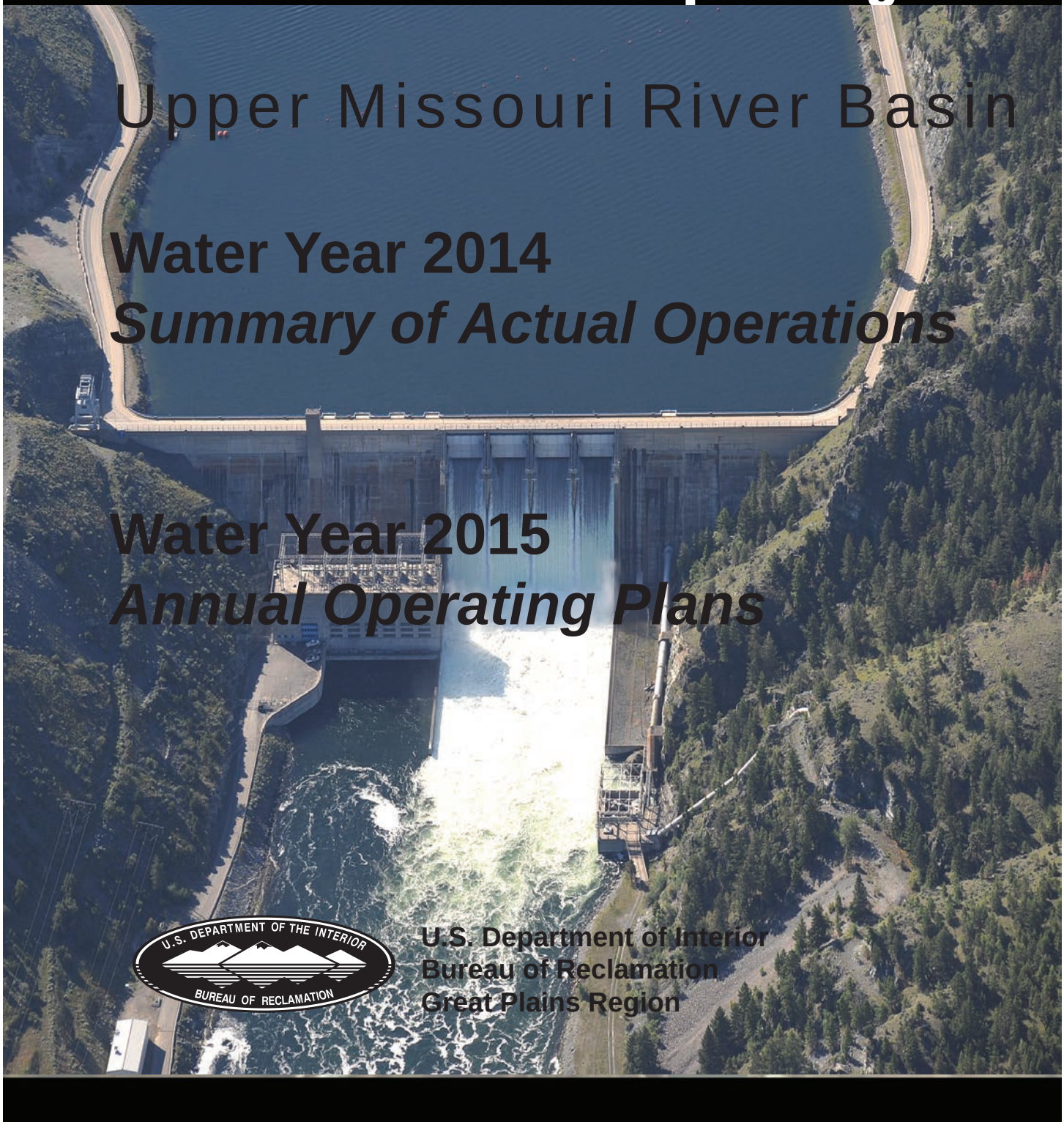
RECLAMATION

Managing Water in the West

Annual Operating Plans



Upper Missouri River Basin

Water Year 2014
Summary of Actual Operations

Water Year 2015
Annual Operating Plans

U.S. Department of Interior
Bureau of Reclamation
Great Plains Region

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Annual reports on actual operations and operating plans for reservoir regulation activities were initiated in 1953. The Mountain Area Office (MTAO), Wyoming Area Office (WYAO), Dakotas Area Office (DKAO) and the Regional Office are all responsible for preparing reports on actual operations and operating plans for reservoirs within the Upper Missouri River Basin above Sioux City, Iowa. This report briefly summarizes weather and steamflow conditions in the Upper Missouri River Basin during water year (WY) 2014, which are principal factors governing the pattern of reservoir operations. This report also describes operations during WY 2014 for reservoirs constructed by the Bureau of Reclamation (Reclamation) for providing flood control and water supplies for power generation, irrigation, municipal and industrial uses, and to enhance recreation, fish and wildlife benefits.

This report includes operating plans to show estimated ranges of operation for WY 2015, with a graphical presentation on a monthly basis. The operating plans for the reservoirs are presented only to show possible operations under a wide range of inflows, most of which cannot be reliably forecasted at the time operating plans are prepared; therefore, plans are at best only probabilities. The plans are updated monthly as the season progresses are more reliable estimates of inflow become available.

A report section devoted to Energy Generation is included at the end of this report. The energy generation and water used for power at Reclamation and Corps of Engineers (Corps) plants are discussed, and the energy generated in 2014 is compared graphically with that of previous years.

All references to a year in this report will mean the water year extending from October 1 through September 30, unless specifically stated otherwise.

SUMMARY

OF OPERATIONS

FOR WATER YEAR 2014

FOR RESERVOIRS

(CLARK CANYON, CANYON FERRY, HELENA VALLEY, SUN RIVER, LAKE ELWELL, MILK RIVER and BIGHORN LAKE AND YELLOWTAIL POWERPLANT)

UNDER THE RESPONSIBILITY

OF THE

MONTANA AREA OFFICE

SUMMARY OF HYDROLOGIC CONDITIONS AND FLOOD CONTROL OPERATIONS DURING WY 2014

Prior to WY 2014, WY 2013 was an overall dry year in south central and southwest Montana and overall normal to wet year in the northern areas of Montana. The U.S. Drought Monitor revealed areas of extreme drought conditions in the southwest during August 2013. However, September brought much needed precipitation to these areas. Several rain storm events produced valley precipitation of about 150 percent of average in the Beaverhead Basin and over 250 percent of average in the Bighorn Basin. The rainfall assisted in returning the soil moisture content to near normal conditions, but temperatures still remained above normal.

WY 2013 ended with varying storage levels. Gibson Reservoir was near 35 percent of average while Fresno Reservoir was near 150 percent of average. The Reclamation reservoirs with the most amount of carryover storage were Nelson Reservoir and Bighorn Lake at 95 percent of full capacity.

October through December

WY 2014 began in October with temperatures decreasing slightly below average across Montana. Precipitation across the state continued to produce average to below average amounts, except for the Bighorn Basin. This basin received 242 percent of average valley precipitation and 145 percent of average mountain precipitation. These precipitation events caused inflows into Bighorn Lake to rise to 172 percent of average for the month and by late October the reservoir was filled to the top of the joint use pool.

November's temperatures fluctuated throughout the month as various cold and warm fronts moved through Montana. On November 19, 2013, the city of Great Falls temperatures fell 20 degrees in 4 minutes and by the morning of November 20th temperatures in north central Montana were below zero. Warmer air again moved across the state by the 22nd increasing temperatures to above 50 degrees. Precipitation was near 75 percent of average across the basins except for the Beaverhead and Jefferson Basins. The valley precipitation in the Beaverhead was 11 percent of average while the Jefferson was 27 percent of average.

The month of December resulted in very cold temperatures, as much as 50 degrees below average. The city of Dillon set record lows on the 3rd and wind chills reached -52 degrees at Havre, Montana on the 6th. These cold temperatures assisted in producing over 10 inches of snow in Billings, Montana and the Little Belt Mountains while the Milk River Basin received 228 percent of average valley precipitation.

The year to date mountain precipitation from October through December ranged from 58 percent of average above Lima Reservoir to 106 percent of average above Bighorn Lake. The valley precipitation ranged from 70 percent of average in the Jefferson Basin to 160 percent of average in the Bighorn Basin. Additional monthly data on valley and mountain precipitation per basin during WY 2014 can be found in Tables MTT1A and MTT1B. By the end of December, the reservoir storages ranged from 14 percent of full at Gibson Reservoir to 94 percent full at Bighorn Lake.

TABLE MTT1A
PRECIPITATION IN INCHES AND PERCENT OF AVERAGE
2014 VALLEY PRECIPITATION

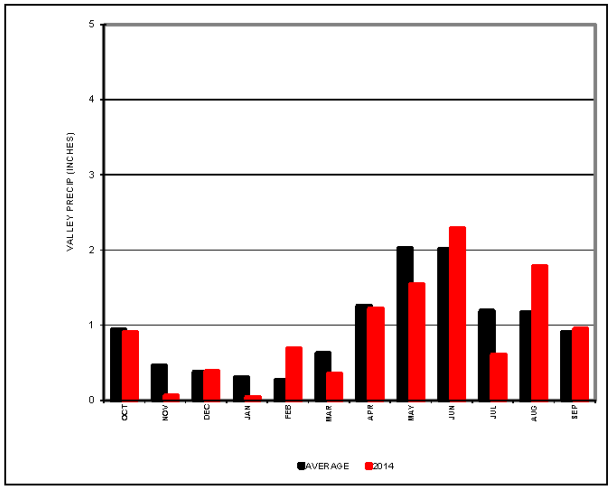
BASIN	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP	
	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%
Beaverhead																								
Monthly Precip Average	0.94		0.45		0.37		0.30		0.26		0.62		1.25		2.01		2.01		1.18		1.17		0.90	
Monthly Precip and % of Average	0.90	96	0.05	11	0.38	101	0.04	12	0.68	265	0.35	56	1.22	97	1.54	76	2.28	114	0.60	51	1.77	152	0.94	105
Year-to-Date Precip and % of Average	0.90	96	0.95	68	1.32	75	1.36	66	2.03	88	2.38	81	3.59	86	5.13	83	7.41	90	8.01	85	9.78	93	10.72	94
Jefferson																								
Monthly Precip Average	0.83		0.56		0.46		0.40		0.33		0.67		1.19		2.06		2.15		1.37		1.27		0.95	
Monthly Precip and % of Average	0.68	82	0.15	27	0.46	99	0.14	35	0.86	265	0.66	98	1.21	102	1.03	50	2.08	97	0.75	55	2.19	173	1.08	113
Year-to-Date Precip and % of Average	0.68	82	0.83	60	1.29	70	1.43	64	2.29	89	2.95	91	4.16	94	5.19	80	7.27	84	8.02	80	10.21	91	11.29	92
Madison																								
Monthly Precip Average	1.50		1.32		1.39		1.26		1.10		1.35		1.77		2.68		2.84		1.56		1.42		1.25	
Monthly Precip and % of Average	1.55	103	0.75	57	1.24	89	0.26	21	1.79	162	2.39	178	1.82	103	1.97	73	2.90	102	1.13	72	3.50	247	2.17	173
Year-to-Date Precip and % of Average	1.55	103	2.30	81	3.54	84	3.80	69	5.58	85	7.98	101	9.80	101	11.77	95	14.67	96	15.80	94	19.30	106	21.48	110
Gallatin																								
Monthly Precip Average	1.72		1.19		0.93		0.83		0.78		1.38		2.30		3.18		3.11		1.46		1.43		1.40	
Monthly Precip and % of Average	1.00	58	0.93	78	1.25	134	0.69	83	1.39	178	3.45	250	2.22	97	1.88	59	3.75	121	0.61	42	2.84	199	1.61	115
Year-to-Date Precip and % of Average	1.00	58	1.93	66	3.18	83	3.87	83	5.26	97	8.71	128	10.93	120	12.81	104	16.56	107	17.17	102	20.01	109	21.62	110
Missouri Above Toston																								
Monthly Precip Average	1.06		0.86		0.81		0.72		0.62		0.95		1.46		2.37		2.49		1.44		1.33		1.09	
Monthly Precip and % of Average	0.98	93	0.42	49	0.80	99	0.25	35	1.23	199	1.55	163	1.50	103	1.35	57	2.56	103	0.90	62	2.73	206	1.47	134
Year-to-Date Precip and % of Average	0.98	93	1.40	73	2.20	81	2.45	71	3.68	91	5.24	104	6.74	104	8.08	91	10.64	94	11.54	90	14.28	101	15.74	104
Sun-Teton																								
Monthly Precip Average	1.20		1.24		1.09		1.08		0.94		1.19		1.51		2.49		2.71		1.40		1.49		1.53	
Monthly Precip and % of Average	0.68	57	1.08	87	0.88	81	1.49	189	1.78	189	2.32	195	1.46	97	1.08	43	3.78	140	0.91	65	2.65	178	1.18	77
Year-to-Date Precip and % of Average	0.68	57	1.76	72	2.65	75	4.13	90	5.91	107	8.23	122	9.69	118	10.77	100	14.55	108	15.46	104	18.12	111	19.29	108
Marias																								
Monthly Precip Average	0.61		0.41		0.36		0.31		0.29		0.61		0.99		2.00		2.61		1.31		1.30		1.26	
Monthly Precip and % of Average	0.44	72	0.53	130	0.74	208	0.60	195	0.22	75	0.80	132	1.28	130	1.36	68	4.21	161	0.69	53	2.85	219	1.05	83
Year-to-Date Precip and % of Average	0.44	72	0.97	95	1.71	125	2.31	138	2.53	128	3.33	129	4.61	129	5.97	107	10.18	125	10.87	115	13.72	127	14.77	123
Milk																								
Monthly Precip Average	0.63		0.44		0.37		0.37		0.29		0.50		0.84		1.99		2.37		1.60		1.10		1.21	
Monthly Precip and % of Average	0.25	39	0.34	79	0.84	228	0.19	50	0.17	58	0.65	129	0.90	108	1.22	61	3.08	130	0.76	47	4.63	419	1.07	88
Year-to-Date Precip and % of Average	0.25	39	0.59	56	1.43	100	1.62	90	1.79	85	2.43	94	3.33	97	4.56	84	7.64	98	8.40	89	13.03	124	14.10	120
St. Mary																								
Monthly Precip Average	1.90		2.54		2.33		2.32		1.93		1.79		1.49		2.49		3.47		1.64		1.48		1.97	
Monthly Precip and % of Average	1.02	54	2.37	93	1.53	66	2.52	109	3.01	156	4.70	263	1.38	93	1.30	52	6.33	183	1.00	61	2.28	154	1.26	64
Year-to-Date Precip and % of Average	1.02	54	3.39	77	4.92	73	7.44	82	10.45	95	15.15	118	16.53	116	17.83	106	24.16	119	25.16	115	27.44	118	28.69	113
Bighorn Above Yellowtail																								
Monthly Precip Average	0.83		0.46		0.34		0.29		0.32		0.60		1.12		1.81		1.40		0.86		0.67		1.01	
Monthly Precip and % of Average	2.02	242	0.18	39	0.40	119	0.46	159	0.77	238	0.61	102	0.95	84	1.26	70	1.70	122	0.56	65	1.69	253	1.29	128
Year-to-Date Precip and % of Average	2.02	242	2.20	170	2.60	160	3.06	160	3.83	171	4.44	156	5.39	136	6.65	115	8.35	116	8.90	111	10.60	122	11.89	122

