



## **Water Rights Accounting**

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December 8, 2015

Big Lost Advisory Committee



# Current Water Rights Accounting Programs

- Snake (1978)
- Boise (1986)
- Payette (1992)
- Bear (~1980)

# Water Rights Accounting Purpose

- It is a tool to help the water master regulate the river.
- There are currently 1,345 water rights in the Big Lost accounting.
- 116 Diversions.
- 1 storage reservoir.

# Definitions

**Reach** is a section of river between two river gages.

**Reach Gain** is the gains or losses within that river reach.

*Reach gain = Outflow – Inflow + Diversions ± Reservoir Change in Content + Reservoir Evap.*

**Natural Flow:** The water that would be in the river if there were no diversions or reservoirs.

*Natural flow = Sum of the upstream reach gains*

**Stored Flow:** Water in excess of the computed natural flow.

# Accounting

- Water rights have points-of-diversion, priority dates, and flow rates.
- Natural Flow is delivered to the earliest priority first, limited to the amount of natural flow at the point of diversion and the diversion's water right flow rate.
- Storage is delivered to diversions when there isn't enough natural flow at the point-of-diversion to fill the diversion's water right priority or the diversion exceeds its water right flow rate.

# What does the water right accounting program do?

- Determines natural flow distribution for each day.
- Calculates the natural flow in the river at various key locations.
- Special to the Big Lost, proportion losses to natural flow and stored flow.
- Based on the natural flow available, determines what water rights are in priority.
- Determines storage use.
- Determines reservoir water right fill.

## What doesn't the water right accounting program do?

- It will not call the priority date for today. It is after the fact accounting.

# How it works

- Watermaster gathers diversion data and sends it to IDWR.
- Watermaster enters those rights calling for water into demand database.
- IDWR gathers reservoir and flow data from various sources.
- IDWR runs the accounting program.
  - Weekly (or more) during the irrigation season.
- Send Report to Watermaster for Review
  - Send to watermaster to distribute via email.
  - Post to IDWR's website.  
(<http://www.idwr.idaho.gov/WaterManagement/WaterDistricts/BigLost/default.htm>)

# Reports

- One report for when the river is connected.
- Two reports for when the river is disconnected
  - Above reservoir
  - Below reservoir

REACH	FLows	IN	CFS	ACTUAL	NATURAL	ACTUAL	RMAINING	EXCHANGE	STORED	RESRVOIR	NATURAL	TOTAL	REACH	
				DATE	FLOW	FLOW	NAT FLOW	FLOW	FLOW	EVAP	FLOW	RCH DIV	GAIN	
													LAST RIGHT	
1	BIG LOST	BLW	MACKAY	RES	JUN 17	445.7	498.0	431.3	0.0	66.7	16.5	12.2	445.7	18870601
2	BIG LOST	AT	LESLIE		JUN 17	332.0	256.0	222.5	9.8	33.5	0.0	129.0	-113.7	18870601
3	BIG LOST	BLW	MOORE	DIV	JUN 18	278.1	47.8	42.6	0.0	5.2	0.0	126.8	-53.9	18870601
5	BIG LOST	BLW	MUNSEY	DIV	JUN 19	269.1	0.0	0.0	41.6	0.0	0.0	66.0	-9.0	18870601
6	BIG LOST	NR	ARCO		JUN 19	269.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18870601

\* - INDICATES FLOW ESTIMATED, NOT MEASURED

TOTALS 269. 334. 269.

RESERVOIR	PREV	CONT	CURR	CONT	CHNG	CONT	ACC	STOR	TOTL	STOR	TOTL	EVP	PRIORITY	RESERVOIR	RIGHT	STORED
	(AF)	(AF)	(AF)	(CFS)	(CFS)	(AF)	(AF)					(AF)			(AF)	(AF)
1	MACKAY	34280.0	34120.0	-80.7	4.9	41426.8	1040.1						1	MACKAY	556.5	304.6
													2	MACKAY	294.0	161.8
													3	MACKAY	556.5	140.1
													4	MACKAY	1113.0	213.0
													5	MACKAY	140.0	17.5
													6	MACKAY	20646.0	20646.0
													7	MACKAY	17205.0	17205.0
													8	MACKAY	6000.0	2738.8
														TOTAL	46511.0	41426.8

