



State of Idaho
DEPARTMENT OF WATER RESOURCES

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CECIL D. ANDRUS
GOVERNOR

R. KEITH HIGGINSON
DIRECTOR

July 25, 1994

Patrick D. Brown
HEPWORTH LEZAMIZ & HOHNHORST
P.O. Box 389
Twin Falls, ID 83303-0389

RE: August 1993 Demand for Delivery of Water Right No. 36-7071 and
Request for Subsequent Hydrologic Data

Dear Mr. Brown:

This letter is a response to your correspondence dated July 18, 1994 concerning the 1993 demand for delivery of water right no. 36-7071 owned by John and Delores Jones and information IDWR has collected in that regard.

In my correspondence to you dated September 1, 1993, I stated that IDWR had installed monitoring equipment in the nearby Curren Tunnel and would be looking at this data to help determine whether pumping of wells in the area produces an immediate effect on the flow from the springs and tunnels.

Enclosed are copies of several hydrographs from the Curren Tunnel. The graphs show average daily flows in the tunnel since September of 1993. The graphs show a steady increase in water level and flow through the autumn, with a peak in late October and early November, followed by a steady decline through March. The portion of the hydrograph between autumn and spring is typical of most springs in the Hagerman and Thousand Springs area. Flows from April through July fluctuate more than the rest of the year. About one cfs of the fluctuations during this latter period is due to the Rangen pipe diversion. Some of the remaining fluctuations may be due to groundwater pumping and recharge from nearby irrigation. We are currently working with Rangen Inc. to monitor the flow in their pipe diversion. This will allow us to determine tunnel flow fluctuations caused by flow changes in the pipe.

In addition to the above monitoring efforts, IDWR has contacted about 18 separate well owners who operate about 28 wells within a three mile radius from the Curren Tunnel. We have asked these operators to submit information about their pumping activity in order to correlate fluctuations in the tunnel with pumping activity. Only two operators have submitted information in 1993 and only one operator has submitted any data for this year. You are welcome to review this or any other information that may relate to the Jones' water right at the IDWR main office.

Page 2

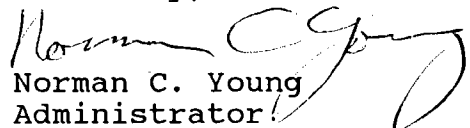
On July 20, 1994, IDWR staff visited the Jones Hatchery and repeated the measurements which were made at the hatchery last August. The staff measured a total of 34.23 cfs being diverted to the hatchery. Total measured discharge from Weatherby Springs, Hoagland Tunnel and Three Springs was 46.59 cfs. The measured flows to the hatchery and from the springs is nearly identical to the flows which were measured on August 24, 1993. The 1993 measurements were included with my September 1, 1993 correspondence.

On July 20 IDWR staff also evaluated the current distribution of available flow from the spring sources above. The total rate of diversion for all irrigation rights below the springs which have a priority date earlier than the Jones hatchery is 63.79 cfs. As the total available supply from all sources was about 47 cfs, about 17 cfs of irrigation rights were not filled. The last irrigation right or rights to fill have a priority date of 3/8/1902. It did not appear that any of the irrigation diversions below the springs were exceeding their water rights. The July 20, 1994 measurements confirm that the Jones hatchery is receiving less than the 73 cfs of water that was licensed under right 36-7071. This right has a priority date of 7/8/1969.

Your letter indicates that you are continuing the demand to deliver water to the Jones right. If this is a call for pumping of ground water to be curtailed outside of the water district, a petition needs to be filed in accordance with Rule 030 of the temporary Rules Governing Conjunctive Management of Surface and Ground Water (IDAPA 37-0311-9301). The petition should identify any specific wells or water rights that you identify as affecting the Jones' prior right. If you are unable to identify specific wells or rights, the petition can identify an area within which pumping is affecting the right. Note that Rule 50 designates the Eastern Snake River Plain Aquifer as an area of common ground water supply.

Upon receipt of a petition, IDWR will respond in accordance with the rules.

