

WESTERN DIVISION SYSTEM
RESOURCES DIVISION
LOVELAND, COLORADO

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

PRECIPITATION VARIED

TEMPERATURES VARIED

Precipitation was varied over the Colorado-Big Thompson Project (Project) during September. The Lake Estes and St Vrain watersheds were the lowest at 78 percent of average. The Willow Creek and Lake Granby watersheds were the highest at 127 percent of average.

Temperatures over the Project were varied for September.

PRECIPITATION

Watershed	September Precipitation			October-September Precipitation		
	2011 (Inches)	Avg <u>1</u> / (Inches)	% of Avg	WY2011 (Inches)	Avg <u>1</u> / (Inches)	% of Avg
Green Mtn.	1.37	1.39	99	24.72	17.85	138
Willow Crk.	1.75	1.38	127	23.13	17.35	133
L. Granby	1.75	1.38	127	23.13	17.35	133
L. Estes	1.26	1.62	78	21.65	18.60	116
St. Vrain	1.26	1.62	78	21.65	18.60	116
Poudre	1.60	1.38	116	16.95	15.48	110

1/ 30 year average, 1971-2000

INFLOWS ABOVE AVERAGE

Inflows were above average over the Project during September. The inflow to Green Mountain was the lowest at 140 percent of average. The inflow to Willow Creek Reservoir was the highest at 215 percent of average. Water year to date (October-September) inflows have been 166 percent of average.

RESERVOIR INFLOW

Reservoir	September Inflow			October-September Inflow		
	2011 (KAF)	Avg <u>1</u> / (KAF)	% of Avg	WY 2011 (KAF)	Avg <u>1</u> / (KAF)	% of Avg
Green Mtn.*	25.7	18.4	140	621.1	395.6	157
Willow Crk.	2.8	1.3	215	139.1	59.9	232
L. Granby	12.0	6.7	179	439.3	258.4	170
L. Estes <u>2</u>	6.5	4.4	148	143.6	94.1	153

* Undepleted

1/ 30 year average, 1971-2000

2/ Lake Estes Computed Inflow

TRANSMOUNTAIN DIVERSIONS ABOVE AVERAGE

Transmountain diversions through Adams Tunnel during September were 156 percent of average. During September, 25,900 acre-feet of water was brought through the tunnel. Water year to date (October-September) diversions have been 108 percent of average.

TRANSMOUNTAIN DIVERSION

Adams Tun.	September			October-September		
	2011 (KAF)	Avg 1/ (KAF)	% of Avg.	WY 2011 (KAF)	Avg 1/ (KAF)	% of Avg
	25.9	16.6	156	245.3	227.3	108

1/ 30 year average, 1971-2000

RESERVOIR STORAGE ABOVE AVERAGE

The Lake Granby storage of 499,000 acre-feet on September 30 was 61,000 acre-feet above average and 6,800 acre-feet higher than 1 year ago on this date. Terminal reservoir storage in Carter Lake and Horsetooth Reservoir was 131 and 132 percent of average, respectively.

Colorado-Big Thompson Project storage water in Lake Granby, Carter Lake, and Horsetooth was 680,900 acre-feet on September 30 which was 104,400 acre-feet above average and 84 percent of the total available storage capacity.

RESERVOIR STORAGE

Reservoir	Total Storage on September 30						Total Storage Cap.(KAF)
	2011 (KAF)	2011 (% of Avg)	2010 (KAF)	2009 (KAF)	2008 (KAF)	1971-00 Avg (KAF)	
Green Mtn	137.9	112	108.4	106.6	109.5	123.4	153.6
L. Granby	499.0	114	492.2	474.8	408.3	438.0	539.8
Horse-tooth	109.3	132	102.3	85.3	80.3	82.9	156.7
Carter L.	72.6	131	55.3	65.3	53.4	55.6	112.2
Dillon	247.8	104	229.9	242.9	252.1	237.4	254.0
Williams Fork	76.8	105	86.9	84.8	88.4	73.4 ^{1/}	96.8
Project	Total Storage Water in Lake Granby, Carter Lake, and Horsetooth Reservoir on September 30						
CBT	680.9	118	649.8	625.4	542.0	576.5	808.7

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

PROJECT WATER DELIVERIES ABOVE AVERAGE

Project water deliveries during September were 152 percent of average. Colorado-Big Thompson seasonal deliveries (November 2010-September 2011) were 89 percent of average to date.

Units = 1000 AF

Project	Delivery Point	Sep. Delivery			Seasonal Delivery Through Sep. 30		
		2011	Avg <u>1/</u>	% of Avg	2011	Avg <u>1/</u>	% of Avg
	Carter Lake*	17.0	10.4	163	70.7	65.5	108
	Hansen F.C.*	11.6	9.7	120	28.3	46.8	60
	Horsetooth Res*	17.6	10.3	171	81.7	90.6	90
CBT Total		46.2	30.4	152	180.7	202.9	89

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 285,900,000 kilowatt-hours of energy produced during September was 143 percent of average. Total system generation for the water year (October-September) was 3,265,500,000 kilowatt-hours which was 123 percent of average.

