

An aerial photograph of a river valley, likely in Montana, showing a winding river through agricultural fields and some forested areas. The image is used as a background for the title page.

# **Water Right Changes**

## **Legal Background & Historic Use Analysis**

**By Scott Irvin**

**Montana Department of Natural Resources & Conservation**

**March, 2010**

# Historical Evaluation

## Resources Considered

- Application Materials
- Statement of Claim
- Water Court Documents
- Historic Decree
- Water Measurement/Use Records
- Water Resources Survey
  - Field Notes
  - Aerial Photo
- Series of Aerial Photos
- Topographic Maps
- Soil Surveys
- Field Investigation
- Water User Communications
  - History of Irrigation Practices
  - Crop Production

Form No. 201 (2-8-80)

40714  
S-18E-U

STATEMENT OF CLAIM FOR EXISTING WATER RIGHTS  
**IRRIGATION**

APR 30 1982  
DEPT. OF NATURAL RESOURCES AND CONSERVATION

45-127-03-02 For the Water Courts of the State of Montana

40-00

CONTRACT BUYER: RUTLEDGE RANCHES INC., A Corporation  
CONTRACT SELLER: SPOKANE RANCHES, A Corporation

1. Owner of Water Right  
Co-Owner or Other Interest Owner

Address: Wisdom, Montana, Zip Code 59761  
Home Phone No. 689-2947

2. Person completing form: SOUTHERN MONTANA ABSTRACT & TITLE COMPANY  
P.O. Box 390, Phone 406-683-4445  
DILLON, MONTANA 59725

3. Name of ditch, creek or river: North Fork - Big Hole River  
Use:  Irrigation  Sprinkler  Furrow  Flood

4. Method of Irrigation Use: (Check Only One)

5. Source of Water: (Check Only One)

Spring Name \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

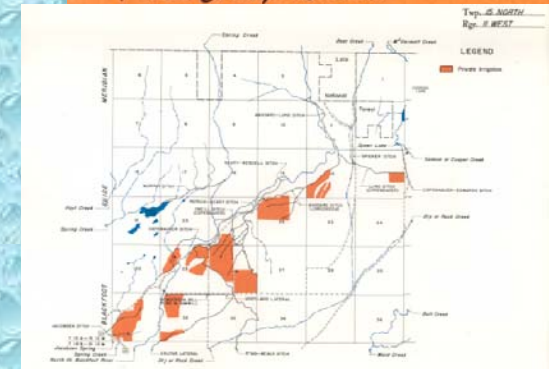
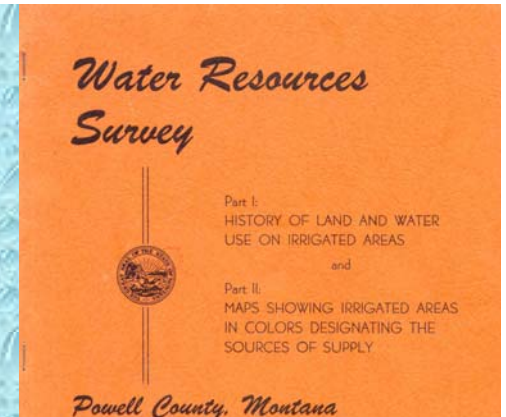
6. Particulars of water right:  
use of the water of Dumpsey Creek mentioned in the complaint, said waters to be diverted from said creek at the head of each of the ditches of the parties respectively in the order and manner hereinafter named, to wit:

1. John and Henry Quinlan, 100 in. thereof.  
2. \_\_\_\_\_  
3. \_\_\_\_\_

7. Measure:  
H. J. Hiesenberg, 174 in. thereof.  
3. \_\_\_\_\_  
H. J. Hiesenberg, 100 in. thereof.

8. Measure:  
William T. Elliott and Eliza C. Elliott, 100 in. thereof.  
This water right of H. J. Hiesenberg, W. T. and Eliza C. Elliott is of equal date and as between the said parties there is no priority.