A composite of the following National Weather Service stations was used to determine monthly valley precipitation and percent of average for the drainage basins:

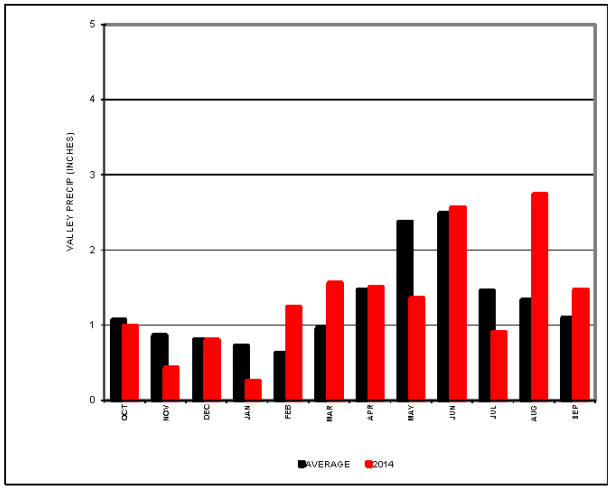
Beaverhead.....Lima and Dillon
Jefferson.....Lima, Dillon, Virginia City, and Boulder
Madison.....Hebgen, West Yellowstone, and Norris Madison
Gallatin.....Bozeman
Missouri Above Toston.....Townsend, Lima, Dillon, Virginia City, Boulder, Hebgen, West Yellowstone, Norris Madison, and Bozeman
Sun-Teton.....Summit, Choteau, Fairfield, Augusta, and Gibson
Marias.....Cut Bank, Conrad, Valier, Gold Butte, and Chester
Milk.....Havre, Chinook, Harlem, Malta, and Rudyard
St. Mary.....Babb and East Glacier
Bighorn Above Yellowtail....Buffalo Bill, Sunshine, Boysen Dam, Dubois, Gas Hills, Lander, Riverton, Basin, Lovell, Thermopolis, and Worland

TABLE MTT1A-1
PRECIPITATION IN INCHES AND PERCENT OF AVERAGE
2014 VALLEY PRECIPITATION

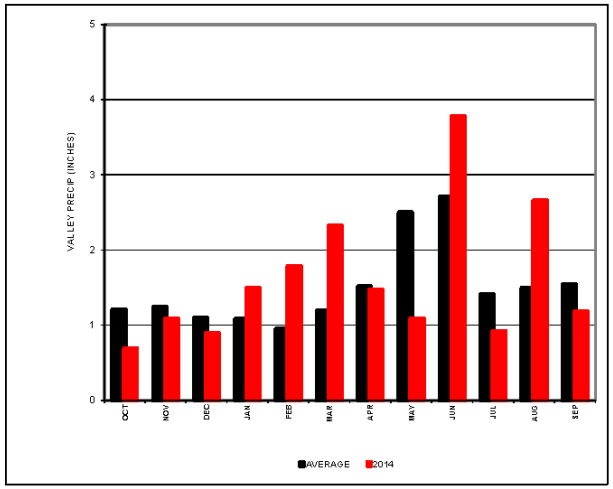
CLARK CANYON RESERVOIR



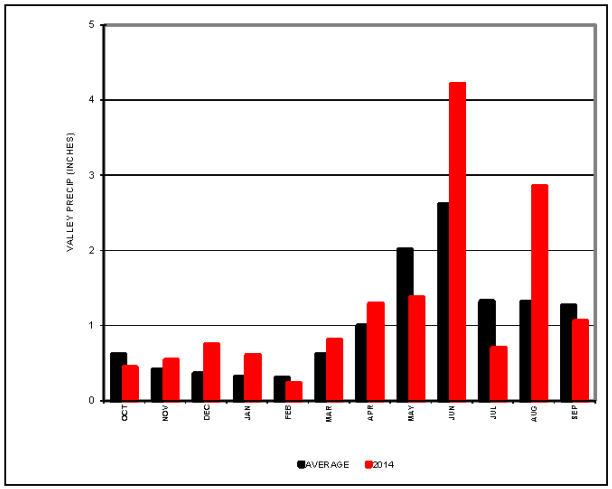
CANYON FERRY RESESRVOIR



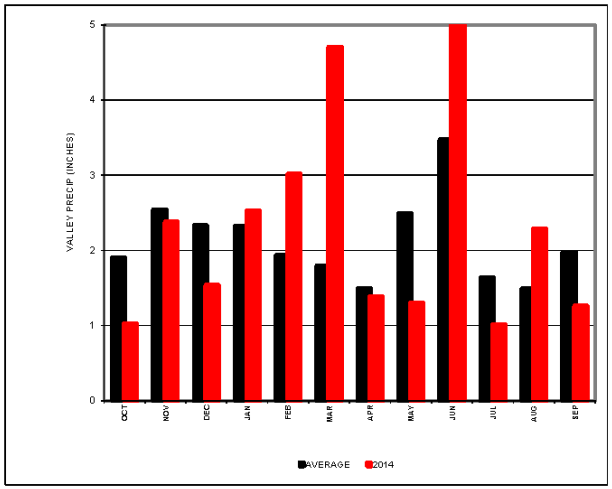
GIBSON RESERVOIR



LAKE ELWELL



LAKE SHERBURNE



BIGHORN LAKE

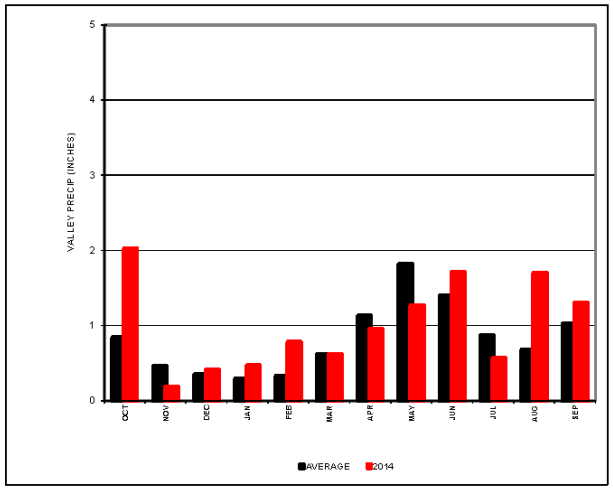


TABLE MTT1B
PRECIPITATION IN INCHES AND PERCENT OF AVERAGE
2014 MOUNTAIN PRECIPITATION

BASIN	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP	
	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%
Lima Reservoir																								
Monthly Precip Average	2.05		2.43		2.80		2.52		2.14		2.57		2.57		3.05		2.81		1.61		1.36		1.50	
Monthly Precip and % of Average	1.14	56	1.72	71	1.40	50	1.24	49	2.18	102	3.18	124	1.94	75	3.00	98	2.78	99	1.08	67	4.78	351	3.38	225
Year-to-Date Precip and % of Averag	1.14	56	2.86	64	4.26	58	5.50	56	7.68	64	7.68	75	12.80	75	15.80	78	18.58	81	19.66	80	24.44	94	27.82	102
Clark Canyon Reservoir																								
Monthly Precip Average	2.18		2.61		2.55		2.43		2.03		2.64		2.98		3.42		3.01		1.51		1.47		1.64	
Monthly Precip and % of Average	1.73	79	1.74	67	1.97	77	1.81	75	3.67	180	3.40	129	2.40	81	3.54	104	2.06	68	0.91	61	3.71	252	2.40	146
Year-to-Date Precip and % of Averag	1.73	79	3.47	73	5.44	74	7.26	74	10.93	93	14.33	99	16.73	96	20.27	97	22.33	94	23.24	92	26.96	101	29.36	103
Jefferson Drainage																								
Monthly Precip Average	2.15		2.63		2.64		2.52		2.10		2.64		2.99		3.38		2.97		1.56		1.55		1.67	
Monthly Precip and % of Average	1.79	84	1.76	67	2.46	93	2.36	93	4.17	199	3.96	150	2.42	81	2.68	79	2.46	83	1.15	74	3.32	214	1.89	113
Year-to-Date Precip and % of Averag	1.79	84	3.56	74	6.02	81	8.38	84	12.54	104	16.51	112	18.93	107	21.60	103	24.06	100	25.21	99	28.53	105	30.41	106
Madison Drainage																								
Monthly Precip Average	2.89		3.83		4.20		3.94		3.27		3.75		3.81		4.03		3.21		1.79		1.68		1.83	
Monthly Precip and % of Average	2.31	80	3.50	91	3.41	81	3.41	77	4.21	129	6.35	169	4.49	118	2.95	73	3.05	95	0.79	44	4.13	246	2.93	160
Year-to-Date Precip and % of Averag	2.31	80	5.81	87	9.23	84	9.23	83	16.49	91	22.84	104	27.33	106	30.28	102	33.33	101	34.11	98	38.24	105	41.16	108
Gallatin Drainage																								
Monthly Precip Average	3.07		3.43		3.45		3.25		2.96		3.93		4.58		4.94		4.11		2.20		2.00		2.14	
Monthly Precip and % of Average	2.50	82	2.50	73	3.73	108	3.40	105	4.33	146	7.30	186	5.30	116	3.90	79	3.33	81	0.97	44	4.53	226	2.20	103
Year-to-Date Precip and % of Averag	2.50	82	5.00	77	8.73	88	12.13	92	16.47	102	23.77	118	29.07	118	32.97	111	36.30	108	37.27	104	41.80	110	44.00	110
Canyon Ferry Reservoir																								
Monthly Precip Average	2.41		3.04		3.16		3.01		2.51		3.04		3.32		3.67		3.12		1.64		1.59		1.73	
Monthly Precip and % of Average	1.91	79	2.34	77	2.84	90	2.66	88	4.21	168	4.97	163	3.23	97	2.76	75	2.64	85	1.02	62	3.70	232	2.13	123
Year-to-Date Precip and % of Averag	1.91	79	4.25	82	7.09	82	9.75	84	13.96	99	18.93	110	22.16	108	24.92	103	27.56	101	28.58	99	32.28	106	34.40	107
Gibson Reservoir																								
Monthly Precip Average	2.52		3.14		3.02		2.79		2.42		2.72		2.75		3.66		3.68		1.78		2.08		2.17	
Monthly Precip and % of Average	1.18	47	2.33	74	2.13	70	3.43	123	4.80	198	5.35	197	2.58	94	1.48	40	3.95	107	0.63	35	2.93	141	1.93	89
Year-to-Date Precip and % of Averag	1.18	47	3.50	65	5.63	65	9.05	79	13.85	100	19.20	116	21.78	112	23.25	101	27.20	102	27.83	98	30.75	101	32.68	100
Lake Elwell Reservoir																								
Monthly Precip Average	3.14		4.22		4.09		4.08		3.29		3.65		3.41		4.15		4.02		1.89		2.12		2.55	
Monthly Precip and % of Average	1.16	37	3.74	89	3.26	80	4.40	108	5.82	177	7.32	201	3.48	102	1.70	41	5.04	125	1.20	63	2.94	139	2.62	103
Year-to-Date Precip and % of Averag	1.16	37	4.90	71	8.16	71	12.56	81	18.38	98	25.70	114	29.18	113	30.88	103	35.92	106	37.12	103	40.06	105	42.68	105
Sherburne Reservoir																								
Monthly Precip Average	4.85		7.53		6.84		7.42		5.11		5.35		4.51		4.67		5.12		2.46		1.97		3.23	
Monthly Precip and % of Average	1.90	39	7.30	97	5.75	84	5.75	88	6.30	123	14.20	266	3.35	74	2.80	60	7.05	138	1.15	47	2.20	112	1.35	42
Year-to-Date Precip and % of Averag	1.90	39	9.20	74	14.95	78	21.45	81	27.75	87	41.95	113	45.30	109	48.10	104	55.15	107	56.30	105	58.50	105	59.85	101
Bighorn Lake																								
Monthly Precip Average	2.42		2.32		2.14		2.09		1.83		2.64		3.16		3.61		2.85		1.80		1.31		2.14	
Monthly Precip and % of Average	3.51	145	1.53	66	2.24	105	2.40	115	3.67	200	4.16	158	3.16	100	2.41	67	3.11	109	1.32	74	2.44	185	2.16	101
Year-to-Date Precip and % of Averag	3.51	145	5.04	106	7.28	106	9.68	108	13.35	124	17.51	130	20.67	124	23.08	114	26.19	114	27.52	111	29.95	114	32.12	113

