MINUTES

MONTANA HOUSE OF REPRESENTATIVES
54th LEGISLATURE - REGULAR SESSION

JOINT SUBCOMMITTEE ON LONG-RANGE PLANNING

Call to Order: By **CHAIRMAN ERNEST BERGSAGEL,** on January 18, 1995, at 8:00 A.M.

ROLL CALL

Members Present:
Rep. Ernest Bergsagel, Chairman (R)
Sen. Ethel M. Harding, Vice Chairman (R)
Sen. B.F. "Chris" Christiaens (D)
Rep. Matt McCann (D)
Rep. Tom Zook (R)

Members Excused: None

Members Absent: None

Staff Present: Nan LeFebvre, Office of the Legislative Fiscal Analyst
Jane Hamman, Office of Budget & Program Planning
Tracy Bartosik, Committee Secretary

Please Note: These are summary minutes. Testimony and discussion are paraphrased and condensed.

Committee Business Summary:
Hearing: Resource Indemnity Trust Grants HB 6 and 8
Executive Action: None

Note: Descriptions of the following projects can be found in the "Project Evaluations and Recommendations For 1996-1997 Biennium - Appendix" booklet (Exhibit 5, 1-16-95)

HEARING ON HB 6 AND 8
RESOURCE INDEMNITY TRUST GRANTS

GOVERNOR'S OFFICE - FLATHEAD BASIN COMMISSION
Flathead Lake Watershed, page 34

Jerry Sorenson, Citizen Representative, Flathead Basin Commission, said the purpose of the Commission under law is to protect the water quality in the Flathead Basin through a cooperative approach from various agencies and the public. He said the Commission has a long history of monitoring the basin, and although water quality is good at this time, it shows indications that it is diminishing.

Mr. Sorenson said the Flathead Basin Commission is proposing to facilitate the development and implementation of a comprehensive

lake and watershed management plan and implementation of strategies to restore and sustain the high water quality of the Basin. He said this project will have an emphasis on education, rather than regulations, and will be a two-year project.

He said the Commission has been able to build a cooperative relationship with the tribes in the area, and they are very much in support of this project. **Mr. Sorenson** said $10,000 has been set aside for economic analysis, with the intent being to look at ways in which inputs into the lake can be reduced, and what the potential cost would be to the people and the industries that may be responsible in reducing that.

REP. MATT McCANN asked if the $50,000 in grant funds would pay for the salary of the coordinator for one or two years. **Mr. Sorenson** replied two years.

John Tubbs, Department of Natural Resources and Conservation (DNRC), asked **Rich Moy, DNRC,** to explain the state water planning process. **Mr. Moy** said, "One of the things that has been found over the last few years is if you really want effective change then work with local people." He said the Flathead Basin Commission is the first entity that has been ongoing for ten years, and to be a voting member of the Commission you must reside in that Basin. He emphasized that one of the main things that is strongly encouraged in state water planning is local involvement, and having the local people making decisions rather than government.

CHAIRMAN ERNEST BERGSAGEL asked how much total money has gone into the project over the ten year period of time. **Mr. Moy** said he believes approximately $40,000 per year through the Governor's Office, and that is primarily to fund a full-time coordinator in the basin. **CHAIRMAN BERGSAGEL** asked how much was contributed in terms of grants. **Mr. Moy** said this is the first grant proposal the Commission has written and presented to the legislature.

SEN. CHRIS CHRISTIAENS clarified that there is one full-time employee for the Basin, and this grant would help pay for another half-time employee. **Mr. Moy** indicated that was correct.

SEN. ETHEL HARDING stated she strongly supports this project.

MONTANA STATE HISTORIC PRESERVATION OFFICE
PLACES Master Plan, page 58

Marcella Sherfy, Administrator, State Historic Preservation Office, provided an overview of the project. She said this grant requests funding to conduct a multi-disciplinary, multi-cultural look at the German Gulch mining district, for the purpose of not simply conducting a study, but to develop a plan that will allow people to understand a remarkably rich, historic mining area to promote tourism.

Ms. Sherfy said German Gulch is one of the most intact remnants of Chinese mining. In 1870, Chinese miners constituted 25% of the mining community in the territory of Montana. This particular set of resources, unlike most historic mining remains in the state, has not been subject to substantial intensive mining in years following the historic period. It has, however, experienced vandalism, and artifacts have been taken from the site. **Ms. Sherfy** said the Master Plan will be developed to meet the goals and objectives of the Butte Anaconda Heritage Park and Partners in Mining Heritage Park. She stated that "PLACES" stands for People, Land and Cultural Environments. She said the Deerlodge National Forest supports this proposal and believes that it would benefit both the Forest and the public.

SEN. CHRISTIAENS asked how the applicant anticipates making up for the $20,000 shortfall. **Ms. Sherfy** replied their office continues to be funded for survey of historical resources from the National Park Service, and they will use those dollars in conjunction with additional U.S. Forest Service dollars. **SEN. CHRISTIAENS** asked if there is money available from Butte-Silver Bow, since the project would be in that county, or from the local historical societies. **Ms. Sherfy** said the local historical societies have already contributed space and time. She said the areas of Butte-Silver Bow County and Anaconda/Deer Lodge County both have preservation offices which have committed time to the project and also some money, which may be able to be expanded.

SEN. CHRISTIAENS asked if the Historic Preservation Office has done similar kinds of programs in other parts of the state. **Ms. Sherfy** said the previous project that has been done so far under the PLACES program is the Flying D Ranch project in Madison County, which is one of the least disturbed land environments in the state.

REP. McCANN asked **Ms. Sherfy** to describe the setting of the location of the project. **Ms. Sherfy** explained it is in a fairly deep mountain ravine along a streambank. She said there is active mining at the top of the German Gulch area, there is a middle area which was primarily a German settlement, and the lower end of it was a Chinese settlement.

CHAIRMAN BERGSAGEL questioned what "Section 106 of 36CFR800" found in the fifth paragraph on page 59 of the booklet refers to. **Ms. Sherfy** replied that it is the section of the National Historic Preservation Act, passed in 1966, that created the National Register of Historic Places program, and it requires federal agencies, prior to any action, to consider impacts to properties that are currently listed on the National Register of Historic Places or could be eligible for listing. She said it is a procedural law.

CHAIRMAN BERGSAGEL asked if it is the intent to acquire the private claims at the bottom of German Gulch. **Ms. Sherfy** said it is not their intent to acquire them, but to try to legally obtain

access, and if not, there is a rich enough collection of surviving resources on Forest Service land that the project potential would not be hurt by that.

In response to a question from **CHAIRMAN BERGSAGEL, Ms. Sherfy** said the site has not been of interest in recent times to any ongoing mining exploration. It does not appear to have been of interest to the mining community for an extensive period of time.

REP. McCANN asked what kind of mining is being done at the top of the gulch. **Ms. Sherfy** stated it is hard-rock gold, and is very limited and not large scale.

SEN. HARDING asked if the salaries are for field work. **Ms. Sherfy** said the salaries include supervision of the field activities, development of the research designs, development of the final planning product, and the grant also includes contracting costs for some specialized services.

{Tape: 1; Side: B}

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION (DNRC) - WATER RESOURCES DIVISION
Deadman's Basin Water Quality, page 8

Glen McDonald, Bureau Chief, State Water Projects Bureau, gave an overview of the project and submitted written informational testimony in support of the project, including five letters from other interested parties. **EXHIBIT 1**

CHAIRMAN BERGSAGEL asked if the Careless Creek Canal was going to be eliminated. **Mr. McDonald** said it wouldn't be eliminated, but the flows would be cut down.

CHAIRMAN BERGSAGEL asked if there were seepage problems in the Careless Creek Canal. **John Tubbs, DNRC,** said the water quality problem is associated with the sediment that the high-flows out of Careless Creek take away from the banks and dump into the water.

REP. McCANN asked if Careless Creek flows back into the Musselshell. **Mr. McDonald** said yes, it does.

CHAIRMAN BERGSAGEL questioned who owns the land along the southside of Careless Creek. **Mr. McDonald** said it is private holdings. **Mr. McDonald** continued to explain the phases of the project which are outlined on the handouts he provided.

SEN. CHRISTIAENS asked in what timeframe would the phases be completed. **Mr. McDonald** said phases 2 and 3 will be completed within the next biennium and phases 3 and 4 would be completed some time after that within the subsequent biennium.

In response to a question from **SEN. CHRISTIAENS, Mr. McDonald** said the water users pay $.75 principal on the water they get out of the project, $2.00 for operations and maintenance costs, and a $1.00 special assessment fee, which they put into a reserve account. There will be an additional $.33 added to that, which would amount to a total of $4.07 per acre foot.

In response to a question from **SEN. CHRISTIAENS, Mr. McDonald** said the land that is irrigated is primarily used to grow alfalfa.

SEN. HARDING asked which phase they are on currently. **Mr. McDonald** explained that they are on phases 2 and 3. He said phase one was funded by the water users association.

Bob Doffan, President, Deadman's Basin Water User's Association, said the water users are willing to share in the costs of this project. He said there are five land owners on Careless Creek and they are also trying to get grants and other sources of funding in an attempt to heal their creek. He asked that the committee support this project.

Teri Hice, Secretary, Deadman's Basin Water User's Association, said as of January 17, 1995, the association has $96,000 available in savings, of which $32,000 has been earmarked for contribution to the Deadman's Basin project. She said in October the association assessed $1.00 per share, which is $26,000 that has been put into a special assessment account. **Ms. Hice** said they have $51,000 in their checking account, which has been allocated for this year's expenses. This equals a total of $173,000 available. The water users have indicated that they would be interested in possibly paying off the loan sooner than required, possibly in three to five years.

CHAIRMAN BERGSAGEL asked what their average costs per acre for irrigation on Deadman's Basin are. **Mr. Doffan** said most of the canals are private so they pay their own expenses.

DNRC - WATER RESOURCES DIVISION
Verification of PDSI Study, page 11

Dennis Rehberg, Lieutenant Governor, State of Montana, spoke in support of this project. He explained that the Montana Drought Advisory Committee (MDAC) is mandated by statute to review and report drought monitoring information to the public, to identify areas of the state with a high probability of drought, and to target reporting and assistance efforts to those areas. He said the Palmer Drought Severity Index (PDSI) is a surrogate index used to assess soil moisture conditions. It is relied on, in part, as a tool for operational decision-making.

Lieutenant Governor Rehberg said the need for the verification comes from studies which have indicated the PDSI may not be appropriate for use as a triggering mechanism for operational

decision-making, and it needs to be verified under Montana conditions. He said the study would compare what PDSI indicates with: 1) soil moisture gathered over a two-year period from different locations within Montana, and 2) other soil moisture indices to determine their potential suitability. He explained that a final report with recommendations will be prepared for the Governor and the MDAC for review. **Lieutenant Governor Rehberg** stated the grant is for a study toward perfecting the index so it reacts better to conditions and this would better help the local people.

{Tape: 2; Side: A;}

He said drought planning has to be done at a local level. He also said they would like to eventually get television stations to run the index to better present it to the public.

George Ochenski, Trout Unlimited, said he has also been a member of the Governor's drought task force. He said the PDSI is another tool used along with the meetings, held locally and statewide. He said this project would cut down on the color printing that is being done because two different indices are being used. This project would bring them into one, and make them more clear.

Jo Brunner, Private Citizen, said in the past she has also been a member of the Governor's drought task force, and has sat on many other drought committees. She said there has been a great increase in the ability to send information to the communities. **Ms. Brunner** explained that agriculture in the past hasn't always been impressed with the information because of the lag time. She believes the ability to go one step further will help increase agriculture's trust in the information. She urged the committee to support the request for funding.

CHAIRMAN BERGSAGEL asked what the Drought Advisory Committee does. **Lieutenant Governor Rehberg** explained that by law, they are required to meet twice-a-year to gather information on drought conditions and determine what, if anything, needs to be done. He said those meetings take place in November and February, or more frequently depending on the severity of the drought. He said information is gathered from the Soil Conservation Service, the Weather Service, and the Bureau of Reclamation. He said they meet with ranchers and irrigators and discuss the possibilities of solutions. With the statistics they've gathered, they can choose to "kick in" a disaster declaration, which gives the ability to gather the local drought committees together and provide them information on how to conserve, adapt, and adjust. **Lieutenant Governor Rehberg** said the task force is specifically set up to provide a response mechanism.

