

WESTERN DIVISION SYSTEM
RESOURCES DIVISION
LOVELAND, COLORADO

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

PRECIPITATION VARIED
TEMPERATURES GENERALLY ABOVE AVERAGE

Precipitation was varied over the Colorado-Big Thompson Project (Project) during January. The Lake Estes and St Vrain watersheds were the lowest at 42 percent of average. The Green Mountain watershed was the highest at 102 percent of average.

Temperatures over the Project were generally above average for the month.

PRECIPITATION

Watershed	January Precipitation			October-January Precipitation		
	2012 (Inches)	Avg <u>1</u> / (Inches)	% of Avg	WY2012 (Inches)	Avg <u>1</u> / (Inches)	% of Avg
Green Mtn.	1.34	1.32	102	4.38	5.04	87
Willow Crk.	0.68	1.42	48	3.42	5.04	68
L. Granby	0.68	1.42	48	3.42	5.04	68
L. Estes	.34	0.81	42	4.67	3.78	124
St. Vrain	.34	0.81	42	4.67	3.78	124
Poudre	.18	0.42	43	3.87	2.58	150

1/ 30 year average, 1971-2000

INFLOWS VARIED

Inflows were varied over the Project during January. The inflow to Lake Granby was the lowest at 97 percent of average. The inflow to Lake Estes was the highest at 130 percent of average. Water year to date (October-January) inflows have been 125 percent of average.

RESERVOIR INFLOW

Reservoir	January Inflow			October-January Inflow		
	2012 (KAF)	Avg <u>1</u> / (KAF)	% of Avg	WY 2012 (KAF)	Avg <u>1</u> / (KAF)	% of Avg
Green Mtn.*	9.8	8.0	122	51.5	40.6	127
Willow Crk.	1.0	0.8	125	5.6	4.1	137
L. Granby	3.7	3.8	97	20.9	17.0	123
L. Estes <u>2</u>	1.3	1.0	130	7.2	6.6	109

*Total runoff of the watershed above Green Mountain does not include depletions by Denver and Colorado Springs.

1/ 30 year average, 1971-2000

2/ Lake Estes Computed Inflow

TRANSMOUNTAIN DIVERSIONS BELOW AVERAGE

Transmountain diversions through Adams Tunnel during January were 83 percent of average. During January, 19,600 acre-feet of water was brought through the tunnel. Water year to date (October-January) diversions have been 71 percent of average.

TRANSMOUNTAIN DIVERSION

Adams Tun.	January			October-January		
	2012 (KAF)	Avg 1/ (KAF)	% of Avg.	WY 2012 (KAF)	Avg 1/ (KAF)	% of Avg
	19.6	23.6	83	57.3	80.8	71

1/ 30 year average, 1971-2000

RESERVOIR STORAGE VARIED

The Lake Granby storage of 444,400 acre-feet on January 31 was 74,400 acre-feet above average and 6,500 acre-feet lower than 1 year ago on this date. Terminal reservoir storage in Carter Lake and Horsetooth Reservoir was 71 and 120 percent of average, respectively.

Colorado-Big Thompson Project storage water in Lake Granby, Carter Lake, and Horsetooth was 634,200 acre-feet on January 31 which was 70,600 acre-feet above average and 78 percent of the total available storage capacity.

RESERVOIR STORAGE

	Total Storage on January 31						
Reservoir	2012 (KAF)	2012 (%of Avg)	2011 (KAF)	2010 (KAF)	2009 (KAF)	1971-00 Avg(KAF)	Total Storage Cap.(KAF)
Green Mtn	87.1	101	77.0	79.4	65.3	86.3	153.6
L. Granby	444.4	120	450.9	402.5	330.3	370.0	539.8
Horse-tooth	127.8	120	92.4	78.1	85.8	106.1	156.7
Carter L.	62.0	71	56.9	98.0	80.9	87.5	112.2
Dillon	242.7	109	220.9	240.2	229.2	222.7	254.0
Williams Fork	80.1	152	80.7	76.5	78.8	52.81/	96.8
Project	Total Storage Water in Lake Granby, Carter Lake, and Horsetooth Reservoir on January 31						
CBT	634.2	113	600.2	578.6	497.0	563.6	808.7

1/ 20 year average, 1970-1989.

SNOWPACK WATER CONTENT BELOW AVERAGE

Snowpack water content on February 1 was 80 percent of the 1971-2000 average throughout the Project watersheds. The Lake Granby watershed was the lowest at 67 percent of average. The highest snowpack water content on the Project was recorded for the St Vrain watershed at 98 percent of average

The snowpack update graph on the next page are readings from the Natural Resource Conservation Service automated SNOTEL sites (for snowpack telemetry). This system has replaced many of the manual measurements at the remote sites. The 1971-2000 average is being used.