A composite of the following Natural Resources Conservation Service SNOTEL sites was used to determine monthly mountain precipitation and percent of average for the drainage basins:

Lima Reservoir.....Crab Creek, Island Park, Tepee Creek, Divide, and Lakeview Ridge

Clark Canyon Reservoir.....Beagle Springs, Darkhorse Lake, Lemhi Ridge, Tepee Creek, Divide, Bloody Dick, and Lakeview Ridge

Jefferson Drainage.....Beagle Springs, Clover Meadow, Darkhorse Lake, Mule Creek, Lemhi Ridge, Rocker Peak, Tepee Creek, Clavert Creek, Saddle Mountain, Lower Twin, Divide, Bloody Dick, Lakeview Ridge, Short Creek, Frohner Meadow, and Moose Creek

Madison Drainage.....Carrot Basin, Clover Meadow, Tepee Creek, Black Bear, Lower Twin, Beaver Creek, Madison Plateau, and Whiskey Creek

Gallatin Drainage.....Carrot Basin, Shower Falls, and Lick Creek

Canyon Ferry Reservoir.....Beagle Springs, Darkhorse Lake, Carrot Basin, Clover Meadow, Shower Falls, Mule Creek, Rocker Peak, Black Bear, Saddle Mountain, Lower Twin, Beaver Creek, Madison Plateau, Short Creek, Lick Creek, Whiskey Creek, Frohner Meadow, Calvert Creek, Moose Creek, Lemhi Ridge, Tepee Creek, Divide, Bloody Dick, and Lakeview Ridge

Gibson Reservoir.....Mount Lockhart, Wood Creek, Dupuyer Creek, and Waldron

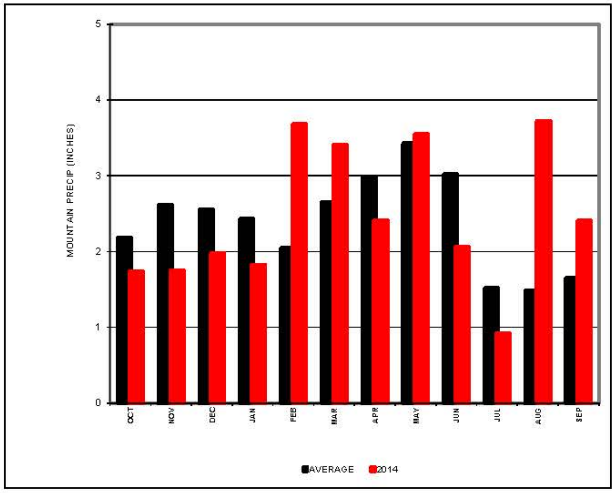
Lake Elwell Reservoir.....Mount Lockhart, Badger Pass, Pike Creek, Dupuyer Creek, and Waldron

Sherburne Reservoir.....Flattop Mountain and Many Glacier

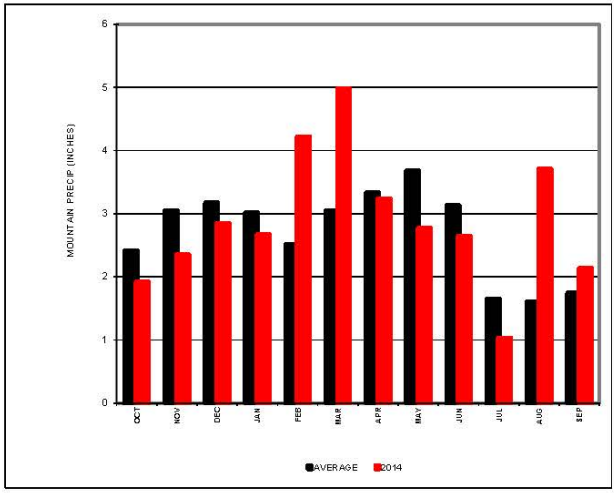
Bighorn Lake.....Kirwin, Blackwater, Evening Star, Shell Creek, Powder River, Bald Mountain, Bone Springs Divide, Owl Creek, Sucker Creek, Dome Lake, Hansen Sawmill, Timber Creek, Bear Trap Meadow, Burgess Junction, Middle Powder, Sylvan Lake, Younts Peak, and Sylvan Road

TABLE MTT1B-1
PRECIPITATION IN INCHES AND PERCENT OF AVERAGE
2014 MOUNTAIN PRECIPITATION

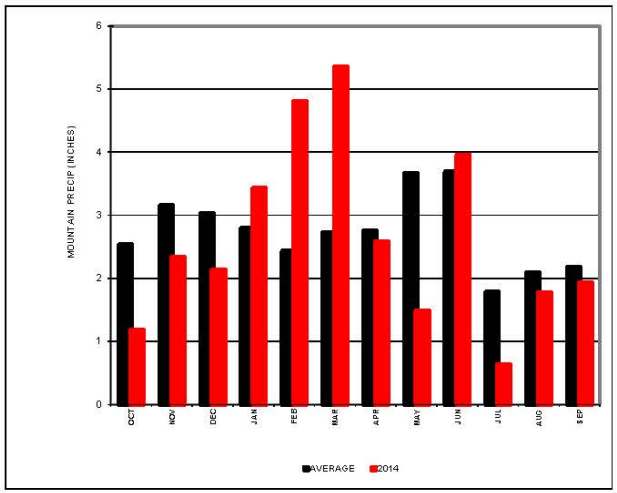
CLARK CANYON RESERVOIR



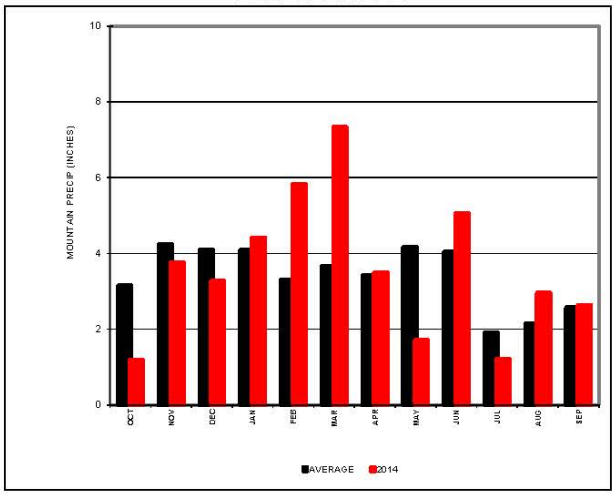
CANYON FERRY RESESRVOIR



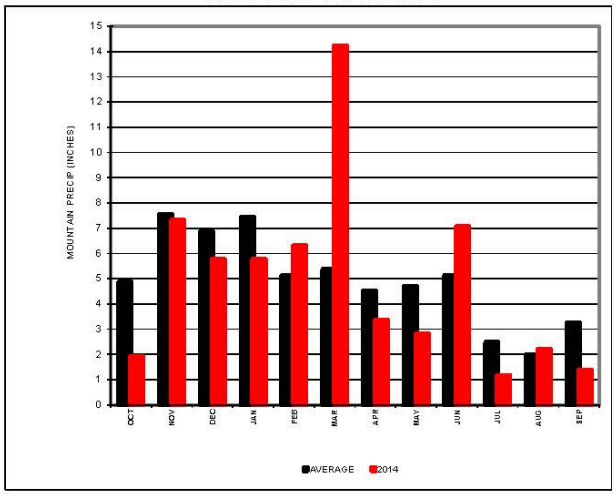
GIBSON RESERVOIR



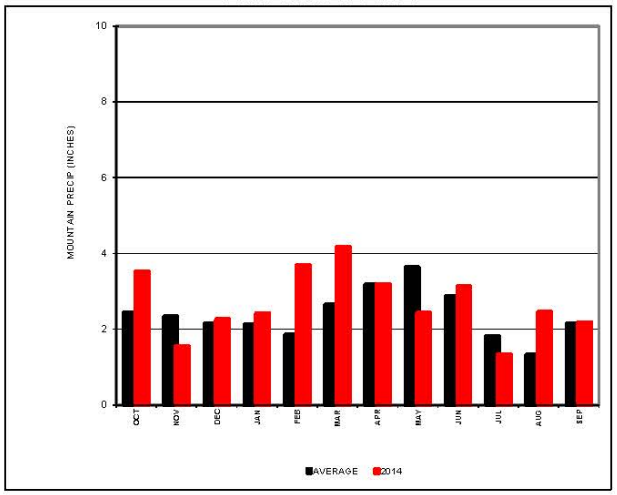
LAKE ELWELL



LAKE SHERBURNE



BIGHORN LAKE



January through March

On January 1, 2014 the Natural Resources Conservation Service (NRCS) begins reporting mountain snowpack or snow water equivalents throughout Montana. The NRCS mountain snow water content ranged from 95 percent of median in the Sun River Basin to 210 percent of median in the Milk River Basin, Table MTT2. On January 1, 2014 Reclamation began forecasting the April through July spring runoff volumes for Reclamation reservoirs east of the Continental Divide. Therefore, the water supply forecasts prepared on January 1, 2014 indicated April through July runoff volumes varying from 69 percent of average at Clark Canyon to 107 percent of average at Yellowtail Reservoir, Table MTT3.

January started out as a typical January in Montana as mild temperatures generally prevailed. Heavy snow had fallen across much of the central and southern Montana on the first, with up to a foot at Big Sky, and 7 inches at Billings and Roundup. Then another strong weather system brought snow to much of the state on the January 4, 2014 and January 5, 2014 with Hardin received 6.5 inches, Red Lodge 9 inches and Livingston 8 inches. However, after this system passed, temperatures plummeted into the -20 degrees range across northeast Montana.

The month of February brought cold temperatures and more heavy snowfall. Temperatures averaged as much as 45 degrees below normal and new daily snowfall records were recorded at Great Falls (3.3 inches) and West Yellowstone (10 inches). A strong westerly weather system brought moisture for 12-14 inches of snow over the western mountains. A foot or more of snow fell over Livingston, Roundup, Jefferson City, Winston and Billings. By late February, Billings picked up another 8.6 inches, Missoula 9.1 inches while heavier amounts fell over the higher elevations. Local blizzard conditions occurred on the January 28, 2014 over western Montana, and portions of the southwest. February's mountain precipitation resulted in a low of 102 percent of average at Lima Reservoir and a high of about 200 percent of average at Bighorn Lake, Gibson Reservoir, and the Jefferson Drainage Basin.

Due to the heavy precipitation during the month of February, all of the April through July water supply forecasts increased for the March 1, 2014 forecast, except for Clark Canyon Reservoir. Forecasts ranged from 69 percent of average at Clark Canyon to 154 percent of average at Bighorn Lake. Overall, March's snowfall was above average state wide. The year to date valley precipitation varied from 81 percent of average in the Beaverhead Basin to 155 percent of average in Bighorn Basin. The snowpack above all of Reclamation's reservoirs were much above average. Snowpack above Clark Canyon Reservoir was a low of 117 percent of average while Fresno Reservoir was 208 percent of average. At several locations, snowpack accumulations were approaching near record high levels.

Reclamation continuously evaluated the inflows and snowpack throughout the winter months and made adjustments to reservoir releases as necessary in order to safely store the anticipated forecasted volumes.