CHAIRMAN BERGSAGEL asked who and how many people are on the committee. **Lieutenant Governor Rehberg** said it is established by

law to include the Department of Natural Resources and Conservation, the Department of Agriculture, the Department of Livestock, the Department of Fish, Wildlife and Parks, the Department of State Lands, the Department of Commerce, and the Department of Health and Environmental Science. He said there are also ex officio members.

SEN. HARDING said in the financial assessment it indicates that $45,000 will used to fund a graduate student, and she asked for clarification on that. **Dr. John Waith, Department of Science, Montana State University,** said the student would be a masters student in the Department of Plant and Soil Sciences. He stated he would ultimately be responsible in this area of the project. The graduate student will participate in field work and make it part of his/her research thesis. This will be over a two-year period.

Lieutenant Governor Rehberg closed the hearing by again urging the committee to support the funding for this project.

DNRC - WATER RESOURCES DIVISION
Flint Creek Return Flow Study, page 36

Rich Moy, DNRC, gave an overview of the project. He said the Bureau of Reclamation helped with the study and they have indicated they will provide $550,000 over the next three years toward the comprehensive management plan. He said one part of that is to study the hydrology and this is the return flow study. He said DNRC's role is to provide technical assistance and service to the people of that watershed. Of the $100,000 requested, $70,000 will go to the USGS and will be matched by an additional $70,000. The other $30,000 will go to DNRC. DNRC will use the money to put in additional gages and help collect additional data. **EXHIBIT 2**

Eugene Manley, Retired Rancher, stated for 35 years he also worked as an officer of an irrigation company. He said the technical assessment portion of the project, which is stated in the booklet on page 37, explains the problem. **Mr. Manley** submitted maps and other written testimony to the committee to better explain the project. The maps he provided show the return flows in the basin. **EXHIBIT 3** He said the return flow study has been ignored long enough and he urged the committee to support the grant. **Mr. Manley** stated the project is in the best interest of all Montanans. He submitted written testimony to the committee. **EXHIBIT 4**

Fred Parker, Farmer and Rancher, spoke in support of this project.

{Tape: 2; Side: B}

Mr. Parker said he felt there was no other way of gathering the scientific data needed to answer the competing challenges for

water and water resources other than an study such as this. He strongly urged that this study continue to be funded.

Jo Brunner, Member, Upper Clark Fork Steering Committee, said finally people within Montana are beginning to recognize that streams cannot be maintained if return flows are not looked at. If water isn't diverted, the stream will eventually go dry. She said she firmly believes this study is a basis that the rest of the state can use in determining how to look toward their return flows.

CHAIRMAN BERGSAGEL asked if the Department of Fish, Wildlife and Parks had been asked for revenue for the study. **Ms. Brunner** said she was unsure, but she knows the department is active somehow in the project.

Mike Murphy, Montana Water Resources Association, voiced his support of the study.

SEN. CHRISTIAENS questioned what has been done to encourage the irrigators to go on using gravity irrigating rather than sprinkler. **Mr. Manley** said concern for that is being expressed, but those people have a right to irrigate however they wish.

CHAIRMAN BERGSAGEL asked **Mr. Manley** if he had gone to the Department of Fish, Wildlife, and Parks about doing a study for this particular project. **Mr. Manley** said yes, but the Department didn't seem interested and there were no talks of funding.

CHAIRMAN BERGSAGEL commented that in some areas the lining of the ditches and piping is essential because of the high Ph soils, and in regard to the Muddy Creek project, it is essential that the amount of water applied to the land is reduced because of the erosion factor. He said each case needs to be treated individually, basin by basin.

John Tubbs, DNRC, said even in basins where you are trying to save water, how it will affect the groundwater needs to be thought about.

MONTANA STATE UNIVERSITY, MONTANA WATERCOURSE
Preparing Citizens, page 17

Mary Ellen Wolfe, MSU, Montana Watercourse, spoke on behalf of this grant request and provided the committee with an overview of the project. She explained that the requested $100,000 grant would go toward funding an ongoing project entitled "Preparing Local Citizens for Montana's Water Future." The project will produce a series of five water forums, each with an accompanying citizens' guide to catalyze learning and dialogue on five critical water resource topics. These are watershed, instream flows, surface and groundwater quality, water rights, and water conservation. **Ms. Wolfe** said a statewide public symposium and accompanying citizens' guide will provide successful models,

lessons, experiences, and "how to's" necessary to establish local people to use these ideas and teach others in their communities. If even 10% of those who participated in the original training took those materials home to their water users conservation districts and used them with even 15 local waterusers and residents, there would be an additional 1,125 well-informed Montanans.

SEN. CHRISTIAENS asked what people get from the writing workshops. **Ms. Wolfe** said the writing workshops are based on the model of the Water Education of Teachers Program. She said that program involves having experts, water managers, and teachers come together for a two-day session to come up with the content of their new curriculum guide. She said they want to create materials through this, and develop structure.

SEN. CHRISTIAENS asked how the project would be affected if the Jackson Foundation does not come through with funding. **Ms. Wolfe** replied that the funding from the Jackson Foundation has not come through. She said this is a problem she is working on and she is meeting with the Conservation Division later this week. She will propose that they team up to do some grant writing to private foundations.

In response to a question from **Nan LeFebvre, Office of the Legislative Fiscal Analyst, Ms. Wolfe** explained that the subtotal for the project activities is $37,200 from DNRC grants, with a $29,000 match. She said the project can proceed without the funding from the Jackson Foundation.

Tom Ruffatto, Rancher from the Bitterroot Valley, voiced his support of this project.

Roxy French, Bitterroot Water Forum, supported this project and explained that there are many water-related issues which local citizens need to be involved in. Because experts on these matters are not always available, education of the local people is very important.

LEWIS AND CLARK COUNTY
Helena Area Bedrock Aquifer, page 23

Vivian Drake, Lewis and Clark County Water Quality Protection Agency, said the Helena area is one of the fastest growing areas in the state. This is increasing pressure on limited water supplies within the bedrock aquifer systems and exposing the aquifers to potential contaminant sources. **Ms. Drake** explained that very little is known about the Helena area bedrock aquifers. This project would enable them to gather important information for its protection.

Joanna Thamke, U.S. Geological Survey, informed the committee about the products that will be generated through this project. **EXHIBIT 5** She said these include: 1) The geologic cross-section

of bedrock aquifers that will aid in siting sanitary waste disposal sites, such as drain fields. 2) Mapping the general water quality characteristics of the bedrock areas would help site future development areas. 3) Mapping local recharge areas, water level trends, and ground water fluctuations in response to recharge. Where the recharge is occurring and the effects on the groundwater are currently unknown. 4) Groundwater flow paths of the various aquifers. This will be determined by age-dating through a new technique involving freons. The age of the groundwater can be determined quite precisely and is based on the concentration of these freons. This will show how fast the water is moving through the aquifers, and how old it is. 5) Mapping the general water-bearing characteristics of the various bedrock aquifers. This will show general ranges of expected water yields in existing wells. 6) Analysis of the sensitivity of the various parts of the bedrock aquifer to the effects of land management and use practices. **Ms. Drake** emphasized that the technical developments made during this pilot program can be used for other needs around Montana.

SEN. CHRISTIAENS asked what happens if the aquifers are not charging adequately. **Jack Stults, Water Resources Division, DNRC, and Helena City Commissioner,** explained there is presently unused capacity in the Ten Mile water system, which could supply domestic water to certain areas of the valley if needed. The information generated as a result of this study would help determine how aggressively to approach those needs, and would help people who are dependent upon groundwater sources to do their own planning. He added that the Helena City Commission formally supported this project.

SEN. CHRISTIAENS asked for an explanation regarding the $4,100 for insurance as listed in the financial assessment. **Ms. Drake** replied it is partially liability insurance and part is a contractual requirement from the USGS.

SEN. CHRISTIAENS asked if freon testing is expensive, and if it is available to other communities. **Ms. Thamke** responded that it is, in fact, expensive, at approximately $200 per sample. She indicated that it is available in other communities.

{Tape: 3; Side: 2}

Robert Rasmussen, Director, Lewis and Clark County Planning Department, voiced his support for the project. He stated it is frustrating to not have the information to be able to inform developers on the aquifers' situations. This study would help that a great deal. He said this study would aid in answering questions such as whether or not development should be limited in bedrock aquifer areas of this community.

Alice Stanley, Hydrogeologist and Board Chair of Lewis and Clark County Water Quality Protection District, Helena, submitted written testimony in support of this project. **EXHIBIT 6**

REP. JIM ELLIOTT, HD 72, testified as a proponent of this project and provided a hydrography of his well. He said it shows the how high the water level was before increased development and subdivision planning.

CITY OF LEWISTOWN
Water System Improvements, page 6

REP. LARRY GRINDE, HD 94, said the district is losing a lot of water and that is the reason for this project. He asked that the committee support this request.

Jim Yeagley, Planning Director, Lewistown/Fergus County, voiced his support of this project.

Keith Jensen, Robert Peccia and Associates, said his firm has been selected by Lewistown to assist in developing the water system. He gave a brief overview of the project. He said the source of water for Lewistown is Big Spring. It has been apparent for many years that both water transmission mains have been leaking, resulting in a loss of about 50% of the water entering the mains. Another problem in the system is critically low hydrant flows in different areas, the worst being the hydrant located at the airport. The project is proposed to minimize transmission main leakage, minimize distribution systems leakage, improve pressure and fire flow rates, and minimize operations and maintenance costs. **Mr. Jensen** said the city of Lewistown is requesting a $50,000 loan and a $50,000 grant to complete this project.

Lee Kunan, Vice President, Lewistown City Council, said the City will experience quite an impact to their water rates to build this system. He said anything the committee can do to help would be greatly appreciated.

CHAIRMAN BERGSAGEL asked how much their water rates are now and how much the rates will be increased. **Mr. Kunan** replied that currently the rates are around $7.50 per month for a residential user. After completion of the project the rates will be around $24 to $25 per month.

In response to a question from **CHAIRMAN BERGSAGEL, Mr. Jensen** stated there is a 16 inch transmission line and a 20-inch transmission line currently in place. He said the 16-inch line is beyond repair and use, and the 20-inch line will have further leakage testing done on it to determine if it has any useful life in it. A brand new 24-inch line, which is sized to replace both if the 20-inch line is abandoned, will be considered.

ADJOURNMENT

Adjournment: 11:45 a.m.

ERNEST BERGSAGEL, Chairman

for TRACY BARTOSIK, Secretary

EB/tb

LONG RANGE PLANNING

Joint Appropriations Subcommittee

ROLL CALL DATE 1-18-95

NAME	PRESENT	ABSENT	EXCUSED
Rep. Ernest Bergsagel, Chairman	X		
Rep. Matt McCann	X		
Rep. Tom Zook	X		
Sen. Ethel Harding, Vice Chairman	X		
Sen. Chris Christiaens	X		

EXHIBIT 1
DATE 1-18-95
HB 648

DEADMAN'S BASIN WATER QUALITY IMPROVEMENT PROJECT

PHASE I - DROP STRUCTURE REPLACEMENT PROJECT COMPLETED FALL 1993

PHASE I SPENDING

DROP STRUCTURE REPLACEMENT PROJECT	**$122,000**

PHASE I FUNDING

ASCS COST SHARE FUNDS	$61,000
DEADMAN'S BASIN WATER USERS	$61,000

PHASE II - STILLING BASINS AND CANAL BEND RECONSTRUCTION
PHASE III - ENGINEERING DESIGN, EXISTING DROP STRUCTURES

PHASE II&III SPENDING PLAN

STILLING BASIN RECONSTRUCTION	$65,000
RIPRAP REINFORCEMENT CANAL BANKS	$54,000
ENGINEERING CONSULTANT	$35,000
MISCELLANEOUS CONSTRUCTION QA	$20,250
PHASE II CONSTRUCTION COSTS	$174,250
10% CONTINGENCY	$17,425
PHASE II&III BUDGET	**$191,675**

PHASE II&III FUNDING PLAN

RRGL GRANT	$47,919
RRGL LOAN	$111,081
DEADMAN'S BASIN WATER USERS	$32,675
PHASE II&III FUNDING	**$191,675**

PHASE IV - EXISTING DROP STRUCTURE REHABILITATION

PHASE V - REMAINING CANAL ENLARGEMENT, CANAL BANK, AND EROSION PROTECTION PROJECTS

Letters of Support

The following letters of support have been submitted for the proposed project. Copies of the letters are included.

