



State of Idaho

**DEPARTMENT OF WATER RESOURCES**

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*Jim Luke 7/2*  
*Water Dist 36-A*

DIRK KEMPTHORNE  
Governor

KARL J. DREHER  
Director

July 15, 2002

Distribution: Bar S Ditch Water Distribution Representatives

RE: Additional Considerations Regarding Deliveries from the Bar S Ditch

Dear Interested Parties:

On Tuesday, June 18, 2002, several parties met at Weatherby Springs to conduct a field examination of a portion of the Bar S Ditch. The examination ended with a discussion of the participants. I agreed to prepare a letter that describes some of the considerations that were discussed. Accordingly this letter describes a series of facts regarding the ditch, and proposes some recommendations for addressing the concerns that have been raised about the ditch. The letter includes an invitation to a follow-up meeting to discuss the recommendations.

**Facts**

1. The Bar S Ditch originates at a point below the upper fish propagation raceways located on the Bill Jones place. A flow of about 6.5 cfs (cubic feet per second) was being diverted into the head of the ditch. This is the flow rate specified by the Kramer Stipulation. The remaining flow of Weatherby Springs was diverted into the lower fish propagation raceways located on the Bill Jones place. This flow was ultimately either discharged into Billingsley Creek, or was diverted into the Jones irrigation system.
2. The total diversion rate for water rights included in the Kramer Stipulation plus SRBA decreed rights for diversions from the Bar S Ditch by parties not included in the Kramer Stipulation is 10.06 cfs.
3. The total diversion rate for water rights served by the Bar S Ditch without including the limitations provided by the Kramer Stipulation is 15.81 cfs.
4. The Idaho Water Resource Board has filed Minimum Instream Flow Applications on Billingsley Creek, Nos. 36-8596 and 36-8793, both of which include reaches below the point where Weatherby Springs discharges into Billingsley Creek.

## Additional Considerations Regarding Deliveries from the Bar S Ditch

Page 2 of 3

July 15, 2002

5. The Natural Resources Conservation Service has conducted some preliminary estimates of the feasibility of replacing the Bar S Ditch with a pipeline. As described on the enclosed Pipeline Design Sheet, a flow of 6.5 cfs can be conveyed by gravity flow in a pipeline with a diameter of 22 inches, and a flow of 10.06 cfs can be conveyed by gravity flow in a pipeline with a diameter of 24 inches.
6. Deliveries of water from Weatherby Springs are subject to a number of existing limitations and agreements such as water right limitations (as depicted in partial decrees issued in the Snake River Basin Adjudication), the Kramer Stipulation, and certain agreements between present and former water users along the pipeline.
7. Presently some of the deliveries from the ditch and the pipelines supplied by the ditch are neither measured nor regulated.
8. IDWR has been advised that a recent ditch measurement has resulted in the identification of a 30% loss (about 2 cfs) in the Bar S Ditch, from the head of the ditch to the confluence with the Curren Ditch.
9. The Highway District has expressed an interest in contributing several thousand dollars toward installation of a pipeline to replace the Bar S Ditch due to safety concerns where the ditch parallels the highway.

### **Recommendations**

1. For proper water distribution, deliveries from the Bar S Ditch and the north and south pipelines must be measured and regulated. Each user who diverts from the system should install a measuring device and controlling works, and a "lateral manager" should be appointed by a lateral water users' association to conduct measurement and regulation. The lateral water users' association should be properly constituted in accordance with the provisions of Chapter 13, Title 42, Idaho Code.
2. Construction of a pipeline to replace the present Bar S Ditch would have the advantages of:
  - a. Reducing ditch loss.
  - b. Reducing highway safety concerns.
  - c. Reducing water-logging of fields adjacent to the ditch.
  - d. Increasing the portion of water rights satisfied by Weatherby Springs water.
  - e. Reducing ditch maintenance problems.
3. Construction of a pipeline should be actively pursued. This letter serves as a request to the NRCS to develop a cost estimate for construction this fall of a pipeline that would extend from the present head of the ditch to the point of intersection with Curren Ditch, at flow rates of both 6.5 cfs and 10.06 cfs.

Additional Considerations Regarding Deliveries from the Bar S Ditch

Page 3 of 3

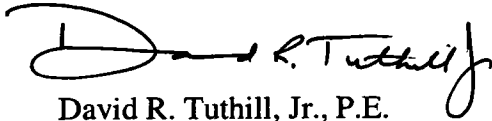
July 15, 2002

4. IDWR has received a suggestion that as an alternative to increasing the flow rate through the Bar S Ditch (or a replacement pipeline) above 6.5 cfs, additional water rights from the Bar S Ditch might be satisfied by injecting Weatherby Springs water into Billingsley Creek, and re-diverting these flows lower in the system, perhaps through the Buckeye Ditch, or through the Buckeye Ditch into the Big Bend Ditch. Steve Clelland has prepared a computerized map of ditch locations and other features to enable a detailed discussion of options in this regard.

This letter serves as an invitation for a meeting to further explore the recommendations above. **The meeting is scheduled to be held on Thursday, July 25, 2002 at 1:30 p.m. in the Conference Room of the IDWR Southern Regional Office in Twin Falls.**

We look forward to seeing you at the meeting.

Sincerely,



David R. Tuthill, Jr., P.E.  
Adjudication Bureau Chief

Enclosures: Distribution List and Pipeline Design Sheet



NATURAL RESOURCES CONSERVATION SERVICE

PIPELINE DESIGN SHEET  
VERSION 1.0

NAME:	Bar S Ditch	DATE:	06/18/02
SCD:	Gooding	COUNTY:	Gooding
PREPARED BY:	KWH	JOB CLASS:	

DESIGN INPUTS:

BEGINNING STATION	0	ENDING STATION	2050
FRICITION FACTOR	150	FLOW IN CFS	6.5

<u>PIPE SIZE</u>	<u>PIPE RATING</u>			<u>PIPE DESCRIPTION</u>
PIPE #1 INSIDE DIAMETER	18.07	63	PSI	PVC - PIP
PIPE #2 INSIDE DIAMETER	17.91	80	PSI	PVC - PIP
PIPE #3 INSIDE DIAMETER	21.12	80	PSI	PVC - PIP

ENTRANCE CONDITION	0.5	KE	MINOR LOSSES	1.25	K1
VELOCITY HEAD	1	KV	MINOR LOSSES	0	K2
			MINOR LOSSES	0	K3
			MINOR LOSSES	0	K4

HYDRAULICS

	<u>PIPE #1</u>	<u>PIPE #2</u>	<u>PIPE #3</u>
PIPE SIZE	18.07	17.91	21.12
DISTANCE	2050	2050	2050
AREA	1.780917	1.749519	2.432849
CFS	6.50	6.50	6.50
VELOCITY	3.65	3.72	2.67
LOSS PER FT.	0.00192	0.00201	0.00090
KE	0.50	0.50	0.50
KV	1.00	1.00	1.00
SUM OF (K1-K4)	1.25	1.25	1.25
VELOCITY HEAD	0.21	0.21	0.11
MINOR LOSSES	0.26	0.27	0.14
LINE LOSS	3.94	4.12	1.85
ENTRANCE LOSS	0.31	0.32	0.17
TOTAL LOSS	4.51	4.71	2.15
	BORDERLINE	BORDERLINE	OK
AIR VENT SPACING	9.7	9.8	8.3

NOTES:



BAR S DITCH DELIVERY  
Mailing July 12, 2002

VERL BELL  
853 E 2830 S  
HAGERMAN ID 83332

BARBARA HOSKOVEC  
2856 S 900 E  
HAGERMAN ID 83332

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