TABLE MTT2
2014 MOUNTAIN SNOW WATER CONTENT
AS A PERCENT OF MEDIAN

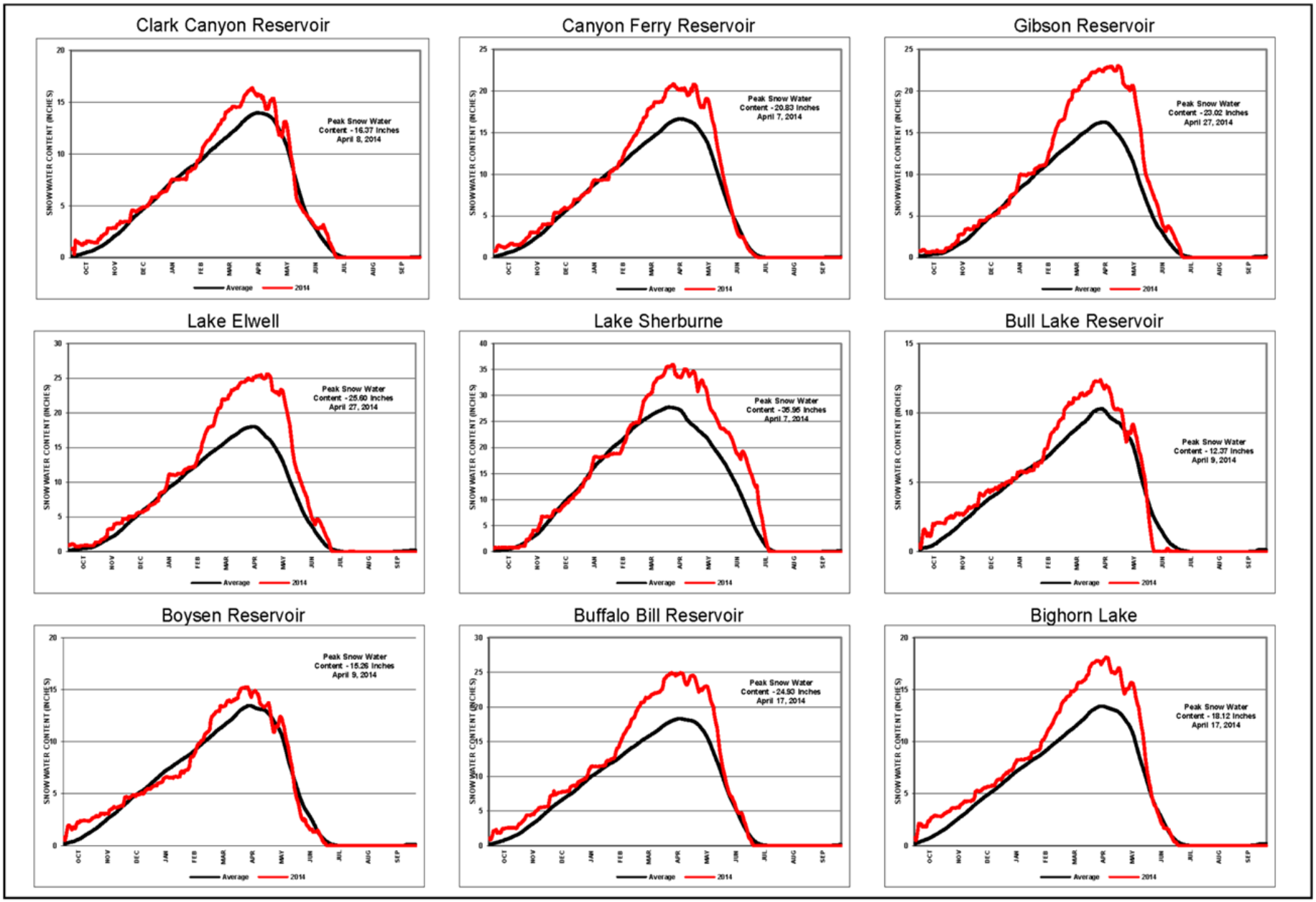
DRAINAGE BASIN	JAN 1	FEB 1	MAR 1	APR 1	MAY 1
Beaverhead	105	101	122	129	128
Jefferson	120	115	136	144	143
Madison	104	100	112	128	133
Gallatin	118	111	121	137	147
Missouri Headwaters above Toston	118	125	163	171	180
Sun	95	109	106	122	128
Marias	114	107	118	138	154
Milk River	210	119	151	161	0
St. Mary	106	99	112	127	138
Wind	109	95	137	137	143
Shoshone	119	115	144	146	147
Bighorn (Boysen-Bighorn)	129	127	146	147	155

TABLE MTT3
2014 WATER SUPPLY FORECASTS

RESERVOIR	JAN 1[1/]		FEB 1[1/]		MAR 1[1/]		APR 1[2/]		MAY 1[3/]		JUN 1[4/]		ACTUAL APRIL-JULY[5/]		% OF APRIL FORE-CAST REC'D
	1,000 AC-FT	% OF AVG	1,000 AC-FT	% OF AVG	1,000 AC-FT	% OF AVG	1,000 AC-FT	% OF AVG	1,000 AC-FT	% OF AVG	1,000 AC-FT	% OF AVG	1,000 AC-FT	% OF AVG	
Clark Canyon	61.4	69	46.4	52	61.6	69	80.9	91	42.5	58	30.0	55	48.6	55	60
Canyon Ferry	1,750.4	101	1,570.5	91	2,027.7	117	2,457.1	142	1,883.0	132	922.0	98	2,056.7	119	84
Gibson	385.9	96	362.6	90	472.2	117	527.8	131	473.0	132	255.5	120	487.5	121	92
Tiber	381.8	105	368.2	101	418.0	115	494.0	136	453.0	146	225.0	121	480.7	132	97
Sherburne	93.2	94	93.0	94	95.6	96	106.6	107	98.0	111	63.0	110	127.2	128	119
Fresno	60.0	73	67.0	82	70.0	86	60.0	118	46.0	104	NA	NA	151.0	184	216
Yellowtail	1,143.0	107	1,140.0	107	1,646.7	154	1,960.8	183	1,636.2	177	782.9	119	1,724.9	161	88

1/ Runoff Forecast for April-July; Fresno Reservoir is March-September.
2/ Runoff Forecast for April-July; Fresno Reservoir is April-September
3/ Runoff Forecast for May-July; Fresno Reservoir is May-September
4/ Runoff Forecast for June-July; Fresno Reservoir is June-September
5/ Actual Runoff for April-July; Fresno Reservoir is March-September.

Figure MTG1
WATER YEAR 2014
SNOW WATER CONTENT



April through June

In a NRCS Map shown in Figure 1, April month to date SNOTEL precipitation across Montana was much above normal, 140 to 206 percent. The resulting April through July forecasted runoff volumes ranged from 91 percent of average into Clark Canyon Reservoir to 183 percent of average into Bighorn Lake. During the first half of April, most of the reservoirs had reached their peak snowpack for the year, however, Gibson and Tiber Reservoirs did not reach their peak snowpack until the last week of April, Table MTG1. This continued to be one of the snowiest winters (January through April) since 2011.

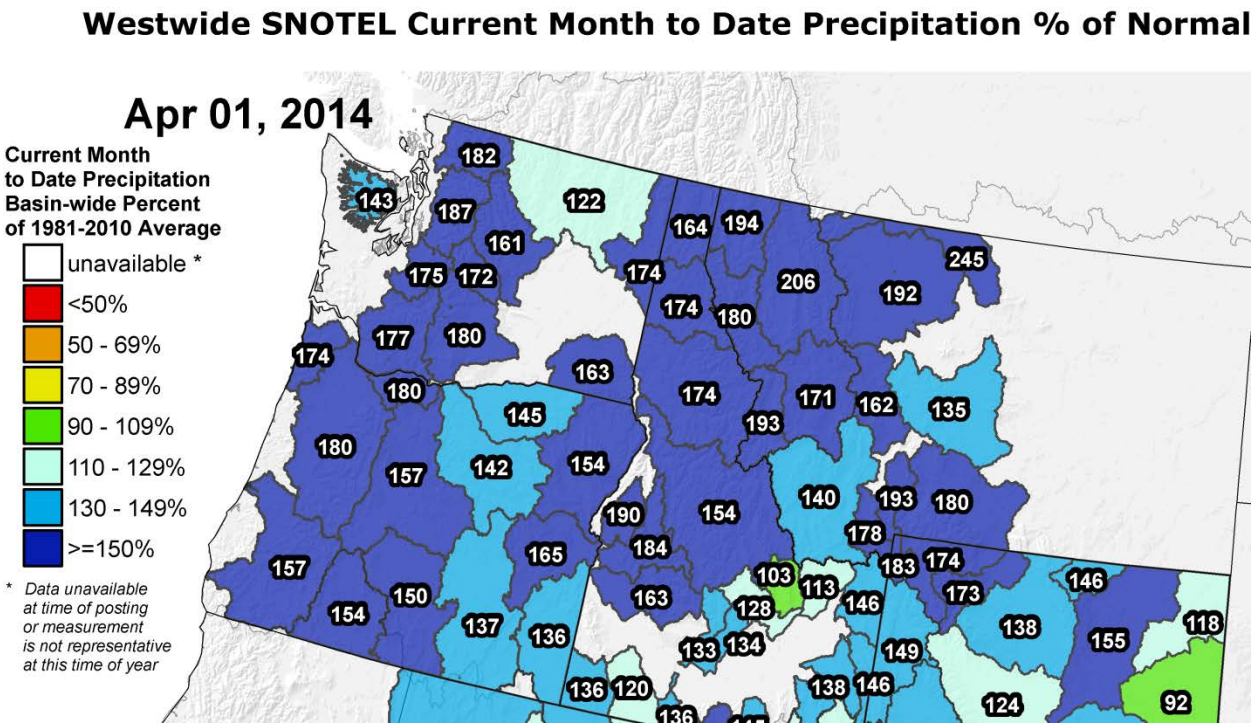


Figure 1. SNOTEL Month to Date Precipitation Percent of Normal (USDA/NRCS Nation Water and Climate Center).

April started cold with areas of heavy snow accumulations, but as the month progressed, temperatures increased to above normal. A drier than normal area covered much of central and southwest Montana, however, the statewide soil moisture values for April were the third highest of record for the month.

After a warm start in May, a cool period persisted for most of the month. Strong thunderstorms prevailed across the state, which brought golf ball size hail and rain to the Sun River Basin, and cities of Ulm, Billings, Hardin, and Colstrip, Montana. Another weather system brought 7 inches of snow to Bynum, 4 inches at Choteau and Cut Bank and 3.6 inches at Great Falls, Montana. Even though May produces strong weather systems, the snowfall and valley precipitation totals for the month were below average above all of Reclamation's reservoirs, with the exception of Clark Canyon Reservoir. The headwaters of the Beaverhead River Basin above Clark Canyon Reservoir continued to experience very dry conditions.

Overall, the month of June was below average temperatures and above average precipitation. A thunderstorm on the June 12, 2014 produced golf ball sized hail at Fort Shaw. The valley precipitation ranged from 97 percent of average in the Jefferson Basin to 183 percent of average in the St. Mary Basin. Some of the precipitation continued to fall in the form of snow during the month. One storm brought up to 5 inches to the highest elevations in the southwest on the June 14, 2014 and another storm brought up to 20 inches of snow to portions of Glacier Park from June 18, 2014 through June 20, 2014. On June 19, 2014, Great Falls reached a high temperature of 49 degrees. This was the latest in the season that the high temperature remained below 50F in nearly 100 years, since 1918. By the end of June, the statewide soil moisture values were the fourth highest of record.

July through September

July brought a turn in the weather conditions as the month produced below average mountain and valley precipitation and above average temperatures. Due to the drier conditions most basins returned to average percent precipitation for the year to date. One cold spell settled into the southwest valleys near Dillon and Bozeman, Montana late in the month. Bozeman tied a record low of 41°F on July 25, 2014 (old record was set in 1950) and Bozeman and Dillon both tied record lows on the July 26, 2014. Bozeman fell to 40°F, while Dillon hit 39°F. Both records were previously from 2005.

By the end of July, the actual April through July runoff volumes for WY 2014 ranged from 55 percent of average into Clark Canyon Reservoir to 161 percent of average into Yellowtail Reservoir, Table MTT3.

Two large storm systems brought very cool temperatures and heavy rain to parts of the state in August. The first affected eastern Montana from August 14-16, 2014, and the second affected much of the state from August 20-25, 2014. This brought record amounts of precipitation to much of central and northeastern Montana for the month (Figure 2).

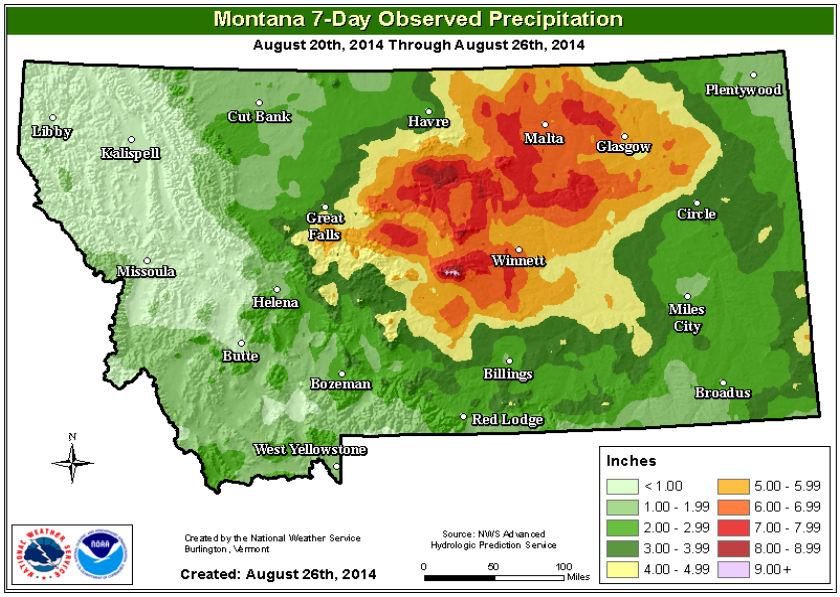


Figure 2. Seven Day Observed Precipitation (inches) for August 20 – 26, 2014 (National Weather Service).

Close to 50 locations set new all-time August maximum precipitation values. The highest amount of precipitation that was received during the late August storm was 12.75 inches at Grass Range, which caused the Missouri River at Landusky to increase 10 feet and approach flood stage. The 7 day storm system also caused flooding along the Mussleshell River and the Lower Milk River as shown in Figure 3 below.

