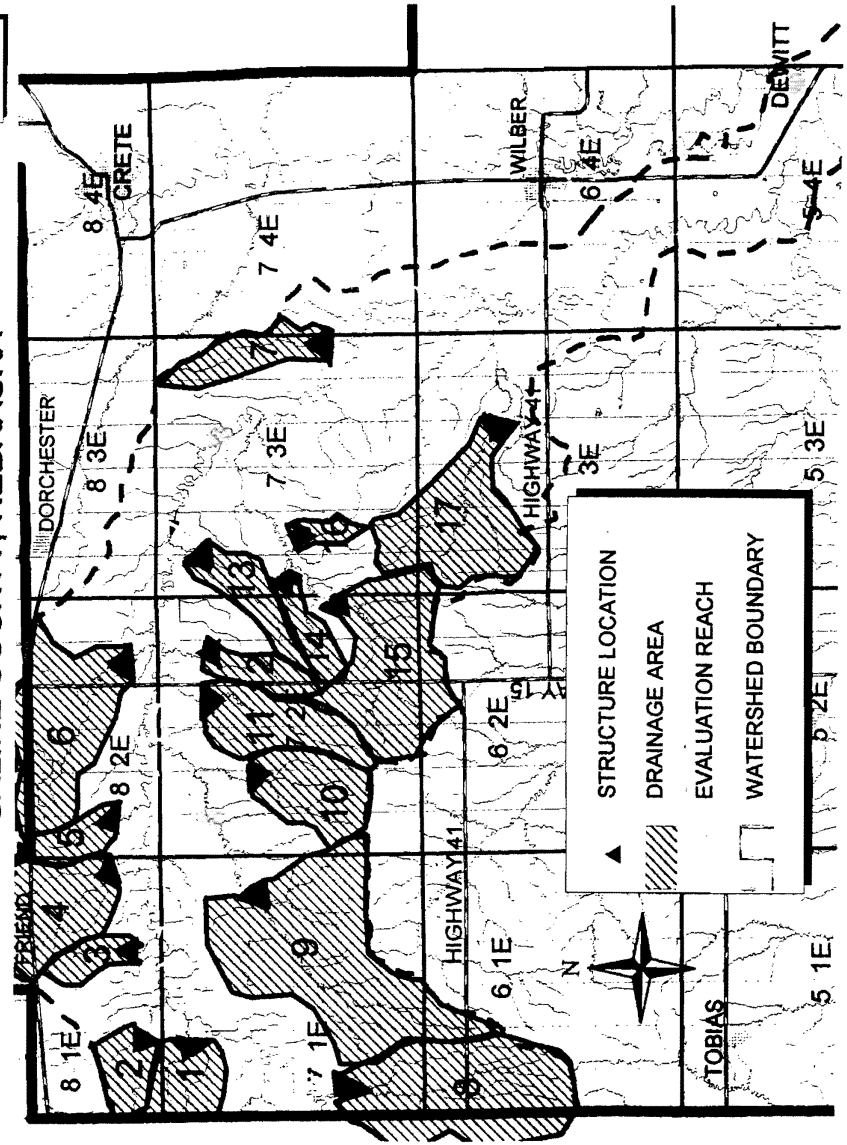
5 0 5 10 Miles



30

LBBNRD

# PROJECT MAP LOWER TURKEY CREEK SALINE COUNTY, NEBRASKA



▲ STRUCTURE LOCATION  
 ▨ DRAINAGE AREA  
 --- EVALUATION REACH  
 [ ] WATERSHED BOUNDARY



31

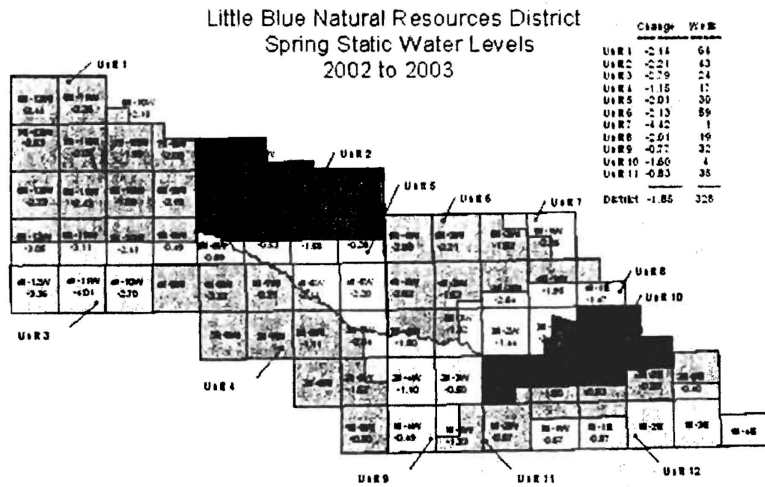
# REPORT TO THE LITTLE BLUE RIVER COMPACT

MAY 15, 2003

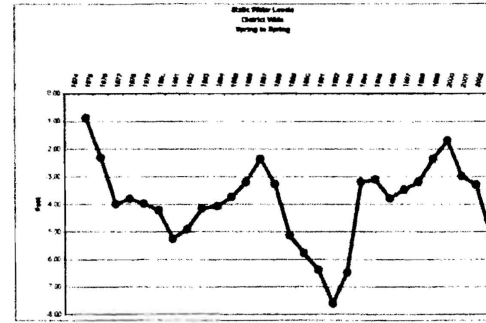
## Spring 2003 Groundwater Levels

The Little Blue NRD measured 328 irrigation wells during the spring 2003 static water level collection. Average levels were generally down from spring 2002, with the average decline of 1.85 feet. The greatest declines existed in western Adams and Webster Counties with the largest single township decline of 4.01'. These areas were the most severely impacted by the 2002 drought, where the rainfall of 17.88" was approximately 10 inches below normal of 28.06". Only one township showed a very slight rise, all other townships were down.

The District has established groundwater management zones with similar geologic conditions for management purposes, and has tracked groundwater levels by zone since 1996. The map below shows the most recent annual water level changes since spring 2002.



Zone 11 in the southern portion of the district is an area which the district is examining closely because of the presence of a more delicate aquifer. Extensive level measurements in 2 mile radius of target wells have shown anything from a 21' decline since registration to a 34' rise. The rise is attributed to a watershed dam that lies within 1/4 mile of the well, pointing out the value of groundwater recharge in the area.



**Groundwater Con't**  
Throughout the district, the levels are approximately 4 feet below the 1974 levels. It should be noted that the average saturated thickness of water bearing material throughout the LBNRD is about 100 feet. New irrigation wells drilled in the district in 2002 were 108.