	CHANGE IN	STORAGE	ARCO	TOTAL	UNACCT	
	CONTENT	USED	STORED	STORED	STORED	
YEAR-TO-DATE	AF	-4420.0	8009.7	0.0	2886.8	13.9

DIVERSION	CFS	CFS	AF	DIVERSION	CFS	CFS	AF	DIVERSION	CFS	CFS	AF			
	DIVN	STOR	USED		DIVN	STOR	USED		DIVN	STOR	USED			
2	SHARP	12.2	2.7	68.8	10	SUTTER	0.0	0.0	0.0	18	ARCO	27.9	0.0	334.0
3	STREETER	0.0	0.0	0.0	11	ANGELO	0.0	0.0	0.0	19	MUNSEY	38.1	32.4	2659.3
4	SWAUGER	17.0	0.0	9.6	12	BECK	11.2	0.0	56.5	20	MILLER	0.0	0.0	0.0
5	MARINAC	0.0	0.0	0.0	13	LOW_BURNETT	0.0	0.0	0.0	21	MCLAUGHLIN	0.0	0.0	12.6
6	DARLINGTON	41.0	8.1	439.1	14	31N1	2.0	0.0	60.9	22	FOLKMAN_PUMP	0.0	0.0	0.0
7	BURNETT	71.0	25.8	1983.6	15	B&J	6.4	0.8	4.8	23	HUGGINS_PUMP	0.0	0.0	0.0
8	RAINBOW_PUMP	0.0	0.0	0.0	16	MOORE	92.0	0.0	560.3	24	QUIST_PUMP_#1	0.0	0.0	0.0
9	VANOUS	0.0	0.0	0.0	17	EASTSIDE	15.2	0.0	1820.2	25	QUIST_PUMP_#2	0.0	0.0	0.0

REACH LOSS DATA - JUN 16, 2007

REACH	ACTUAL DATE	TOTAL GAIN (CFS)	TOTAL GAIN (%)	STORAGE GAIN (CFS)	STORAGE GAIN (%)
1 BIG LOST BLW MACKAY RES	JUN 14	475.1	100.	0.0	0.
2 BIG LOST AT LESLIE	JUN 14	-108.4	-22.	-1.7	0.
3 BIG LOST BLW MOORE DIV	JUN 15	-78.1	-32.	0.0	0.
5 BIG LOST BLW MUNSEY DIV	JUN 16	1.3	2.	0.0	0.
6 BIG LOST NR ARCO	JUN 16	0.0	0.	0.0	0.

EXCHANGE PUMP DATA - JUN 16, 2007

EXCHANGE PUMP	CFS PUMPED	AF YR	TOTAL	EXCHANGE PUMP	CFS PUMPED	AF YR	TOTAL	EXCHANGE PUMP	CFS PUMPED	AF YR	TOTAL
1 OSMITH_PUMP	5.6		277.6	6 JENSEN_PUMP	8.2		604.5	11 QUIST_PUMP	0.0		0.0
2 LSMITH_PUMP	0.0		0.0	7 ISOM_1_PUMP	9.6		688.2	12 SCHUREMAN_PUMP	0.0		392.7
3 MANDERSON_PUMP	4.2		16.7	8 PARKINSON_PUMP	4.5		414.0	13 RASMUSSEN_PUMP	0.0		0.0
4 FOLKMAN_PUMP	4.4		234.4	9 TOONE_PUMP	5.9		463.5				
5 JACOBSEN_PUMP	0.0		0.0	10 ISOM_2_PUMP	7.6		545.3				

REACH	FLOWS IN CFS	ACTUAL DATE	NATURAL FLOW	ACTUAL FLOW	RMAINING NAT FLOW	EXCHANGE FLOW	STORED FLOW	RESRVOIR EVAP	NATURAL FLOW DIV	TOTAL RCH DIV	REACH GAIN	LAST RIGHT
1	BIG LOST BLW MACKAY RES	JUN 17	445.7	498.0	431.3	0.0	66.7	16.5	14.4	12.2	445.7	18870601
2	BIG LOST AT LESLIE	JUN 17	332.0	256.0	222.5	9.8	33.5	0.0	95.1	129.0	-113.7	18870601
3	BIG LOST BLW MOORE DIV	JUN 18	278.1	47.8	42.6	0.0	5.2	0.0	126.0	126.8	-53.9	18870601
5	BIG LOST BLW MUNSEY DIV	JUN 19	269.1	0.0	0.0	41.6	0.0	0.0	33.6	66.0	-9.0	18870601
6	BIG LOST NR ARCO	JUN 19	269.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18870601
* - INDICATES FLOW ESTIMATED, NOT MEASURED								TOTALS	269.	334.	269.	



River Reach

# River Flow Section

	REACH FLOWS IN CFS	ACTUAL DATE	NATURAL FLOW	ACTUAL FLOW	RMAINING NAT FLOW	EXCHANGE FLOW	STORED FLOW	RESRVOIR EVAP	NATURAL FLOW DIV	TOTAL RCH DIV	REACH GAIN	LAST RIGHT
1	BIG LOST BLW MACKAY RES	JUN 17	445.7	498.0	431.3	0.0	66.7	16.5	14.4	12.2	445.7	18870601
2	BIG LOST AT LESLIE	JUN 17	332.0	256.0	222.5	9.8	33.5	0.0	95.1	129.0	-113.7	18870601
3	BIG LOST BLW MOORE DIV	JUN 18	278.1	47.8	42.6	0.0	5.2	0.0	126.0	126.8	-53.9	18870601
5	BIG LOST BLW MUNSEY DIV	JUN 19	269.1	0.0	0.0	41.6	0.0	0.0	33.6	66.0	-9.0	18870601
6	BIG LOST NR ARCO	JUN 19	269.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18870601

\* - INDICATES FLOW ESTIMATED, NOT MEASURED

TOTALS 269. 334. 269.