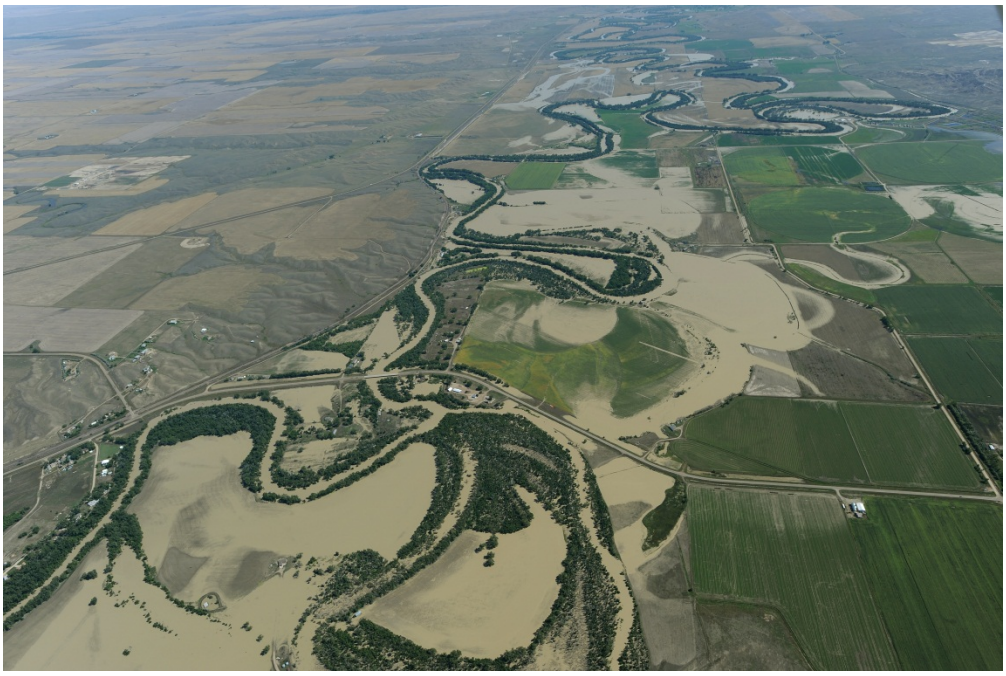


Figure 3. August 28, 2014 Photo of flooding along the Milk River between Saco and Nashua, Montana.

Overall, August averaged 2.42 inches above normal, or 3.72 inches. This is the highest composite August value of record. The old record was 2.84 inches in 1933.

Precipitation and temperatures varied throughout the state during September. By the end of the WY, the mountain precipitation was near average for all basins above Reclamation's reservoirs. The Jefferson Basin had a low of 88 percent of average valley precipitation, while the Marias Basin had a high of 121 percent of average valley precipitation.

WY 2014 ended with varying storage levels. Clark Canyon Reservoir was at 76 percent of average while Sherburne Reservoir was 202 percent of average. The Reclamation reservoir with the most carryover storage was Bighorn Lake at 100 percent of full capacity.

WY 2014 inflows to Reclamation facilities in Montana east of the Continental Divide ranged from 104 to 139 percent of average, with Clark Canyon Reservoir being the exception, receiving only 60 percent of average. Due to a higher than normal water year, Reclamation was able to maintain flows at or above the minimum fishery flows.

The Corps of Engineers reported the operations of Reclamation projects under the jurisdiction of the Montana Area Office east of the Continental Divide prevented approximately $29,387,800 in total flood damages during WY 2014. The damages prevented in WY 2014 were credited to the operations of Clark Canyon Ferry, Gibson, Tiber, Sherburne, Fresno and Yellowtail Dams. The total flood damages prevented by MTAO's facilities since 1950 is approximately $537,855,700.

FLOOD BENEFITS

The Corps evaluated the reservoir regulation data pertaining to Reclamation reservoirs within the jurisdiction of the MTAO and indicated that seven reservoirs provided flood relief during WY 2014. They were: Clark Canyon Reservoir on the Beaverhead River near Dillon; Canyon Ferry Reservoir on the Missouri River near Helena; Lake Elwell on the Marias River near Chester; Lake Sherburne on Swiftcurrent Creek near Babb; Fresno Reservoir on the Milk River near Havre; Gibson Reservoir on the Sun River near Augusta; and Bighorn Lake on the Bighorn River near Fort Smith. Canyon Ferry Reservoir and Bighorn Lake played the most important role in preventing flood damages during the 2014 runoff season. The most notable examples of peak flows regulated by Reclamation reservoirs during the spring runoff are as follows:

Reservoir	Peak Inflow (cfs)	River Discharge (cfs)	Date
Clark Canyon	483	402	06/02/14
Canyon Ferry	21,081	10,285	05/30/14
Lake Elwell	6,754	576	03/13/14
	10,770	1,218	06/20/14
Fresno Reservoir	3,248	51	03/14/14
	4,554	402	06/21/14
Gibson Reservoir	5785	2611	05/24/14
Lake Sherburne	1,394	455	05/24/14
	1,970	804	06/19/14
Bighorn Lake	8,468	3,183	03/10/14
	13,778	8,311	05/30/14

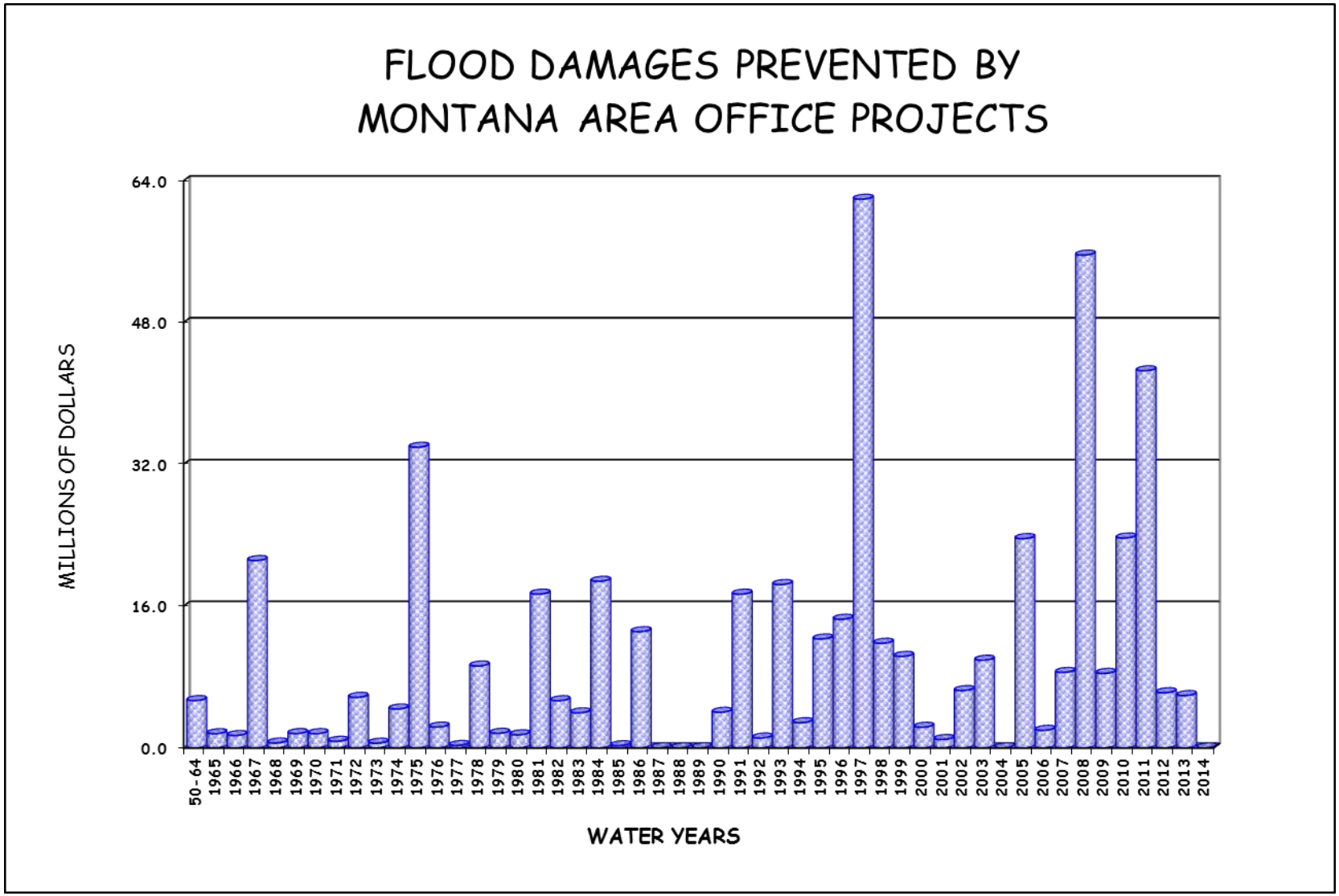
The Corps estimated the operations of Reclamation reservoirs in Montana during 2014 reduced flood damages by $29,387,800. Some of these benefits were derived by reducing local damages and other benefits were derived by storing water which would have contributed to flooding downstream on the main stem of the Missouri River below Fort Peck Reservoir. The flood damages prevented are listed in Table MTT4. For additional information on the operations of the reservoirs within the jurisdiction of the MTAO, refer to the individual "Summary of Operations for 2014" for each reservoir in this report. Figure MTG2 shows the annual flood damages prevented by MTAO reservoirs since 1950.

TABLE MTT4
FLOOD DAMAGES PREVENTED
(THOUSANDS OF DOLLARS)

Reservoir	Local	Main Stem	2014 Total	Prev. Accum.	1950-2014 Accum. Total
Clark Canyon	$ 0	$ 72.7	$ 72.7	$ 15,995.9	$ 16,068.6
Canyon Ferry	$ 2,123.1	13,111.6	15,234.7	216,576.7	231,811.1
Gibson[1]	$ 10.5	0	10.5	3,075.1	3,085.5
Lake Elwell	$ 0	2,731.5	2,731.5	92,963.4	95,694.9
Lake Sherburne[2]	$ 1,594.9	0	1,594.9	8,817.1	10,412.0
Fresno	$ 111.4	0	111.4	15,389.5	15,500.9
Bighorn Lake	$ 270.8	9,361.3	9,632.1	155,650.2	165,282.3
Total	$ 4,110,700	$ 25,277.1	$ 29,387.8	$ 508,467.9	$ 537,855.7

[1] No space allocated to flood control, but some flood protection provided by operation for other purposes.
2 Now includes historical flood damages prevented by Lake Sherburne since 1950 based on estimates provided by the Corps of Engineers.

FIGURE MTG2


FLOOD DAMAGES PREVENTED BY
MONTANA AREA OFFICE PROJECTS
MILLIONS OF DOLLARS
64.0
48.0
32.0
16.0
0.0
50-64
1965
1966
1967
1968
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WATER YEARS

UNIT OPERATIONAL SUMMARIES FOR WY 2014

Clark Canyon Reservoir

Clark Canyon Reservoir, a Pick-Sloan Missouri River Basin Program (P-S MBP) project is located on the Beaverhead River approximately 20 miles upstream from Dillon, Montana. It has a total capacity of 257,152 acre-feet (AF) (255,643 AF active). The reservoir is the storage facility for the East Bench Unit providing a full water supply for irrigation of 21,800 acres and a supplemental supply for about 28,000 acres. Flood control, recreation, and fish and wildlife are among the other functions served by the reservoir.

In 2000, Reclamation surveyed Clark Canyon Reservoir to develop a topographic map and compute a present storage-elevation relationship (area-capacity tables). The data were used to calculate reservoir capacity lost due to sediment accumulation since dam closure in August of 1964. The 2000 survey determined that Clark Canyon Reservoir has a storage capacity of 174,367 AF and a surface area of 5,151 acres at a reservoir elevation of 5546.10 feet (ft). Since closure in 1964, the reservoir has accumulated a sediment volume of 4,106 AF below elevation 5546.10 ft. This volume represents a 2.3 percent reduction in capacity and an average annual sedimentation rate of 114.7 AF. The revised area-capacity table was put into effect on October 1, 2001, reflecting the new storage levels.

WY 2013 climatic conditions in the Beaverhead River Basin were dry and warm during the runoff period. However, precipitation in both the valley and mountain areas rebounded in September. By the end of September, the total cumulative valley precipitation for the year was 101 percent of average while the total cumulative mountain precipitation for the Beaverhead Basin was 83 percent of average. In September, storage in Clark Canyon Reservoir was low as irrigation demands continued to reduce storage. WY 2013 ended with a storage content of 47,983 AF (59 percent of average) at elevation 5513.05 ft.

WY 2014 began with cooler temperatures and near average precipitation. However, November brought increased temperatures and very dry conditions across the Beaverhead River Basin. The valley and mountain precipitation was 11 and 67 percent of average, respectively. Once again the weather pattern shifted in December creating cooler temperatures and varying levels of below average precipitation across the basin. By the end of December, the valley precipitation had reached a year to date average of 75 percent while the mountain precipitation had reached a year to date average of 74 percent.

On January 1, 2014 the NRCS measured snowpack in the Beaverhead River Basin at 105 percent of median while temperatures averaged about 2 to 6 degrees above normal. Snow accumulation in the Beaverhead River Basin slowed during the month which resulted in a slight drop in the NRCS's February 1, 2014 snowpack of 101 percent of median. However, February brought cooler temperatures and significant mountain and valley precipitation at 180 and 265 percent of

average respectively. On March 1, 2014 the measured snowpack in the Beaverhead River Basin had increased to 122 percent of median.

The East Bench Unit Joint Board, consisting of three representatives from each water user entity, met on March 4, 2014 to discuss the water supply outlook for the 2014 irrigation season. The forecast started with below average storage and below average runoff projections. Based on the below average storage levels, the Joint Board tentatively set allotments at the first reduced tier (CCWSC 3.5 AF/acre, EB 2.7 AF/acre) with the option of raising the reduced allotments in April if possible. The first tier reduced allotments is 3.5 AF per acre for the Clark Canyon Water Supply Company (CCWSC) and 2.7 AF per acre for the East Bench Irrigation District (EBID).