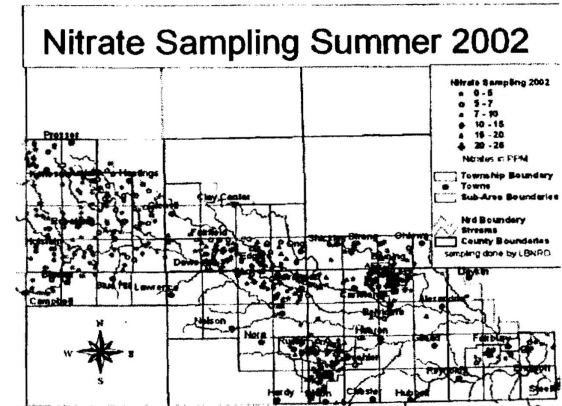
This chart reflects the long term trends in static water levels in the Little Blue NRD. Note that in 1974 only 84 wells were monitored across the district.

## Wellhead Protection Activities

The Little Blue NRD has been very active working with 20 communities on wellhead protection activities. Our focus is primarily on providing guidance, conducting contaminant source inventories, mapping and planning for the future. Some communities have included implementation of BMPs, and the NRD has assisted by establishing regulatory areas in some rural agricultural lands to provide a layer of protection outside the community's jurisdiction.

## Water Quality Work

The district has had a very active water well sampling program over the past 10 years. During 2002, 410 wells were sampled for nitrates with the major focus on the western third of the district and management sub-districts where past problems have been noted. The map at right shows the distribution of sample sites, those areas where nitrates have been a particular problem, and the boundaries of special management areas established by the district.



In accordance with the district's groundwater management plan, the district's emphasis is placed on educational activities and monitoring. However, aggressive management activities are implemented when groundwater contaminant levels reach 70% of their MCL. Higher level management activities include: operator training, reporting of ag-land practices, and implementation of best management practices. Four areas of the district, comprising 100,800 acres, are now in some level of advanced management.

### Watershed Protection Project

The Little Sandy Watershed Project in Jefferson, Thayer, Fillmore and Saline Counties is underway. The NRD received funding for the 5 watershed dam project last May and is currently obtaining lands and easements for the first two sites, and finalizing engineering plans. Bids are expected to be let in June or July with construction to begin in August. Although the main purpose of the watershed project is flood control, the first sites also include one project for groundwater recharge and one for public recreation.

### Soil and Water Conservation Accomplishments for 2002

Practice	Units	Quantity
Terraces	Feet	114,604
Waterways	Feet	13,542
Underground Tile Outlets	Feet	36,225
Water Sediment Structures	Each	8
Grade Stabilization Structures	Each	3
Water Impoundment Dams	Each	2
Diversions	Each	8
Livestock Dugouts	Each	5
Planned Grazing Systems	Each	26
Critical Area & Range Seeding	Acres	323
Tree Plantings	Each	75
Irrigation Management Plans	Each	6
Water Flow Meters	Each	23
Drop Nozzle Packages	Each	16
Chemical & Fertilizer Applicator Regulators	Each	12
Water Wells Decommissioned	Each	162
Buffer Strips	Ac/Mile	326 / 44.6

### Rural Water Project Doing Fine

The Little Blue Public Water Project which serves southern Jefferson and Northern Washington Counties has been very successful to date. The project began service in 1998 with 131 customers and has grown to 145 active services, with 67 of those in Kansas. Monthly water sales 1,250,000 gallons per month.

### KANSAS-NEBRASKA BIG BLUE RIVER COMPACT U.S. Geological Survey—Water Year 2002

The U.S. Geological Survey continues to operate two streamflow gaging stations for the Compact Administration—Big Blue River at Barneston, NE (06882000), and Little Blue River at Hollenberg, KS (06884025). Each station automatically records streamflow stage every 30 minutes using an electronic data logger (EDL). These instantaneous values are transmitted via GOES satellite, to USGS offices where they are used to compute preliminary values of instantaneous and daily discharge. Periodic visits are made to the stations to maintain and calibrate the equipment, make discharge measurements, and download the data directly from the EDL as a backup to the satellite data. The discharge measurements are used to develop and adjust the stage-discharge relations (rating curves) that are needed to convert stage values to corresponding values of discharge.

Current (real-time) and historic data on surface-water, ground-water, and water-quality for the Nation can be accessed online from the National Water Information System Web (NWISWeb) site. Daily, monthly, and annual streamflow statistics are also available from NWISWeb. Real-time data—up to 31 days of unit values or 18 months of daily values—for Nebraska and nearby sites (including both Compact state line streamflow sites) can also be accessed directly from the recently updated Nebraska District Web site.

<http://waterdata.usgs.gov/nwis/>  
<http://ne.water.usgs.gov/>

NWISWeb site  
Nebraska Web site

Before the data are finalized, updates and revisions are made as needed, based on a series of quality checks and reviews. Finalized values of daily discharge and summary statistics are published in the Survey's annual water-resources data report for Nebraska. Streamflow data for water year 2002 were recently published for both the Big and Little Blue River stations. Beginning this year, and continuing into the future, the data report was primarily released as an online report. It, and those from other states, can be accessed at the Web site show below.

<http://water.usgs.gov/pubs/wdr/>

USGS Water Data Reports

For the Big Blue River at Barneston, the annual mean discharge of 407 ft<sup>3</sup>/s for WY 2002, was smaller than the 1,154 ft<sup>3</sup>/s for WY 2001 and the 872 ft<sup>3</sup>/s for the period of record, 1933–2001 WYs. The maximum and minimum daily discharges during WY 2002 were 7,020 ft<sup>3</sup>/s on May 28 and 49 ft<sup>3</sup>/s on August 5. A plot of the daily discharges for WY 2002 compared to the historic minimum, median, and maximum values for each day of the year is attached. No new record daily lows or highs were set during the WY. There were several runoff events during May through September.

For the Little Blue River at Hollenberg, the annual mean discharge of 216 ft<sup>3</sup>/s for WY 2002, was smaller than the 581 ft<sup>3</sup>/s for WY 2001 and the 537 ft<sup>3</sup>/s for the period of record, 1975–2001 WYs. The maximum and minimum daily discharges during WY 2002 were 5,790 ft<sup>3</sup>/s on May 28 and 40 ft<sup>3</sup>/s on August 8. A plot of the daily discharges for WY 2002 compared to the historic minimum, median, and maximum values for each day of the year is attached. Several record daily lows were set during the months of December, March, and July–September. There were numerous runoff events during May through September, and several record daily highs were set in May.

The daily discharge records for the Big and Little Blue River streamflow gaging stations for WY 2002, and the hydrographs of the two ground-water observation wells in Gage and Jefferson Counties, Nebraska, were provided to Jeff Shafer of the Nebraska Department of Natural Resources.