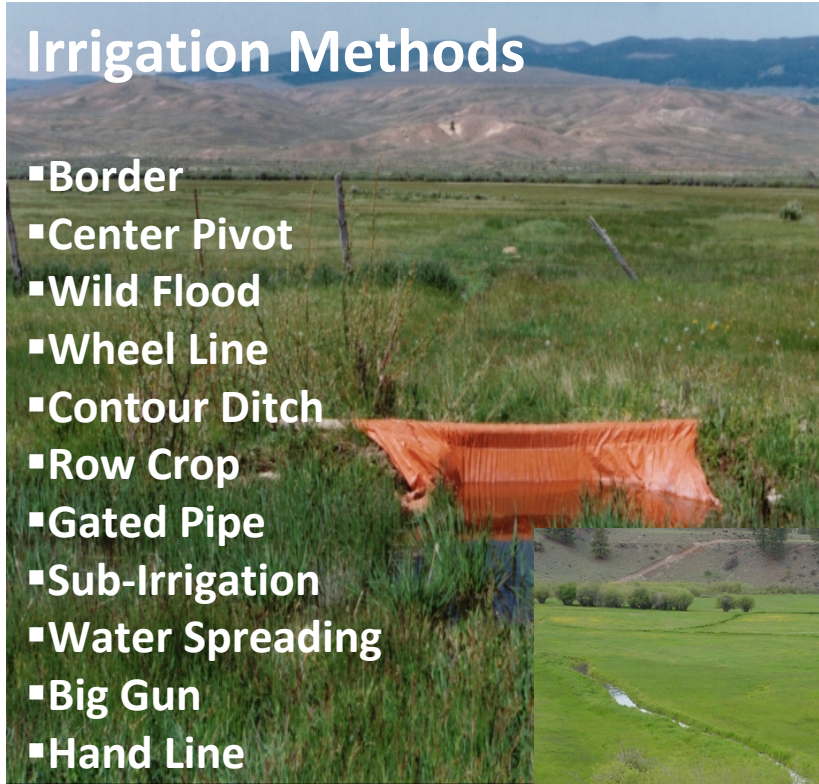
4. \_\_\_\_\_  
Henry and John Quinlan, 50 in. thereof.  
5. \_\_\_\_\_  
Henry and John Quinlan, 100 in. thereof.  
Darius Quinlan, 100 in. thereof.  
Peter Johnson, 100 in. thereof.  
There is no priority between these parties to this water-right.  
6. \_\_\_\_\_  
Herman Johnson, 50 in. thereof.  
7. \_\_\_\_\_  
Peter Johnson, 50 in. thereof.  
Pat Quinlan, 50 in. thereof.  
There is no priority between these parties to this water-right.  
3. \_\_\_\_\_





# Irrigation Methods

- Border
- Center Pivot
- Wild Flood
- Wheel Line
- Contour Ditch
- Row Crop
- Gated Pipe
- Sub-Irrigation
- Water Spreading
- Big Gun
- Hand Line
- Drip