The beginning of March was dry with mild temperature in the Beaverhead Basin while the rest of the state was receiving ample precipitation. Yet towards the end of March, the basin did receive a boost in mountain precipitation to 129 percent of average for the month. The year to date valley precipitation as of March 31, 2014 was 91 percent of average, and the mountain precipitation, 99 percent of average. Inflow into Clark Canyon Reservoir for October through March was 64,500 AF, or 65 percent of average. Due to the below average inflows the end of March reservoir elevation was recorded at elevation 5560.57 ft, approximately 6 feet below average.

On April 1, 2014 the NRCS measured the mountain snowpack to be 129 percent of median. Even though the snowpack was much above the median value, the water supply forecast prepared on April 1, 2014 indicated the April through July runoff into Clark Canyon Reservoir would be 91 percent of average, totaling approximately 80,900 AF. The forecast also indicated the reservoir would be 12 feet from filling to the top of the joint use pool. The East Bench Unit Joint Board met again on April 8, 2014 to discuss the water supply and storage and inflow projections. Due to storage being lower than average with below average inflows to date, and general uncertainties of the basin, they confirmed the first tier reduced allotments would be implemented for the 2014 irrigation season. Releases from Clark Canyon began to increase on April 2, 2014 in preparation for the start of the irrigation season.

The precipitation was fairly consistent in the Beaverhead Basin during April as the valley and mountain precipitation was 97 and 81 percent of average, respectively. On April 8, 2014, the snowpack peaked at 16.37 inches of snow water equivalent, 119 percent of the 30 year average. The snowmelt then began, but then a weather system in late April caused a small increase in the snowpack. On May 1, 2014 the NRCS measured the mountain snowpack to be 128 percent of median. For the month of May the total inflow to Clark Canyon Reservoir was only 11,000 AF, which is 59 percent of the 30 year average. This may be attributed to the dry soil moisture conditions in previous months and irrigation demands upstream of Clark Canyon.

June brought cooler temperatures and timely rains which allowed the East Bench Irrigation District to reduce releases out of Clark Canyon Dam and conserve storage. This conservative operation allowed the end of June reservoir storage to only drop to 96,750 AF or 81 percent of the 30 year average. Without these timely rains, the reservoir storage would have been evacuated much lower. With temperature on the rise, July valley precipitation was only 51 percent of average. The U.S. drought monitor reported that by the end of August the Beaverhead Basin area was abnormally dry.

Snowmelt runoff during April through July was well below normal at 55 percent of the 30 year average, totaling 48,600 AF. Daily inflows into Clark Canyon Reservoir averaged 112 cubic feet per second (cfs) during April, 177 cfs during May, 307 cfs during June and 207 cfs during July. These resulted in respective monthly total inflows of 6,600 AF, 10,980 AF, 18,300 AF and 12,700 AF. The peak inflow for WY 2014 occurred on June 2, 2014, at 483 cfs.

Releases during the April through July time period averaged 28 cfs during April, 211 cfs during May, 458 cfs during June, and 578 cfs during July. Storage reached the peak for the year of 107,959 AF at elevation 5531.87 ft on May 3, 2014. On July 23, 2014 the peak release from Clark Canyon Reservoir was recorded at 716 cfs to meet downstream irrigation demands.

Lima Reservoir is a private irrigation facility located upstream of Clark Canyon Reservoir on the Red Rock River, a tributary of the Beaverhead River. Lima Reservoir did not fill to the top of the conservation pool in WY 2014. The reservoir peaked at 52,615 AF (62 percent full) or elevation 6576.67 ft on May 29, 2014. On July 21, 2014, all irrigation releases out of Lima Reservoir were discontinued for the year with storage at elevation 6559.98 ft (13 percent full), to conserve storage. The drainage area above Lima Reservoir accounts for about 25 percent of the total drainage area above Clark Canyon Reservoir.

Once again, the weather systems changed in August across the state. The temperatures were several degrees below normal and yielded much above average precipitation in both the valley and mountain areas. August precipitation was the wettest on record for the state, with the Beaverhead Basin producing 152 and 351 percent of average valley and mountain precipitation, respectively.

On September 9, 2014 the East Bench Unit Joint Board held a meeting to discuss winter releases. Reclamation provided reservoir operation plans with a minimum, maximum, and most probable inflows with a 50 cfs winter release. During the discussion of the plans, Montana Fish, Wildlife and Parks (MFWP) stated they would support a 35 cfs winter release, with the possibility of 5 cfs being stored for a 2015 spring sediment flushing flow if needed. Reclamation and the Joint Board verbally agreed to this proposal. A letter from the Joint Board was received on September 12, 2104 while the MFWP letter was received in October confirming the above verbal agreement.

In response, Reclamation’s letter dated, September 30, 2014 stated that under Article 6.g and Exhibit D of Reclamation's Contract Nos. 069F670010 and 069F6700009 with the EBID and CCWSC includes provisions which encourage working with third parties such as the State of Montana to enhance the environmental health of the Beaverhead River. Measures that could be considered appropriate include, among other considerations, storing water for enhancement purposes, provided the minimum release from Clark Canyon Reservoir is not less than 25 cfs. In accordance with these contracts, Reclamation concurred that a reduction in winter flows from 35 cfs to 30 cfs for the purpose of storing water for spring 2015 flushing flow is acceptable, provided all parties are in mutual agreement. This reduction will result in approximately 2,100 AF of banked water for a spring flushing flow if needed. A memorandum of understanding will be created to identify and determine the specific requirements of the flushing flow.

Therefore, the winter release from Clark Canyon Dam was set at 30 cfs on October 2, 2014.

On October 2, 2014 a short term flow reduction to the Beaverhead River occurred to allow for inspection of the dam outlet works by Reclamation and East Bench Irrigation District personnel. Immediately following the inspection the winter releases of 30 cfs was established.

The majority of the storage water released from Clark Canyon Reservoir was released from May 1, 2014 through September 30, 2014 to meet the downstream irrigation demands. Beginning on May 1, 2014, storage in Clark Canyon Reservoir declined from 107,878 AF at elevation 5531.85 to 59,215 AF at elevation 5517.47 ft on September 30, 2014. Due to the first tier reduced allotments, the EBID water users received approximately 62,239 AF and CCWSC used approximately 76,834 AF and left about 14,212 AF in storage during WY 2014. The total diversion recorded by the river commissioner for the "non-signer" users on the Beaverhead River was approximately 38,287 AF.

The total annual inflow to Clark Canyon Reservoir during WY 2014 was 60 percent of the 30 year average, totaling approximately 132,600 AF. The total annual release to the Beaverhead River from Clark Canyon Reservoir was 121,337 AF. By the end of September, the total cumulative valley precipitation for the year was 91 percent of average while the total cumulative mountain precipitation for the Beaverhead Basin was 102 percent of average.

The Corps of Engineers determined that during 2014, Clark Canyon Reservoir did not prevent any local flood damages, but prevented $72,700 in main stem flood damages downstream of Fort Peck Reservoir. Since construction of the Clark Canyon Dam in 1965, Clark Canyon Reservoir has reduced flood damages by a total of $16,068,600.

Important Events During WY 2014

October 1, 2013: Clark Canyon Reservoir enters the WY with 47,983 AF of storage at elevation 5513.05 ft.

October 4, 2013: Following the 2013 irrigation season, releases from Clark Canyon Reservoir to the Beaverhead River were reduced to approximately 25 cfs for a winter release.

May 7, 2014: Clark Canyon Reservoir reached peak storage content of 107,959 AF at elevation 5531.87 ft, which is approximately 14.1 feet below full pool.

May 8, 2014: This marked the beginning of when releases from Clark Canyon Reservoir were increased to meet irrigation demands.

June 2, 2014: Inflows into Clark Canyon Reservoir peaked at 483 cfs.

June 23, 2014: Releases from Clark Canyon Reservoir reached a peak of 716 cfs to meet downstream water demands from the Beaverhead River.

September 30, 2014: Clark Canyon Reservoir ends the WY with 59,215 AF of storage at elevation 5517.47 ft.

Additional hydrologic and statistical information pertaining to the operation of Clark Canyon Reservoir during 2014 can be found in Table MTT5 and Figure MTG3.

TABLE MTT5
HYDROLOGIC DATA FOR 2014
CLARK CANYON - EAST BENCH UNIT
NEW SEDIMENT SURVEY DATA EFFECTIVE 10/1/2001

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	5470.60	1,061	1,061
TOP OF ACTIVE CONSERVATION	5535.70	124,160	123,099
TOP OF JOINT USE	5546.10	174,367	50,207
TOP OF EXCLUSIVE FLOOD CONTROL	5560.40	253,442	79,075

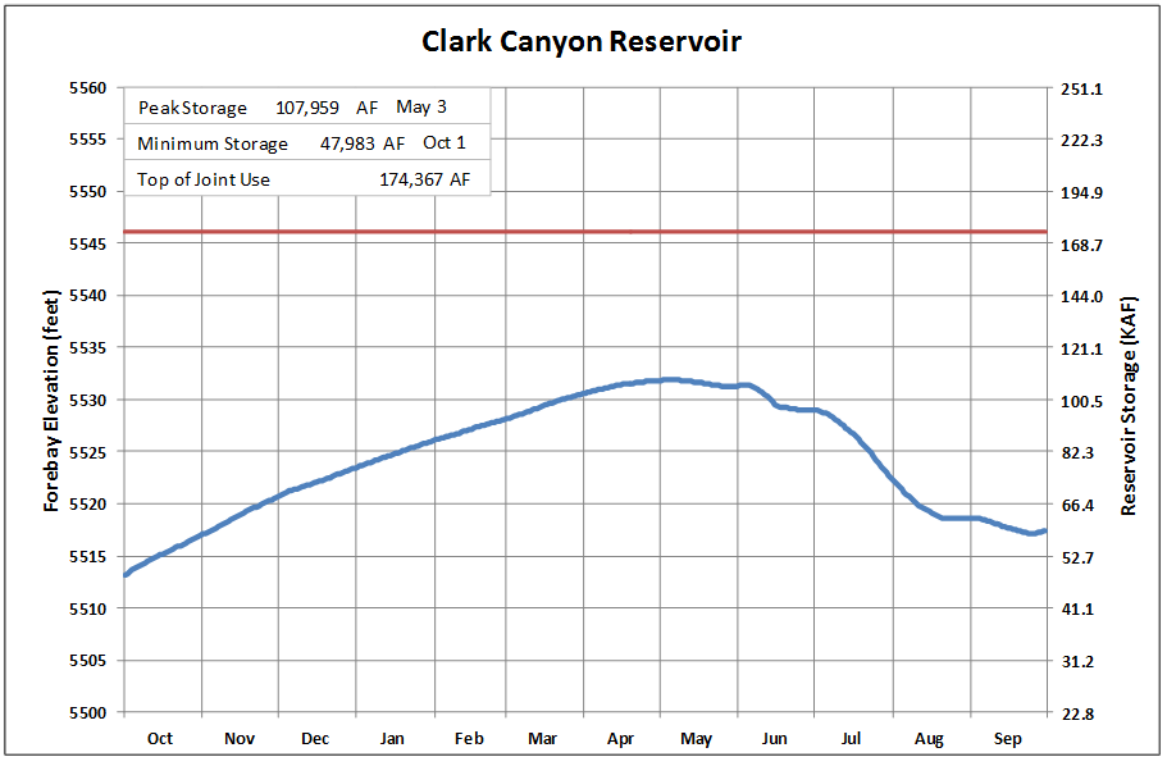
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	5513.05	47,983	OCT 01, 2013
END OF YEAR	5517.47	59,215	SEP 30, 2014
ANNUAL LOW	5513.05	47,983	OCT 01, 2013
ANNUAL HIGH	5531.87	107,959	MAY 07, 2013
HISTORIC HIGH	5564.70	283,073	JUN 25, 1984

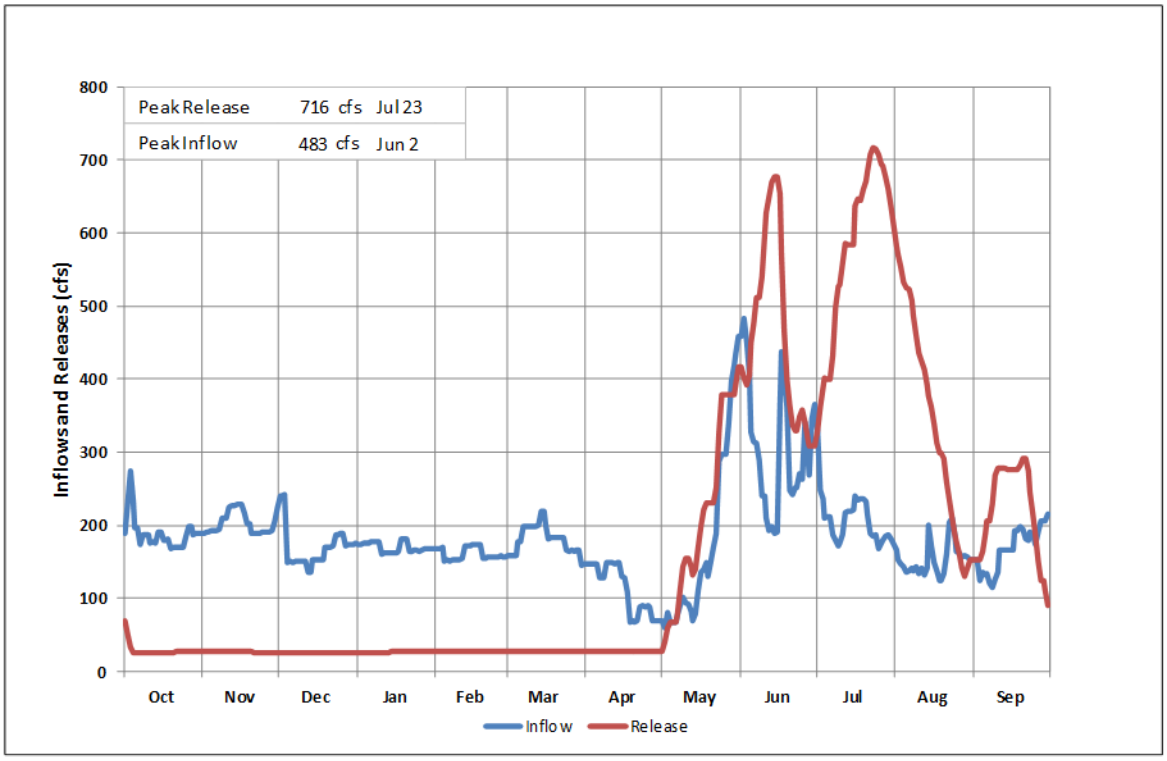
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	132,569	OCT 13-SEP 14	121,337	OCT 13-SEP 14
DAILY PEAK (CFS)	483	JUN 02, 2014	716	JUL 23, 2014
DAILY MINIMUM (CFS)	60	MAY 02, 2014	25	NOV 22, 2013
DAILY FLOW AT BARRETTS (CFS)			905	JUN 16, 2014
DAILY FLOW AT BARRETTS W/O CLARK CANYON RESERVOIR (CFS)			781	JUN 02, 2014
PEAK SPILL (CFS)			0	NONE
TOTAL SPILL (AF)			0	NONE