River Reach

Data Date



REACH FLOWS IN CFS	ACTUAL DATE	NATURAL FLOW	ACTUAL FLOW	RMAINING NAT FLOW	EXCHANGE FLOW	STORED FLOW	RESRVOIR EVAP	NATURAL FLOW DIV	TOTAL RCH DIV	REACH GAIN	LAST RIGHT
1 BIG LOST BLW MACKAY RES	JUN 17	445.7	498.0	431.3	0.0	66.7	16.5	14.4	12.2	445.7	18870601
2 BIG LOST AT LESLIE	JUN 17	332.0	256.0	222.5	9.8	33.5	0.0	95.1	129.0	-113.7	18870601
3 BIG LOST BLW MOORE DIV	JUN 18	278.1	47.8	42.6	0.0	5.2	0.0	126.0	126.8	-53.9	18870601
5 BIG LOST BLW MUNSEY DIV	JUN 19	269.1	0.0	0.0	41.6	0.0	0.0	33.6	66.0	-9.0	18870601
6 BIG LOST NR ARCO	JUN 19	269.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18870601
* - INDICATES FLOW ESTIMATED, NOT MEASURED								TOTALS	269.	334.	269.

River Reach

Data Date

Natural Flow

1	2	3	4	5	6	7	8	9	10	11	12	13		
REACH	FLOWS	IN	CFS	ACTUAL	NATURAL	ACTUAL	RMAINING	EXCHANGE	STORED	RESRVOIR	NATURAL	TOTAL	REACH	
				DATE	FLOW	FLOW	NAT FLOW	FLOW	FLOW	EVAP	FLOW	RCH DIV	GAIN	
													LAST	
													RIGHT	
1	BIG LOST	BLW	MACKAY	JUN 17	445.7	498.0	431.3	0.0	66.7	16.5	14.4	12.2	445.7	18870601
2	BIG LOST	AT	LESLIE	JUN 17	332.0	256.0	222.5	9.8	33.5	0.0	95.1	129.0	-113.7	18870601
3	BIG LOST	BLW	MOORE	JUN 18	278.1	47.8	42.6	0.0	5.2	0.0	126.0	126.8	-53.9	18870601
5	BIG LOST	BLW	MUNSEY	JUN 19	269.1	0.0	0.0	41.6	0.0	0.0	33.6	66.0	-9.0	18870601
6	BIG LOST	NR	ARCO	JUN 19	269.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18870601
* - INDICATES FLOW ESTIMATED, NOT MEASURED										TOTALS	269.	334.	269.	

River Reach

Data Date

Natural Flow

Actual Flow  
(the physical flow in the river)

1	REACH FLOWS IN CFS												
2		ACTUAL	NATURAL	ACTUAL	RMAINING	EXCHANGE	STORED	RESRVOIR	NATURAL	TOTAL	REACH		
3		DATE	FLOW	FLOW	NAT FLOW	FLOW	FLOW	EVAP	FLOW DIV	RCH DIV	GAIN	LAST	RIGHT
4													
5	1	BIG LOST BLW MACKAY RES	JUN 17	445.7	498.0	431.3	0.0	66.7	16.5	14.4	12.2	445.7	18870601
6	2	BIG LOST AT LESLIE	JUN 17	332.0	256.0	222.5	9.8	33.5	0.0	95.1	129.0	-113.7	18870601
7	3	BIG LOST BLW MOORE DIV	JUN 18	278.1	47.8	42.6	0.0	5.2	0.0	126.0	126.8	-53.9	18870601
8	5	BIG LOST BLW MUNSEY DIV	JUN 19	269.1	0.0	0.0	41.6	0.0	0.0	33.6	66.0	-9.0	18870601
9	6	BIG LOST NR ARCO	JUN 19	269.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18870601
10	* - INDICATES FLOW ESTIMATED, NOT MEASURED								TOTALS	269.	334.	269.	
11													
12													

River Reach

Data Date

Natural Flow

Actual Flow  
(the physical flow in the river)

Remaining Natural Flow  
(Natural flow available in that reach after natural flow diversions have been taken out)

REACH	FLWS	IN	CFS	ACTUAL	NATURAL	ACTUAL	RMAINING	EXCHANGE	STORED	RESRVOIR	NATURAL	TOTAL	REACH	
				DATE	FLOW	FLOW	NAT FLOW	FLOW	FLOW	EVAP	FLOW DIV	RCH DIV	GAIN	LAST RIGHT
1	BIG LOST	BLW	MACKAY RES	JUN 17	445.7	498.0	431.3	0.0	66.7	16.5	14.4	12.2	445.7	18870601
2	BIG LOST	AT	LESLIE	JUN 17	332.0	256.0	222.5	9.8	33.5	0.0	95.1	129.0	-113.7	18870601
3	BIG LOST	BLW	MOORE DIV	JUN 18	278.1	47.8	42.6	0.0	5.2	0.0	126.0	126.8	-53.9	18870601
5	BIG LOST	BLW	MUNSEY DIV	JUN 19	269.1	0.0	0.0	41.6	0.0	0.0	33.6	66.0	-9.0	18870601
6	BIG LOST	NR	ARCO	JUN 19	269.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18870601
* - INDICATES FLOW ESTIMATED, NOT MEASURED											TOTALS	269.	334.	269.

