

WESTERN DIVISION SYSTEM  
RESOURCES DIVISION  
LOVELAND, COLORADO

AUGUST 1, 2012  
WATER SUPPLY AND UTILIZATION REPORT  
WESTERN DIVISION SYSTEM  
PICK-SLOAN MISSOURI BASIN PROGRAM

PRECIPITATION ABOVE AVERAGE  
TEMPERATURES GENERALLY ABOVE AVERAGE

Precipitation was above average over the Colorado-Big Thompson Project (Project) during July. The Willow Creek and Lake Granby watersheds were the lowest at 166 percent of average. The Lake Estes and St. Vrain watersheds were the highest at 231 percent of average.

Temperatures over the Project were generally above average for July.

PRECIPITATION

Watershed	July Precipitation			October-July Precipitation		
	2012 (Inches)	Avg <u>1</u> / (Inches)	% of Avg	WY2012 (Inches)	Avg <u>1</u> / (Inches)	% of Avg
Green Mtn.	3.49	2.00	174	12.24 <u>2</u>	14.64	84
Willow Crk.	2.98	1.88	166	10.16	14.10	72
L. Granby	2.98	1.88	166	10.16	14.10	72
L. Estes	5.26E	2.28	231E	15.16E	14.89	102E
St. Vrain	5.26E	2.28	231E	15.16E	14.89	102E
Poudre	4.02	2.00	201	11.81	12.42	95

1/ 30 year average, 1971-2000

2/ Correction

E Estimated

INFLOWS WELL BELOW AVERAGE

Inflows were well below average over the Project during July. The inflow to Green Mountain Reservoir was the lowest at 31 percent of average. The inflow to Lake Estes was the highest at 47 percent of average. Water year to date (October-July) inflows have been 57 percent of average.

RESERVOIR INFLOW

Reservoir	July Inflow			October-July Inflow		
	2012 (KAF)	Avg <u>1</u> / (KAF)	% of Avg	WY 2012 (KAF)	Avg <u>1</u> / (KAF)	% of Avg
Green Mtn.*	23.2	74.0	31	193.0	344.1	56
Willow Crk.	1.7	5.0	34	29.0	56.7	51
L. Granby	16.0	42.3	38	139.1	232.8	60
L. Estes <u>2</u>	9.6	20.5	47	44.8	80.5	56

\* Undepleted

1/ 30 year average, 1971-2000

2/ Lake Estes Computed Inflow

2012 BYPASS/SPILL (AF)

Bypass/Spill	Granby*	Willow Crk.**	Green Mtn.***
March	0	0	329
April	0	0	4002
May	0	0	4513
June	0	0	1859
July	0	0	0
Total	0	0	10,703

\* Water released through the spillway gates.

\*\* Over release at Willow Creek is any amount released above required minimums.

\*\*\* Bypass at Green Mtn. is any amount released beyond turbine capacity or bypassing of the turbines.

TRANSMOUNTAIN DIVERSIONS ABOVE AVERAGE

Transmountain diversions through Adams Tunnel during July were 146 percent of average. During July, 33,200 acre-feet of water was brought through the tunnel. Water year to date (October-July) diversions have been 114 percent of average.

TRANSMOUNTAIN DIVERSION

Adams Tun.	July			October-July		
	2012 (KAF)	Avg 1/ (KAF)	% of Avg.	WY 2012 (KAF)	Avg 1/ (KAF)	% of Avg
	33.2	22.8	146	214.4	188.5	114

1/ 30 year average, 1971-2000

RESERVOIR STORAGE BELOW AVERAGE

The Lake Granby storage of 394,600 acre-feet on July 31 was 68,300 acre-feet below average. Terminal reservoir storage in Carter Lake and Horsetooth Reservoir was 82 and 84 percent of average, respectively.

Colorado-Big Thompson Project storage water in Lake Granby, Carter Lake, and Horsetooth was 554,300 acre-feet on July 31 which was 101,000 acre-feet below average and 69 percent of the total available storage capacity.

RESERVOIR STORAGE

Reservoir	Total Storage on July 31						
	2012 (KAF)	2012 (% of Avg)	2011 (KAF)	2010 (KAF)	2009 (KAF)	1971-00 Avg(KAF)	Total Storage Cap.(KAF)
Green Mtn	96.0	65	152.3	152.0	152.8	147.9	153.6
L. Granby	394.6	85	531.2	531.2	511.7	462.9	539.8
Horse-tooth	92.1	84	150.9	136.9	132.2	110.3	156.7
Carter L.	67.6	82	109.2	103.8	91.1	82.1	112.2
Dillon	221.8	89	256.1	253.2	256.6	249.9	254.0
Williams Fork	75.8	89	96.2	96.1	96.1	85.0 <sup>1</sup> / <sub>2</sub>	96.8
Project	Total Storage Water in Lake Granby, Carter Lake, and Horsetooth Reservoir on July 31						
CBT	554.3	85	791.3	771.9	735.0	655.3	808.7

<sup>1</sup>/ 20 year average, 1970-1989.