MONTH	INFLOW		OUTFLOW*		CONTENT	
	KAF	% OF AVG	KAF	% OF AVG	KAF	% OF AVG
OCTOBER	11.6	57	1.8	13	57.8	63
NOVEMBER	12.1	61	1.6	12	68.3	67
DECEMBER	10.4	64	1.6	13	77.2	71
JANUARY	10.4	75	1.6	16	86.0	75
FEBRUARY	8.9	72	1.5	16	93.4	78
MARCH	11.1	70	1.7	17	102.8	80
APRIL	6.6	41	1.7	17	107.7	80
MAY	11.0	59	13.0	47	105.7	82
JUNE	18.3	61	27.3	71	96.7	82
JULY	12.7	53	35.5	78	74.0	79
AUGUST	9.4	54	21.1	54	62.3	81
SEPTEMBER	10.0	59	13.1	64	59.2	76
ANNUAL	132.6	60	121.3	48		
APRIL-JULY	48.6	55				

* Average for the 1965-2014 period.

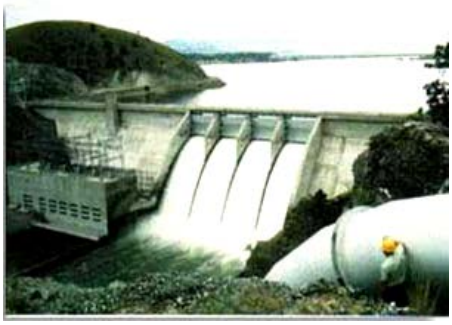
FIGURE MTG3





Water Year 2014

Canyon Ferry Lake and Powerplant



Canyon Ferry Lake (P-S MBP), formed by Canyon Ferry Dam, is located on the Missouri River near Helena, Montana. It has a total capacity of 1,992,977 AF. The top 3 feet were allocated to exclusive flood control in February 1966. The next 27 ft are allocated to joint conservation and flood control purposes. The joint use space will be evacuated for flood control purposes only to the extent that refill during the spring runoff are reasonably assured. The conservation space was constructed mainly for power generation and to provide replacement storage for several new irrigation developments located on the Missouri River and its tributaries above Great Falls, Montana. To date, however, the conservation storage has been used primarily for power production. The only new areas under irrigation are 5,000 acres being irrigated on the Crow Creek Unit (P-S MBP), 13,900 acres on the Helena Valley Unit (P-S MBP), and 28,000 acres on the East Bench Unit (P-S MBP). In addition, about 5,200 acres in the Helena Valley Unit that was once irrigated by pumping from Lake Helena and from other streams are now irrigated by pumping from Canyon Ferry Reservoir. About 33,700 acres on the East Bench Unit also receives a supplemental water supply. A small amount of municipal water is also furnished to the city of Helena, Montana, through facilities for the Helena Valley Unit.

In 1997, a hydrographic and a topographic survey were conducted and a new elevation area capacity table and curve was developed. The 1997 survey determined that Canyon Ferry Lake has a storage capacity of 1,992,977 AF and a surface area of 34,048 acres at reservoir elevation 3800ft. Since closure in 1953, the reservoir has accumulated a sediment volume of 59,746 AF below reservoir elevation 3800.00 ft. This volume represents a 2.91 percent reduction in capacity and an average annual sedmentation rate of 1,345.6 AF. The revised area-capacity table was put into effect on October 1, 1998, reflecting the new storage levels.

In WY 2013, dry conditions persisted during July through August. September was warmer than average, however, the much needed precipitation in the basin was well above average. The September valley precipitation in the Jefferson Basin was 243 percent of average, the Madison Basin was 219 percent of average, and the Gallatin Basin was 214 percent of average. This precipitation gradually increased inflows into Canyon Ferry Reservoir and aided in slowing the draw-down rate of the reservoir. By the end of WY 2013, the reservoir storage content was 1,446,324 AF, at elevation 3783.00 ft, with inflows and releases at 2,900 cfs.

WY 2014 started with a cool and slightly dry October in the Upper Missouri River Basin. Inflows into Canyon Ferry Reservoir were 85 percent of the 30 year average and releases remained at 2,900 cfs for conserving storage. November began with warmer temperatures, however, a severe cold front moved through the state on November 19, 2013, resulting in below zero temperatures. Low temperatures of negative 20 degrees Fahrenheit were seen in West Yellowstone, Montana and temperatures in the city of Great Falls, Montana dropped 20 degrees in just 4 minutes. Warmer temperatures returned to the state by November 22, 2013, while the end of the month valley precipitation was 50 percent below average.

The climatic conditions of December were similar to November. A warm start suddenly turned very cold with some temperatures across the state reaching negative 50 degrees with the wind chill. Inflows into Canyon Ferry dropped from 3,300 cfs to 860 cfs due to the cold temperatures. Due to the low inflows, PPL-MT requested an increase in releases out of Canyon Ferry Reservoir to reduce the potential for downstream ice jam flooding. In response, total releases out of Canyon Ferry Lake were increased to 4,100 cfs by December 5, 2013. Releases were then returned to 2,900 cfs on December 13, 2013 when the temperatures returned to normal. The snow-water equivalent was near average by the end of the month and the valley precipitation in the upper river basins had a year to date percent of average of 70 in the Jefferson Basin, 84 in the Madison Basin, and 83 in the Gallatin Basin. By the end of December the storage content was at 1,471,193 AF or elevation 3783.83 ft.

On January 1, 2014, the NRCS measured the snow-water equivalent of the mountain snowpack in the Missouri River Basin at 118 percent of median. Snow accumulated at average rates throughout the month, while above normal temperatures prevailed for the majority of the time. By the end of the month, temperatures once again plummeted to negative values. PPL-MT once again requested another increase in releases out of Canyon Ferry Reservoir to reduce the potential for downstream ice jam flooding. In response, total releases out of Canyon Ferry Lake were increased to 3,900 cfs by February 2, 2014. Releases were then returned to 2,900 cfs on February 12, 2014 when the temperatures returned to more normal like conditions.

February brought much needed precipitation to the basins above Canyon Ferry Reservoir. The mountain precipitation resulted in a monthly percent of average of 199 in the Jefferson Basin, 129 in the Madison Basin, and 146 in the Gallatin Basin. By the end of the month, temperatures were again forecasted to drop below zero. Therefore, PPL-MT requested another increase in releases out of Canyon Ferry Reservoir to reduce the potential for downstream ice jam flooding. In response, total releases out of Canyon Ferry Lake were increased to 3,900 cfs by February 28, 2014.

On March 1, 2014, the NRCS measured the mountain snowpack in the Missouri River Basin at 163 percent of median. Also on March 1, 2014 the forecasted April through July inflow volume was 117 percent of the 30 year average. March weather patterns were similar to February's. More snow accumulated in the mountains while more precipitation fell in the valley areas. Unseasonably warm weather quickly melted the low elevation snow in mid-March causing inflows into Canyon Ferry to increase to over 7,700 cfs. As a result, storage was slowly refilling. To continue evacuating storage as planned in preparation for the snowmelt runoff, releases were gradually increased to 6,700 cfs by the end of the month. The end of March storage content was 1,407,984 AF at an elevation of 3781.70 ft while inflows averaged near 4,300 cfs and releases were maintained at about 6,700 cfs during late March.

Due to substantial snow accumulation during February and March, the NRCS April 1, 2014 snowpack was now 171 percent of median while Reclamation's April through July forecasted inflow volume increased to 132 percent of average. Also, during the first week of April was the initiation of diversions for the Helena Valley Irrigation District to the Helena Valley Reservoir. April temperatures remained cool, but by mid-April some of the low elevation snowmelt runoff was occurring. Inflow into Canyon Ferry Lake increased to over 9,100 cfs, causing storage to begin slowly filling. In order to control storage in Canyon Ferry in preparation of the anticipated

snowmelt runoff, releases out of Canyon Ferry Dam were increased to 8,650 cfs. By the end of April, storage content in Canyon Ferry Lake was near a low for the year at 1,323,775 AF, at elevation 3778.75 ft with inflows averaging near 7,500 cfs and releases maintained at 8,400 cfs.

May was cooler than expected and produced below average precipitation in the basin. The spring snowmelt runoff began in mid-May. Inflows increased from 7,000 cfs on May 17, 2014 to a peak of 21,081 cfs on May 30, 2014. Reclamation gradually increased releases to near 10,700 cfs in order to slow and control the rate of fill in the reservoir. After the peak occurred, the inflows began to decline rapidly by 1,000 cfs to 2,000 cfs per day resulting in an inflow of 10,000 cfs on June 13, 2014. Since inflows were declining quickly, there was less than average precipitation occurring in the basin, and there was less than 4 inches of snow water equivalent remaining in the mountains, Reclamation was forecasting that inflows at this point would continue to decline. In response, Reclamation reduced releases to 4,300 cfs by June 11, 2014 to assure the reservoir would fill from the current elevation of 3790.99 ft, to the top of the joint-use pool, elevation 3797.0 ft by late June.

By the end of the June, stream flows into Canyon Ferry remained slightly higher than anticipated due to precipitation in the basin. As a result, the reservoir was nearing full pool. To control the rate of fill releases out of Canyon Ferry to the Missouri River were once again increased to 7,000 cfs by July 4, 2014. The reservoir entered the exclusive flood pool on June 29, 2014 and continued to increase until reaching a peak storage content of 1,913,944 AF at elevation 3797.66 on July 5, 2014. Reclamation worked closely with the Corps of Engineers in coordinating releases out of Canyon Ferry while storage occupied the exclusive flood pool. Inflows did begin to decline in early July and all storage was evacuated from the exclusive flood pool by July 16, 2014. By now inflows declined to 3,800 cfs and releases were gradually reduced to 4,900 cfs.

July was warm with little precipitation. The mountain precipitation for the month was 62 percent of average while the valley precipitation in the Jefferson Basin was 55 percent of average, the Madison Basin was 72 percent of average, and the Gallatin Basin was 42 percent of average. Even though it was a dry month, inflows averaged near 4,350 cfs while 4,400 cfs was maintained to the Missouri River below Holter Dam. April through July runoff into Canyon Ferry Lake during WY 2014 was 119 percent of average, totaling approximately 2,056,700 AF.

The first part of August continued to be warm and dry. Then about mid-month a strong weather system brought thunderstorms and heavy rain across Montana. Inflows into Canyon Ferry Reservoir rose from 1,900 cfs to 4,200 cfs. By the end of the month, over 200 percent of average precipitation fell in the basin. September continued with average precipitation and slightly warmer than average temperatures. Inflows for the month were 111 percent of average.

By the end of the water year, Canyon Ferry Lake had a storage content of 1,699,195 AF at an elevation of 3791.11 ft (109 percent of average), with inflows averaging near 3,600 cfs and releases were maintained at 4,200 cfs. The annual inflow to Canyon Ferry Lake was 105 percent of average, totaling 3,617,700 AF.

During 2014, Canyon Ferry Lake Power plant generated 333,233,000 kilowatt-hours, 87 percent of the long-term average dating back to 1967. This was 104,062,000 kilowatt-hours more than

generated during the record low year of 2002 and 59,859,000 kilowatt-hours more than generated in 2013. The plant used 83 percent of the water released from the dam in 2014 (2,800,934 AF). The remainder of the water was released to meet the irrigation needs of the Helena Valley Irrigation District (203,710 AF) and spilled through the river outlet gates (253,373 AF) and through the spillway gates (107,700 AF).

The Corps of Engineers estimated that during 2014, Canyon Ferry Lake prevented $2,123,100 local flood damages and also prevented $13,111,600 in flood damages downstream on the Missouri River below Fort Peck Reservoir. Since construction of the Canyon Ferry Dam in 1954, Canyon Ferry Reservoir has reduced flood damages by a total of $231,811,400.