Watershed	Feb 1 Snow-Water Content			Comparative Feb 1 Snow-Water Content			
	2012 (In.)	Avg. (In.)	% of Avg.	2011 (In.)	2010 (In.)	2009 (In.)	2008 (In.)
Green Mtn	6.4	9.3	69	13.9	6.4	11.3	10.8
Willow C	5.7	6.4	89	9.7	4.0	7.6	8.1
L. Granby	5.2	7.8	67	11.6	5.1	9.7	8.5
L. Estes	5.8	6.9	84	9.7	5.3	7.4	6.4
St. Vrain	6.0	6.1	98	7.7	4.1	6.5	5.4
Poudre	7.0	8.4	83	11.4	6.5	9.5	8.4

WATER SUPPLY OUTLOOK IS BELOW AVERAGE

Current February 1 water supply forecasts are below average over the Project watersheds. Forecasted April-July volumes range from 84 percent of average for the Green Mountain watershed to 96 percent of average for the Willow Creek Reservoir and Poudre River at Canyon Mouth watersheds.

Feb 1 2012 Forecast of Apr-Jul Volume (KAF)									
Fore- Cast Point	Chance of Exceeding					Comparative Apr-Jul Volume (KAF)			
	95% Reason- able Min <u>1/</u>	75%	50% Most Probable	25 %	5% Reason- able Max <u>1/</u>	2011	2010	Avg <u>2/</u>	Most ProbAble % avg
Green Mtn Res	184	212	231	251	278	479	248	276	84
Willow Crk Res	36	43	47	52	59	125	52	49	96
Lake Granby	135	156	171	186	208	416	212	199	86
Big Thompson River Above L.Estes	47	57	65	72	83	113	80	71	92
Big Thompson R. at Canyon Mouth	49	71	87	103	125	<u>3/</u>	107	93	94
St Vrain Crk at Lyons	54	69	80	91	106	<u>3/</u>	96	87	92
Poudre R. at Canyon Mouth	126	179	216	253	306	<u>3/</u>	288	226	96

1/ The probability is estimated to be 9 chances in 10 that the actual volume will fall between the reasonable minimum and reasonable maximum.

2/ Historical average:

Green Mtn: 1928-2011, Willow C: 1920-2011, Granby: 1928-2011, BT above Estes: 1936-2011, BTR @Canyon: 1947-2010, ST Vrain: 1954-2010, Poudre: 1954-2010

3/ Not available at this time.

WESTERN DIVISION SYSTEM
GENERATION BELOW AVERAGE

System generation of 159,200,000 kilowatt-hours of energy produced during January was 84 percent of average. Total system generation for the water year (October-January) was 594,000,000 kilowatt-hours which was 81 percent of average.

WESTERN DIVISION SYSTEM
GROSS GENERATION

Powerplant	January 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.	2.2	3.0	73	16.5	13.6	121
Marys Lake	3.3	4.3	77	9.9	13.6	73
Estes	8.6	11.0	78	29.3	35.9	82
Pole Hill	6.9	16.9	41	28.1	54.0	52
Flatiron 1&2	17.0	21.9	78	46.1	71.4	65
Big Thompson	0.0	0.0	-	1.2	.7	121
Seminole	5.8	10.7	54	18.0	38.0	47
Kortes	6.1	11.8	52	20.7	41.1	50
Fremont C.	6.8	12.0	57	20.6	44.7	46
Alcova	3.0	5.3	57	12.1	23.3	52
Glendo	0.0	0.0	-	0.0	.3	-
Guernsey	0.0	0.0	-	0.0	.6	-
Boysen	0.0	4.8	-	0.0	20.1	-
Heart Mtn.	0.0	0.0 <u>3/</u>	-	1.7	.8 <u>3/</u>	212
Buffalo Bill	2.5	1.7 <u>3/</u>	147	9.4	8.1 <u>3/</u>	116
Shoshone	0.4	1.4 <u>3/</u>	29	5.1	5.9 <u>3/</u>	86
Spirit Mtn.	0.0	0.0 <u>3/</u>	-	1.7	.9 <u>3/</u>	189
Mt. Elbert	29.6	9.0 <u>4/</u>	329	84.6	45.3 <u>4/</u>	187
Yellowtail	67.0	74.9 <u>5/</u>	89	289.0	312.1 <u>5/</u>	93
Total	159.2	188.7	84	594.0	730.4	81

1/ Oct-Jan

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 January. Colorado-Big Thompson Project pumping was 57 percent of average for January. Mt. Elbert pumping was 410 percent of average. Water year to date (October-January) pumping for the Western Division System was 139 percent of average.

PUMP ENERGY

Pumping Plant	January Pump Energy			Oct-January Pump Energy		
	2012 (GWH)	Avg <u>1</u> / (GWH)	% of Avg	WY2012 (GWH)	Avg <u>1</u> / (GWH)	% of Avg
Willow Crk	0.0	0.0	-	0.0	0.4	-
Farr	2.9	4.2	69	9.2	13.5	68
Flatiron 3	1.8	4.0	45	5.7	12.8	45
Mt. Elbert	33.2	8.1 <u>2</u> / 	410	95.0	52.2 <u>2</u> / 	182
Total	37.9	16.3	233	109.9	78.9	139

1/ 1976-2005 average

2/ 1990-1999 average

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

PRECIPITATION VARIED

Precipitation was varied over the Fryingpan-Arkansas Project (Project) during January. Precipitation at Pueblo Reservoir was the lowest at 8 percent of average. Precipitation at Twin Lakes Reservoir was the highest at 102 percent of average.