John Rouen, NRCS - John is the NRCS (formerly SCS) Lower Musselshell Regional Office Manager. John has applied for a $104,000 DHES 319 grant to do restoration work on Careless Creek. Final approval for the 319 grant will depend on the ability of the DNRC and the Deadman's Basin to use the Barber Canal to keep flows in Careless Creek below 150 cfs. Approval of the proposed loan and grant will be sufficient to begin work on the Careless Creek.

Bob Martinka, DFWP - The DFWP supports improvement of water quality in the Lower Musselshell to help restore and rehabilitate the warm water fisheries program.

Jim Suit, Engineering Bureau Chief, NRCS - The NRCS has listed the Careless Creek/Barber Canal project as the #3 priority project in Montana for the NRCS.

Warren Kellogg, Water Quality Specialist, DHES - The DHES has been concerned about the water quality of the Careless Creek discharge for several years. The DHES supports this project as the primary solution to the problem.

Deadman's Basin Water Users Association (DBWUA) - The DBWUA support the project as a water quality improvement project and will realize no water quantity or farm efficiency gains.

EXHIBIT 1
DATE 1-18-95
HB 6+8

UNITED STATES DEPARTMENT of AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
109 RAILROAD AVE. EAST
ROUNDUP, MT. 59072
(406) 323-2103

Chairman
Long-range Planning
Subcommittee
Helena, Mt. 59620

January 10, 1995

RECEIVED
JAN 12 1995
DNRC

Dear Members of the Subcommittee:

The funds requested for enlargement of Barber Canal are part of a project effort to restore the severely eroding channel on the lower end of Careless Creek in Golden Valley County.

The Lower Musselshell Conservation District (LMCD) has been working with the landowners, irrigation water users' and various state and federal agencies searching for a solution to address the nonpoint source pollution Careless Creek contributes to the Musselshell River.

The unified effort has required a combination of activities to achieve a viable solution to a long term problem. The LMCD has been approved for funding of a 319 Water Quality grant to address the erosion and water quality on Careless Creek, but it is anticipating full funding for enlargement of the Barber Canal as requested by Mt. DNRC Water Resources Division.

Any loss of funds due to disapprovals or reductions from planned amounts would delay completion efforts to resolve a critical resource problem that affects five land owners along Careless Creek and 175 water users' along the Musselshell River.

Please familiarize yourself and others before considering reduction in funding or lowering priority as recommended by Conservation Assistance Renewable Resource Development Group.

Sincerely,

John P Rouane Jr.

John P. Rouane Jr.
Resource Conservationist
NRCS, Roundup, Mt.

Montana Department of Fish, Wildlife & Parks

RECEIVED
JAN 17 1995
DNRC

P. O. Box 200701
Helena, MT 59620-0701
(406) 444-3186
FAX:406-444-4952
Ref:RM013.95
January 12, 1995

Mr. Mark Simonich, Director
Montana Department of Natural Resources and Conservation
1520 E 6th Ave
P.O. Box 202301
Helena, MT 59620-2301

Dear Mark:

Our staff have been in touch with Kurt Hafferman of your Department and have reviewed your project to improve and stabilize the Barber Canal which receives water from Deadman's Basin Reservoir. We fully support your proposal for a renewable resource grant to partially fund this project.

As you know, the original Careless Creek Channel was much too small to receive the high flows originating from Deadman's Basin Reservoir. Consequently, the channel has suffered severe erosion over the years and represents a major source of sediment to the Musselshell River. It is much preferable to route a greater percentage of the Deadman's Basin discharge into the Barber Canal thereby reducing erosion in Careless Creek.

Reduction in the sediment load to the Musselshell River will improve water quality and subsequently benefit fishes and other aquatic life.

Sincerely,

Bob

Robert R. Martinka
Chief of Field Operations

c: Glenn Phillips
Jim Darling
Ken Frazer

United States Department of Agriculture
Natural Resources Conservation Service
Federal Building, Room 443
10 East Babcock Street
Bozeman, MT 59715-4704

January 10, 1995

EXHIBIT 1
DATE 1-18-95
HB 6+8

Kurt Hafferman
Project Section
Water Resources Division
1520 East Sixth Avenue
Helena, Montana 59620-2301

Dear Mr. Hafferman:

Enclosed is the current Natural Resources Conservation Service (NRCS) priority list of projects. The Careless Creek project has a signed plan of work and it is third in planning priority out of approximately 200 planning and design projects.

If I can be of further assistance, please let me know.

Sincerely,

D. James Suit

D. JAMES SUIT, P.E.
State Conservation Engineer

Enclosure

cc w/o encl:
Ron Nadwornick, ASTC(RP), NRCS, Bozeman, Montana
John Rouane, RC, NRCS, Roundup, Montana

November, 1994

MONTANA NATURAL RESOURCES CONSERVATION SERVICE CATEGORIZATION OF PLANNING AND APPLICATION PRIORITIES

CATEGORY 1 - Projects/Jobs with commitments made and recognized. Listed by order of priority. The MRST contact person is shown in parentheses.

1. Thirty Mile Watershed (Yerger)
2. Lower Birch Project (Meyer)
3. Careless Creek (Signed Plan of Work) (Suit)
4. Northern Cheyenne Reservation GP (Ongoing) (Schaefer)
5. Musselshell River FIRS Study-Ongoing (Kaiser, D.)
6. Bitterroot River FPMS (Van Mullem)
7. Gallatin River Floodplain Management Study (Van Mullem)
8. Cove Ditch Conservation Field Trial (Meyer)
9. Smith River-CRM (Burnworth)
10. Tongue River Operation Guide (Kaiser, R.)
11. Little Rock Creek (Baker)
12. Flint Creek (Van Mullem)
13. Old Hale Ditch (Yerger)
14. Sun River Diversion (Yerger)
15. Montana Prison Waste System (Meyer)
16. Eagle Creek Dam (Yerger)
17. Beaver Creek Dam Inspection Plan (Suit)

CATEGORY 2 - Group Projects as prioritized. For these jobs a scoping trip and Plan of Work needs to be developed or revised before MRST will commit staff time. The MRST contact person for these jobs is shown in parentheses.

1. Lower Fort Peck, Missouri River (Runnels)
2. Muddy Creek (Nadwornick)
3. Nevada Creek (Nadwornick)

CATEGORY 3 - Group Projects requiring the development of a Plan of Work prior to a planning start. If you need more than 3 days of MRST staff assistance, then a Plan of Work must be developed. If you need assistance in developing a plan of work for these projects, they will be given priority. No MRST contact person has been assigned to these projects.

590 Bullhead Canal Lining
500 Bullhead Salinity Weather Stations
325. Weast Ditch LTA
300. Orchard Canal
5. Bolhuis Leep Group
4. Upper Big Hole CRM

EXHIBIT 1
DATE 1-18-95
HB 6+8

DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES
WATER QUALITY DIVISION

COGSWELL BUILDING
1400 BROADWAY

STATE OF MONTANA

(406) 444-2406
FAX (406) 444-1374
Phone # (406) 444-4490

PO BOX 200901
HELENA, MONTANA 59620-0901

January 17, 1995

Department of Natural Resources and Conservation
1520 East Sixth
Helena, Montana 59620

I would like to give my full support to DNRC's Deadman's Basin Water Quality Improvement Project. The project's stated goal of increasing the flow capacity of the Barber Canal and decreasing the flow releases down Careless Creek is crucial before the severe bank erosion occurring along the lower reaches of Careless Creek can be effectively addressed. Bank erosion on Careless Creek contributes excessive amounts of sediment, adversely impacting the uses of water in both Careless Creek and the Musselshell River.

The Lower Musselshell Conservation District will soon begin remediation work in the Careless Creek watershed. Without the cooperation of DNRC and the Deadman's Basin Water Users to reduce flows down Careless Creek, this work would probably not be worth pursuing. The proposed DNRC project highly complements the local initiatives under way and will go along way in dealing with one of the worst water quality problems in the Musselshell Basin.

Sincerely,

Warren Kellogg

Warren Kellogg
Resource Conservationist - Water Quality
Montana Nonpoint Source Program

January 11, 1995

Deadman's Basin Water Users' Association
125 Autumn Road
Roundup, MT 59072

Long Range Planning Committee
Helena, MT

Dear Members of the Long Range Planning Committee,

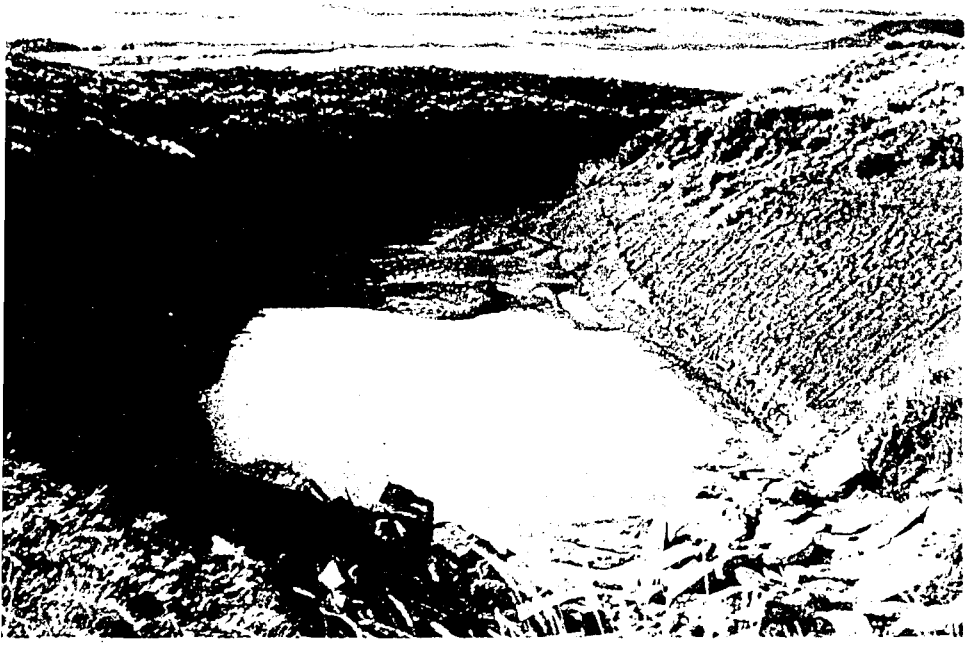
Deadman's Basin Water Users' Association (DBWUA) has worked closely with the Department of Natural Resources and Conservation in the development of the Deadman's Basin Water Quality Improvement Project. The members of the Board of Directors of DBWUA would like to express our support for the grant project and accept the financial commitment for the DBWUA share and loan agreement.

The Association realizes that there is no economic gain from this project nor will it improve water quantity or farm efficiency. However, the members do support this project as being the best overall means of improvement for water quality and standard of living on the Musselshell River.

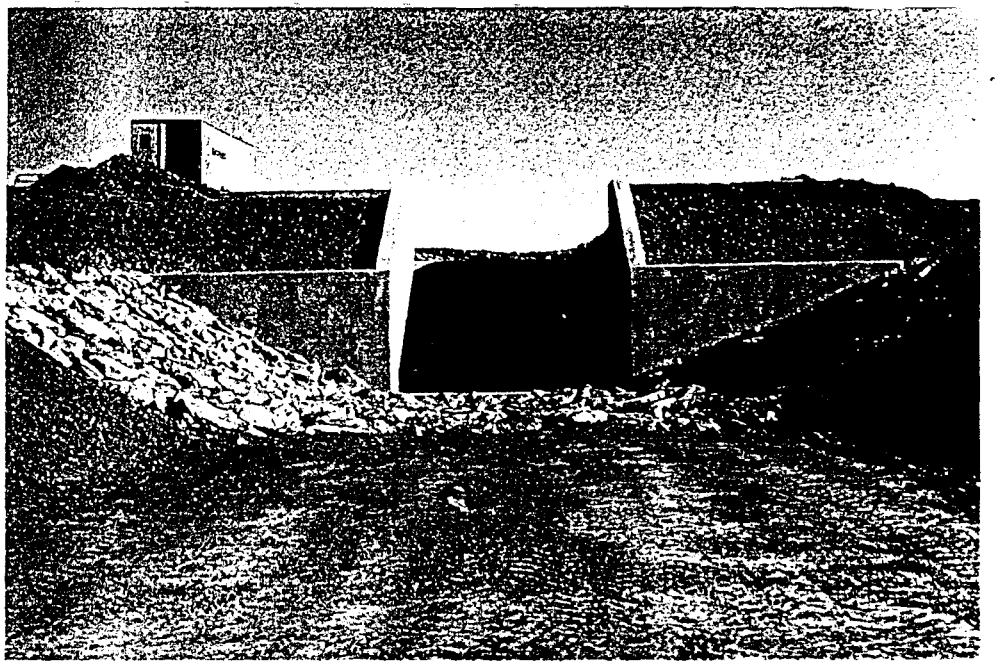
Thank you for your time and consideration.