River Reach

Data Date

Natural Flow

Actual Flow  
(the physical flow in the river)

Remaining Natural Flow  
(Natural flow available in that reach after natural flow diversions have been taken out)

**Note:** 0 Remaining Natural Flow means that there is not enough natural flow in the river to meet irrigation demand. Storage water must be released to meet demand.

1	REACH FLOWS IN CFS												
2		ACTUAL	NATURAL	ACTUAL	RMAINING	EXCHANGE	STORED	RESRVOIR	NATURAL	TOTAL	REACH		
3		DATE	FLOW	FLOW	NAT FLOW	FLOW	FLOW	EVAP	FLOW DIV	RCH DIV	GAIN	LAST	RIGHT
4													
5	1	BIG LOST BLW MACKAY RES	JUN 17	445.7	498.0	431.3	0.0	66.7	16.5	14.4	12.2	445.7	18870601
6	2	BIG LOST AT LESLIE	JUN 17	332.0	256.0	222.5	9.8	33.5	0.0	95.1	129.0	-113.7	18870601
7	3	BIG LOST BLW MOORE DIV	JUN 18	278.1	47.8	42.6	0.0	5.2	0.0	126.0	126.8	-53.9	18870601
8	5	BIG LOST BLW MUNSEY DIV	JUN 19	269.1	0.0	0.0	41.6	0.0	0.0	33.6	66.0	-9.0	18870601
9	6	BIG LOST NR ARCO	JUN 19	269.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18870601
10	* - INDICATES FLOW ESTIMATED, NOT MEASURED									TOTALS	269.	334.	269.
11													
12													

River Reach

Data Date

Natural Flow

Actual Flow (the physical flow in the river)

Remaining Natural Flow  
(Natural flow available in that reach after natural flow diversions have been taken out)

Exchange Flow  
(Total pumped by the exchange wells)

REACH	REACH FLOWS IN CFS	ACTUAL DATE	NATURAL FLOW	ACTUAL FLOW	RMAINING NAT FLOW	EXCHANGE FLOW	STORED FLOW	RESRVOIR EVAP	NATURAL FLOW DIV	TOTAL RCH DIV	REACH GAIN	LAST RIGHT
1	BIG LOST BLW MACKAY RES	JUN 17	445.7	498.0	431.3	0.0	66.7	16.5	14.4	12.2	445.7	18870601
2	BIG LOST AT LESLIE	JUN 17	332.0	256.0	222.5	9.8	33.5	0.0	95.1	129.0	-113.7	18870601
3	BIG LOST BLW MOORE DIV	JUN 18	278.1	47.8	42.6	0.0	5.2	0.0	126.0	126.8	-53.9	18870601
5	BIG LOST BLW MUNSEY DIV	JUN 19	269.1	0.0	0.0	41.6	0.0	0.0	33.6	66.0	-9.0	18870601
6	BIG LOST NR ARCO	JUN 19	269.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18870601

\* - INDICATES FLOW ESTIMATED, NOT MEASURED

TOTALS

269.

334.

269.

River Reach

Data Date

Natural Flow

Actual Flow (the physical flow in the river)

Remaining Natural Flow  
(Natural flow available in that reach after natural flow diversions have been taken out)

Exchange Flow  
(Total pumped by the exchange wells)

Stored Flow

WATER DISTRICT 34 - BIG LOST RIVER BELOW RESERVOIR FLOW ACCOUNTING - v1.2PC

Example: 498 cfs was released from Mackay, of that 66.7 cfs was storage water released from the reservoir.

	REACH FLOWS IN CFS	ACTUAL DATE	NATURAL FLOW	ACTUAL FLOW	RMAINING NAT FLOW	EXCHANGE FLOW	STORED FLOW	RESRVC EVA
1	BIG LOST BLW MACKAY RES	JUN 17	445.7	498.0	431.3	0.0	66.7	16.7
2	BIG LOST AT LESLIE	JUN 17	332.0	256.0	222.5	9.8	33.5	0.0
3	BIG LOST BLW MOORE DIV	JUN 18	278.1	47.8	42.6	0.0	5.2	0.0
5	BIG LOST BLW MUNSEY DIV	JUN 19	269.1	0.0	0.0	41.6	0.0	0.0
6	BIG LOST NR ARCO	JUN 19	269.1	0.0	0.0	0.0	0.0	0.0

\* - INDICATES FLOW ESTIMATED, NOT MEASURED

TOTALS

River Reach

Data Date

Natural Flow

Actual Flow (the physical flow in the river)

Remaining Natural Flow  
(Natural flow available in that reach after natural flow diversions have been taken out)

Exchange Flow  
(Total pumped by the exchange wells)