Sincerely,


Norman C. Young
Administrator

Water Management Division

enclosures

cc: Southern Region
John and Delores Jones
George Lemmon

MEMORANDUM

TO: NORM YOUNG

FROM: TIM LUKE *TL*

DATE: July 22, 1994

RE: Information Requested by Pat Brown's 7/18/1994 letter

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Attached are some hydrographs from Curren Tunnel with data through July 20, 1994. The latest graphs have an additional plot for adjusted flow since mid-April. This adjustment was made based on observed differences between our staff gage measurements in the tunnel and the water level sensor data. Also shown on the graph are several polysonic flow meter measurements of the Rangen pipeline, as well as the total flow of the tunnel on certain dates. The Rangen pipe measurements appear to explain some of the fluctuations in flow of the tunnel. We do not know when Rangen started to increase its use from the tunnel. However, we do know that they irrigate about 7 acres from this same pipe and that their irrigation demand likely increased in early April. Rangen stated also that they did increase their use from the pipe by about 170 gpm (0.38 cfs) on May 24 for the fish experiment which they are running through mid-October.

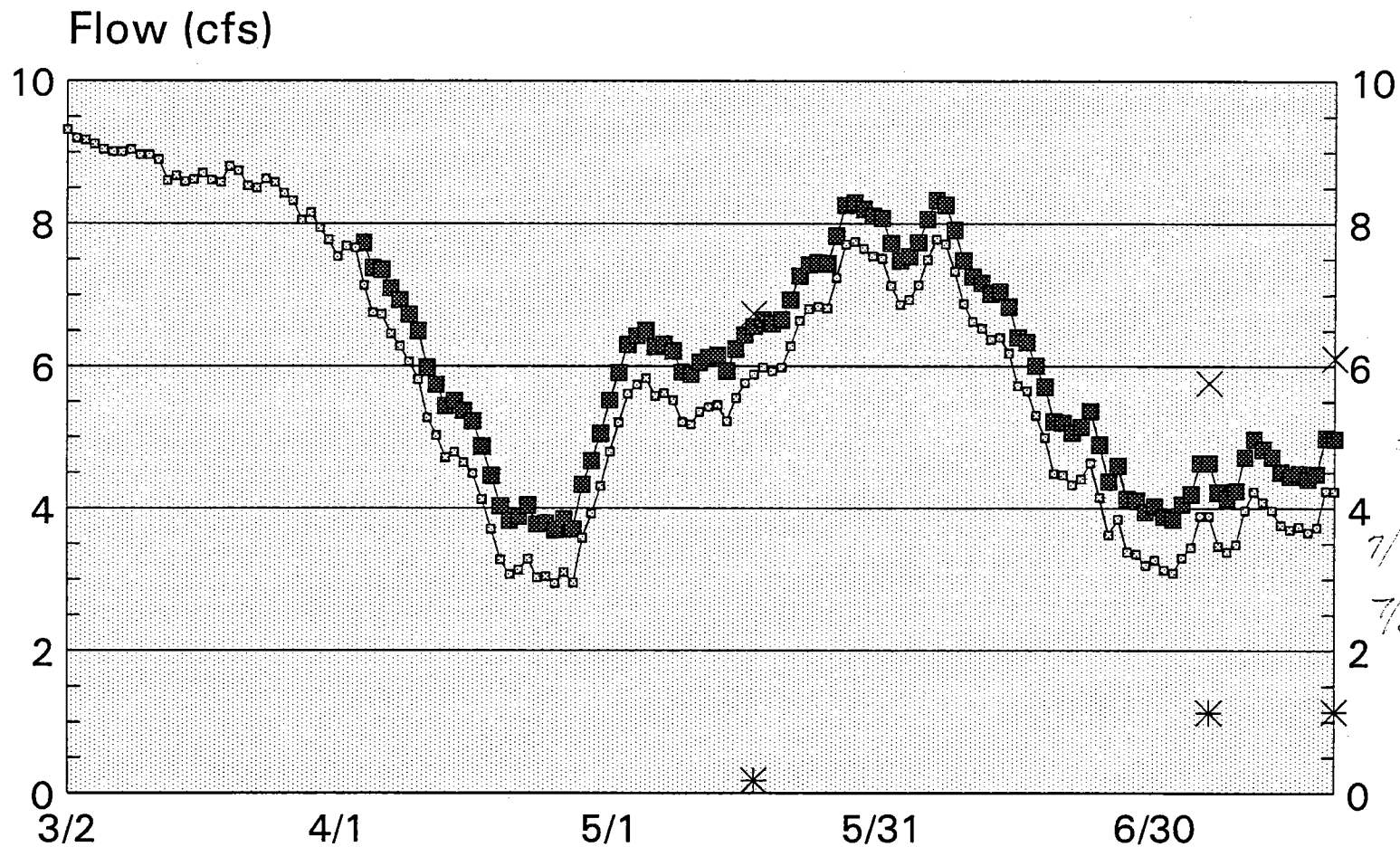
Other flow data attached includes spring flow measurements from several different springs diverted to the National Fish Hatchery. These springs are measured by weirs which have been strictly constructed according to standard weir requirements. The data is for water years 1992 and 1993. We checked the discharge on these springs last week and found essentially no difference in discharge from the same time one year ago.

