

WESTERN DIVISION SYSTEM
 RESOURCES DIVISION
 LOVELAND, COLORADO

NOVEMBER 1, 2011
 WATER SUPPLY AND UTILIZATION REPORT
 WESTERN DIVISION SYSTEM
 PICK-SLOAN MISSOURI BASIN PROGRAM

PRECIPITATION ABOVE AVERAGE
 TEMPERATURES VARIED

Precipitation was above average over the Colorado-Big Thompson Project (Project) during October. The Willow Creek and Lake Granby watersheds were the lowest at 133 percent of average. The Lake Estes and St Vrain watersheds were the highest at 209 percent of average. On October 25 and 26, the Front Range experienced a snowstorm dumping close to 10 inches in Fort Collins of very wet snow.

Temperatures over the Project were varied for October.

PRECIPITATION

Waterhshed	October Precipitation		
	2011 (Inches)	Avg <u>1</u> / (Inches)	% of Avg.
Green Mtn.	1.69	1.16	146
Willow Crk.	1.75	1.32	133
Lake Granby	1.75	1.32	133
Lake Estes	2.30	1.10	209
St. Vrain	2.30	1.10	209
Poudre	1.73	.94	184

1/ 30 year average, 1971-2000

INFLOWS ABOVE AVERAGE

Inflows were above average over the Project during October. The inflow to Lake Estes was the lowest at 126 percent of average. The inflow to Willow Creek was the highest at 154 percent of average.

RESERVOIR INFLOW

Reservoir	October Inflow		
	2011 (1000 AF)	Avg <u>1</u> / (1000 AF)	% of Avg.
Green Mtn. *	18.6	13.7	136
Willow Creek	2.0	1.3	154
Lake Granby	8.9	5.8	153
Lake Estes <u>2</u> /	3.4	2.7	126

* Undepleted

1/ 30 year average, 1971-2000

2/ Lake Estes Computed Inflow

TRANSMOUNTAIN DIVERSIONS ABOVE AVERAGE

Transmountain diversions through Adams Tunnel during October were 199 percent of average. During October, 31,100 acre-feet of water was brought through the tunnel.

TRANSMOUNTAIN DIVERSION

Adams Tunnel	October		
	2011 (1000 AF)	Avg <u>1</u> / (1000 AF)	% of Avg.
	31.1	15.6	199

1/ 30 year average, 1971-2000

RESERVOIR STORAGE VARIED

The Lake Granby storage of 473,200 acre-feet on October 31 was 46,100 acre-feet above average and 20,200 acre-feet lower than 1 year ago on this date. Terminal reservoir storage in Carter Lake and Horsetooth Reservoir was 113 and 128 percent of average, respectively.

Colorado-Big Thompson Project storage water in Lake Granby, Carter Lake, and Horsetooth was 641,200 acre-feet on October 31 which was 76,000 acre-feet above average and 79 percent of the total available storage capacity.

RESERVOIR STORAGE

Reservoir	Total Storage on October 31						Total Storage Cap.(KAF)
	2011 (KAF)	2011 (%of Avg)	2010 (KAF)	2009 (KAF)	2008 (KAF)	1971-00 Avg (KAF)	
Green Mtn	104.2	91	79.2	80.6	75.6	114.5	153.6
L. Granby	473.2	111	493.4	444.1	380.3	427.1	539.8
Horse-tooth	102.2	128	71.4	68.7	71.5	80.0	156.7
Carter L.	65.8	113	38.6	73.8	50.8	58.1	112.2
Dillon	243.2	104	219.7	241.0	245.5	234.4	254.0
Williams Fork	78.0	115	84.2	80.1	83.9	68.1 _{1/}	96.8
Project	Total Storage Water in Lake Granby, Carter Lake, and Horsetooth Reservoir on October 31						
CBT	641.2	113	603.4	586.6	502.6	565.2	808.7

_{1/} 20 year average, 1970-1989.

PROJECT WATER DELIVERIES ABOVE AVERAGE

Project water deliveries during October were 242 percent of average. Colorado-Big Thompson seasonal deliveries (November 2010 – October 2011) were 101 percent of average to date.

Units = 1000 AF

Project	Delivery Point	Oct. Delivery*			Seasonal Delivery Through Oct. 31*		
		2011	Avg <u>1/</u>	% of Avg	2011	Avg <u>1/</u>	% of Avg
	Carter Lake*	15.2	4.6	330	85.9	70.2	122
	Hansen F.C.*	11.1	5.2	213	39.4	52.0	76
	Horsetooth Res.*	14.6	7.1	206	96.3	97.7	99
CBT Total		40.9	16.9	242	221.6	219.9	101

1/ 30 year average, 1971-2000

* May include Windy Gap, carriage contract, non-charge, or replacement water.

WESTERN DIVISION SYSTEM
GENERATION ABOVE AVERAGE

System generation of 198,100,000 kilowatt-hours of energy produced during October was 120 percent of average.