Stored Flow

1	WATER DISTRICT 34 - BIG LOST RIVER BELOW RESERVOIR FLOW ACCOUNTING - v1.2PC JUN 19, 2007													20070723
2	REACH FLOWS IN CFS		ACTUAL	NATURAL	ACTUAL	RMAINING	EXCHANGE	STORED	RESRVOIR	NATURAL	TOTAL	REACH		
3			DATE	FLOW	FLOW	NAT FLOW	FLOW	FLOW	EVAP	FLOW DIV	RCH DIV	GAIN	LAST RIGHT	
4														
5	1	BIG LOST BLW MACKAY RES	JUN 17	445.7	498.0	431.3	0.0	66.7	16.5	14.4	12.2	445.7	18870601	
6	2	BIG LOST AT LESLIE	JUN 17	332.0	256.0	222.5	9.8	33.5	0.0	95.1	129.0	-113.7	18870601	
7	3	BIG LOST BLW MOORE DIV	JUN 18	278.1	47.8	42.6	0.0	5.2	0.0	126.0	126.8	-53.9	18870601	
8	5	BIG LOST BLW MUNSEY DIV	JUN 19	269.1	0.0	0.0	41.6	0.0	0.0	33.6	66.0	-9.0	18870601	
9	6	BIG LOST NR ARCO	JUN 19	269.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18870601	

\* - INDICATES FLOW ESTIMATED, NOT MEASURED

TOTALS

269.

334.

269.

River Reach

Data Date

Natural Flow

Actual Flow (the physical flow in the river)

Remaining Natural Flow  
(Natural flow available in that reach after natural flow diversions have been taken out)

Exchange Flow  
(Total pumped by the exchange wells)

Stored Flow  
Reservoir Evaporation

REACH FLOWS IN CFS	ACTUAL DATE	NATURAL FLOW	ACTUAL FLOW	RMAINING NAT FLOW	EXCHANGE FLOW	STORED FLOW	RESRVOIR EVAP FLOW	NATURAL FLOW DIV	TOTAL RCH DIV	REACH GAIN LAST RIGHT
1 BIG LOST BLW MACKAY RES	JUN 17	445.7	498.0	431.3	0.0	66.7	16.5	14.4	12.2	445.7 18870601
2 BIG LOST AT LESLIE	JUN 17	332.0	256.0	222.5	9.8	33.5	0.0	95.1	129.0	-113.7 18870601
3 BIG LOST BLW MOORE DIV	JUN 18	278.1	47.8	42.6	0.0	5.2	0.0	126.0	126.8	-53.9 18870601
5 BIG LOST BLW MUNSEY DIV	JUN 19	269.1	0.0	0.0	41.6	0.0	0.0	33.6	66.0	-9.0 18870601
6 BIG LOST NR ARCO	JUN 19	269.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 18870601

\* - INDICATES FLOW ESTIMATED, NOT MEASURED

TOTALS

269.

334.

269.

River Reach

Data Date

Natural Flow

Actual Flow (the physical flow in the river)

Remaining Natural Flow  
(Natural flow available in that reach after natural flow diversions have been taken out)

Exchange Flow  
(Total pumped by the exchange wells)

Stored Flow  
Reservoir Evaporation  
Natural Flow Diversions

REACH FLOWS IN CFS	ACTUAL DATE	NATURAL FLOW	ACTUAL REMAINING	EXCHANGE	STORED RESERVOIR	EVAPORATION	NATURAL FLOW DIV	TOTAL RCH DIV	REACH GAIN	LAST RIGHT
1 BIG LOST BLW MACKAY RES	JUN 17	445.7	318.9	0.0	5.2	0.0	14.4	12.2	445.7	18870601
2 BIG LOST AT LESLIE	JUN 17	278.1	152.1	0.0	0.0	0.0	95.1	129.0	-113.7	18870601
3 BIG LOST BLW MOORE DIV	JUN 18	278.1	152.1	0.0	0.0	0.0	126.0	126.8	-53.9	18870601
5 BIG LOST BLW MUNSEY DIV	JUN 19	269.1	152.1	0.0	0.0	0.0	33.6	66.0	-9.0	18870601
6 BIG LOST NR ARCO	JUN 19	269.1	152.1	0.0	0.0	0.0	0.0	0.0	0.0	18870601
* - INDICATES FLOW ESTIMATED, NOT MEASURED							269.	334.	269.	

Example: In the reach ending at Moore Diversion there was 126.8 cfs diverted, of which 126.0 cfs was natural flow. (0.8cfs was storage water)

River Reach

Data Date

Natural Flow

Actual Flow (the physical flow in the river)

Remaining Natural Flow  
(Natural flow available in that reach after natural flow diversions have been taken out)

Exchange Flow  
(Total pumped by the exchange wells)

Stored Flow

Reservoir Evaporation

Natural Flow Diversions

Total Diversions

1	WATER DISTRICT 34 - BIG LOST RIVER BELOW RESERVOIR FLOW ACCOUNTING - v1.2PC JUN 19, 2007													20070723
2	REACH FLOWS IN CFS		ACTUAL	NATURAL	ACTUAL	RMAINING	EXCHANGE	STORED	RESRVOIR	NATURAL	TOTAL	REACH		
3			DATE	FLOW	FLOW	NAT FLOW	FLOW	FLOW	EVAP	FLOW DIV	RCH DIV	GAIN	LAST RIGHT	
4														
5	1	BIG LOST BLW MACKAY RES	JUN 17	445.7	498.0	431.3	0.0	66.7	16.5	14.4	12.2	445.7	18870601	
6	2	BIG LOST AT LESLIE	JUN 17	332.0	256.0	222.5	9.8	33.5	0.0	95.1	129.0	-113.7	18870601	
7	3	BIG LOST BLW MOORE DIV	JUN 18	278.1	47.8	42.6	0.0	5.2	0.0	126.0	126.8	-53.9	18870601	
8	5	BIG LOST BLW MUNSEY DIV	JUN 19	269.1	0.0	0.0	41.6	0.0	0.0	33.6	66.0	-9.0	18870601	
9	6	BIG LOST NR ARCO	JUN 19	269.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18870601	

\* - INDICATES FLOW ESTIMATED, NOT MEASURED

TOTALS

269.