In September of 1993, IDWR sent pump cards to about 17 separate well owners who operate 28 wells within a three mile radius on the plain from the Curren Tunnel. Several pump cards were returned at that time, most indicating that wells had been shut off for the season by September 1 or shortly thereafter. Only one well owner, Rangen-Tate, who operates one well, has returned pump cards this year. Those cards are attached.

Based on the limited data, it appears that there may be some fluctuation in the tunnel that is caused by groundwater pumping and recharge. The most dramatic fluctuations occurred between April 1 and about April 20, and June 1 and June 30. If the Rangen-Tate pumpcard is representative of other wells in the area, then there may indeed be a correlation between the sharp decrease in tunnel flow in April versus nearby groundwater pumping. Quantification of any decrease or increase due to pumping is difficult by just looking at our graph.

Curren Tunnel

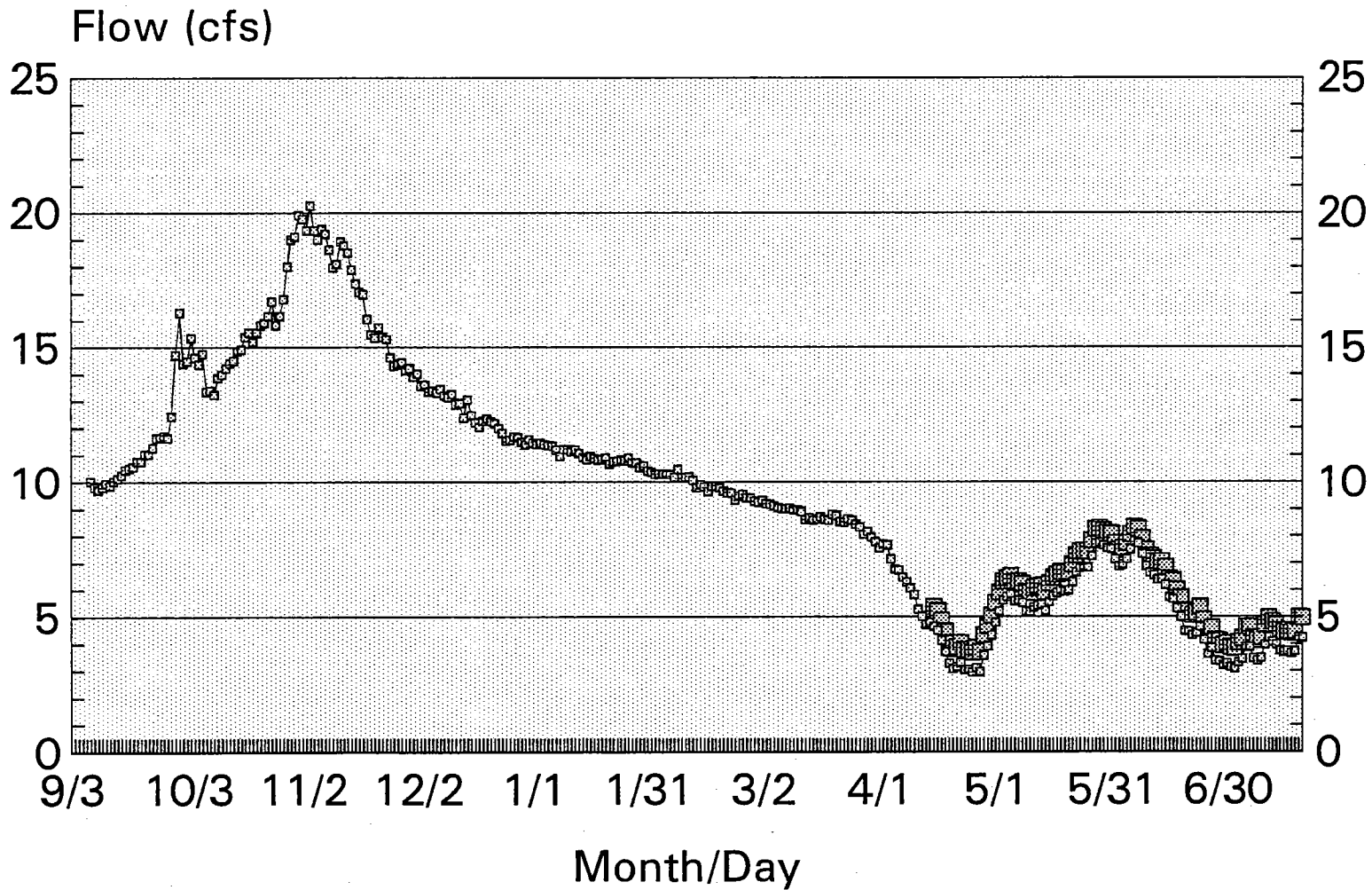
Average Daily Flow Rate
Enlarged Version