PRECIPITATION

Stations	January Precipitation			October-January Precipitation		
	2012 (Inches)	Avg (Inches)	% of Avg	WY2012 (Inches)	Avg (Inches)	% of Avg
Ruedi *	1.90	2.09 <u>1/</u>	91	5.50	7.66 <u>1/</u>	72
Turquoise	1.19	1.35 <u>2/</u>	88	4.74	4.95 <u>2/</u>	96
Twin Lakes	.41	.40 <u>3/</u>	102	1.90	2.12 <u>3/</u>	90
Pueblo	.02	.25 <u>4/</u>	8	2.54	1.93 <u>4/</u>	132

* 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 January. The inflow to Pueblo Reservoir was the lowest at 78 percent of average. The inflow to Twin Lakes Reservoir was the highest at 109 percent of average. Water year to date (October-January) inflows over the Fryingpan-Arkansas Project were 81 percent of average.

RESERVOIR INFLOW*

Reservoir	January Inflow			October-January Inflow		
	2012 (KAF)	Avg (KAF)	% of Avg	WY2012 (KAF)	Avg (KAF)	% of Avg
Ruedi	2.4	2.5 <u>1/</u>	96	13.7	12.6 <u>1/</u>	109
Turquoise	0.4	0.4 <u>2/</u>	100	1.3	1.6 <u>2/</u>	81
Twin Lakes	1.2	1.1 <u>2/</u>	109	5.6	6.4 <u>2/</u>	88
Pueblo	15.9	20.4 <u>2/</u>	78	74.4	97.1 <u>2/</u>	77

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

RESERVOIR STORAGE ABOVE AVERAGE

Reservoir storage is above average on the Fryingpan-Arkansas Project. Twin Lakes is the lowest at 101 percent of average. Pueblo Reservoir is the highest at 116 percent of average.

Fryingpan-Arkansas Project storage water in Turquoise Lake, Twin Lakes, and Pueblo Reservoirs was 420,800 acre-feet on January 31 which was 16,200 acre-feet higher than 1 year ago on this date.

RESERVOIR STORAGE

Reservoir	Total Storage on January 31						Total Storage Capacity (AF)
	2012 (KAF)	2012 (% of Avg)	2011 (KAF)	2010 (KAF)	2009 (KAF)	Avg (KAF)	
Ruedi	76.1	106	72.0	70.6	72.9	72.0 <u>1/</u>	102,373
Turquoise	92.8	105	68.7	70.0	77.4	88.1 <u>2/</u>	129,398
Twin Lakes	108.7	101	108.5	110.3	99.0	107.5 <u>3/</u>	141,000
Pueblo	219.3	116	227.4	250.7	216.8	189.1 <u>1/</u>	256,949 <u>4/</u>
Project	Total Storage Water in Turquoise, Twin Lakes, and Pueblo Reservoirs on January 31						
Fry-Ark	420.8	109	404.6	431.0	393.2	384.7	527,347

1/ 1982-2007 average

2/ 1989-2007 average

3/ 1987-2007 average

4/ Top of active conservation capacity

SNOWPACK WATER CONTENT WELL BELOW NORMAL

Snowpack water content on February 1 was well below normal on the Fryingpan-Arkansas Project watersheds. The Upper Arkansas River watershed was 53 percent of average. The Fryingpan River watershed was 68 percent of average.

SNOW-WATER ACCUMULATION

Watershed	Feb 1 Snow-Water Content			Comparative Feb 1 Snow-Water Content (Inches)			
	2012 (In.)	Avg <u>1/</u> (In.)	% of Avg	2011	2010	2009	2008
U.Arkans.	5.2	8.0	53	11.2	6.9	11.0	9.8
Fryingpan River	5.9	8.7	68	11.3	6.8	9.6	12.3

1/ 1971-2000 average

WATER SUPPLY OUTLOOK BELOW AVERAGE

The current February 1 water supply forecast for Ruedi is below average.

	February 1, 2012 Forecast of Apr-Jul Volume (KAF)						
	Chance of Exceeding						
Forecast Point	95% Reasonable Min <u>2/</u>	75%	50% Most Probable	25%	5% Reasonable Max <u>2/</u>	Avg <u>3/</u>	Most Probable % Avg
Ruedi <u>1/</u>	85	106	121	136	157	134.0	90

1/ Undepleted

2/ The probability is estimated to be 9 chances in 10 that the actual volume will fall between the reasonable minimum and reasonable maximum.

3/ 1969-2006 average

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>