334.

269.

River Reach

Data Date

Natural Flow

Actual Flow (the physical flow in the river)

Remaining Natural Flow  
(Natural flow available in that reach after natural flow diversions have been taken out)

Exchange Flow  
(Total pumped by the exchange wells)

Stored Flow  
Reservoir Evaporation  
Natural Flow Diversions

Total Diversions

Reach Gains.  
(negative means a loss in that reach).

REACH	REACH FLOWS IN CFS	ACTUAL DATE	NATURAL FLOW	ACTUAL FLOW	RMAINING NAT FLOW	EXCHANGE FLOW	STORED FLOW	RESRVOIR EVAP FLOW	NATURAL FLOW DIV	TOTAL RCH DIV	REACH GAIN	LAST RIGHT
1	BIG LOST BLW MACKAY RES	JUN 17	445.7	498.0	431.3	0.0	66.7	16.5	14.4	12.2	445.7	18870601
2	BIG LOST AT LESLIE	JUN 17	332.0	256.0	222.5	9.8	33.5	0.0	95.1	129.0	-113.7	18870601
3	BIG LOST BLW MOORE DIV	JUN 18	278.1	47.8	42.6	0.0	5.2	0.0	126.0	126.8	-53.9	18870601
5	BIG LOST BLW MUNSEY DIV	JUN 19	269.1	0.0	0.0	41.6	0.0	0.0	33.6	66.0	-9.0	18870601
6	BIG LOST NR ARCO	JUN 19	269.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18870601

\* - INDICATES FLOW ESTIMATED, NOT MEASURED

TOTALS

269.

334.

269.

River Reach

Data Date

Natural Flow

Actual Flow (the physical flow in the river)

Remaining Natural Flow

(Natural flow available in that reach after natural flow diversions have been taken out)

Exchange Flow

(Total pumped by the exchange wells)

Stored Flow

Reservoir Evaporation

Natural Flow Diversions

Total Diversions

Reach Gains.

(negative means a loss in that reach).

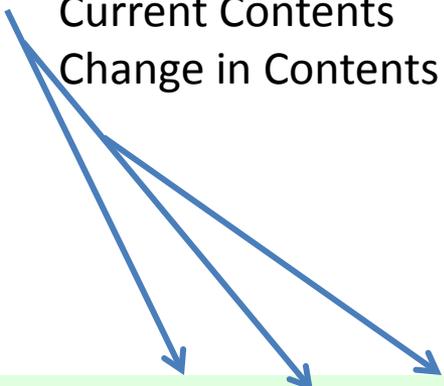
Priority Date

(YYYY/MM/DD)

Previous Contents (Yesterday)

Current Contents

Change in Contents



RESERVOIR	PREV CONT (AF)	CURR CONT (AF)	CHNG CONT (CFS)	ACC STOR (CFS)	TOTL STOR (AF)	TOTL EVP (AF)	PRIORITY	RESERVOIR	RIGHT (AF)	STORED (AF)
1 MACKAY	34280.0	34120.0	-80.7	4.9	41426.8	1040.1	1	MACKAY	556.5	304.6
							2	MACKAY	294.0	161.8
							3	MACKAY	556.5	140.1
							4	MACKAY	1113.0	213.0
							5	MACKAY	140.0	17.5
							6	MACKAY	20646.0	20646.0
							7	MACKAY	17205.0	17205.0
							8	MACKAY	6000.0	2738.8
								TOTAL	46511.0	41426.8

## Reservoir Contents Section

Previous Contents (Yesterday)

Current Contents

Change in Contents

Accrual to Storage: The amount of water credited towards filling the storage water right that day.

RESERVOIR	PREV CONT (AF)	CURR CONT (AF)	CHNG CONT (CFS)	ACC STOR (CFS)	TOTL STOR (AF)	TOTL EVF (AF)	PRIORITY	RESERVOIR	RIGHT (AF)	STORED (AF)
1 MACKAY	34280.0	34120.0	-80.7	4.9	41426.8	1040.1	1	MACKAY	556.5	304.6
							2	MACKAY	294.0	161.8
							3	MACKAY	556.5	140.1
							4	MACKAY	1113.0	213.0
							5	MACKAY	140.0	17.5
							6	MACKAY	20646.0	20646.0
							7	MACKAY	17205.0	17205.0
							8	MACKAY	6000.0	2738.8
								TOTAL	46511.0	41426.8

Previous Contents (Yesterday)

Current Contents

Change in Contents

Accrual to Storage: The amount of water credited towards filling the storage water rights that day.

Total Storage: The total storage credited towards filling the storage water rights.