Based on average daily water levels and rating table.

Curren Tunnel

Average Daily Flow Rate



Based on average daily water levels and rating table.

Keith

MEMORANDUM

TO: NORM YOUNG *NY*

FROM: TIM LUKE *TL*

DATE: July 21, 1994

RE: VISIT & MEASUREMENTS AT JONES FISH HATCHERY

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On August 20, 1994, Scott King and I visited the Jones Fish Hatchery and diversions from Weatherby Springs, Three Springs and Hoagland Tunnel. We met Bill Jones while doing our measurements.

Attached to this memo is a diagram of the fish hatchery and spring diversions. Listed below is a summary of the measurements. The summary includes the amount of water being diverted to the fish hatchery.

Location/Source of Measurement	Method	Discharge
Sum of hatchery raceway weir measurements, including hatchery inflow from irrigation overflow	Raceway Suppressed Weirs	34.23 cfs
Irrigation Pipeline with commingled water from Three Sprgs. & Weatherby Sprgs.	Polysonic Meter	8.39 cfs
Hoagland Tunnel (meas. on ditch)	Swoffer 2100 Current Meter	5.50 cfs
Wheatherby Springs Overflow	Suppressed Weir	1.07 cfs

The total amount of water diverted to the Jones hatchery was 34.23 cfs. The total measured spring flow from Three Springs, the Weatherby Springs complex and Hoagland Tunnel was 46.59 cfs. This amount is derived by summation of the Hoagland Tunnel measurement (5.5 cfs), the commingled pipeline measurement (8.39 cfs), overflow from Wheatherby Springs (1.07 cfs) and the sum of the hatchery raceway weirs (34.23 cfs) less the overflow to the hatchery from the commingled pipeline (2.6 cfs).

The equation for total spring flow therefore is:

$$Q = 5.5 + 8.39 + 1.07 + (34.23 - 2.6) = 46.59 \text{ cfs}$$

The 2.6 cfs overflow to the hatchery from the commingled pipeline was determined by taking the difference of two weir discharge measurements in a single hatchery raceway. The overflow pipe discharges to this raceway in between the two weirs.