The estimate of the Compact Administration's share of the cost to operate the two streamflow gaging stations for the period July 1, 2003 to June 30, 2004 were sent to Jeff Shafer of the Nebraska Department of Natural Resources.

Phil Soenksen  
Nebraska District  
May 11, 2003

# NWISWeb: New Site for the Nation's Water Data

**USGS**  
science for a changing world  
Water Resources

skip navigation

Data Category: Home Geographic Area: Home

### NWISWeb Data for the Nation

**Data Category**

- Real-time** Current-conditions data transmitted from selected surface-water, ground-water, and water-quality sites.
- Site information** Descriptive site information for all sites with links to all available water data for individual sites.
- Surface water** Water flow and levels in streams, lakes, and springs.
- Ground water** Water levels in wells.
- Water quality** Chemical and physical data for streams, lakes, springs, and wells.

**Introduction**

These pages provide access to water-resources data collected at approximately 1.5 million sites in all 50 States, the District of Columbia, and Puerto Rico. Online access to this data is organized around categories listed to the left.

The USGS investigates the occurrence, quantity, quality, distribution, and movement of surface and underground waters and disseminates the data to the public, State and local governments, public and private utilities, and other Federal agencies involved with managing our water resources.

About Us Help

## Introduction

The online National Water Information System (NWISWeb) provides the public with access to more than 100 years of water data collected by the U. S. Geological Survey (USGS). The new Web site (<http://waterdata.usgs.gov/nwis/>) allows users to access several hundred million pieces of historical and real-time data—all from home or office computers.

*"We keep up with the stage and flow on a daily basis."*

## Data integration

USGS has been providing real-time and historic streamflow data on the Web since 1994. However, the information was available for each State only through separate Web sites. The NWISWeb system improves that service by aggregating all the data into one national database accessible through one Web site. NWISWeb integrates stream-flow information with many other types of water data, including historic water-quality data from rivers and aquifers, historic ground-

water-level data, and real-time water quality, precipitation, and ground-water levels. (A description of the development and contents of NWIS can be found at <http://water.usgs.gov/pubs/FS/FS-027-98/>)

*"I appreciate the timely data you provide."*

## Mission

NWISWeb is an integral part of the USGS mission to disseminate important water-quality and quantity data to the public. These data can help interested parties, such as water managers, engineers, scientists, emergency managers, recreational water users, utilities, and others, to:

- Evaluate current water supplies and plan for future supplies.
- Forecast floods and droughts.
- Operate reservoirs for hydropower, flood control, or water supplies.
- Evaluate and control water quality.
- Navigate rivers and streams.
- Safely and enjoyably fish, canoe, kayak, or raft.
- Study how the Nation's water resources are changing over time.

*"... very helpful in planning fishing excursions."*

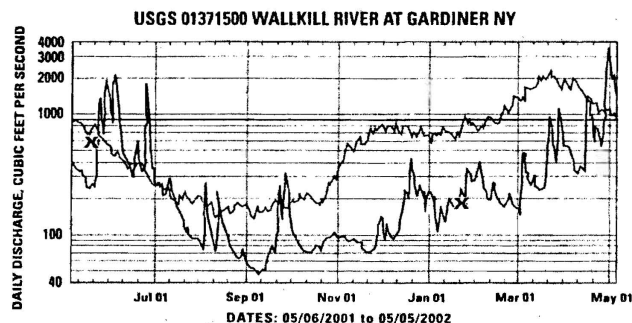


Figure 1. Comparison of current flow with median flow (data over time).

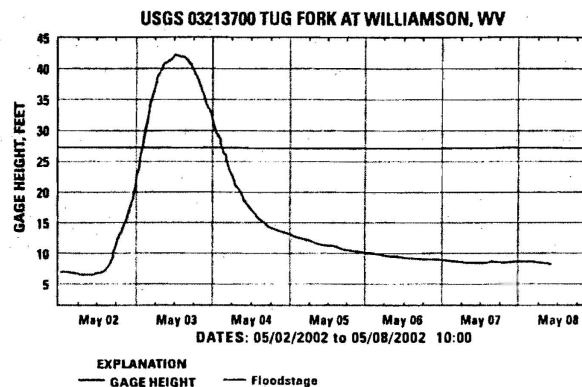


Figure 2. Monitoring river levels during a flood.

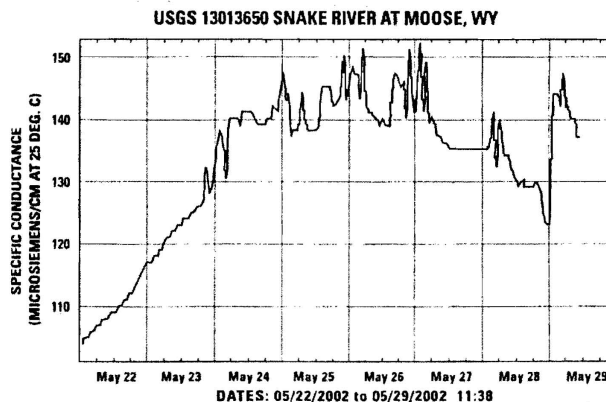


Figure 3. Monitoring chemical characteristics.

## Data Network

NWISWeb data come from a nationwide network of more than 1.5 million USGS water-data collection sites, currently including:

- 315,000 water-quality sites where samples are taken from rivers or aquifers.
- 22,600 past and present streamflow sites.
- 8,830 real-time sites, including streams, lakes, reservoirs, ground-water, and meteorological sites.
- 1.40 million wells.

From this source network comes an array of water-data samples, as well as data values:

- 62.7 million chemical analyses that are based on 4.0 million water-quality samples.
- 181 million daily streamflow values.
- 635,000 flood-peak discharges.
- 7.1 million ground-water-level measurements.

*"... imagine my amazement to find ground-water depth information and water-quality data online."*

## Monitoring

At selected surface-water and ground-water sites, the USGS maintains instruments that continuously record physical and chemical characteristics of the water for such information as water level, flow, pH, specific conductance, temperature, dissolved oxygen, and percent dissolved-oxygen saturation. A list of the many parameters can be found at [http://waterdata.usgs.gov/nwis/current?submitted\\_form=introduction](http://waterdata.usgs.gov/nwis/current?submitted_form=introduction).

The data is normally transmitted by modem or satellite once every 4 hours and is processed automatically at USGS offices and made available within minutes. NWISWeb improves efficiency in USGS research and data retrieval operations. Most users can obtain the information they need directly from NWISWeb. The system also allows USGS scientists to better quality-assure data as it is received from the monitoring sites.