Sincerely,

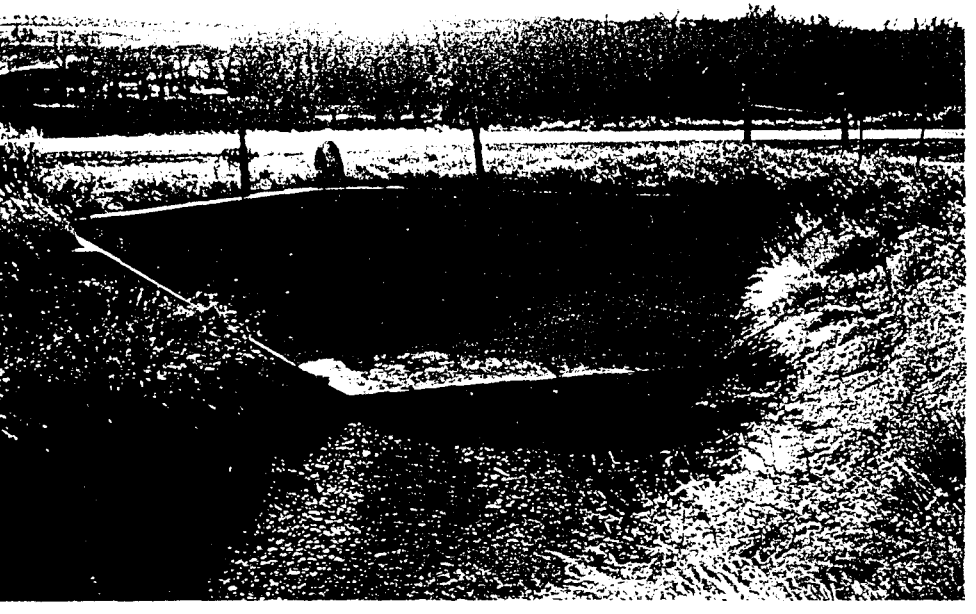
Robert T. Goffena
Chairman
DBWUA



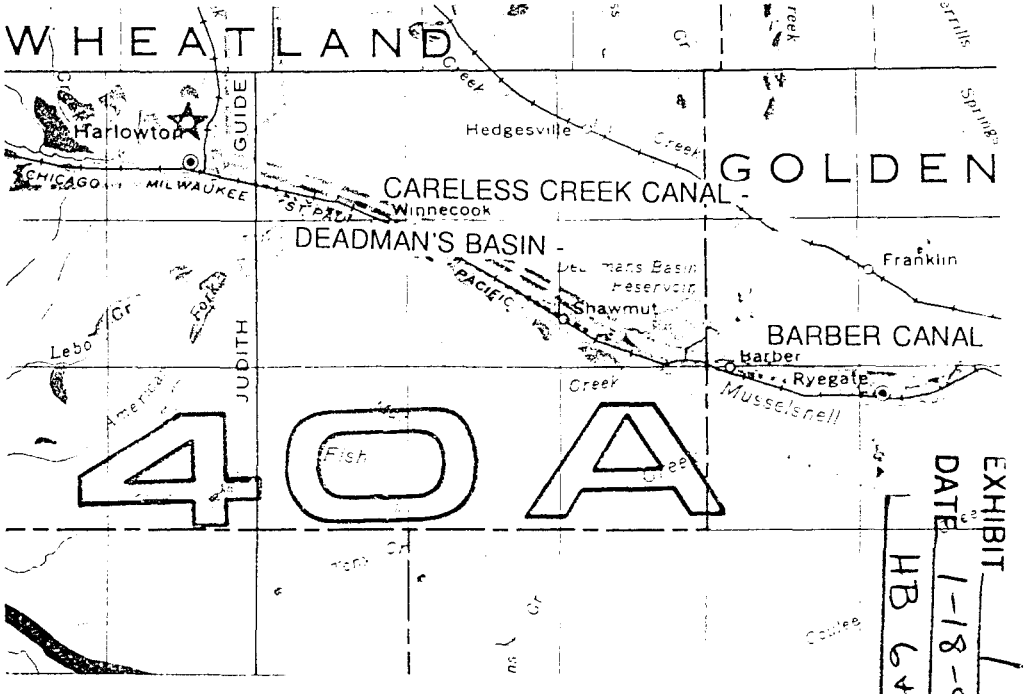
PLUNGE POOL BELOW DROP STRUCTURE



NEW DROP STRUCTURE



EXISTING DROP STRUCTURE ENTRANCE



PROJECT LOCATION

EXHIBIT 1
DATE 1-18-95
HB 648

EXHIBIT 2
DATE 1/18/95
SB

FLINT CREEK RETURN FLOW STUDY

PROPOSED BY

THE MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

IN BEHALF OF

THE GRANITE COUNTY BASIN WATERSHED RESOURCES COMMITTEE

WATER RIGHTS ENFORCEMENT

Some years in the future, when our final decrees are issued, determinations will have to be made as to how those decrees will be enforced so that all water right holders in the Upper Clark Fork River Basin will receive the flow rates in the priority they are entitled to. In the past we have only been concerned with our own decree within a sub-basin on a particular stream or one of its reaches.

We must now realize that there exists on the Clark Fork River large water rights owned by Washington Water Power and Montana Power. Washington Water Power has rights at Noxon Rapids totaling 55,400 cubic feet per second, and these rights are filled on an average of only twenty-two consecutive days a year, generally in late May and early June during periods of high water.

While Washington Water Power's rights are large they are generally junior to most other rights in the Clark Fork Basin. Even though the rights are junior they are entitled to get those amounts of water which they are decreed when those waters are being used by someone else. Yet, when it comes to the enforcement of those rights, wherever they exist, might not that cost of enforcement outweigh the benefit derived, if the sole benefit is partial fulfillment of that right?

Within the area of the Upper Clark Fork River, Montana Power holds water rights at the Milltown dam generating facility of 2000 cubic feet per second with a priority date of 1904. This right can effect many of the rights on lands put under irrigation since that date. In some years there are days even in June when flow rates at Milltown fall below 2000 cfs. In July of 1988 average mean flow rate was 1197 cfs, in August it fell to 627 cfs. So in July Montana Power received 59.85% of its right, and in August 31.55%.

While Washington Water Powers rights are being adjudicated in basin 76N at Thompson Falls, and Montana Powers rights at Milltown in three basins: two Clark Fork River sub-basins (76G and 76M) and the Blackfoot (76F), Flint Creek and Rock Creek are also sources to supply for the above rights.

In the future, when our final decrees are issued, and we know what our rights are and their relationship to each other, and we reach a point where power generating rights fall below their adjudicated flow rates, what enforcement mechanism will be put in place?

To insure fairness to all water users in every basin and sub-basin in the Clark Fork River won't we have to create some system of enforcing all rights too what they are decreed in order to

EXHIBIT 2
DATE 1-18-95

make sure each basin is contributing the amounts of waters to which the power companies are entitled?

Do we create a huge, expensive bureaucracy, and will all water right holders including; Murphy rights, power generation, instream flow rights if they exist, and irrigation share those costs on a prorated basis?

Will we start now, in some such organization ~~such~~ as the Upper Clark Fork River Steering Committee, to develop some innovative planning so as to avoid huge costs and major inconveniences in enforcing and administrating rights in the basin?

Eugene Manley

Flint Creek Waterusers Association
4796 Skalkaho Rd.
Philipsburg, MT 59858

December 16, 1993

Mr. Rich Moy
Department of Natural Resources & Conservation
P. O. Box 202301
1520 East 6th
Helena, MT 59620

Dear Rich:

The Flint Creek Waterusers Assocation enthusiastically supports the Return Flow Study proposed for the Flint Creek Basin.

The information and data generated from this study will be valuable in our water distribution planning. This study should also show that current irrigation practices contribute significant amounts of water to the Clark Fork Basin in the late summer season.

The Flint Creek Waterusers Association can offer some help from our project manager and ditch rider to measure and record water flows. We can also offer the use of some equipment to help install recording devices. Please contact me if we can be of further assistance to make this valuable project succeed.

Sincerely,

Ed Lord
President

EXHIBIT 2
DATE 1-18-95

Office of

The Board of County Commissioners

Granite County

COMMISSIONERS
FRANK WALDBILLIG, CHAIRMAN
P.O. BOX L
PHILIPSBURG MT 59858
ALLEN A. MORRISON
8060 HIGHWAY ONE
PHILIPSBURG, MT 59858
EARL A. MARTIN
BOX 402
DRUMMOND, MONTANA 59832

OFFICE TELEPHONE
406-859-3771

RECEIVED
DEC 09199
DNRC

Post Office Box P
Philipsburg, Montana 59858

December 7, 1993

Department of Natural Resources and Conservation
Water Management Bureau
1520 East Sixth Avenue
P. O. Box 202301
Helena, Montana 59620-2301

Attn: Richard Moy, Bureau Chief

Dear Mr. Moy:

The Board of County Commissioners of Granite County is extremely interested in the proposed return flow water study planned for the Flint Creek basin. We believe that this study will provide valuable information on water availability and water occurance, as well as data to enhance water management.

We feel strongly about this study and have appointed a Basin Watershed Resources Committee to act as a liason among the three agencies involved; Bureau of Reclamation, Department of Natural Resources and Conservation and the Soil Conservation Service. Each member of this committee is intimately familiar with the Flint Creek basin and has years of practical experience with water usage.

The committee members and their addresses follow for future reference:

Frank Waldbillig, Chairman
P. O. Box L
Philipsburg, Montana 59858

Fred Parker
5905 Highway One
Drummond, Montana 59832

Elliott Enman
130 East Mullan Trail
Drummond, Montana 59832

Bill Dennis
5426 Skalkaho Road
Philipsburg, Montana 59858

Pat McDonald
P. O. Box A
Philipsburg, Montana 59858

Both the Board of County Commissioners and the committee are very interested in this study. Any assistance that your agency can provide to bring this study to a useful and meaningful conclusion will be very much appreciated.

Sincerely yours,

BOARD OF COUNTY COMMISSIONERS
OF GRANITE COUNTY

Frank Waldbillig, Chairman

CC/mk

cc: Bureau of Reclamation
Soil Conservation Service
Committee Members

EXHIBIT 2
DATE 1-18-95

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DEC 20 1993
DNRC

GRANITE CONSERVATION DISTRICT - Phillipsburg, Montana 59858

December 16, 1993

Mr. Rich Moy
Chief
Water Management Bureau
Lee Metcalf Building
1520 East Sixth Avenue
PO Box 202301
Helena, MT 59620-2301

Dear Mr. Moy:

The Granite Conservation District strongly supports the Bureau of Reclamation Return Flows Study on Flint Creek in Granite County. This study could provide a great tool to water users in this basin for water management enhancement.

Sincerely,

James Dinsmore

James Dinsmore
Granite Conseryation District, Chairman

United States Department of the Interior

TAKE PRIDE IN AMERICA

BUREAU OF RECLAMATION
Pacific Northwest Region
1150 North Curtis Road
Boise, Idaho 83706-1234

IN REPLY
REFER TO:

PN-6434
FIN-4.00

MAY - 5 1994

RECEIVED
MAY 09 19
DNRC

Mr. Richard Moy
Montana Department of Natural Resources
and Conservation
1520 East Sixth Avenue
Helena MT 59620

Subject: Western Montana Water Conservation Study

Dear Mr. Moy:

Reclamation has a study line item in the proposed program budget labelled the Western Montana Water Conservation Study. Primarily the funds will be used for water management studies in the Clark Fork Basin. Currently, the main focus of our work is in the Flint Creek watershed. For the next few years scheduled funding is projected as follows:

Fiscal Year 1995	$200,000
Fiscal Year 1996	$200,000
Fiscal Year 1997	$150,000

A portion of this year's funding and about $20,000 of next year's funding will be used for the remote sensing program which will provide us with a current assessment of irrigated lands.