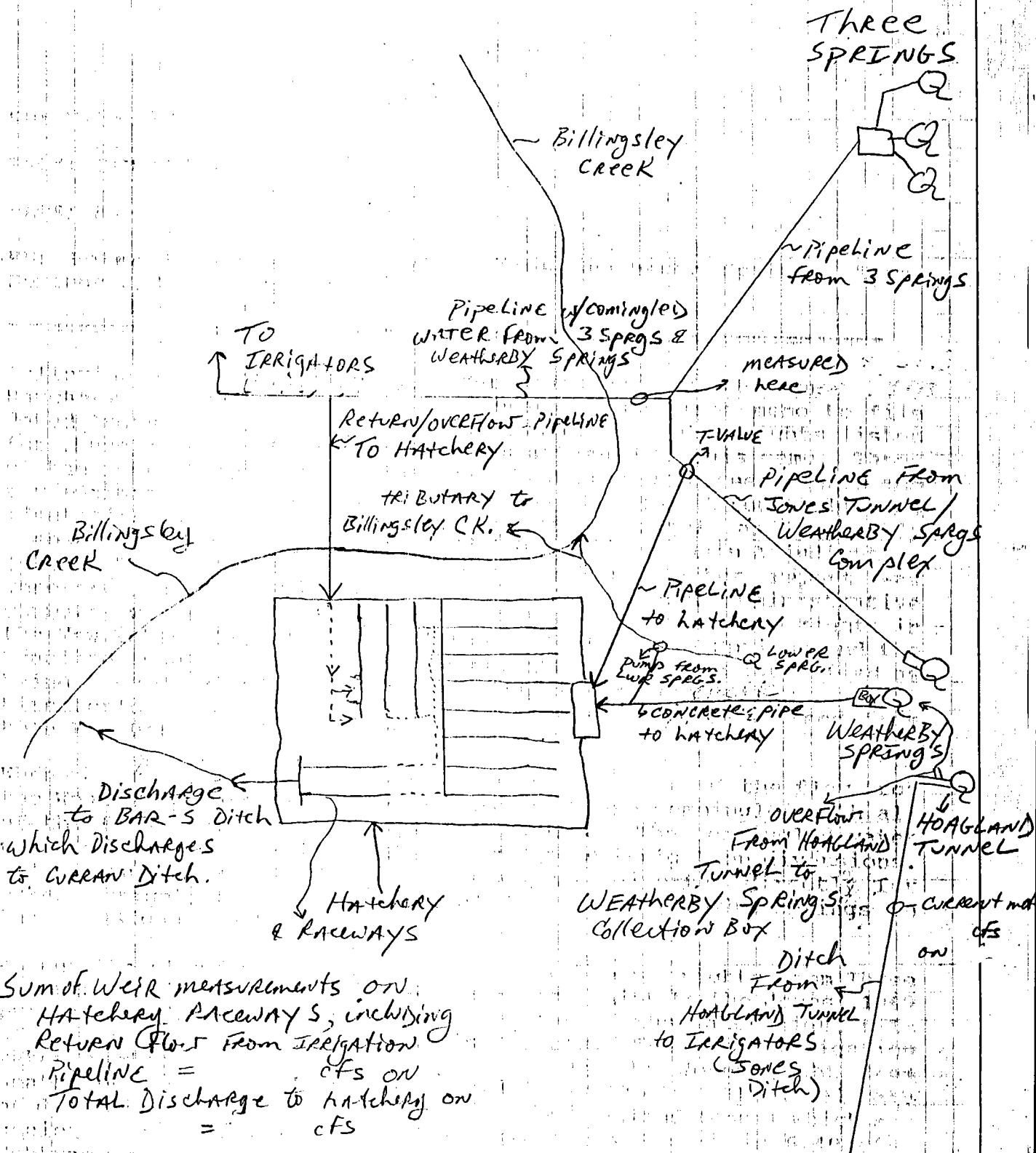
In addition to the measurements above, we also measured the discharge of a pump which diverts spring water from a lower pond to an upper pond. The commingled water in the upper pond is diverted in to the hatchery. The pump water therefore is measured with the other water in the hatchery raceways. The discharge from the pump was 3.81 cfs.

It should be noted that all of the weir measurements involve direct measurement of head of water over wood stoplogs set in rectangular concrete raceways. There are some small leaks between some of the wood stoplogs and weir crests lack a sharp edge. These specific devices and the method in which they were measured do not qualify as standard weirs, but they should provide close estimates of actual flow.

As compared to measurements taken by IDWR on August 26, 1993 (see memo dated 8/27/93), the total discharge to the hatchery on 7/20/1994 is only 0.56 cfs less. Total spring discharge between 8/26/93 and 7/20/94 is approximately the same.

Irrigation Water Rights and Diversions:

The total rate of diversion for all irrigation rights which have priority dates earlier than the Jones Hatchery 1969 right is 63.79 cfs. As the total available supply is about 47 cfs, then about 17 cfs of irrigation rights are not filled. This means that the last right to fill has a priority date of 3/8/1902. Water rights listings are attached to this memo.



Sum of Weir measurements on
 Hatchery Raceways, including
 Return flow from Irrigation
 Pipeline = cfs on
 Total Discharge to hatchery on
 = cfs

Total Discharge from 3 Springs, Weatherby Springs
 & Hoagland Tunnel =

Unaccounted lower spring
 Discharge to creek =
 total estimated spring Q =

U.S. FISH AND WILDLIFE SERVICE - DIVISION OF ENGINEERING
 423011 Bickle Lake Cipolletti Weir