*"Your website will REALLY be helpful the next time we have to monitor a flooding situation in our (radio stations's) coverage area."*

## Functionality

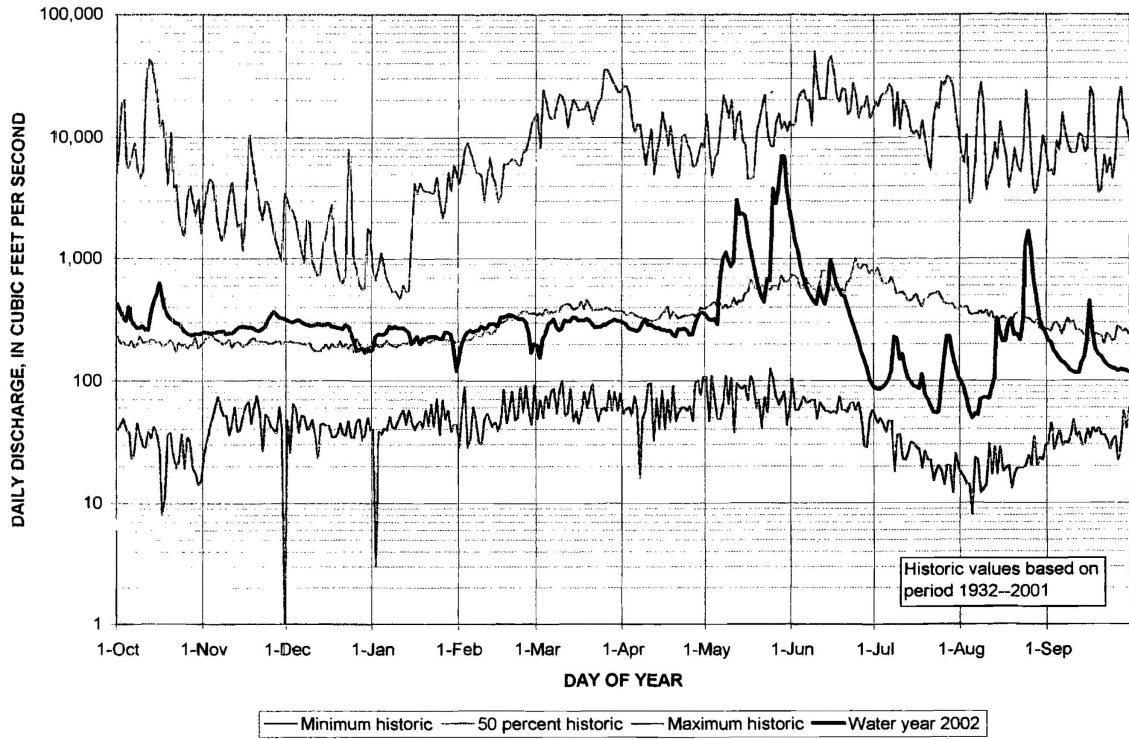
A single interface allows access to data from the entire Nation and enables users to easily compare data spatially over time to track changes. Navigation features allow users to start their search by specifying the data type of interest and to search the entire Nation or a specific State. Users select exactly how they want to see the data they request—as graphs, tables, or files they can download. They can also create their own Web site bookmarks to make requests for tailored outputs that they expect to use repeatedly. The bookmarking feature gives users the output they want when they reconnect to the Web site in a few hours, weeks, or months. Those users who expect to make large or frequent requests are urged to e-mail [gs-w\\_support@usgs.gov](mailto:gs-w_support@usgs.gov) to work with USGS staff to identify the best way to get data they need.

## For more information, please contact:

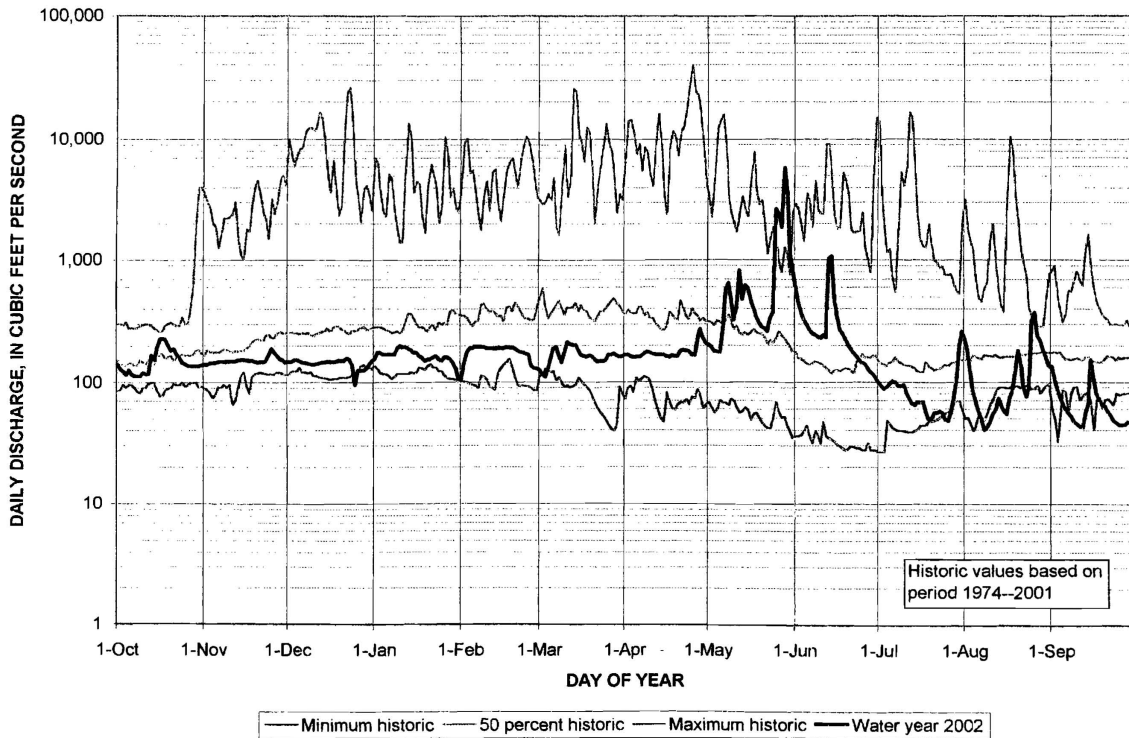
Chief, NWIS  
 U.S. Geological Survey  
 437 National Center, Reston, VA 20192  
 email: [h2oteam@usgs.gov](mailto:h2oteam@usgs.gov)



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KANSAS - NEBRASKA BIG BLUE RIVER  
COMPACT ADMINISTRATION  
REPORT

**Water Quality Committee  
May 8, 2003**

**Background:** In 1995, the Water Quality Committee and affiliated partner agencies and associations began pursuing four (4) primary objectives designed to enhance water quality in the Big Blue River Basin of Kansas and Nebraska. These objectives were to:

- 1) design and implement a basin wide water quality monitoring program;
- 2) develop and conduct a baseline survey of farm practices utilized in the basin with emphasis on pesticide and nutrient use;
- 3) develop water quality Best Management Practices (BMPs) and economics support information suitable to the basin; and,
- 4) initiate and conduct water quality stewardship education and outreach programs in the basin.