WESTERN DIVISION SYSTEM
GROSS GENERATION

(Energy in GWH)

Powerplant	October Gross Generation		
	2011 (GWH)	Avg 1/ (GWH)	% of Avg.
Green Mtn.	9.5	4.7	202
Marys Lake	5.4	2.1	257
Estes	14.3	5.9	242
Pole Hill	21.2	8.9	238
Flatiron 1&2	26.3	12.0	219
Big Thompson	1.2	0.4	300
Seminole	4.1	8.1	51
Kortes	5.0	8.6	58
Fremont C.	0.4	8.5	5
Alcova	3.1	7.0	44
Glendo	0.0	0.2	-
Guernsey	0.0	0.5	-
Boysen	0.0	5.3	-
Heart Mtn.	1.7	0.8 <u>2/</u>	212
Buffalo Bill	4.9	2.5 <u>2/</u>	196
Shoshone	1.6	1.6 <u>2/</u>	100
Spirit Mtn.	1.7	0.9 <u>2/</u>	189
Mt. Elbert	7.9	11.8 <u>3/</u>	67
Yellowtail	89.8	74.6 <u>4/</u>	120
Total	198.1	164.4	120

1/ 1976-2005 average

2/ 1995-2005 average

3/ 1990-1999 average

4/ 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 October. Colorado-Big Thompson Project pumping was 190 percent of average for October. Mt. Elbert pumping was 81 percent of average.

PUMP ENERGY

Pumping Plant	October Pump Energy		
	2011 (GWH)	Avg <u>1</u> / (GWH)	% of Avg.
Willow Creek	0.0	0.1	-
Farr	4.1	2.1	195
Flatiron 3	3.5	1.8	194
Mt. Elbert	12.2	15.0 <u>2</u> /	81
Total	19.8	19.0	104

1/ 1976-2005 average

2/ 1990-1999 average

NOVEMBER 1, 2011
 WATER SUPPLY AND UTILIZATION REPORT
 FRYINGPAN-ARKANSAS PROJECT

PRECIPITATION ABOVE AVERAGE

Precipitation was above average over the Fryingpan-Arkansas Project (Project) during October. Precipitation at Ruedi Reservoir (Nast SNOTEL) was the lowest at 118 percent of average. Precipitation at Pueblo Reservoir was the highest at 247 percent of average.

PRECIPITATION

Stations	October Precipitation		
	2011 (Inches)	Avg. (Inches)	% of Avg.
Ruedi *	1.70	1.44 <u>1/</u>	118
Turquoise	2.19	1.05 <u>2/</u>	209
Twin Lakes	1.23	.67 <u>3/</u>	184
Pueblo	1.53	.62 <u>4/</u>	247

* Used Nast Snotel site
1/ 1971-2000 average for Nast
2/ 1973-1999 average
3/ 1966-1999 average
4/ 1976-1999 average

INFLOWS VARIED

Native inflows were varied over the Project during October. The inflow to Pueblo Reservoir was the lowest at 59 percent of average. The inflow to Ruedi Reservoir was the highest at 121 percent of average.

RESERVOIR INFLOW*

Reservoir	October Inflow		
	2011 (1000 AF)	Avg. (1000 AF)	% of Avg.
Ruedi	5.2	4.3 <u>1/</u>	121
Turquoise	0.4	0.4 <u>2/</u>	100
Twin Lakes	2.3	2.6 <u>2/</u>	88
Pueblo	16.1	27.2 <u>2/</u>	59

* Computed Native Inflow
1/ 1970-1989 average
2/ 1966-1986 average

RESERVOIR STORAGE VARIED

Reservoir storage is varied on the Fryingpan-Arkansas Project. Twin Lakes is the lowest at 93 percent of average. Pueblo Reservoir is the highest at 116 percent of average. The total water in storage in the four reservoirs of 479,800 acre-feet at the end of October was 5,200 acre-feet lower than 1 year ago on this date.

RESERVOIR STORAGE

	Total Storage on October 31						
Reservoir	2011 (KAF)	2011 (% of Avg)	2010 (KAF)	2009 (KAF)	2008 (KAF)	Avg (KAF)	Total Storage Capacity (AF)
Ruedi	83.5	99	76.8	76.1	77.0	84.1 <u>1/</u>	102,373
Turquoise	122.4	112	114.7	107.1	104.0	109.0 <u>2/</u>	129,398
Twin Lakes	106.8	93	109.8	116.2	110.8	114.9 <u>3/</u>	141,000
Pueblo	167.1	116	183.7	194.6	176.2	144.4 <u>1/</u>	256,949 <u>4/</u>
Project	Total Storage Water in Turquoise, Twin Lakes, and Pueblo Reservoirs on October 31						
Fry-Ark	396.3	108	408.2	417.9	391.0	368.3	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>