PROJECT WATER DELIVERIES ABOVE AVERAGE

Project water deliveries during July were 105 percent of average. Colorado-Big Thompson seasonal deliveries (November 2011-July 2012) were 156 percent of average to date.

Units = 1000 AF

Project	Delivery Point	July Delivery			Seasonal Delivery Through July 31		
		2012	Avg <u>1</u> /	% of Avg	2012	Avg <u>1</u> /	% of Avg
	Carter Lake *	27.4	18.3	150	83.4	35.5	235
	Hansen F.C.*	6.8	11.1	61	21.3	24.0	89
	Horsetooth Res*	26.9	28.6	94	74.1	54.9	135
CBT Total		61.1	58.0	105	178.8	114.4	156

1/ 30 year average, 1971-2000

\* May include some Windy Gap and/or carriage contract water.

WESTERN DIVISION SYSTEM  
GENERATION BELOW AVERAGE

System generation of 263,300,000 kilowatt-hours of energy produced during July was 80 percent of average. Total system generation for the water year (October-July) was 1,897,700,000 kilowatt-hours which was 87 percent of average.

WESTERN DIVISION SYSTEM  
GROSS GENERATION

(Energy in GWH)

Powerplant	July Gross Generation			Accum. Gross Generation <u>1/</u>		
	2012 (GWH)	Avg <u>2/</u> (GWH)	% of Avg.	WY 2012 (GWH)	Avg <u>2/</u> (GWH)	% of Avg
Green Mtn.	4.8	7.4	65	27.0	37.9	71
Marys Lake	5.6	3.3	170	36.5	31.3	117
Estes	14.4	9.4	153	96.7	83.5	116
Pole Hill	22.8	18.7	122	139.0	146.7	95
Flatiron 1&2	28.8	24.0	120	187.5	191.7	98
Big Thompson	0.9	2.6	35	4.2	8.1	52
Seminole	9.5	14.4	66	101.7	113.9	89
Kortes	12.4	14.4	86	108.5	120.3	90
Fremont C.	22.4	35.7	63	120.2	184.0	65
Alcova	26.7	18.8	142	97.4	89.4	109
Glendo	21.0	20.8	101	69.1	55.9	124
Guernsey	2.0	2.1	95	12.6	12.1	104
Boysen	5.9	7.8	76	23.6	56.2	42
Heart Mtn.	3.5	3.1 <u>3/</u>	113	9.3	9.5 <u>3/</u>	98
Buffalo Bill	11.0	11.6 <u>3/</u>	95	57.7	53.1 <u>3/</u>	105
Shoshone	2.0	2.2 <u>3/</u>	91	13.9	16.3 <u>3/</u>	85
Spirit Mtn.	3.4	3.0 <u>3/</u>	113	11.9	8.2 <u>3/</u>	145
Mt. Elbert	26.6	22.7 <u>4/</u>	117	204.2	135.9 <u>4/</u>	150
Yellowtail	39.6	107.0 <u>5/</u>	37	576.7	818.1 <u>5/</u>	70
Total	263.3	329.0	80	1897.7	2172.1	87

1/ Oct-Jul

2/ 1976-2005 average

3/ 1995-2005 average

4/ 1990-1999 average 5/ 1971-1990 average; In general 1/2 of Yellowtail energy is dedicated to the Western Division System through marketing arrangement. The other 1/2 is marketed in Eastern Division System.

WESTERN DIVISION SYSTEM  
PUMP ENERGY VARIED

The pump energy required for the Western Division System was varied for July. Colorado-Big Thompson Project pumping was 45 percent of average for July. Mt. Elbert pumping was 166 percent of average. Water year to date (October-July) pumping for the Western Division System was 166 percent of average.

PUMP ENERGY

Pumping Plant	July Pump Energy			Oct-July Pump Energy		
	2012 (GWH)	Avg <u>1/</u> (GWH)	% of Avg	WY2012 (GWH)	Avg <u>1/</u> (GWH)	% of Avg
Willow Crk	0.0	0.3	-	3.2	5.5	58
Farr	4.7	1.9	247	26.4	25.5	104
Flatiron 3	6.7	0.9	744	34.5	25.0	138
Mt. Elbert	39.4	23.7 <u>2/</u>	166	261.7	140.8 <u>2/</u>	186
Total	50.8	26.8	190	325.8	196.8	166

1/ 1976-2005 average

2/ 1990-1999 average

AUGUST 1, 2012  
WATER SUPPLY AND UTILIZATION REPORT  
FRYINGPAN-ARKANSAS PROJECT

PRECIPITATION VARIED

Precipitation was varied over the Fryingpan-Arkansas Project (Project) during July. Precipitation at Pueblo Reservoir was the lowest at 92 percent of average. Precipitation at Turquoise Lake was the highest at 163 percent of average.