These monies would support the data analysis needed to determine return flows, compute a basin water budget, and develop a model to assist local water resource managers of the Flint Creek Basin to evaluate alternative management scenarios.

Sincerely,

Dana D. Rachotte

for John W. Keys, III
Regional Director

cc: Mr. Mike McLane
Montana Department of Natural
Resources and Conservation
1520 East Sixth Avenue
Helena MT 59620

Mr. Terry Voeller
Montana Department of Natural
Resources and Conservation
1520 East Sixth Avenue
Helena MT 59620

EXHIBIT 2
DATE 1-18-95

WE ARE DEFINING THE BASIS OF THE FUTURE OF MONTANA'S WATER RESOURCES NOW, AND I FEEL THAT BASIS IS SERIOUSLY FLAWED, BECAUSE UP UNTIL NOW WE SEEM TO HAVE IGNORED THE IMPLICATIONS OF RETURN FLOWS.

I FIND IT RATHER REMARKABLE THAT IN THE STORAGE SECTION OF THE STATE WATER PLAN I COULD FIND ONLY ONE SENTENCE ON NON-STRUCTURAL STORAGE. THE STATISTICS GIVEN TO ME ARE THAT WE HAVE 2,500,000 IRRIGATED ACRES IN MONTANA. THIS MEANS, IN THE EARLY IRRIGATION SEASON, DURING THE PERIOD UP TO JULY, WE ARE PUTTING INTO OUR AQUIFERS WELL OVER 5,000,000 ACRE FEET OF WATER. DURING THE IRRIGATION SEASON WE DIVERT MORE THAN 12,500,000 ACRE FEET OF WATER, SOME 5,000,000 ACRE FEET RETURNS IN A VERY SHORT TIME.

DOESN'T NON-STRUCTURAL STORAGE DESERVE MORE ATTENTION THAN IT IS NOW GETTING? SHOULDN'T WE EXERT MORE EFFORTS TOWARDS A BETTER UNDERSTANDING OF RETURN FLOWS; WHAT CREATES THEM, WHERE THEY ARE, AND SINCE THEY BECOME SUCH AN INTEGRAL PART OF A BASIN SYSTEM, HOW WE CAN MANAGE THEM BETTER?

THE REASON WHY FLINT CREEK IRRIGATORS ARE REQUESTING THIS GRANT IS BEST DEFINED IN THE FIRST PARAGRAPH OF THE TECHNICAL ASSESSMENT SECTION OF PROJECT NO. 14 OF YOUR GRANT REQUESTS AS FOLLOWS: "FLINT CREEK IRRIGATORS HAVE BEEN FRUSTRATED, OVER THE YEARS, BY DECISIONS MADE IN THEIR BASIN WITH LITTLE CONSIDERATION FOR RETURN FLOWS. THE IMPORTANCE OF RETURN FLOWS TO FISH HABITAT AND TIMING FOR HYDROPOWER ARE NOT DOCUMENTED TO DATE. ADDITIONALLY MANY FLINT CREEK IRRIGATORS ARE APPREHENSIVE OVER CONVERSION TO SPRINKLER SYSTEMS, WHICH HAVE DIFFERENT FLOW PATTERNS THAN GRAVITY IRRIGATION. RETURN FLOW DATA WILL ALLOW LOCAL WATER USERS TO BETTER MANAGE THEIR WATER SUPPLIES."

IT WILL ALSO HELP SOME OF US TO CONVINCE NON-BELIEVERS RETURN FLOWS DO REALLY EXIST, AND ALERT OTHER BASINS TO THE ROLE THEY CAN AND DO PLAY IN A BASIN SYSTEM. ALL WATERSHEDS MUST LEARN THAT WE ARE SERIOUSLY IMPAIRING THE LOGISTICAL CAPACITY OF BASIN SYSTEMS TO SUPPLY THE WATER RESOURCES WE DEMAND OF THEM FOR IRRIGATION, INSTREAM FLOW AND OTHER NECESSARY USES.

WE ARE IN ESSENCE DESTROYING THE LOGISTICAL CAPACITY OF BASIN SYSTEMS TO SUPPLY WHAT WE DEMAND OF THEM FOR IRRIGATION, INSTREAM FLOW AND ALL THE OTHER USES.

WE MUST DEVELOP A BETTER UNDERSTANDING OF THE INTERRELATION-SHIP OF STRUCTURAL AND NON-STRUCTURAL STORAGE AND HOW THEY CAN, IF PROPERLY MANAGED, COMPLIMENT EACH OTHER TO THE EXTENT THEY CAN CREATE VOLUMES OF USAGE FAR EXCEEDING THE ORIGINAL STORAGE.

THE RESULTS OF THIS STUDY WILL HELP ADDRESS SOME OF THE MYTHS THAT EXIST ABOUT WHAT CONSTITUTES IN-EFFICIENT USE OF OF OUR WATER RESOURCES BY AGRICULTURE. TWO OF THOSE ARE, THAT LARGER,

LONGER CANALS WATER LOSES ARE INTOLERABLE, THE TRUTH OF THE MATTER IS THAT IF THEY ARE PUT INTO USE AS EARLY IN THE IRRIGATION SEASON AS POSSIBLE THE CANAL LOSES FILL THE AQUIFER SOONER AND THE RESULTING RETURN FLOWS WILL LAST LONG AFTER THE DIVERSION IS SHUT OFF.

SPRINKLING OFTEN TOUTED AS A WATER SAVING MEASURE OVER FLOOD IRRIGATION DEFINITELY REMOVES THE FLOW RATE AND VOLUME OF WATER PUT INTO OUR AUQIFERS.

IN OUR ADJUDICATION PROCESS WHICH IS SUPPOSED TO DECREE ALL OF THE BENEFICIAL USES OF WATER CREATED BEFORE 1973 WE ARE IGNORING THOSE WATERS THAT CREATE RETURN FLOWS SOONER AND SUSTAIN THEM LONGER.

WE HAVE SALVAGED WATER LAWS THAT ENCOURAGE THE DESTROYING OF NON-STRUCTURAL STORAGE.

THESE ARE SOME OF THE CONCERNS WE HAVE IN THE FLINT CREEK BASIN AND THIS RETURN FLOW STUDY WILL DEVELOP DATA THAT WE CAN USE TO ADDRESS SOME OF THE PROBLEMS WE SEE IN THE BASIN.

IF THE BUREAU OF RECLAMATION, THE EXPERTS IN WATER MANAGEMENT, FEEL THAT IT IS DESIROUS TO DEVOTE THE RESOURCES THEY ARE PUTTING INTO THIS STUDY, I WOULD HOPE WE AS A STATE CAN REALIZE IT IS IN OUR INTEREST TO SEE THIS MOST IMPORTANT STUDY IS FULLY FUNDED.

THAT IS WHY WE ARE REQUESTING THIS GRANT.

I WANT TO THANK YOU FOR THE OPPORTUNITY TO APPEAR BEFORE YOU TO MAKE THIS REQUEST.

Eugene Manley- Rancher near Hall, Montana
Montana ranch broker since 1973
Water rights consultant
35 years Executive Secretary Allendale Irrigation Company

EXHIBIT 3
DATE 1-18-95
SB

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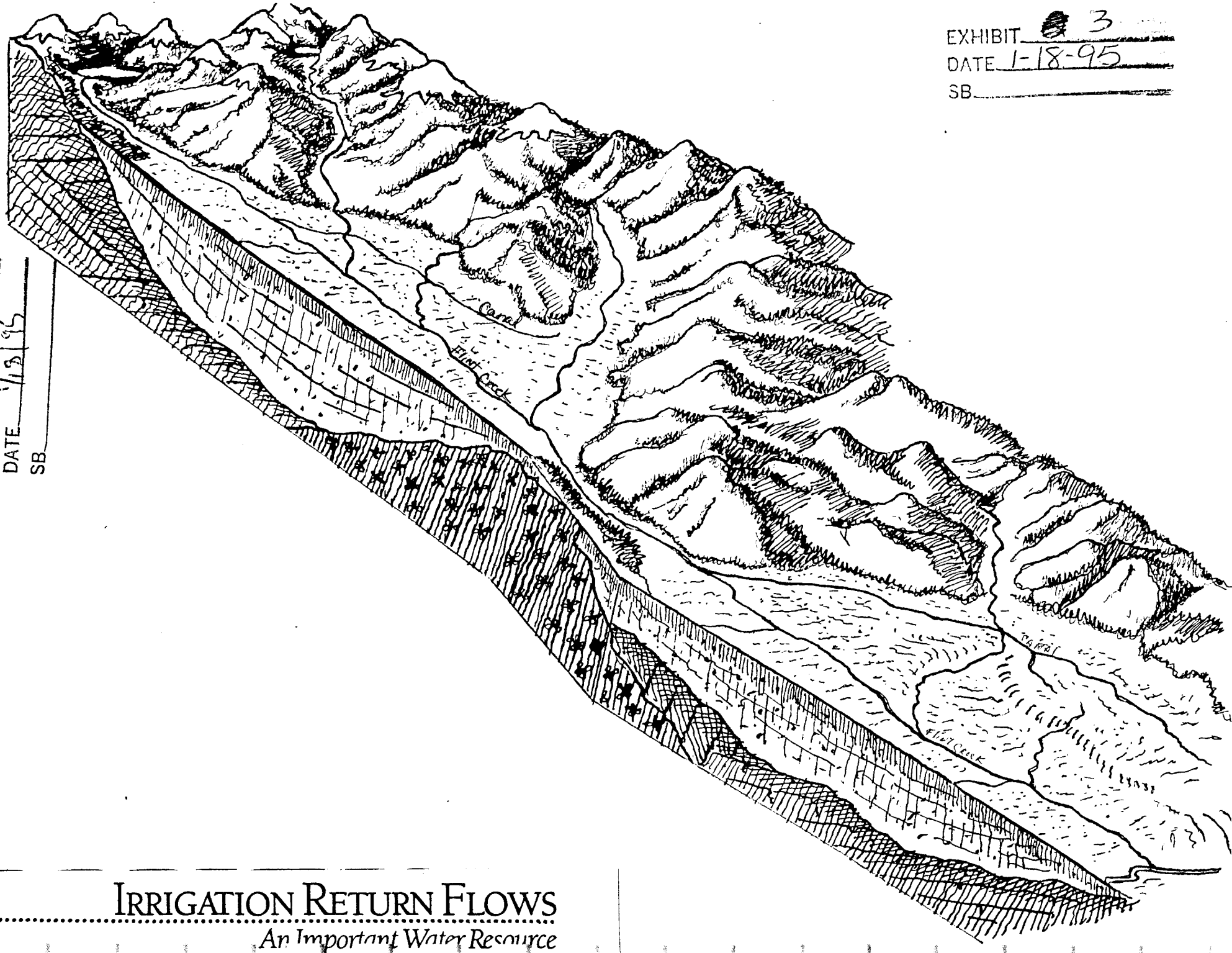
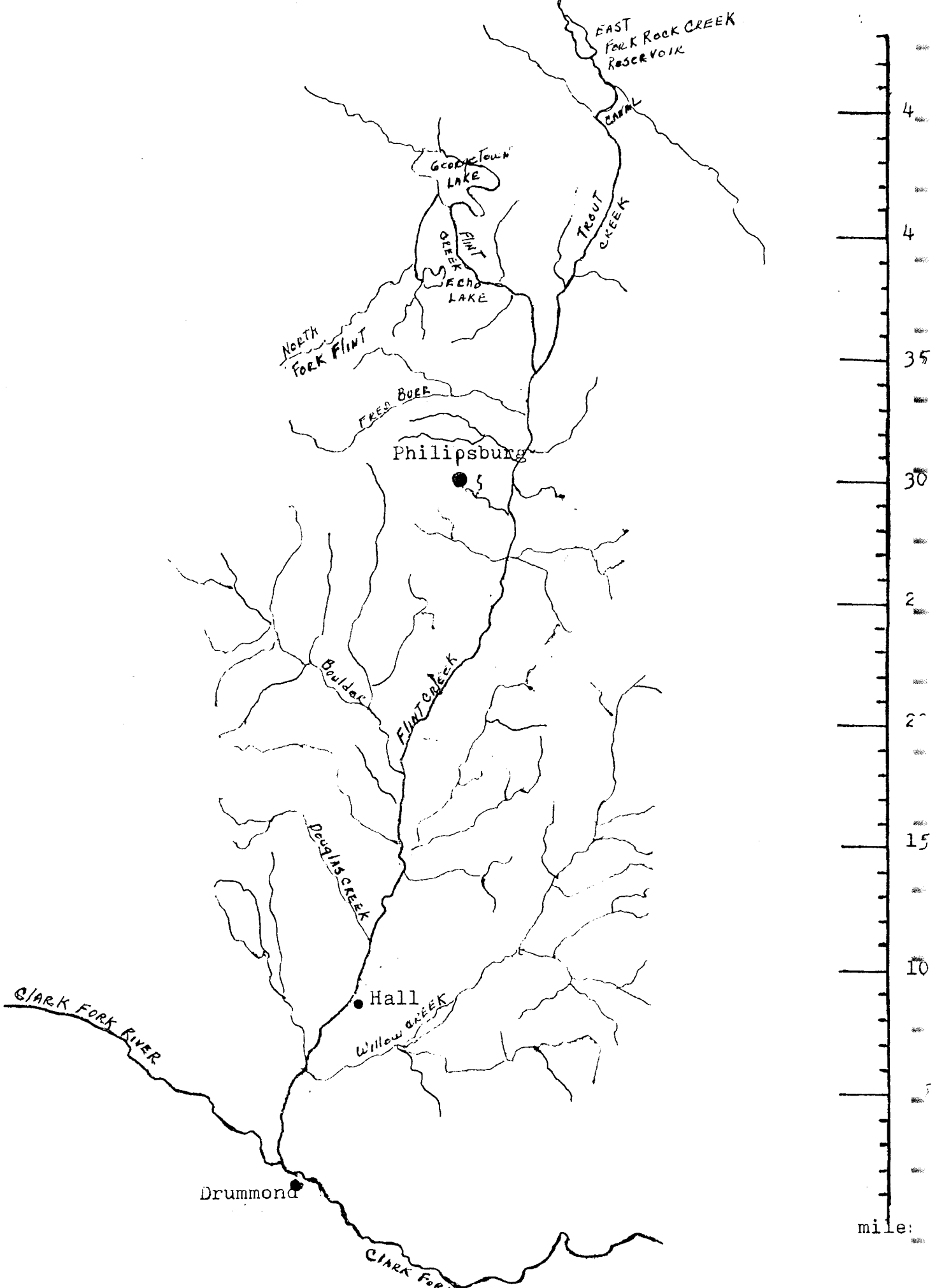
DATE 1/18/95
SB