Most Water Quality Committee projects are planned and conducted through the use of work groups made up of appropriate governmental agency, land grant university and private sector partners. The full committee and affiliated partners meet annually for a review of the status of existing projects and to establish goals for the upcoming year. Over the years we have developed an excellent working relationship. In recent years we have held an annual meeting during the month proceeding the annual meeting of the Kansas - Nebraska Big Blue River Compact Administration. Project workgroups meet as the need arises.

To update you on water quality activities in the basin, I thought I would report to you some of the information and items that were discussed at the recent annual meeting of the committee, adding a few tidbits information where relevant.

**Annual Meeting:** The 2002 annual meeting of the Kansas - Nebraska Big Blue River Compact Administration's Water Quality Committee was held on May 2 from 9:30 a.m. to 2:30 p.m. at the offices of the Lower Big Blue Natural Resources District, 805 Dorsey Street, Beatrice, NE. Committee members present at this years meeting included Annette Kovar (NDEQ), Tom Stiles (KDHE), and Dale Lambley (KDA). Other participants included Don Vogel (Nebraska Corn Growers Association), Steve Walker (NDEQ), Verlon Barnes (USDA - NRCS/NDEQ Liaison), Craig Romary (NDA), Kent McVay (KSU - Agronomy), Jeff Neel (KSU Agronomy), Dan Devlin (KSU Agronomy), Phil Barnes (KSU Biological and Agricultural Engineering), Tom Franti (UNL Cooperative Extension Service), Jessica Baetz (Kansas Corn Growers Association/Kansas Grain Sorghum Producers Associations) and Charles Wortmann (UNL Agronomy-Horticulture Department). Ron Fleecs (Lower Big Blue NRD) was also able to join for a portion of the meeting. The new director of the Kansas Water Office (Joe Harkens) is reviewing personnel assignments and will soon be selecting a new KWO representative for the Water Quality Committee.

**Water Quality Monitoring:** The basin water quality monitoring system became operational in mid-April of 1997 and has continued to present. During 2002, a new site was added on Big Indian Creek near Odell, NE bringing the total to 29 locations being sampled within the basin. The 2002 year offered some challenges, most of which related to drought conditions and road construction. For ease

of access, many of the automatic samplers were originally placed at bridges. Several of the bridges on both sides of the state line are now being renovated or replaced. In a few cases, the automatic samplers had to be removed and the sampling crew resorted to taking grab samples

Because of the drought, there were few runoff events and little inflow of atrazine or other contaminants. The primary runoff event series occurred during a brief period in June. On the average, most atrazine contaminated inflow takes place during the spring period when atrazine has just been applied to fields and the most intense spring rainfall events take place. This typically occurs during April and May. Atrazine runoff spikes are also seen in June and we have generally felt that June spikes were related to grain sorghum planting time applications. However, Phil Barnes/KSU has reviewed the monitoring data and has come to suspect that factors in addition to grain sorghum production may be involved in the occurrence of June spikes. This is a possibility that the Water Quality Committee will need to examine more closely.

The 2002 year also was unusual from a flow standpoint. Because scattered rain storms took place in the upper reaches of the basin and irrigation demand downstream was high, upstream flows in certain top-of-basin tributaries were sometimes of greater volume than river flow lower in the basin.

**Tuttle Creek Lake Interstate Watershed Initiative:** In late August, 2002, we received an announcement from EPA of the availability of special Watershed Initiative Grant funds. Special points were to be awarded to grant proposals which were interstate in nature. A meeting among Nebraska stakeholders was held on September 9, 2002 to discuss possible projects such as a joint Big Blue River Basin project. This was followed by a September 11<sup>th</sup> meeting in Beatrice among Kansas and Nebraska committee members and stakeholders to discuss geographic areas within the basin to be targeted, the scope of the project, and goals and objectives. The outcome was development of a grant proposal which would build upon successful approaches demonstrated in the two states. The proposal was entitled the "Tuttle Creek Lake Interstate Watershed Initiative". Some of the key features of the proposal were to;

- A) Demonstrate an effective approach for protecting and restoring the water quality of a large interstate watershed by systematically targeting and implementing best management practices in smaller pilot sub-watersheds (Swan Creek Lake Watershed in Nebraska and Horseshoe Creek Watershed in Kansas) using an innovative community-based approach to watershed planning.
- B) Protect wellhead protection areas in alluvial aquifers of the basin.
- C) Develop wellhead protection plans and watershed management plans using the community-based approach, then assist NRCS, NRDs in Nebraska and Conservation Districts in Kansas in implementing these plans by providing incentive payments to landowners through a "priceline.com" method. This is an approach which has met with some success in Nebraska in helping to insure adoption of BMPs in identified critical areas of NPS pollution.

The project also proposed expansion of buffer strip incentive payments basin-side, use of DNA fingerprinting to determine sources of microbial contaminants, and additional support for continuation of the basin water quality monitoring program.

The information we received indicated that the proposal was the top ranked proposal coming out of EPA Region VII and we had high hopes for funding. Unfortunately, EPA Headquarters released the national listing of the 20 projects receiving funding on May 5, and the Tuttle Creek Project was not included.



Regardless of the outcome, we need to recognize Steve Walker (NDEQ) for his efforts in our behalf. Steve "volunteered" to develop the actual grant application document and did a great job.

Heartland Regional Water Quality Coordination Initiative. An initiative that will take place is the Heartland Regional Water Quality Initiative which has been funded by a USDA-CSREES grant. This is a joint project between UNL, KSU, ISU and the University of Missouri. The goal is to promote coordination of water quality education, research and extension programs of the four land grant universities in the region. Specifically, the initiative targets animal waste management, nutrient and pesticide management, and community involvement in two watersheds. Charles Barden/KSU and Charles Wortman/UNL are leaders of the Nutrient/Pesticide Management Team. Dan Devlin/KSU and Dale Lambley/KDA are team members. The Nutrient/Pesticide Management Team will be holding it's first meeting next month.

Education, Research and Incentive Programs: There continues to be a broad range of educational, research and water quality stewardship activities underway in the basin. Activities range across the spectrum of conservation practices and are becoming almost too varied to cover in a report such as this. Some key efforts I would like to mention are as follows:

1) KSU and UNL continue to coordinate their research and extension education activities. An example is their establishment and coordination of the Integrated Agricultural Management Systems (IAMS) sites which are designed to test the effect of differing agricultural practices. Both are also researching and sharing information on nutrient and manure management, no-till techniques, stream side buffers, and similar areas of farm production and management.