WESTERN DIVISION SYSTEM
GROSS GENERATION

Powerplant	September Gross Generation			Accum. Gross Generation <u>1/</u>		
	2011 (GWH)	Avg <u>2/</u> (GWH)	% of Avg.	WY 2011 (GWH)	Avg <u>2/</u> (GWH)	% of Avg
Green Mtn.	5.8	6.4	91	78.0	51.9	150
Marys Lake	4.6	2.6	177	41.7	37.3	112
Estes	11.6	7.4	157	110.5	100.3	110
Pole Hill	18.4	11.1	166	196.9	172.3	114
Flatiron 1&2	24.3	14.9	163	253.3	226.7	112
Big Thompson	1.8	0.9	200	10.5	10.9	96
Seminole	11.4	7.3	156	191.7	132.5	145
Kortes	12.3	7.9	156	118.4	140.3	84
Fremont C.	27.9	22.1	126	291.6	239.6	122
Alcova	14.7	10.4	141	166.2	118.1	141
Glendo	17.7	7.2	246	162.6	80.3	202
Guernsey	2.5	3.2	78	25.2	19.4	130
Boysen	4.8	5.9	81	63.9	69.3	92
Heart Mtn.	3.4	2.8 <u>3/</u>	121	16.1	15.2 <u>3/</u>	106
Buffalo Bill	11.8	6.2 <u>3/</u>	190	79.9	69.4 <u>3/</u>	115
Shoshone	1.6	2.0 <u>3/</u>	80	18.4	20.4 <u>3/</u>	90
Spirit Mtn.	2.8	2.8 <u>3/</u>	100	13.8	14.0 <u>3/</u>	99
Mt. Elbert	27.0	14.5 <u>4/</u>	186	381.4	169.0 <u>4/</u>	226
Yellowtail	81.5	63.9 <u>5/</u>	128	1045.4	959.0 <u>5/</u>	109
Total	285.9	199.5	143	3265.5	2645.9	123

1/ Oct-Sep

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 September. Colorado-Big Thompson Project pumping was 183 percent of average for September. Mt. Elbert pumping was 211 percent of average. Water year to date (October-September) pumping for the Western Division System was 219 percent of average.

PUMP ENERGY

Pumping Plant	September Pump Energy			Oct-September Pump Energy		
	2011 (GWH)	Avg <u>1</u> / (GWH)	% of Avg	WY2011 (GWH)	Avg <u>1</u> / (GWH)	% of Avg
Willow Crk	0.0	0.2	-	0.5	5.7	9
Farr	3.2	2.5	128	26.9	30.6	88
Flatiron 3	3.4	0.9	378	41.6	26.8	155
Mt. Elbert	39.7	18.8 <u>2</u>	211	467.6	182.1 <u>2</u>	257
Total	46.3	22.4	207	536.6	245.2	219

1/ 1976-2005 average

2/ 1990-1999 average

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

PRECIPITATION VARIED

Precipitation was varied over the Fryingpan-Arkansas Project (Project) during September. Precipitation at Ruedi Reservoir (Nast SNOTEL) was the lowest at 64 percent of average. Precipitation at Pueblo Reservoir was the highest at 100 percent of average.

PRECIPITATION

Stations	September Precipitation			October-September Precipitation		
	2011 (Inches)	Avg (Inches)	% of Avg	WY2011 (Inches)	Avg (Inches)	% of Avg
Ruedi *	.80	1.25 <u>1/</u>	64	27.10	22.24 <u>1/</u>	122
Turquoise	.95	1.35 <u>2/</u>	70	19.00	16.69 <u>2/</u>	114
Twin Lakes	.81	.93 <u>3/</u>	87	9.53	9.84 <u>3/</u>	97
Pueblo	.92	.92 <u>4/</u>	100	5.87	13.15 <u>4/</u>	45

* 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 September. The inflow to Pueblo Reservoir was the lowest at 46 percent of average. The inflow to Ruedi Reservoir was the highest at 145 percent of average. Water year to date (October-September) inflows over the Fryingpan-Arkansas Project were 100 percent of average.

RESERVOIR INFLOW*

Reservoir	September Inflow			October-September Inflow		
	2011 (KAF)	Avg (KAF)	% of Avg	WY2011 (KAF)	Avg (KAF)	% of Avg
Ruedi	6.8	4.7 <u>1/</u>	145	169.3	130.3 <u>1/</u>	130
Turquoise	0.6	0.7 <u>2/</u>	86	32.1	29.9 <u>2/</u>	107
Twin Lakes	3.3	4.1 <u>3/</u>	80	106.9	93.7 <u>3/</u>	114
Pueblo	14.9	32.3 <u>3/</u>	46	475.6	533.2 <u>3/</u>	89

* Computed Native Inflow
1/ 1970-1989 average
2/ 1969-1986 average
3/ 1966-1986 average

RESERVOIR STORAGE ABOVE AVERAGE

Reservoir storage is above average on the Fryingpan-Arkansas Project. Twin Lakes Reservoir is the lowest at 102 percent of average. Pueblo Reservoir is the highest at 111 percent of average. The total water in storage in the four reservoirs of 497,400 acre-feet at the end of September was 1,600 acre-feet lower than 1 year ago on this date.

RESERVOIR STORAGE

Reservoir	Total Storage on September 30						Total Storage Capacity (AF)
	2011 (KAF)	2011(% of Avg)	2010 (KAF)	2009 (KAF)	2008 (KAF)	Avg (KAF)	
Ruedi	88.9	103	78.7	77.7	81.8	88.6 <u>1/</u>	102,373
Turquoise	123.4	110	115.7	120.9	105.2	112.3 <u>2/</u>	129,398
Twin Lakes	118.1	102	117.5	112.0	121.1	115.6 <u>3/</u>	141,000
Pueblo	167.0	111	187.1	193.2	178.6	150.2 <u>1/</u>	256,949 <u>4/</u>
Project	Total Storage Water in Turquoise, Twin Lakes, and Pueblo Reservoirs on September 30						
Fry-Ark	408.5	108	420.3	426.1	404.9	378.1	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>