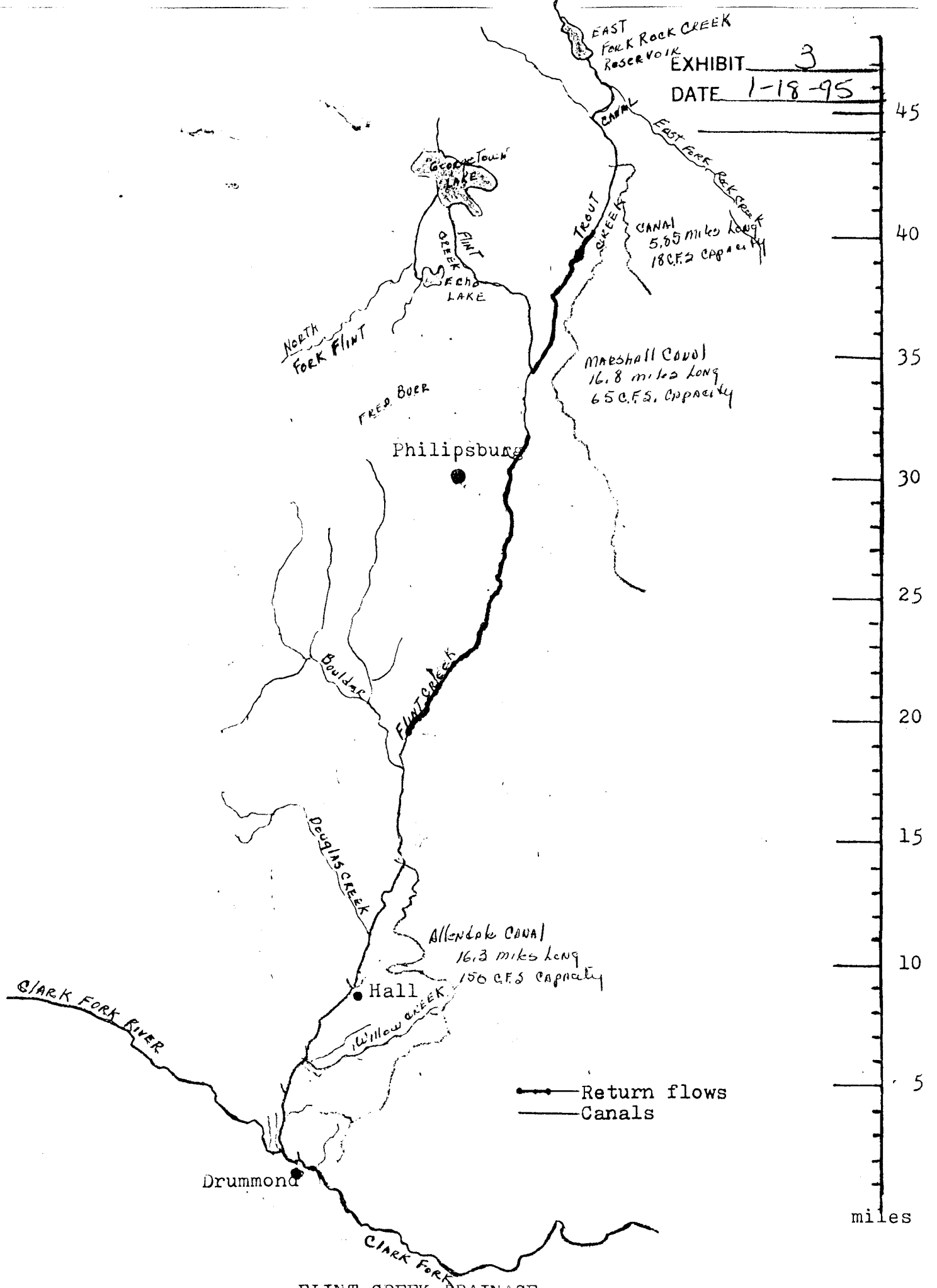


IRRIGATION RETURN FLOWS

An Important Water Resource



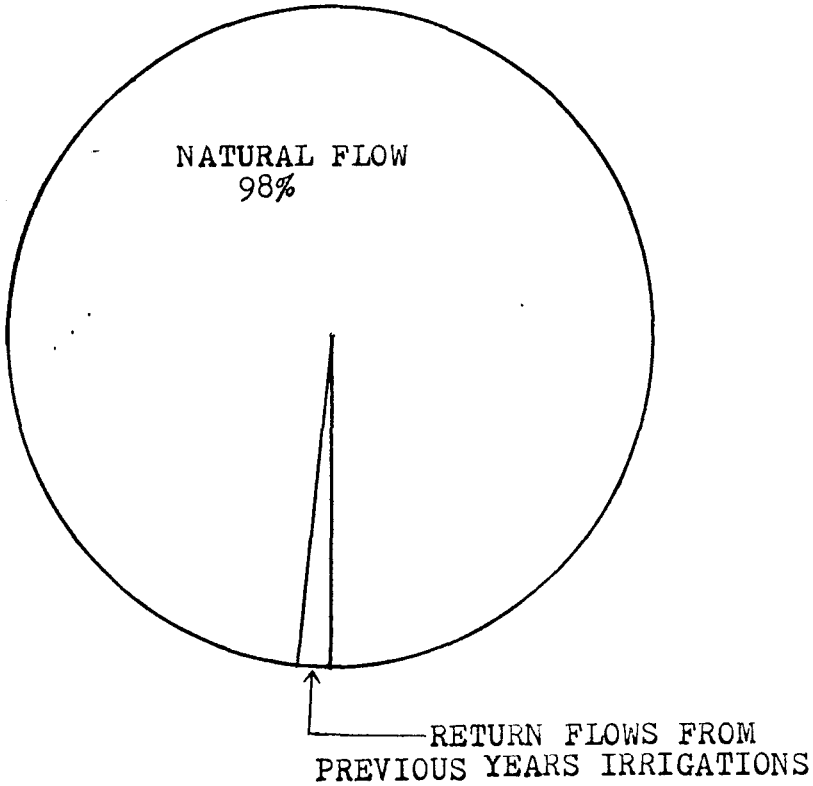
FLINT CREEK DRAINAGE
WATER SOURCES AT START OF IRRIGATION SEASON



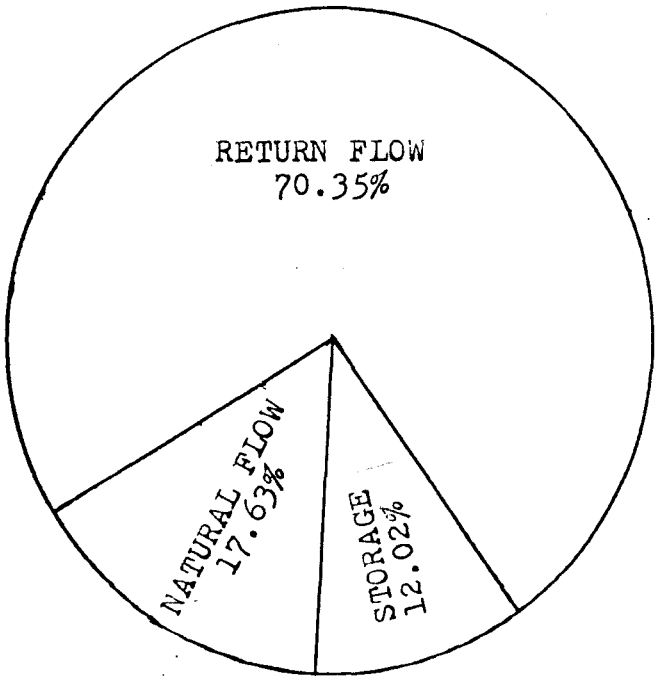
FLINT CREEK DRAINAGE
BASIN WATER SOURCES AFTER JUNE 25, 1988

FLINT CREEK BASIN

WATER SOURCES AT START OF IRRIGATION SEASON



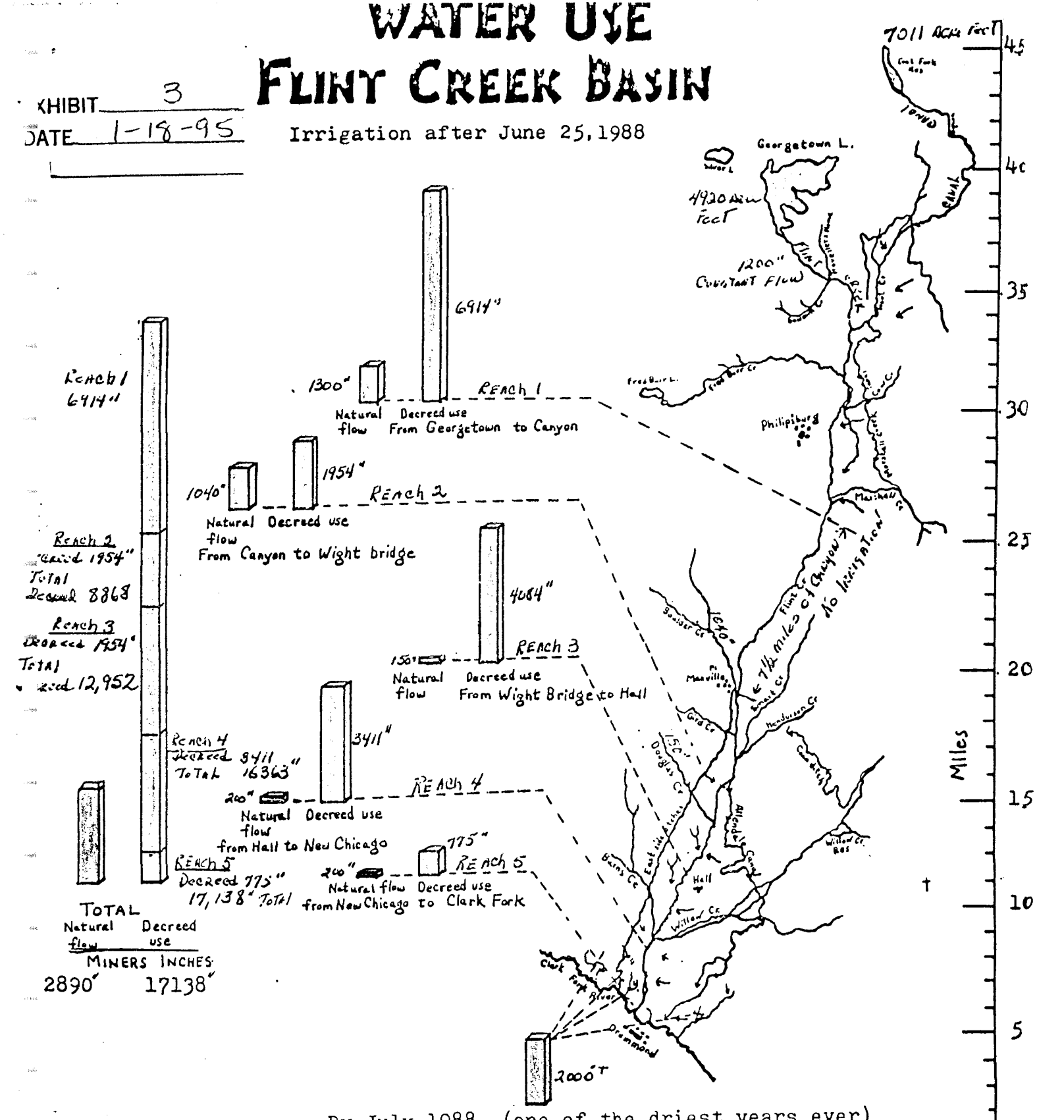
BASIN WATER SOURCES AFTER JUNE 25, 1988



WATER USE
FLINT CREEK BASIN

EXHIBIT 3
DATE 1-18-95

Irrigation after June 25, 1988



By July 1988, (one of the driest years ever) these four watercourses, which are virtually dry in the spring, and Flint Creek were returning well over 2000 inches of water to the Clark Fork River.

APPENDIX C

RETURN FLOW FROM IRRIGATION STABILIZES WATER SOURCES

Copyrighted by Eugene Manley & William Ohrmann
Drummond, Montana 59832

There seems to be plenty of controversy between agriculture, and other users of water. Disputes over the de–watering of streams due to irrigation demand are common.

A drought shocks all of us when we see a stream almost dry, however, ranchers and fisherman really want to see the same thing, a stream full of water. Although it may seem hard to believe, water taken from a stream and used for flood irrigation, doesn't necessarily mean less water in the stream. It can actually work to stabilize the flow later in the season. A proven method is in place that tends to solve this serious problem of de–watering, but we must be willing to understand the complicated way in which irrigation water works its way through a basin. In some basins senior water rights holders sometimes forgo their claims for usage of their rights so that junior right users in the upper basin will make usage of that water in early spring. This will recharge the aquifer, start return flows, and insure those senior users of an in–stream flow that will satisfy their needs later in the season. This method of keeping stream flow constant is one that Mother Nature uses, and it is a natural by product of flood irrigation. This water that finds its way back into a stream after being used for flood irrigation is called "return flow".

One must realize that the source of all water in a basin system is Natural Flow water. As water is diverted for irrigation use, some return flows start to develop almost immediately, others develop over varying lengths of time. Over time, and with distance downstream, we find the source of irrigation water changes from natural flow waters to return flow waters. At the same time we find this return flow adding up to a greater volume of water than the creek would ever flow naturally, and that flow now furnishes most of the water in the creek. That return flow continues to flow long after the irrigation season is over.

When snow melts or rain falls, Mother Nature tries her best to put some of it underground in the aquifer. Flood irrigation does exactly the same thing and tends to store water just as surely and dependably as a dam. If it were not for this system of storing water in layers of sand, gravel, and bedrock, there would be no springs, rivers or wells. Some areas of the world that receive as much precipitation as we do, but lacking the underground storage we enjoy, are virtual deserts.

Nature in our area only gives about nine to fourteen inches of precipitation a year. It seems reasonable to keep as much of this spring run off in small dams or stored in the land itself, rather than have it rush away to the ocean without an opportunity to have it put to use. With the system of ditches and canals in place, we are able to add a great volume of water to the aquifers. It is not a new thing, it has been going on since the first ditch was dug. It has gone on for so long that it is taken for granted that springs, wells, wetlands and creeks have had, and always will have water. After well over one hundred years of flood irrigation developments creating much of the water for these uses, it is understandable how people would make those assumptions.

To illustrate the above points we only have to look at the Willow Creek In Granite County, where all water available for irrigation is measured into the system, and all water diversions out of the system are also measured. In 1988, the driest year ever in that basin, late in the irrigation season on a particular day there was a measured inflow of one thousand thirty five inches of available water, yet there was a measured diverted outflow of some four thousand one hundred inches of usage. One would certainly ask where that extra three thousand inches of water came from. Most of it came from return flows created by early season flood irrigation, some of it from direct return flow.

In the Flint Creek Basin also in Granite County in that same year some 10,000+ acre feet of water were discharged into the upper basin out of the East Fork Reservoir. This furnished some 60,000 acre feet of usage throughout that basin, once again the difference of some 50,000 acre feet can be accounted for by the use and re–use of return flows. As in most basins of this State, if one were to tour the basin in late winter before spring run off and again in late June, or early July, a close observation would astound one as to how many formerly dry, or virtually dry watercourses are now flowing water, and how much total water they are flowing, and the contributions they are making to the overall efficiency of the basin's usage of water.

EXHIBIT 3
DATE 1-18-95

In Flint Creek in 1988, after June 25th, well over 65 percent of the water diverted was return flow. Therefore, it makes sense to find out where those return flows are, what creates them, what the amounts are in different reaches, and knowing all these factors realize how we can fit them into a better management plan for all of the available waters. This is one of the reasons we now have in place a four year study of those return flows in the Flint Creek Basin.

If irrigation methods are altered we will see many changes that will effect us all. Some we won't especially care for, such as a much worse chronic de–watering of streams, and water shortages.

In many areas of the United States, like the Southwest, water is being pumped from ancient underground sources and the water table is lowering ever year. Wells hundreds of feet deep are going ever deeper. We hear how concerned people are trying to figure out a way to divert rivers of the North to these areas, to recharge and stabilize this underground source. The suggested method to recharge these aquifers would be by flooding areas that have proper soils so as to allow this water to percolate to these underground lakes. Flood irrigation on a grand scale!