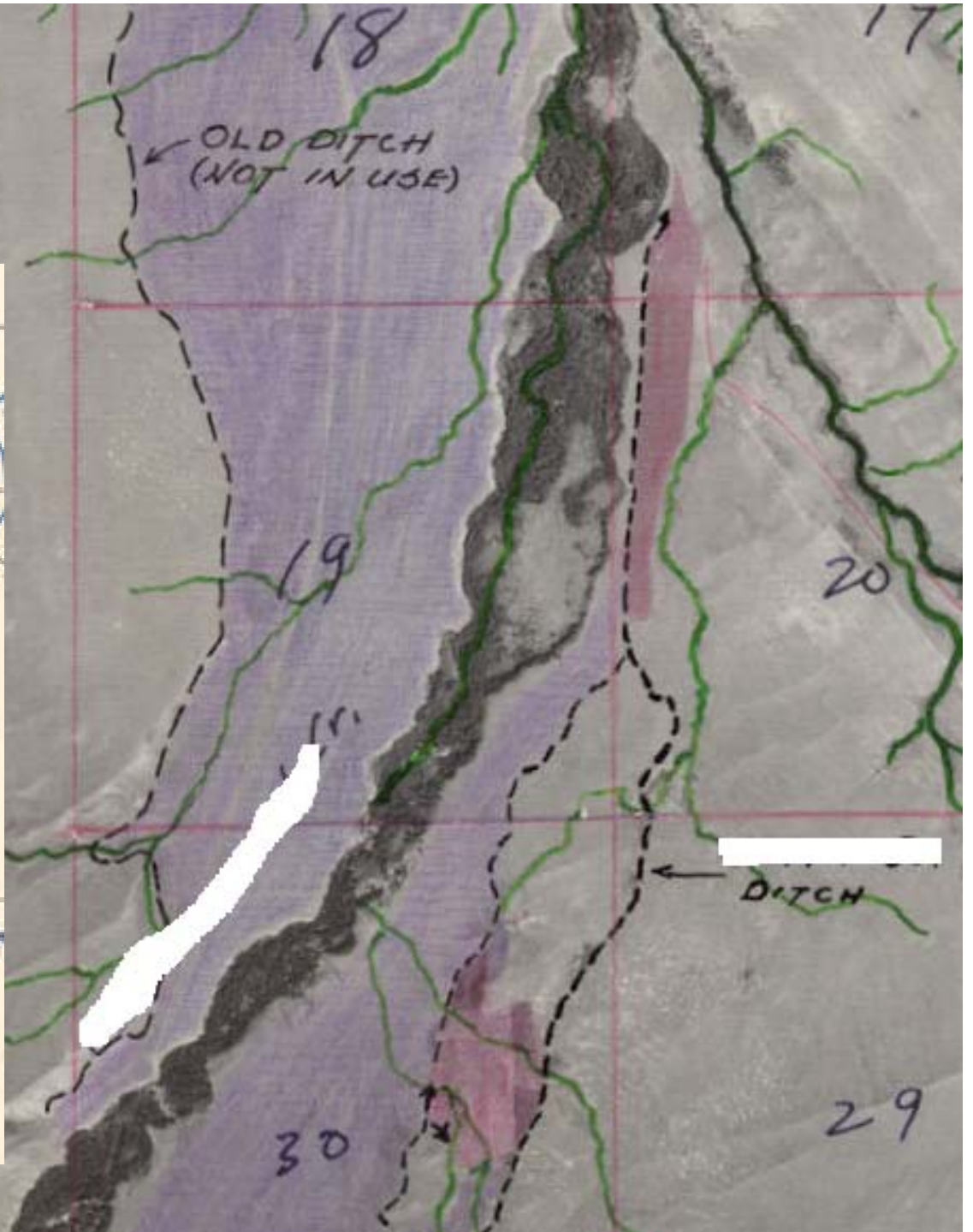


**Flood Irrigation  
Lower Yellowstone River**





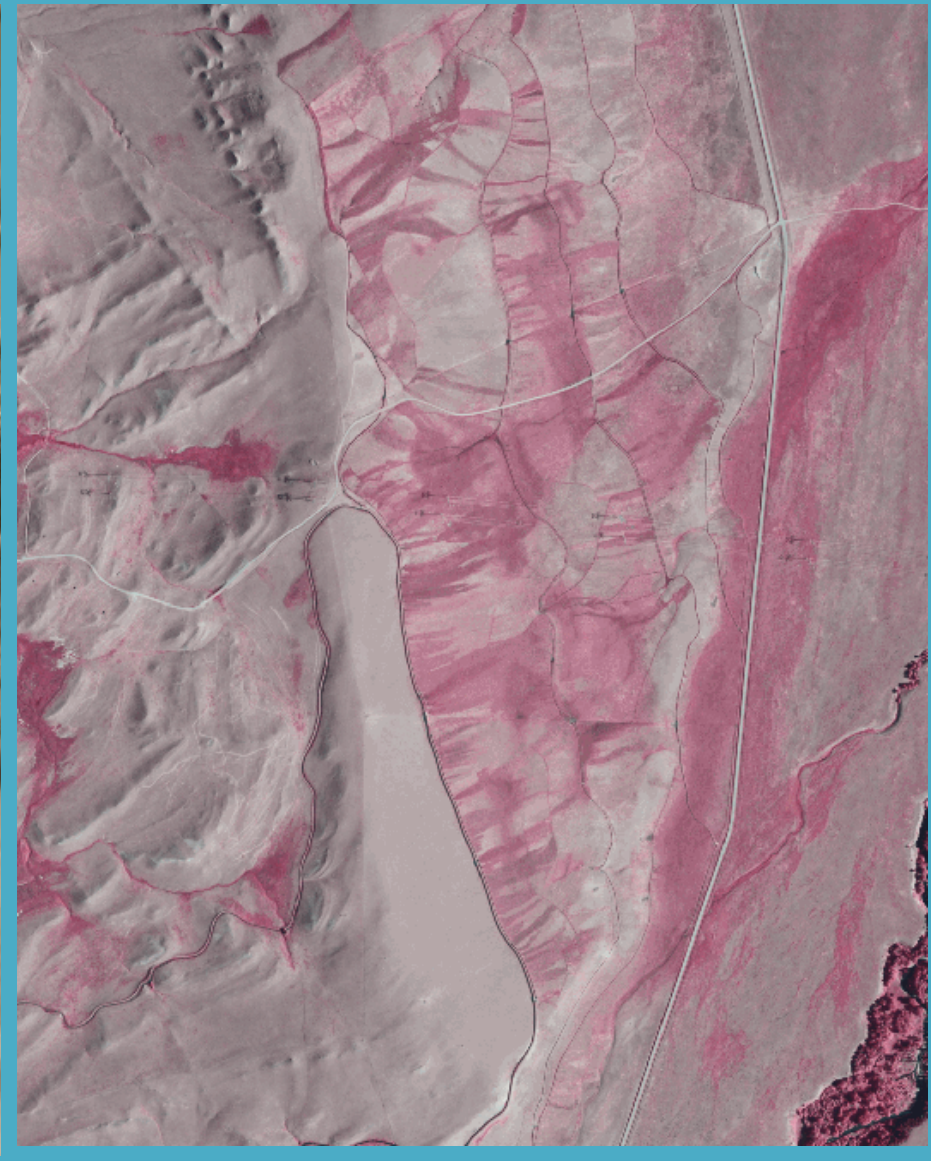
**1947 Aerial Photo  
Water Resources Survey**



1979 Aerial Photo



2005 Aerial Photo







# Importance of Return Flows

- Quote from a water availability analysis in the Musselshell River drainage:

*“The quantity of water diverted does not relate well to the water availability in a drainage. A large portion of the water not consumed by the crop or associated water loving vegetation returns to the stream and can be diverted again. Preliminary modeling of Big Elk Creek indicates that water flowing into the drainage can be diverted 3 to 4 times.”*



# Comments on water right applications about the potential impacts of changes:

- *XYZ Creek* “is typical of higher elevation mountain type streams. The creek peaks from late May to early June, and after mid June the flows continue to subside until July and August, when flows are often not adequate for irrigation needs.” *Joe* “has installed several sprinklers on the drainage, and has long range plans to install additional sprinklers. This will eventually make it possible to provide full season irrigation.....”
- “Due to the extreme losses, there was never adequate water to irrigate the 1006.9 acres prior to installation of the sprinklers.”
- “These fields are in the alluvial flood plain along the *river*. An important consideration is that through direct runoff and deep percolation, a significant portion of the water almost immediately returns to the stream.”
- “As far as production goes, as you are aware, on a good year with adequate water and fertilizer, grass hay has the ability of 1.5-2 tons/ac. Probably, closer to the 1.5 tons per acre. As you are also aware, sprinkler irrigated land is capable of from 4-5 tons per acre/year.”



“The essential problem encountered by a change to sprinkler irrigation is that it is a more efficient, more highly consumptive use of water. A significant amount of the water initially diverted usually finds its way back to the stream, so that this “waste” or return flow from the old flood system may constitute a significant portion of the downstream flow relied upon and appropriated by other users.....Those who have relied upon the presence of the return flow to satisfy their appropriation right will obviously be adversely affected if the quantity of that return flow is curtailed.”

“Conclusion: If the change in use results in the total consumption of a greater quantity of water so that the amount of water effectively available for appropriation downstream is reduced, a new appropriation results.”

Ted J. Doney, Chief Legal Counsel  
Dept. Natural Resources & Conservation  
Memorandum of Law, November 12, 1974