2) KSU, UNL and the Corn Growers Associations are key players in the stream side buffer initiatives and demonstration sites in the two states. We should include NDA, the Kansas State Conservation Commission and NRCS in the listing also, since they are primary sources of funding for buffer incentives for landowners. KSU and UNL are also cooperating in buffer demonstrations and training.

To this point much of the Kansas focus has been on planting of riparian buffers and stream bank restoration. The stream bank restoration project currently being put into place in the lower reaches of the Little Blue River has grown to be one of the largest in the nation.

Nebraska has also focused on incentives for stream side buffers, and has sought innovative ways to increase the value of those buffers to landowners through production of woody specialty crops. The Haskell Demonstration Site near Concord, NE has been developed to show various types of buffers and uses for buffers, demonstrate various buffer designs, and showcase specialty crop alternatives. UNL and the NE Corn Growers also received a grant to look into the flow of water into and through buffers and buffer engineering design. This is referred to as the Clear Creek Project and should provide much information on both buffer design and maintenance needs. UNL has published a "Guide to Buffers in the Blue River Basin" which is an excellent document

KSU has focused a great deal of attention on cooperative work with dairy producers in manure management the Black Vermillion watershed just above Tuttle Creek Reservoir. Nearly 2/3rds of the dairies and 2/3rds of the cows now are covered by proper manure management systems. That effort is now being expanded to include another 200+ smaller livestock operations in the watershed. Both UNL and KSU are involved with NRCS in training of CNMP nutrient management specialists and manure use/fertility planning.

KSU Extension Assistant Jeff Nee has begun a modeling effort designed to implement implementation of water quality in the Little Blue Watershed. The water quality monitoring data we are taking will be using a variation of the SV model and maps indicating differential loading potential by subbasin will be produced.

Verlon Barnes (NRCS/NDEQ) is currently modeling the Nebraska portion of the Little Blue River Watershed to identify area hazard potentials for atrazine runoff. Work was based on crop land acreage considered to have a high or intermediate potential for atrazine runoff in solution and use goes on beyond previous NRCS screening tools to consider the impact of water table depth, irrigation, residue management and pesticide application areas, rates and methods.

Both KSU and UNL continue to evaluate herbicides which might serve as alternatives to atrazine for certain uses.

Farm Practices Survey: A farm practices survey was conducted seven years ago for the purpose of developing a baseline on pesticide and nutrient use practices in the basin. The committee would like to revisit that issue. Craig Romar (NDA) and Dale Lambley/KDA will be contacting EPA Region VII to see if financial assistance is available to support another survey.

TMDLs: Nebraska is not under court ordered deadline, so NDEQ is planning to develop 10 to 15 TMDLs per year. Work on TMDLs for the Big and Little Blue River Watersheds will likely start during 2004. A TMDL for Swan Creek Lake will likely be completed in about 2 years. Kansas is under court ordered deadline for TMDL development, but will complete work this year and ahead of deadline with the submission to EPA of TMDLs for water bodies in NW Kansas. In 2004, Kansas will begin reexamining established TMDLs and making any necessary revisions. This second round process will start with reviews of TMDLs established for the Kansas -Lower Republican Basin.

Specific Herbicide Use Issues and atrazine use, have arisen since the issuance by EPA of the long awaited Atrazine Interim Reregistration Eligibility Decision (IRED). EPA has a program whereby older pesticides are reviewed to ensure that they meet modern health and environmental safety standards. Atrazine has been in the review process for several years. Last fall, KDA and a number of other state pesticide lead agencies started receiving increased contacts from EPA Headquarters seeking recommendations and advice on atrazine risk reduction measures. This continued until early February, 2003 when the IRED or interim decision document was released.

There are three aspects of the Atrazine IRED which I would bring to your attention. Firstly, the EPA Office of Pesticide Programs (OPP) is proposing to adopt a watershed approach to atrazine risk mitigation. Secondly, atrazine product labels are to be "harmonized", particularly as they relate to water quality protection requirements. Finally, certain surface waters serving as public water supplies are to undergo intensified monitoring for the next 5 year period. It would appear that Kansas has 29 public water supplies serving the cities of Topeka and Kansas City. Syngenta has asked KDA to host a meeting of Kansas governmental agency and agricultural stakeholders and will provide more detail concerning the IRED and monitoring and farmer education requirements. The meeting will be held in Topeka on

participated in the Water Quality Committee's last meeting. Jeff Nee's initial effort will be focused on the Lower Little Big River Watershed to identify area hazard potentials for atrazine runoff. Work was based on crop land acreage considered to have a high or intermediate potential for atrazine runoff in solution and use goes on beyond previous NRCS screening tools to consider the impact of water table depth, irrigation, residue management and pesticide application areas, rates and methods.

son) also reported on modeling work and mapping done in the River Watershed to identify area hazard potentials for atrazine runoff. Work was based on crop land acreage considered to have a high or intermediate potential for atrazine runoff in solution and use goes on beyond previous NRCS screening tools to consider the impact of water table depth, irrigation, residue management and pesticide application areas, rates and methods.

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Activities: Some issues specific to herbicide use, particularly atrazine use, have arisen since the issuance by EPA of the long awaited Atrazine Interim Reregistration Eligibility Decision (IRED). EPA has a program whereby older pesticides are reviewed to ensure that they meet modern health and environmental safety standards. Atrazine has been in the review process for several years. Last fall, KDA and a number of other state pesticide lead agencies started receiving increased contacts from EPA Headquarters seeking recommendations and advice on atrazine risk reduction measures. This continued until early February, 2003 when the IRED or interim decision document was released.

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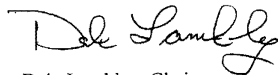
May 20, 2003 and I have also invited Tom Franti (UNL), Don Vogel (Nebraska Corn Growers Association) and some Region VII personnel to join us for the briefing.

The second event which I thought worthy of mention was a water quality stewardship meeting which was held December, 2002 for the farm community in the Daykin, NE area. Earlier during the 2002 growing season, NDEQ collected a water sample from a small stream near Daykin. Subsequent laboratory analysis showed exceedingly high levels of a mixture of herbicides, two of which were atrazine and isoxaflutole (Balance Herbicide). NDEQ notified NDA of the findings and a pesticide investigation was conducted. Investigators were unable to pinpoint the responsible party. Finally, the Pesticide Program Manager issued strongly worded warning letters to farmers in the small watershed where the incident took place and the Nebraska Corn Growers Association stepped forth to initiate a water quality protection effort targeting producers in the watershed. The Corn Growers effort began with the kick-off meeting for producers and pesticide dealers which was held in Daykin on December 16<sup>th</sup>. Phil Barnes (KSU), Randy Pryor (UNL) and I were also invited to participate. Following the meeting Don Vogel (NCGA) made personal contacts with individual growers and Don reports that he seems to be having reasonably good success in getting farmer sign-up for various water quality protection and conservation practices.