For many years sprinkler irrigation was recommended as a way to save water. At the time it seemed like a good idea. Use only what the crops actually need and let the rest go down the stream. However this salvaged water was soon being used on new land, was being totally consumed, and wasn't going down stream at all. This of course is what sprinkler irrigation is supposed to do. Since it makes such efficient use of the water it also causes springs to go dry, and also puts an end to return flows.

Supposing in the future all lands were under sprinkler irrigation. One might then ask how things would be. There would be no more underground storage, fewer springs, and just small areas of seepage. We would have very few wetlands, and also some dry household wells. The creeks that we think we see de–watered now would have reaches dry virtually all summer with no chance of recovery, because there would be no return flows for them.

Another very often suggested method of conserving water is the lining of canals and ditches so as to stop water losses that leave those conveyances by seepage. This is an immediate solution that could have dramatic consequences creating more problems than it solves. Among those consequences are the drying up of valuable wetlands, and the simultaneous shut off of strategic return flow patterns that help stabilize a basin system.

Return flow which starts out as water diverted from a stream, irrigates land, is caught again and again and used over and over. Much of it seeps into the aquifer and comes out eventually as springs. Instead of being long gone out of the valley it is stored underground. It too, eventually reaches the ocean, but the good it does an irrigated basin by being stored and released slowly should be recognized as the gift it is.

One hears about developers wanting to drain wetlands, but not many ranchers feel that way about them. Most wetlands on ranches are valued as pasture, and as a source of water that eventually drains back into a creek. One could ask how many of these wetlands would exist if there were no flood irrigation, and the answer would be very few compared to what we now have. We all know of the numerous areas of typical wetlands, consisting of cattail areas, sedges, and small streams that are dry in spring, but get wet as soon as the land above them is irrigated. It is no secret, it happens every spring to thousands of acres in irrigated valleys. Willows and other small trees develop in some of these areas and furnish excellent habitat for all kinds of birds and other forms of wildlife.

If wetlands are important, as we are told, then these people who believe this should wholeheartedly encourage flood irrigation. So should fishermen, sportsmen, hydropower companies, and anyone else interested in seeing stable late summer stream flow, dependable wells and green valleys.

EUGENE MANLEY
Broker

15 Willow Tree Lane
Hall, Montana 59837
(406) 288-3409

Ranch Broker Consultant

Water Rights Consultant

September 20, 1993

Patrick K. Goggins
Western Livestock Reporter
P. O. Box 30758
Billings, MT 59701

Dear Mr. Goggins

This letter will help to explain what I meant by the statement, "A large majority of the ranches I look at have major unrecognized problems in their water right claims," that was in Agri-news on September 17, 1993.

The State of Montana has for sometime been involved in a general adjudication process that should fully and adequately decree **All** of the water rights that existed prior to July 1, 1993.

In the Flint Creek Basin, where I live, very few if any claims reflect, or claimed those historical high water rights which they used over and above what was decreed in the original decrees issued in the basin. In my work in other basins I see the same dilemma. Those who failed to file on those high water rights not only jeopardize their own own historical beneficial usage rights, they have put in severe peril a whole basin aquifer storage system because the use of those high waters is what creates return flows sooner and sustains them longer.

In the lower reaches of a highly developed basin system these return flows, after high water run off, begin to make up most all the water used in the lower reaches of a basin. They can also become the sole source of water for the most senior water rights.

If we do not correct this problem now, before our final decrees are issued, we will discover our failure to claim this high water will tax the logistical capacity of a basin system beyond its delivery capabilities, creating irrigation deficits and further instream flow depletions that most probably can not be overcome for the rest of the irrigation season.

There are large amounts of wetlands, sub-irrigated grounds, and wildlife habitats that stand to loose their sources of supply because there was either no way to claim a right, or the flow rates granted will never reach their destination.

EXHIBIT 3
DATE 1-18-95

Many times in the past at meetings I have made the following two statements:

> "In any legal process involving water in Montana, we should be claiming the largest amount of water with the earliest priority date that is legally defensible."
>
> "Make sure your water right claims reflect the maximum amount of water that was historically put to a beneficial use in the past."

We are failing to do either of the above effectively!!

Sincerely,

Eugene Manley

IRRIGATION RETURN FLOWS

An Important Water Resource

How well do we really understand return flows from irrigation? First we must understand that the sources of all water in a basin are natural, created by nature through rainfall and accumulated snowpack.

Return flows in a basin are those waters created by flood irrigation, a method that spreads water across tracts of land to increase production. Some of this water is used by crops, some evaporates, but the largest amount seeps into underlying aquifers composed of materials such as clay, sand, gravel and bedrock. Within a short time, some of that water returns to the surface in the form of small seeps and springs that combine to create new water courses and supplement existing ones.

Some return flows develop almost immediately, others develop over varying lengths of time, and in ever increasing flow rates. It is this sort of long-term development of return flows that can help stabilize water sources. Over time, and with distance downstream, we find the source of irrigation water changes from natural flow to return flow. At the same time, we find in many streams this return flow can add up to a greater volume of water than might flow naturally, and that return flow furnishes most of the water in many reaches of a basin. Return flows, then, can contribute to the overall efficiency of the basin's usage of the original natural flow.