DAILY DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCT 1992 TO SEP 1993

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1												
2	15.2						15.2			15.2		
3		15.2										15.8
4			16.3						14.7			
5					15.8	15.8						
6		15.8									15.8	
7								15.2				
8				15.8								
9	15.8						15.2			15.2		
10												15.8
11			16.3						15.2			
12					15.8	15.2						
13		15.8									15.8	
14								14.7				
15				16.3								
16	15.2						15.8			15.8		
17												15.8
18			16.3						15.2			
19					15.8	15.2						
20		15.8									15.8	
21								14.7				
22				16.3								
23	15.8		16.3				15.2			15.8		
24												15.8
25									15.2			
26					15.8	15.2						
27		16.3									15.8	
28								14.7				
29				15.2	-----							
30	15.8				-----		15.2			15.8		
31		-----	15.8		-----		-----		-----			-----
MEAN	15.6	15.8	16.2	15.9	15.8	15.4	15.3	14.8	15.1	15.6	15.8	15.8
MAX	15.8	16.3	16.3	16.3	15.8	15.8	15.8	15.2	15.2	15.8	15.8	15.8
MIN	15.2	15.2	15.8	15.2	15.8	15.2	15.2	14.7	14.7	15.2	15.8	15.8
WTR YEAR 1993	MEAN	15.6	MAX	16.3	MIN	14.7						

U.S. FISH AND WILDLIFE SERVICE - DIVISION OF ENGINEERING
 423011 Bickle Lake Cipolletti Weir

DAILY DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCT 1991 TO SEP 1992

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		16.8						15.8				
2										15.2		
3				16.8			15.8					15.2
4	16.8											
5									14.7			
6			16.8			15.8						
7					16.8						15.2	
8		16.8						15.2				
9												
10				16.3			15.2			15.2		
11	16.8											15.2
12									14.7			
13			16.8			16.3						
14					16.8						15.2	
15		16.8						15.2				
16												
17				16.8			15.2			15.2		
18	16.8											15.2
19									15.8			
20			16.8			16.3						
21					16.8						15.2	
22		16.8						15.2				
23												
24				16.8			15.2			15.2		
25	16.8											15.2
26									15.2			
27			16.8			15.8						
28					16.8						15.2	
29		16.8						15.2				
30					-----							
31		-----		16.8	-----		-----		-----	15.2		-----
MEAN	16.8	16.8	16.8	16.7	16.8	16.1	15.4	15.3	15.1	15.2	15.2	15.2
MAX	16.8	16.8	16.8	16.8	16.8	16.3	15.8	15.8	15.8	15.2	15.2	15.2
MIN	16.8	16.8	16.8	16.3	16.8	15.8	15.2	15.2	14.7	15.2	15.2	15.2
WTR YEAR 1992	MEAN	15.9	MAX	16.8	MIN	14.7						

U.S. FISH AND WILDLIFE SERVICE - DIVISION OF ENGINEERING
 423008 Riley Lake Cipolletti Weir

DAILY DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCT 1992 TO SEP 1993

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1												
2	5.09						5.09			4.88		
3		4.88										5.09
4			5.09						4.88			
5					5.09	5.09						
6		5.09									5.09	
7							4.88					
8				5.09								
9	5.09						4.88			4.88		
10												5.09
11			5.09						4.88			
12					5.09	4.88						
13		5.09									5.09	
14							4.88					
15				5.09								
16	5.09						4.88			5.09		
17												5.09
18			5.09						5.09			
19					4.88	4.88						
20		5.09									5.09	
21								5.09				
22				5.09								
23	5.09		5.09				5.09			5.09		
24												5.09
25									5.09			
26					4.88	4.88						
27		5.09									5.09	
28								5.09				
29				4.88	-----							
30	5.09	-----			-----		5.09			5.09		
31		-----	5.09		-----		-----		-----			-----
MEAN	5.09	5.05	5.09	5.04	4.99	4.93	5.01	4.99	4.99	5.01	5.09	5.09
MAX	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09
MIN	5.09	4.88	5.09	4.88	4.88	4.88	4.88	4.88	4.88	4.88	5.09	5.09
WTR YEAR 1993	MEAN	5.03	MAX	5.09	MIN	4.88						

U.S. FISH AND WILDLIFE SERVICE - DIVISION OF ENGINEERING
 423008 Riley Lake Cipolletti Weir