Finally, I wanted to report to you on the status of the effort to secure a 24(c) registration allowing fall application of atrazine in Nebraska portions of the basin. You will recall that at last years meeting the Water Quality Committee recommended the 24(c) as a tool which had possible use in reducing pesticide runoff and the Compact supported this proposal. Efforts to achieve that end were started last fall with exchange of information and data among KSU, NDA and KDA. Some of the data needed by the NDAs 24(c) advisory committee was at KSU and still in the process of being compiled for publication, so that caused some delay. Shortly thereafter, various EPA activities leading to the Atrazine IRED picked up pace. Finally, I made a decision that we should put the proposed atrazine 24(c) effort on hold pending EPAs atrazine determination. Frankly I could see the situation arising where a 24(c) could be issued, then rendered moot by the IRED. On the brighter side, the label harmonization should have water quality benefits.

I feel good about what the Water Quality Committee has been able to orchestrate in the basin. Also the members continue to have an excellent working relationship, and as Chair, I feel blessed by that aspect of our work.

Sincerely



Dale Lambley, Chair  
Water Quality Committee

Exhibit M

## Atrazine Herbicide Status Report May 2, 2003

**Background:** Atrazine herbicide was first registered for use in the United States in 1958. It is now extensively used throughout the country for control of broadleaf and some grassy weeds in a variety of major and minor crops. Most use in Kansas and Nebraska is in corn and grain sorghum production. The herbicide also has nonagricultural uses such as for weed control on industrial sites and in the southern states on certain types of turf grasses.

For the past several years, the US Environmental Protection Agency (EPA) has had atrazine under special review. This review is part of EPA's standard pesticide reregistration program which is designed to ensure that all older pesticides meet modern health and environmental safety standards. From the standpoint of the states involved, the atrazine review was significant not only because of the wide scale use of the pesticide involved, but because EPA's Office of Pesticide Programs (OPP) worked both to coordinate activities with the Office of Water and Wetlands (OWOW) and to actively seek advice from state pesticide lead agencies on potential risk reduction measures. OPP would likely say the atrazine review was significant also because of the extensive volume of stakeholder comments received.

EPA has now completed a major portion of the review particularly as it relates to human health effects and contamination of surface waters serving as public drinking water supplies. During the first week in February, 2003 EPA released, it's Atrazine Interim Reregistration Eligibility Decision (IRED) document. The IRED document specifies the various conditions and risk mitigation measures that will be taken to ensure that labeled atrazine uses meet current federal safety standards.

**Risk Reduction Measures:** For those who have an interest, there is a great deal of information on OPP's web site about the Atrazine IRED. However, I wanted to focus on three (3) aspects which I believe are particularly significant.

1) Watershed Approach. Under the Atrazine IRED, OPP is proposing to adopt a watershed approach complete with formation of local watershed committees to work toward reduction of atrazine runoff into streams and lakes. This smacks strongly of the Pesticide Management Area approach which has been used successfully in Kansas. In taking the watershed approach, OPP would deviate significantly from the past. Previously, OPP often tried to address pesticide concerns through a national or "one size fits all" label change.

2) Atrazine Label Harmonization. OPP is planning to seek "harmonization" of atrazine labeling, particularly in those requirements relating to water quality protection. You may recall that in Delaware PMA implementation days, Kansas tumbled to the fact that CIBA (now Syngenta) had included water quality protection measures on their atrazine product labels but that other registrants had not followed suit. Jere White (Kansas Corn Growers and Grain Sorghum Producers Associations) and I have been pushing that button with OPP at almost every

opportunity since. I know I can speak for Jere when I say that we were pleased to hear OPP indicate that all registrants would be required to include similar water quality protection language on their atrazine labels.

3) Public Water Supply Protection Measures. There are currently some 10,000 community drinking water systems in the United States that are served by surface water. During the Atrazine IRED process, OPP reviewed surface water quality data taken as part of Clean Water Act and Safe Drinking Water Act programs and identified 3,600 systems where atrazine was used in the feeder watersheds. In conducting the review, OPP found 8 community water systems which had annual concentrations of atrazine exceeding the established 3 ppb MCL and an additional 192 systems where detection spikes approached or occasionally exceeded the 3 ppb level. Twenty - nine of the second tier systems are located in Kansas, largely in the east central and north east portions of the state.

For the 8 highly impacted water systems, OPP has indicated that if atrazine is detected above the limit during the 2003 cropping season, atrazine use will be prohibited in the watershed and atrazine products will be so labeled. An intensive 5 year water quality monitoring program will be put into place for the remaining systems 192 systems and watershed mitigation measures will be put into place. Monitoring results will be compared against a 12.5 ppb atrazine + atrazine metabolites standard. If at the end of 5 years mitigation measures are not successful in maintaining average concentrations below the standard, atrazine use will also be halted in those watersheds. Manufacturers are going to be required to conduct educational programs for farmers in the targeted watersheds and assist the community water suppliers with monitoring and mitigation measures.

In Kansas, Syngenta has asked the Kansas Department of Agriculture to facilitate a briefing session and meeting of Syngenta staff, agricultural organizations and state public water supply and agricultural agency representatives to discuss future atrazine mitigation activities in the 29 watersheds targeted in Kansas. This meeting is scheduled for the afternoon of May 20, 2003 at KDAs main office in Topeka, KS. Likely Syngenta will ask for assistance from KDA, KSU Extension and Research, and the various farm organizations in working with farmers in the affected watersheds.

**Other IRED Measures:** Two other Atrazine IRED issues remain to be addressed. Ecological impact studies of the potential effect of atrazine on amphibians is to be completed by October, 2003. A farmstead well monitoring program is to be ready for initiation by Spring, 2004.