To illustrate these points, we can look to Willow Creek in the Flint Creek Basin of Granite County. There, water available for irrigation is measured, as are all diversions for irrigation. In 1988, a very dry year, late in the irrigation season on a particular day, natural flow measured 1,035 miners inches of water (about 26 cubic-feet per second). Yet the measured amount diverted at the drainage's irrigation diversions totaled 4,100 miners' inches. The difference of more than 3,000 inches came from return flows created by early season flood-irrigation.

Because return flows can become an integral component water usage in a basin, we must learn more about what creates them, where they are and in what amount. Then, and only then, can we become more efficient in our use of available water. We must also learn what actions can adversely affect strategic return flow patterns.

Last May, I learned that if might be possible to get the U.S. Bureau of Reclamation to study return flows. In June, steering committee participants Gerald Mueller, Jo Brunner and I met with staff from the Bureau and from the Montana Department of Natural Resources and Conservation to discuss a possible study. I told them the Clark Fork's Flint Creek Basin would be the ideal place to study, and that its results could be educational to all water interests in the basin. After the meeting, we toured the basin and looked at its water sources and some of its established return flows.

Now, initial preparations are underway to do the study, and I hope the results open the way for a better understanding of how we can manage our water more effectively here and throughout Montana.

Eugene Manley

EXHIBIT 4
DATE 1/18/95
SB

WE ARE DEFINING THE BASIS OF THE FUTURE OF MONTANA'S WATER RESOURCES NOW, AND I FEEL THAT BASIS IS SERIOUSLY FLAWED, BECAUSE UP UNTIL NOW WE SEEM TO HAVE IGNORED THE IMPLICATIONS OF RETURN FLOWS.

I FIND IT RATHER REMARKABLE THAT IN THE STORAGE SECTION OF THE STATE WATER PLAN I COULD FIND ONLY ONE SENTENCE ON NON-STRUCTURAL STORAGE. THE STATISTICS GIVEN TO ME ARE THAT WE HAVE 2,500,000 IRRIGATED ACRES IN MONTANA. THIS MEANS, IN THE EARLY IRRIGATION SEASON, DURING THE PERIOD UP TO JULY, WE ARE PUTTING INTO OUR AQUIFERS WELL OVER 5,000,000 ACRE FEET OF WATER. DURING THE IRRIGATION SEASON WE DIVERT MORE THAN 12,500,000 ACRE FEET OF WATER, SOME 5,000,000 ACRE FEET RETURNS IN A VERY SHORT TIME.

DOESN'T NON-STRUCTURAL STORAGE DESERVE MORE ATTENTION THAN IT IS NOW GETTING? SHOULDN'T WE EXERT MORE EFFORTS TOWARDS A BETTER UNDERSTANDING OF RETURN FLOWS; WHAT CREATES THEM, WHERE THEY ARE, AND SINCE THEY BECOME SUCH AN INTEGRAL PART OF A BASIN SYSTEM, HOW WE CAN MANAGE THEM BETTER?

THE REASON WHY FLINT CREEK IRRIGATORS ARE REQUESTING THIS GRANT IS BEST DEFINED IN THE FIRST PARAGRAPH OF THE TECHNICAL ASSESSMENT SECTION OF PROJECT NO. 14 OF YOUR GRANT REQUESTS AS FOLLOWS: "FLINT CREEK IRRIGATORS HAVE BEEN FRUSTRATED, OVER THE YEARS, BY DECISIONS MADE IN THEIR BASIN WITH LITTLE CONSIDERATION FOR RETURN FLOWS. THE IMPORTANCE OF RETURN FLOWS TO FISH HABITAT AND TIMING FOR HYDROPOWER ARE NOT DOCUMENTED TO DATE. ADDITIONALLY MANY FLINT CREEK IRRIGATORS ARE APPREHENSIVE OVER CONVERSION TO SPRINKLER SYSTEMS, WHICH HAVE DIFFERENT FLOW PATTERNS THAN GRAVITY IRRIGATION. RETURN FLOW DATA WILL ALLOW LOCAL WATER USERS TO BETTER MANAGE THEIR WATER SUPPLIES."

IT WILL ALSO HELP SOME OF US TO CONVINCE NON-BELIEVERS RETURN FLOWS DO REALLY EXIST, AND ALERT OTHER BASINS TO THE ROLE THEY CAN AND DO PLAY IN A BASIN SYSTEM. ALL WATERSHEDS MUST LEARN THAT WE ARE SERIOUSLY IMPAIRING THE LOGISTICAL CAPACITY OF BASIN SYSTEMS TO SUPPLY THE WATER RESOURCES WE DEMAND OF THEM FOR IRRIGATION, INSTREAM FLOW AND OTHER NECESSARY USES.

WE ARE IN ESSENCE DESTROYING THE LOGISTICAL CAPACITY OF BASIN SYSTEMS TO SUPPLY WHAT WE DEMAND OF THEM FOR IRRIGATION, INSTREAM FLOW AND ALL THE OTHER USES.

WE MUST DEVELOP A BETTER UNDERSTANDING OF THE INTERRELATION-SHIP OF STRUCTURAL AND NON-STRUCTURAL STORAGE AND HOW THEY CAN, IF PROPERLY MANAGED, COMPLIMENT EACH OTHER TO THE EXTENT THEY CAN CREATE VOLUMES OF USAGE FAR EXCEEDING THE ORIGINAL STORAGE.

THE RESULTS OF THIS STUDY WILL HELP ADDRESS SOME OF THE MYTHS THAT EXIST ABOUT WHAT CONSTITUTES IN-EFFICIENT USE OF OF OUR WATER RESOURCES BY AGRICULTURE. TWO OF THOSE ARE, THAT LARGER,

LONGER CANALS WATER LOSES ARE INTOLERABLE, THE TRUTH OF THE MATTER IS THAT IF THEY ARE PUT INTO USE AS EARLY IN THE IRRIGATION SEASON AS POSSIBLE THE CANAL LOSES FILL THE AQUIFER SOONER AND THE RESULTING RETURN FLOWS WILL LAST LONG AFTER THE DIVERSION IS SHUT OFF.

SPRINKLING OFTEN TOUTED AS A WATER SAVING MEASURE OVER FLOOD IRRIGATION DEFINITELY REMOVES THE FLOW RATE AND VOLUME OF WATER PUT INTO OUR AUQIFERS.

IN OUR ADJUDICATION PROCESS WHICH IS SUPPOSED TO DECREE ALL OF THE BENEFICIAL USES OF WATER CREATED BEFORE 1973 WE ARE IGNORING THOSE WATERS THAT CREATE RETURN FLOWS SOONER AND SUSTAIN THEM LONGER.

WE HAVE SALVAGED WATER LAWS THAT ENCOURAGE THE DESTROYING OF NON-STRUCTURAL STORAGE.

THESE ARE SOME OF THE CONCERNS WE HAVE IN THE FLINT CREEK BASIN AND THIS RETURN FLOW STUDY WILL DEVELOP DATA THAT WE CAN USE TO ADDRESS SOME OF THE PROBLEMS WE SEE IN THE BASIN.

IF THE BUREAU OF RECLAMATION, THE EXPERTS IN WATER MANAGEMENT, FEEL THAT IT IS DESIROUS TO DEVOTE THE RESOURCES THEY ARE PUTTING INTO THIS STUDY, I WOULD HOPE WE AS A STATE CAN REALIZE IT IS IN OUR INTEREST TO SEE THIS MOST IMPORTANT STUDY IS FULLY FUNDED.

THAT IS WHY WE ARE REQUESTING THIS GRANT.

I WANT TO THANK YOU FOR THE OPPORTUNITY TO APPEAR BEFORE YOU TO MAKE THIS REQUEST.

Eugene Manley- Rancher near Hall, Montana
Montana ranch broker since 1973
Water rights consultant
35 years Executive Secretary Allendale Irrigation Company

EXHIBIT 5
DATE 1-18-95
SB

HELENA AREA BEDROCK AQUIFERS ASSESSMENT

PRODUCTS:

Geologic cross-sections for the bedrock aquifers

Map of the general water-quality characteristics

Map of the local recharge areas, water level trends, and ground-water fluctuations in response to recharge

Ground-water flow paths

Map of the general water-bearing characteristics

Analysis of the sensitivity of bedrock aquifers to the effects of land management and use practices

6
1-18-95

TESTIMONY: LEWIS AND CLARK COUNTY WATER QUALITY PROTECTION DISTRICT IN SUPPORT OF THE HELENA BEDROCK AQUIFER ASSESSMENT

Alice Stanley
705 State Street
Helena, Montana

I have been employed as a hydrogeologist in Montana for 8 years and am the current chair of the board of directors of the Lewis and Clark County Water Quality Protection District.

Our district was the first to be established in Montana. Our District boundaries are defined by watershed boundaries rather than political boundaries, and as such, do not include the entire area of Lewis and Clark county. The district does include surface water, groundwater and a community of people that share a common watershed.

We are a community that has taken responsibility for the protection of our own water resources. Since the district was formed 3 1/2 years ago, we have

- established a set of long range goals and specific objectives.

We have

- identified and prioritized known and potential threats to our water resources and
- implemented programs designed to understand our water systems, prevent pollution and mitigate problems.

And in doing so, we have not only relieved the state and the county of some responsibilities that stress their limited resources but we have also designed water protection programs tailored to the needs of our own watershed. Our District already serves as a useful model to other Montana communities that are interested in increasing self-management as opposed to government management of their water resources.

I ask you to support our request for funding the Helena Bedrock Aquifer assessment. The information we collect during the study is necessary for us to understand the nature and extent of our water supply so we can better manage our resource. And, maybe more importantly, it will provide you with an opportunity to invest in a successful model of resource management on the local level. The rest of Montana will thank you for that.

Thank you for the opportunity to speak.

HOUSE OF REPRESENTATIVES
VISITOR REGISTER

Long-Range Planning SUBCOMMITTEE DATE 1-18-95

DEPARTMENT(S) ______ DIVISION ______

PLEASE PRINT **PLEASE PRINT**

NAME	REPRESENTING	
Marcella Sherfy	Montana Historical Society	
Brian Cockhill	MHS	
Joanna Thamke	US Geological Survey	
Eugene Manley	Flint Creek Rtn. Flow Study	
Mary Ellen Wolfe	Montana Watercourse	
Glen McDonald	DNRC	
Jeri Hice	Deadman's Basin WUA	
KURT HAFFERMAN	DNRC	
Vivian Drake	Lewis + Clark County	
JESSE ABER	DNRC	
Rich Moy	DNRC.	
J. Brunner	self	
Fred Parker	FLINT CREEK RETURN FLOW STUDY	
GEORGE OCHENSKI	TROUT UNLIMITED	SUPPORT PDI.
NORM MIDTLYNG	US GEOLOGICAL SURVEY	
Terry Voeller	DNRC	
Jon M Wraith	MT Agric. Exp. Sta	

PLEASE LEAVE PREPARED TESTIMONY WITH SECRETARY. WITNESS STATEMENT FORMS ARE AVAILABLE IF YOU CARE TO SUBMIT WRITTEN TESTIMONY.

HOUSE OF REPRESENTATIVES
VISITOR REGISTER

_____ SUBCOMMITTEE DATE _____

DEPARTMENT(S) _____ DIVISION _____

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NAME	REPRESENTING	
Patricia Sharp	Montana Advocacy Program	

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HOUSE OF REPRESENTATIVES
VISITOR REGISTER

Long-Range Planning SUBCOMMITTEE DATE 1-18-95

DEPARTMENT(S) _____ DIVISION _____

* PLEASE PRINT * * PLEASE PRINT *

NAME	REPRESENTING	
Roxa Drench Roxa French	Bitter Root Water Forum	
MIKE MURPHY	MT WATER RES. ASSN	
Tom Ruffatto	Rancher Bitterroot	
Robert Rasmussen	Lewis & Clark County Planning Bedrock Aquifer Study	
Jim Stimson	NRIS / MSL Drought Monitoring	
Jim Yeagley	Lewistown	
Keith Jensen	Robert Peccia & Assoc. / Lewistown	
Sean Lawlor	U.S. Geological Survey	
Jim Elliott	U.S.G.S.	
Jack Stults	DNRC & City of Helena	
Belinda Waters	Lewistown Planning Dept	
Lee Kumm	Lewistown City Council	
Alice Stanley	L-C County Water Quality Protection District	

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