DAILY DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCT 1991 TO SEP 1992

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		5.30						5.09				
2										4.88		
3				5.52			5.09					
4	5.09											5.09
5									4.88			
6			5.09			5.09						
7					5.30						4.88	
8		5.09						4.67				
9												
10				5.30			4.88			4.88		
11	5.09											4.88
12									4.67			
13			5.30			5.09						
14					5.30						4.88	
15		5.30						4.67				
16												
17				5.30			4.88			4.88		
18	5.09											5.09
19									5.52			
20			5.09			5.09						
21					5.30						4.88	
22		5.09						5.09				
23												
24				5.30			4.88			4.88		
25	5.09											4.88
26									4.88			
27			5.30			5.09						
28					5.30						4.88	
29		5.09						4.67				
30					-----							
31		-----		5.30	-----		-----		-----	4.88		-----
MEAN	5.09	5.17	5.20	5.34	5.30	5.09	4.93	4.84	4.99	4.88	4.88	4.99
MAX	5.09	5.30	5.30	5.52	5.30	5.09	5.09	5.09	5.52	4.88	4.88	5.09
MIN	5.09	5.09	5.09	5.30	5.30	5.09	4.88	4.67	4.67	4.88	4.88	4.88
WTR YEAR 1992	MEAN	5.06		MAX	5.52	MIN	4.67					

U.S. FISH AND WILDLIFE SERVICE - DIVISION OF ENGINEERING

423002 Spring No. 15 V-Notch Weir

DAILY DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCT 1992 TO SEP 1993

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1												
2	4.25						4.16			3.91		
3												4.16
4			4.25						3.91			
5					4.16	4.16						
6		4.25									4.08	
7								3.99				
8				4.25								
9	4.25						4.16			3.99		
10												4.16
11			4.25						3.99			
12					4.16	4.08						
13		4.25									4.08	
14								3.99				
15				4.25								
16	4.25						4.08			3.99		
17												4.16
18			4.25						3.99			
19					4.16	4.16						
20		4.25									4.08	
21								3.91				
22				4.25			4.08					
23	4.25		4.25							3.99		
24												4.25
25									3.99			
26					4.08	4.08						
27		4.25									4.25	
28								3.91				
29				4.16	-----							
30	4.25				-----		4.08			4.08		
31		-----	4.25		-----		-----		-----			-----
MEAN	4.25	4.25	4.25	4.23	4.14	4.12	4.11	3.95	3.97	3.99	4.12	4.18
MAX	4.25	4.25	4.25	4.25	4.16	4.16	4.16	3.99	3.99	4.08	4.25	4.25
MIN	4.25	4.25	4.25	4.16	4.08	4.08	4.08	3.91	3.91	3.91	4.08	4.16
WTR YEAR 1993	MEAN	4.13	MAX	4.25	MIN	3.91						

U.S. FISH AND WILDLIFE SERVICE - DIVISION OF ENGINEERING

423002 Spring No. 15 V-Notch Weir

DAILY DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCT 1991 TO SEP 1992

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		4.25						3.83				
2										3.91		
3				4.08			3.83					
4	4.25											4.16
5									3.75			
6			3.99			3.91						
7					3.99						3.99	
8		4.25						3.75				
9												
10				3.99			3.91			3.91		
11	4.25											4.16
12									3.75			
13			4.08			3.91						
14					3.99						3.99	
15		4.25						3.75				
16												
17				3.99			3.91			3.91		
18	4.25											4.25
19									3.83			
20			4.08			3.91						
21					3.91						3.99	
22		4.25						3.83				
23												
24				3.99			3.83			3.99		
25	4.25											4.25
26									3.83			
27			4.08			3.91						
28					3.91						4.16	
29		4.25						3.75				
30					-----							
31		-----		3.99	-----		-----		-----	3.91		-----
MEAN	4.25	4.25	4.06	4.01	3.95	3.91	3.87	3.78	3.79	3.93	4.03	4.21
MAX	4.25	4.25	4.08	4.08	3.99	3.91	3.91	3.83	3.83	3.99	4.16	4.25
MIN	4.25	4.25	3.99	3.99	3.91	3.91	3.83	3.75	3.75	3.91	3.99	4.16
WTR YEAR 1992	MEAN	4.00	MAX	4.25	MIN	3.75						

DAILY DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCT 1992 TO SEP 1993

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1												
2	3.30						3.23			3.91		
3												4.25
4			3.52			3.52			4.08			
5					3.60	3.45						
6		3.45									4.25	
7			3.68					3.15				
8				3.60								
9	3.52						3.23			3.99		
10												4.25
11			3.68						4.08			
12					3.60	3.23						
13		3.52									4.33	
14								3.15				
15				3.60								
16	3.68						3.23			4.16		
17												4.25
18			3.68						4.16			
19					3.60	3.30						
20		3.60									4.33	
21								3.91				
22				3.60								
23	3.68		3.60				3.08			4.25		
24												4.25
25									3.91			
26					3.52	2.94						
27		3.60									4.25	
28								3.91				
29				3.52	-----							
30	3.75				-----		3.23				4.33	
31		-----	3.68		-----		-----		-----			-----
MEAN	3.59	3.54	3.64	3.58	3.58	3.29	3.20	3.53	4.06	4.13	4.29	4.25
MAX	3.75	3.60	3.68	3.60	3.60	3.52	3.23	3.91	4.16	4.33	4.33	4.25
MIN	3.30	3.45	3.52	3.52	3.52	2.94	3.08	3.15	3.91	3.91	4.25	4.25
WTR YEAR 1993	MEAN	3.71	MAX	4.33	MIN	2.94						