RESERVOIR	PREV CONT (AF)	CURR CONT (AF)	CHNG CONT (CFS)	ACC STOR (CFS)	TOTL STOR (AF)	TOTL EVP (AF)	PRIORITY	RESERVOIR	RIGHT (AF)	STORED (AF)
1 MACKAY	34280.0	34120.0	-80.7	4.9	41426.8	1040.1	1	MACKAY	556.5	304.6
							2	MACKAY	294.0	161.8
							3	MACKAY	556.5	140.1
							4	MACKAY	1113.0	213.0
							5	MACKAY	140.0	17.5
							6	MACKAY	20646.0	20646.0
							7	MACKAY	17205.0	17205.0
							8	MACKAY	6000.0	2738.8
								TOTAL	46511.0	41426.8

Previous Contents (Yesterday)

Current Contents

Change in Contents

Accrual to Storage: The amount of water credited towards filling the storage water right that day.

Total Evaporation

Total Storage: The total storage credited towards filling the storage water right.

RESERVOIR	PREV CONT (AF)	CURR CONT (AF)	CHNG CONT (CFS)	ACC STOR (CFS)	TOTL STOR (AF)	TOTL STOR (AF)	EVP (AF)	PRIORITY	RESERVOIR	RIGHT (AF)	STORED (AF)
1 MACKAY	34280.0	34120.0	-80.7	4.9	41426.8	1040.1		1	MACKAY	556.5	304.6
								2	MACKAY	294.0	161.8
								3	MACKAY	556.5	140.1
								4	MACKAY	1113.0	213.0
								5	MACKAY	140.0	17.5
								6	MACKAY	20646.0	20646.0
								7	MACKAY	17205.0	17205.0
								8	MACKAY	6000.0	2738.8
									TOTAL	46511.0	41426.8

# Reservoir Right Table

Mackay has 8 water rights which are listed by priority date.



RESERVOIR	PREV CONT (AF)	CURR CONT (AF)	CHNG CONT (CFS)	CONT ACC (CFS)	STOR TOTL (AF)	TOTL EVAP (AF)	PRIORITY	RESERVOIR	RIGHT (AF)	STORED (AF)
1 MACKAY	34280.0	34120.0	-80.7	4.9	41426.8	1040.1	1	MACKAY	556.5	304.6
							2	MACKAY	294.0	161.8
							3	MACKAY	556.5	140.1
							4	MACKAY	1113.0	213.0
							5	MACKAY	140.0	17.5
							6	MACKAY	20646.0	20646.0
							7	MACKAY	17205.0	17205.0
							8	MACKAY	6000.0	2738.8
							TOTAL		46511.0	41426.8

Right (AF)

(The volume limit of the water right.)

Stored (AF)

(The volume of water accrued to the storage right.)

# Year-to-Date Information

4	MACKAY	1115.0	215.0
5	MACKAY	140.0	17.5
6	MACKAY	20646.0	20646.0
7	MACKAY	17205.0	17205.0
8	MACKAY	6000.0	2738.8
TOTAL		46511.0	41426.8

	CHANGE IN CONTENT	STORAGE USED	ARCO STORED	TOTAL STORED	UNACCT STORED
YEAR-TO-DATE AF	-4420.0	8009.7	0.0	2886.8	13.9

Change in Content: Year to date change in reservoir contents.

Storage Used: Total canal storage use.

Arco Storage: Total storage that passed Arco. This is the total storage water that left the basin.

Total Stored: Total storage credited to the storage rights.

Unaccounted for Storage: Natural flow stored after reservoir rights have filled.

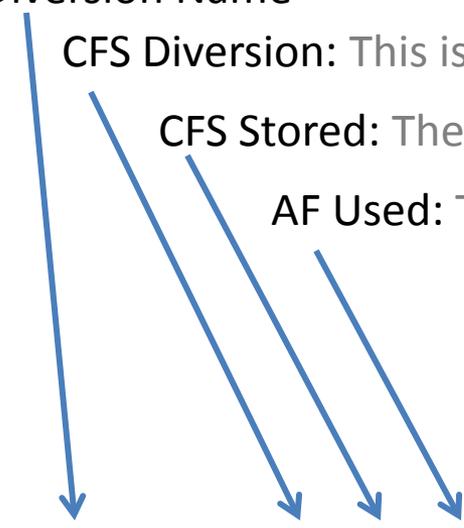
# Canal Data

## Diversion Name

CFS Diversion: This is the canal diversion rate in cfs.

CFS Stored: The portion of what was diverted charged to storage.

AF Used: Total acre-feet of storage used.