KANSAS - NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION  
30<sup>th</sup> ANNUAL MEETING

May 15, 2003  
9:00 a.m.  
Kansas Farm Bureau Building  
2627 KFB Plaza  
Manhattan, KS

AGENDA

1. Call to Order
2. Introductions and Announcements
3. Minutes of the 27<sup>th</sup> Annual Meeting
4. Chairman's Report
5. Kansas Report
6. Nebraska Report
7. Federal Agency Report
8. Secretaries Report
9. Treasurer's Report
10. Committee Reports
  - a. Legal
  - b. Engineering
  - c. Budget
  - d. Water Quality
11. Old Business
12. New Business
13. Adjourn

BIG BLUE RIVER COMPACT ADMINISTRATION BUDGET ANALYSIS

Exhibit N

	As of		MAY 03		2004 Proposed	FY Adopted May 2003	FY 05 Proposed
	2002 Actual	FY Adopted May 2001	2003 Estimate (To Date)	FY Adopted May 2002			
<b>EXPENDITURES</b>							
Operations							
Stateline Gages	\$11,500.00	\$11,090.00	\$12,050.00	\$11,960.00	\$12,650.00	\$12,420.00	\$12,840.00
Observation Wells	\$1,110.00	\$1,140.00	\$1,140.00	\$1,140.00	\$1,480.00	\$1,480.00	\$1,480.00
Low-flow Measurements	\$1,300.00	\$1,250.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Water Quality Committee	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Fidelity Bond	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00
Secretary Honorarium	\$750.00	\$750.00	\$750.00	\$750.00	\$750.00	\$750.00	\$750.00
Treasurer Honorarium	\$750.00	\$750.00	\$750.00	\$750.00	\$750.00	\$750.00	\$750.00
Staff Travel Expenses	\$91.17	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00
Annual Report	\$88.76	\$200.00	\$76.17	\$200.00	\$200.00	\$200.00	\$200.00
Annual Audit	\$500.00	\$500.00	\$500.00	\$500.00	\$500.00	\$500.00	\$500.00
Postage and Office Supplies	\$67.37	\$100.00	\$58.62	\$100.00	\$100.00	\$100.00	\$100.00
Miscellaneous Expenses	\$0.00	\$100.00	\$17.30	\$100.00	\$100.00	\$100.00	\$100.00
Total Expenses	\$16,257.30	\$16,180.00	\$15,642.09	\$15,800.00	\$16,830.00	\$16,600.00	\$17,020.00
<b>INCOME AND CARRY OVER</b>							
Assessments (Both States)	\$16,000.00	\$16,000.00	\$16,000.00	\$16,000.00	\$16,000.00	\$16,000.00	\$16,000.00
Interest Earned	\$119.25	\$400.00	\$72.25	\$400.00	\$150.00	\$150.00	\$150.00
Carry Over from Prior Year	\$15,213.95	\$14,649.92	\$15,075.90	\$15,075.90	\$15,506.06	\$15,506.06	\$15,056.06
Total Income and Carry Over	\$31,333.20	\$31,049.92	\$31,148.15	\$31,475.90	\$31,656.06	\$31,656.06	\$31,206.06
Balance End of Year	\$15,075.90	\$14,869.92	\$15,506.06	\$15,675.90	\$14,826.06	\$15,056.06	\$14,186.06

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**KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION**  
Treasurer's Report  
May 15, 2003

Balance on hand July 1, 2002  
Income so far this fiscal year  
State assessments  
Interest earned  
\$15,075.90

Funds available so far this fiscal year  
Expenditures so far this fiscal year  
31,139.15  
9,617.30

Balance on hand as of May 15, 2003  
21,521.85

Estimated expenditures for remaining of Fiscal Year 2003:

U.S. Geological Survey  
Printing of Annual Report  
Lower NRD - Observation Wells  
Postage, Supplies  
Secretary & Treasurer Honorarium  
Secretary & Treasurer Travel expenses  
Total estimated additional expenditures  
\$6,024.79

Balance on hand as of May 15, 2003  
Estimated additional interest earned  
Estimated additional expenditures  
Estimated balance on June 30, 2003  
\$21,521.85  
9.00  
6,024.79  
\$15,506.06

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

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

**FINANCIAL STATEMENTS  
AND INDEPENDENT AUDITORS' REPORTS**  
June 30, 2003

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KENNEDY AND COE, LLC  
 CERTIFIED PUBLIC ACCOUNTANTS

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, 2003, 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 auditing standards generally accepted in the United States. 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, 2003, and the changes in its net assets and its cash flows for the year then ended in conformity with accounting principles generally accepted in the United States.

Respectfully submitted,  
*Kennedy and Coe, LLC.*

Kennedy and Coe, LLC

Topeka, Kansas  
 March 16, 2004

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

Exhibit A

Statement of Financial Position  
 June 30, 2003

Assets	
Cash in bank	<u>\$ 15,433</u>
Liabilities and Net Assets	
Net assets - unrestricted	<u>\$ 15,433</u>
Total liabilities and net assets	<u>\$ 15,433</u>

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

Exhibit B

Statement of Activities  
Year Ended June 30, 2003

Unrestricted Net Assets	
Revenues:	
Kansas contribution	\$ 8,000
Nebraska contribution	8,000
Interest	66
Total revenues	<u>16,066</u>
Expenses:	
Surface and ground water investigations	13,160
Staff travel	284
Annual meeting expense	40
Auditing and accounting services	500
Printing annual report	76
Fidelity bond	100
Secretary - Treasurer services	1,500
Office supplies and postage	49
Total expenses	<u>15,709</u>
Increase (decrease) in unrestricted net assets	357
Net assets, beginning of year	15,076
Net assets, end of year	<u>\$ 15,433</u>

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

Exhibit C

Statement of Cash Flows  
Year Ended June 30, 2003

Cash flows from operating activities:	
Increase (decrease) in net assets	\$ 357
Net cash (used) by operating activities	<u>357</u>
Cash flows from investing activities	-
Cash flows from financing activities	-
Net (decrease) in cash	<u>357</u>
Cash, beginning of year	15,076
Cash, end of year	<u>\$ 15,433</u>

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

Statement of Revenues and Expenses Compared to Budget  
Year Ended June 30, 2003

Exhibit D

	Budget	Actual	Variance Favorable (Unfavorable)
Revenues:			
Kansas contributions	\$ 8,000	\$ 8,000	\$ -
Nebraska contributions	8,000	8,000	-
Interest	400	66	(334)
Total revenues	<u>16,400</u>	<u>16,066</u>	<u>(334)</u>
Expenses:			
Surface and ground water investigations	13,100	13,160	(60)
Staff travel	200	284	(84)
Annual meeting expense	-	40	(40)
Auditing and accounting services	500	500	-
Printing annual report	200	76	124
Fidelity bond	100	100	-
Secretary - Treasurer services	1,500	1,500	-
Office supplies and postage	100	49	51
Miscellaneous	100	-	100
Total expenses	<u>15,800</u>	<u>15,709</u>	<u>91</u>
Excess (deficit) of revenues over expenses	<u>\$ 600</u>	<u>\$ 357</u>	<u>\$ (243)</u>

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

Notes to Financial Statements  
Year Ended June 30, 2003

**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 accounting principles generally accepted in the United States. 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 U.S. generally accepted accounting principles may require the management to make estimates and assumptions that affect certain reported amounts and disclosures.