U.S. FISH AND WILDLIFE SERVICE - DIVISION OF ENGINEERING

423004 Spring No. 17 V-Notch Weir

DAILY DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCT 1991 TO SEP 1992

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		3.60						5.94				
2										5.15		
3				4.08			3.45					
4	4.59											3.99
5												
6			3.60			3.52						
7					4.08						3.75	
8		3.68						5.74				
9												
10				3.91			3.60			5.24		
11	4.59											4.50
12									5.15			
13			3.83			3.60						
14					3.91						3.60	
15		3.45						5.34				
16												
17				3.91			3.60			5.44		
18	3.60											4.42
19									5.15			
20			3.83			3.60						
21					3.91						3.83	
22		3.45						5.34				
23												
24				3.91			5.53			5.24		
25	3.75											4.25
26									4.77			
27			3.83			3.30						
28					3.45						3.83	
29		3.60						5.53				
30					-----							
31		-----		4.08	-----		-----		-----	3.83		-----
MEAN	4.13	3.56	3.77	3.98	3.84	3.51	4.05	5.58	5.02	4.98	3.75	4.29
MAX	4.59	3.68	3.83	4.08	4.08	3.60	5.53	5.94	5.15	5.44	3.83	4.50
MIN	3.60	3.45	3.60	3.91	3.45	3.30	3.45	5.34	4.77	3.83	3.60	3.99
WTR YEAR 1992	MEAN	4.21		MAX	5.94		MIN	3.30				

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 Department of Water Resources

IDAHO DEPARTMENT OF WATER RESOURCES
 GROUND WATER USE INFORMATION

1. Month/Year: May 1994
2. Water User Name: Tate, Harvey Earl &/or Rangen, Inc.
3. Water Right Number(s): 36-02496, 36-07472 (Tate) &
36-8048 (Rangen, Inc.)
4. Diversion Name and/or Number: _____
5. Diversion Location: T.7S, R.14E, Sec. 32, SENWSE
6. Flow Meter Reading at Beginning of Month: _____
7. Method of Calculating or Estimating Flow Rate: _____
8. Comments: Prist, corners, hand lines

9. Daily Pump Use:

Day	Hours Pumped	Time Pumped		Flow Rate	Day	Hours Pumped	Time Pumped		Flow Rate
		From	To				From	To	
1	OFF				16	24			
2	}				17	}			
3					18				
4					19	OFF			
5					20				
6					21				
7	24				22				
8	}				23	8 hrs			
9					24				
10					25				
11					26				
12					27				
13					28				
14	OFF				29				
15	1				30				
					31				

IDAHO DEPARTMENT OF WATER RESOURCES
GROUND WATER USE INFORMATION

1. Month/Year: April 1994
2. Water User Name: Tate, Harvey Earl &/or Rangen, Inc.
3. Water Right Number(s): 36-02496, 36-07472 (Tate) & 36-8048 (Rangen, Inc.)
4. Diversion Name and/or Number: _____
5. Diversion Location: T.7S, R.14E, Sec. 32, SENWSE
6. Flow Meter Reading at Beginning of Month: _____
7. Method of Calculating or Estimating Flow Rate: _____

8. Comments: *Some days just on; some days corners only - Breakdowns off & on - Some days 12 hrs runs - some days less -*

9. Daily Pump Use:

Day	Hours Pumped	Time Pumped		Flow Rate	Day	Hours Pumped	Time Pumped		Flow Rate
		From	To				From	To	
1					16	ON			
2					17	"			
3					18	"			
4					19	"			
5					20	ON			
6					21	OFF			
7					22	"			
8					23	"			
9					24	ON			
10					25	"			
11					26	"			
12					27	"			
13					28	OFF			
14					29				
15					30				
					31				

ON
"
"
"
"
"
"
"
"
"

APR 13 1994
RECEIVED