	CFS	CFS	AF		CFS	CFS	AF		CFS	CFS	AF
DIVERSION	DIVN	STOR	USED	DIVERSION	DIVN	STOR	USED	DIVERSION	DIVN	STOR	USED
2 SHARP	12.2	2.7	68.8	10 SUTTER	0.0	0.0	0.0	18 ARCO	27.9	0.0	334.0
3 STREETER	0.0	0.0	0.0	11 ANGELO	0.0	0.0	0.0	19 MUNSEY	38.1	32.4	2659.3
4 SWAUGER	17.0	0.0	9.6	12 BECK	11.2	0.0	56.5	20 MILLER	0.0	0.0	0.0
5 MARINAC	0.0	0.0	0.0	13 LOW_BURNETT	0.0	0.0	0.0	21 MCLAUGHLIN	0.0	0.0	12.6
6 DARLINGTON	41.0	8.1	439.1	14 31N1	2.0	0.0	60.9	22 FOLKMAN_PUMP	0.0	0.0	0.0
7 BURNETT	71.0	25.8	1983.6	15 B&J	6.4	0.8	4.8	23 HUGGINS_PUMP	0.0	0.0	0.0
8 RAINBOW_PUMP	0.0	0.0	0.0	16 MOORE	92.0	0.0	560.3	24 QUIST_PUMP_#1	0.0	0.0	0.0
9 VANOUS	0.0	0.0	0.0	17 EASTSIDE	15.2	0.0	1820.2	25 QUIST_PUMP_#2	0.0	0.0	0.0

# Canal Data

## Diversion Name

CFS Diversion: This is the canal diversion rate in cfs.

CFS Stored: The portion of the what was diverted charged to storage.

AF Used: Total acre-feet of storage used.

Example: Darlington diverted 41.0 cfs on June 19, 2007. 8.1 cfs of the 41.0 cfs diverted was storage water. They have used a total of 439.1 acre-feet so far this season.

4												
5		CFS	CFS	AF		CFS	CFS	AF		CFS	CFS	AF
6	DIVERSION	DIVN	STOR	USED	DIVERSION	DIVN	STOR	USED	DIVERSION	DIVN	STOR	USED
7												
8												
9	2 SHARP	12.2	2.7	68.8	10 SUTTER	0.0	0.0	0.0	18 ARCO	27.9	0.0	334.0
0	3 STREETER	0.0	0.0	0.0	11 ANGELO	0.0	0.0	0.0	19 MUNSEY	38.1	32.4	2659.3
1	4 SWAUGER	17.0	0.0	9.6	12 BECK	11.2	0.0	56.5	20 MILLER	0.0	0.0	0.0
2	5 MARINAC	0.0	0.0	0.0	13 LOW_BURNETT	0.0	0.0	0.0	21 MCLAUGHLIN	0.0	0.0	12.6
3	6 DARLINGTON	41.0	8.1	439.1	14 31N1	2.0	0.0	60.9	22 FOLKMAN_PUMP	0.0	0.0	0.0
4	7 BURNETT	71.0	25.8	1983.6	15 B&J	6.4	0.8	4.8	23 HUGGINS_PUMP	0.0	0.0	0.0
5	8 RAINBOW_PUMP	0.0	0.0	0.0	16 MOORE	92.0	0.0	560.3	24 QUIST_PUMP_#1	0.0	0.0	0.0
6	9 VANOUS	0.0	0.0	0.0	17 EASTSIDE	15.2	0.0	1820.2	25 QUIST_PUMP_#2	0.0	0.0	0.0

REACH LOSS DATA - JUN 19, 2007							
		ACTUAL	TOTAL		STORAGE		
REACH		DATE	GAIN		GAIN		
			(CFS)	(%)	(CFS)	(%)	
1	BIG LOST BLW MACKAY RES	JUN 17	445.7	100.	0.0	0.	
2	BIG LOST AT LESLIE	JUN 17	-125.2	-25.	-11.5	-2.	
3	BIG LOST BLW MOORE DIV	JUN 18	-73.4	-29.	-19.6	-8.	
5	BIG LOST BLW MUNSEY DIV	JUN 19	-9.0	-7.	0.0	0.	
6	BIG LOST NR ARCO	JUN 19	0.0	0.	0.0	0.	

## Reach Loss Section



Reach Name

Actual Date: The data date. Upstream gages are lagged to account for travel time

Total Gain

Percentage: This is the percentage loss charged to natural flow.

Storage gain (loss): Loss charged to stored flow.

Percentage: Percentage of loss charged to stored flow

\* IDWR is currently working on the code to improve the proportional loss calculation.

# Exchange Pump Section

Pump Name

CFS Pumped: the pumping rate for that day.

Yearly Total: Year-to-date volume pumped (AF).

EXCHANGE PUMP DATA - JUN 19, 2007											
EXCHANGE PUMP	CFS PUMPED	AF YR	TOTAL	EXCHANGE PUMP	CFS PUMPED	AF YR	TOTAL	EXCHANGE PUMP	CFS PUMPED	AF YR	TOTAL
1 OSMITH_PUMP	5.6	311.0		6 JENSEN_PUMP	8.2	653.3		11 QUIST_PUMP	0.0		
2 LSMITH_PUMP	0.0	0.0		7 ISOM_1_PUMP	9.2	743.8		12 SCHUREMAN_PUMP	6.0		
3 MANDERSON_PUMP	4.2	41.7		8 PARKINSON_PUMP	4.5	440.8		13 RASMUSSEN_PUMP	0.0		
4 FOLKMAN_PUMP	0.0	243.1		9 TOONE_PUMP	5.7	497.8					
5 JACOBSEN_PUMP	0.0	0.0		10 ISOM_2_PUMP	8.0	592.0					

# IDWR Web Resources

Water District Website:

<http://idwr.idaho.gov/WaterManagement/WaterDistricts/BigLost/>

Questions?

## Contact Information:

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