PRECIPITATION

Stations	July Precipitation			October-July Precipitation		
	2012 (Inches)	Avg (Inches)	% of Avg	WY2012 (Inches)	Avg (Inches)	% of Avg
Ruedi *	2.70	1.69 <u>1/</u>	160	13.60	19.48 <u>1/</u>	70
Turquoise	3.28	2.01 <u>2/</u>	163	11.39	13.44 <u>2/</u>	85
Twin Lakes	2.34	1.49 <u>3/</u>	157	6.35	7.40 <u>3/</u>	86
Pueblo	1.86	2.02 <u>4/</u>	92	7.25	10.03 <u>4/</u>	72

\* Used Nast SNOTEL site

1/ 1971-2000 average for Nast

2/ 1973-1999 average

3/ 1966-1999 average

4/ 1976-1999 average

INFLOWS WELL BELOW AVERAGE

Native inflows were well below average over the Project during July. The inflow to Pueblo Reservoir was the lowest at 19 percent of average. The inflow to Ruedi Reservoir was the highest at 40 percent of average. Water year to date (October-July) inflows over the Fryingpan-Arkansas Project were 41 percent of average.

RESERVOIR INFLOW\*

Reservoir	July Inflow			October-July Inflow		
	2012 (KAF)	Avg (KAF)	% of Avg	WY2012 (KAF)	Avg (KAF)	% of Avg
Ruedi	7.4	18.7 <u>1/</u>	40	62.6	118.5 <u>1/</u>	53
Turquoise	1.1	5.2 <u>2/</u>	21	13.5	27.6 <u>2/</u>	49
Twin Lakes	4.4	20.0 <u>3/</u>	22	35.5	82.3 <u>3/</u>	43
Pueblo	17.4	93.7 <u>3/</u>	19	171.5	453.9 <u>3/</u>	38

\* Computed Native Inflow

1/ 1970-1989 average

2/ 1969-1986 average

3/ 1966-1986 average

RESERVOIR STORAGE IS VARIED

Reservoir storage is varied on the Fryingpan-Arkansas Project. Turquoise Lake is the lowest at 74 percent of average. Pueblo Reservoir is the highest at 102 percent of average. The total water in storage in the four reservoirs of 449,000 acre-feet at the end of July was 117,400 acre-feet lower than 1 year ago on this date.

RESERVOIR STORAGE

	Total Storage on July 31						
Reservoir	2012 (KAF)	2012 (% of Avg)	2011 (KAF)	2010 (KAF)	2009 (KAF)	Avg (KAF)	Total Storage Capacity (AF)
Ruedi	85.2	86	100.3	99.3	101.7	98.6 <u>1/</u>	102,373
Turquoise	86.7	74	120.8	111.7	122.6	117.7 <u>2/</u>	129,398
Twin Lakes	101.2	81	130.8	124.0	124.5	124.3 <u>3/</u>	141,000
Pueblo	175.9	102	214.5	218.8	221.0	171.8 <u>1/</u>	256,949 <u>4/</u>
Project	Total Storage Water in Turquoise, Twin Lakes, and Pueblo Reservoirs on July 31						
Fry-Ark	363.8	88	466.1	454.5	468.1	413.8	527,347

1/ 1982-2007 average

2/ 1989-2007 average

3/ 1987-2007 average

4/ Top of active conservation capacity

## COOPERATORS

Many organizations and individuals furnish information for the Water Supply and Utilization Report. Their cooperation is gratefully appreciated, especially:

Natural Resource Conservation Service  
<http://www.wcc.nrcs.usda.gov/>  
Snow Survey Units  
Denver, Colorado  
<http://www.co.nrcs.usda.gov/snosurvfs.htm>  
Casper, Wyoming  
and  
Portland, Oregon

Department of Commerce  
NOAA, National Weather Service  
Boulder, Colorado  
<http://www.crh.noaa.gov/den/>  
Cheyenne, Wyoming  
Salt Lake City, Utah

Department of Energy  
Western Area Power Administration  
Rocky Mountain Region  
Loveland, Colorado  
<http://www.wapa.gov/RM/RM.HTM>

Colorado Climate Center  
Colorado State University  
Fort Collins, Colorado  
<http://ccc.atmos.colostate.edu/Access.html>