Important Events During WY 2014

October 2, 2013: PPL-MT called and reported reservoir levels in Hauser and Holter continue to decrease while maintaining river flows below Holter near 2,900 cfs. As a result, PPL-MT requested releases out of Canyon Ferry Reservoir to be increased. In response, the total release out of Canyon Ferry Reservoir was increased to 3,000 cfs (≈ 3,000 cfs through the power plant, zero cfs through the river outlet gates, and zero cfs for the Helena Valley Project (HVP).

October 17, 2013: River flows downstream of Holter Dam averaged 3,050 cfs. Reservoir levels in Hauser and Holter Reservoirs increased to normal full reservoir contents. To continue conserving storage in Canyon Ferry Reservoir while maintaining river flows below Holter near 2,900 cfs, releases out of Canyon Ferry were decreased. In response, the total release out of Canyon Ferry Reservoir was decreased to 2,900 cfs (≈ 2,900 cfs through the power plant, zero cfs through the river outlet gates, and zero cfs for the HVP).

October 24, 2013: Maintenance on Unit #1 was rescheduled due to the government shutdown.

December 4, 2013 through 5, 2013: Due to much colder temperatures being forecasted, PPL-MT requested an increase in releases to reduce the potential for downstream ice jam flooding. In response, the total release out of Canyon Ferry Lake was increased to 3,500 cfs on the December 4, 2013 and increased again to 4,100 cfs on the December 5, 2013. All releases were made through the power plant.

December 10, 2013 through 12, 2013: The air temperatures return back to normal; therefore releases to the Missouri River were reduced back to the previous flow of 2,900 cfs. In response, the total releases out of Canyon Ferry Lake were decreased to 3,700 cfs on the December 10, 2013, decreased to 3,300 cfs on the December 11, 2013, and decreased again to 2,900 cfs on the December 12, 2013. All releases were made through the power plant.

January 6, 2014 though February 6, 2014: An outage on Unit #1 occurred for triennial maintenance. Turbine releases were restricted and limited to a 2-unit capacity. Turbine releases from Canyon Ferry Lake were maintained at 2,900 cfs (≈ 2,900 cfs through the power plant, zero cfs through the river outlet gates, and zero cfs for the HVP).

January 31, 2014 through February 1, 2014: Due to much colder temperatures being forecasted, PPL-MT requested an increase in releases to reduce the potential for downstream ice jam flooding. Turbine releases were restricted and limited to a 2-unit capacity. In response, the total release out of Canyon Ferry Lake was increased to 3,400 cfs on the January 31, 2014 and increased again to 3,900 cfs on the February 1, 2014. All releases were made through the power plant.

February 1, 2014: NRCS snowpack was reported at 125 percent of median.

February 9, 2014 through February 12, 2014: The air temperatures return back to normal; therefore releases to the Missouri River were reduced back to the previous flow of 2,900 cfs. In response, the total releases out of Canyon Ferry Lake were decreased to 3,615 cfs on the February 9, 2014, decreased to 3,365 cfs on the February 10, 2014, decreased to 3,115 cfs on the February 11, 2014, and decreased to 2,900 cfs on the February 12, 2014. All releases were made

through the power plant.
February 26, 2014 through February 27, 2014: PPL-MT requested an increase in releases due to much colder temperatures being forecasted to reduce the potential for downstream ice jams. In response, the total release out of Canyon Ferry Lake was increased to 3,400 cfs on the February 26, 2014 and increased again to 3,900 cfs on the February 27, 2014. All releases were made through the power plant.

March 1, 2014: NRCS snowpack was reported at 163 percent of median.

March 6, 2014 through March 27, 2014: An outage on Unit #3 occurred for annual maintenance. Turbine releases were restricted and limited to a 2-unit capacity. Turbine releases from Canyon Ferry Lake were maintained at 3,900 cfs (≈ 3,900 cfs through the power plant, zero cfs through the river outlet gates, and zero cfs for the HVP).

March 10, 2014 through 12, 2014: Unseasonably warm weather quickly melted the low elevation snow causing inflows into Canyon Ferry to increase considerably to over 7,700 cfs. As a result, storage was slowly refilling. To continue evacuating storage as planned in preparation for the snowmelt runoff, releases were increased to 5,500 cfs over a 3 day period. Due to scheduled maintenance on Unit #3, turbine releases were restricted and limited to a 2-unit capacity. In response, the total release out of Canyon Ferry Lake was increased to 4,500 cfs on the March 10, 2014 (≈ 3,850 cfs through the power plant, 650 cfs through the river outlet gates, and zero cfs for the HVP). Increased total release to 5,000 cfs on the March 11, 2014 (≈ 3,850 cfs through the power plant, 1,150 cfs through the river outlet gates, and zero cfs for the HVP). Increased total release to 5,500 cfs on the March 12, 2014 (≈ 3,850 cfs through the power plant, 1,650 cfs through the river outlet gates, and zero cfs for the HVP).

March 13, 2014: Inflows into Canyon Ferry continued to remain high and were declining slower than anticipated. To continue evacuating storage as planned in preparation for the snowmelt runoff, releases were increased. Due to scheduled maintenance on Unit #3, turbine releases were restricted and limited to a 2-unit capacity. The total release from Canyon Ferry Lake was increased to 5,800 cfs (≈ 3,800 cfs through the power plant, 2,000 cfs through the river outlet gates, and zero cfs for the HVP).

March 17, 2014 through March 18, 2014: Inflows into Canyon Ferry continued to slowly decline but remained near 4,800 cfs. Scheduled maintenance on Unit #3 was completed; therefore turbine releases were increased to full power plant capacity. To continue evacuating storage as planned in preparation for the snowmelt runoff, total release out of Canyon Ferry were increased. The total release from Canyon Ferry Lake was increased to 6,200 cfs on the March 17, 2014 (≈ 5,700 cfs through the power plant, 500 cfs through the river outlet gates, and zero cfs for the HVP). The total release from Canyon Ferry Lake was increased to 6,700 cfs on the March 18, 2014 (≈ 5,700 cfs through the power plant, 1,000 cfs through the river outlet gates, and zero cfs for the HVP).

April 1, 2014: NRCS snowpack was reported at 171 percent of median.

April 7, 2014: Helena Valley Irrigation District (HVID) initiated diversion to the Helena Valley Reservoir (HVR). Total release from Canyon Ferry Lake was increased to 7,100 cfs (≈ 5,700 cfs

through the power plant, 1,000 cfs through the river outlet gates, and 310 cfs for the HVP).
April 11, 2014: HVID requested an increase in diversions to HVR. In addition, turbine releases were slightly less than full capacity and were increased to full capacity of about 220 cfs more. In response, the total release out of Canyon Ferry Lake was increased to 7,415 cfs (≈ 5,955 cfs through the power plant, 1,000 cfs through the river outlet gates, and 460 cfs for the HVP).

April 11, 2014: Reclamation attended and participated in the Upper Missouri River Advisory Group meeting held in the MFWP's Auditorium Meeting Room at the Montana Wild Outdoor Educations Center in Helena, Montana. Tim Felchle, Chief of Reservoir and River Operations, and Stephanie Micek presented the water supply outlook for the Upper Missouri River Basin and the proposed operations for Canyon Ferry Lake for 2014.

April 14, 2014: HVID requested an increase in diversions to Helena Valley Reservoir. Also, inflow into Canyon Ferry Lake increased to over 9,100 cfs, causing storage to begin slowly filling. To control storage in Canyon Ferry in preparation of the anticipated snowmelt runoff, releases out of Canyon Ferry Dam and Power plant were increased. In response, the total release out of Canyon Ferry Lake was increased to 8,650 cfs (≈ 6,000 cfs through the power plant, 2,000 cfs through the river outlet gates, and 650 cfs for the HVP).

April 17, 2014: HVID reduced diversions to Helena Valley Reservoir for maintenance on Unit #1 of the Helena Valley Pumping Plant. In response, the total release out of Canyon Ferry Lake was decreased to 8,300 cfs (≈ 6,000 cfs through the power plant, 2,000 cfs through the river outlet gates, and 300 cfs for the HVP).

April 25, 2014: HVID increased diversions to Helena Valley Reservoir through Unit #2 while continue maintenance is performed on Unit #1. In response, the total release out of Canyon Ferry Lake was increased to 8,415 cfs (≈ 6,000 cfs through the power plant, 2,000 cfs through the river outlet gates, and 415 cfs for the HVP).

May 1, 2014: NRCS snowpack was reported at 180 percent of median.

May 8, 2014: Western Area Power Administration requested a decrease in turbine releases. In response, the total release out of Canyon Ferry Lake was maintained at 8,415 cfs (≈ 4,320 cfs through the power plant, zero cfs through the river outlet gates, 3,680 cfs through the spillway gates, and 415 cfs for the HVP).

May 13, 2014: HVID increased diversions to Helena Valley Reservoir. In response, the total release out of Canyon Ferry Lake was maintained at 8,415 cfs (≈ 4,320 cfs through the power plant, zero cfs through the river outlet gates, 3,520 cfs through the spillway gates, and 575 cfs for the HVP).

May 15, 2014: HVID increased diversions to Helena Valley Reservoir. In response, the total release out of Canyon Ferry Lake was increased to 8,550 cfs (≈ 4,070 cfs through the power plant, zero cfs through the river outlet gates, 3,750 cfs through the spillway gates, and 730 cfs for the HVP).

May 17, 2014: Western Area Power Administration no longer needed a decrease in turbine

releases therefore turbine releases were restored to full capacity. In response, the total release out of Canyon Ferry Lake was maintained at 8,550 cfs (≈ 6,000 cfs through the power plant, 1,820 cfs through the river outlet gates, zero cfs through the spillway gates, and 730 cfs for the HVP).

May 20, 2014: HVID increased diversions to Helena Valley Reservoir. In response, the total release out of Canyon Ferry Lake was increased to 8,565 cfs (≈ 5,975 cfs through the power plant, 1,820 cfs through the river outlet gates, and 770 cfs for the HVP).

May 28, 2014 through May 29, 2014: Inflows into Canyon Ferry increased to over 19,200 cfs and were forecast to continue increasing. To slow and control the rate of fill in the reservoir, releases out of Canyon Ferry to the Missouri River were gradually increased. In response, the total release out of Canyon Ferry Lake was increased to 9,690 cfs on the May 28, 2014 (≈ 5,840 cfs through the power plant, zero cfs through the river outlet gates, 3,000 through the spillway gates, and 850 cfs for the HVP). On the May 29, 2014, total release out of Canyon Ferry Lake was increased to 10,690 cfs (≈ 5,840 cfs through the power plant, zero cfs through the river outlet gates, 4,000 cfs through the spillway gates, and 850 cfs for the HVP).

May 30, 2014: Inflow into Canyon Ferry peaked at 21,080 cfs.

June 2, 2014: The snowmelt runoff into Canyon Ferry Reservoir peaked and inflows continued to decline. To control the rate of fill and assure the reservoir of refilling, releases out of Canyon Ferry to the Missouri River were gradually decreased. In response, the total release out of Canyon Ferry Lake was decreased to 8,410 cfs (≈ 5,600 cfs through the power plant, 2,000 cfs through the river outlet gates, zero cfs through the spillway gates, and 810 cfs for the HVP).

June 3, 2014: Inflows into Canyon Ferry continued to slowly decline. To control the rate of fill and assure the reservoir of refilling, releases out of Canyon Ferry to the Missouri River were decreased. In response, the total release out of Canyon Ferry Lake was decreased to 6,270 cfs (≈ 5,460 cfs through the power plant, zero cfs through the river outlet gates, and 810 cfs for the HVP).

June 4, 2014: Inflows into Canyon Ferry continued to decline. To control the rate of fill and assure the reservoir of refilling, releases out of Canyon Ferry to the Missouri River were decreased. In response, the total release out of Canyon Ferry Lake was decreased to 5,800 cfs (≈ 5,000 cfs through the power plant, zero cfs through the river outlet gates, and 800 cfs for the HVP).

June 5, 2014: Inflows into Canyon Ferry continued to decline. To control the rate of fill and assure the reservoir of refilling, releases out of Canyon Ferry to the Missouri River were decreased. In response, the total release out of Canyon Ferry Lake was decreased to 5,300 cfs (≈ 4,500 cfs through the power plant, zero cfs through the river outlet gates, and 800 cfs for the HVP).

June 5, 2014: Inflows into Canyon Ferry continued to decline. To control the rate of fill and assure the reservoir of refilling, releases out of Canyon Ferry to the Missouri River were decreased. In response, the total release out of Canyon Ferry Lake was decreased to 4,800 cfs (≈ 4,000 cfs through the power plant, zero cfs through the river outlet gates, and 800 cfs for the

HVP).

June 10, 2014: Inflows into Canyon Ferry continued to decline. To control the rate of fill and assure the reservoir of refilling, releases out of Canyon Ferry to the Missouri River were decreased. In response, the total release out of Canyon Ferry Lake was decreased to 4,300 cfs (≈ 3,500 cfs through the power plant, zero cfs through the river outlet gates, and 800 cfs for the HVP).

June 17, 2014: Inflows into Canyon Ferry continued to decline. To control the rate of fill and assure the reservoir of refilling, releases out of Canyon Ferry to the Missouri River were decreased. In response, the total release out of Canyon Ferry Lake was decreased to 4,075 cfs (≈ 3,300 cfs through the power plant, zero cfs through the river outlet gates, and 775 cfs for the HVP).

June 26, 2014: Inflows into Canyon Ferry were staying steady due to recent rain showers in the basin. To control the rate of fill and maintain flows in the Missouri River below Holter Dam at or above 4,100 cfs, releases out of Canyon Ferry to the Missouri River were increased to a total release of 4,345 cfs (≈ 3,600 cfs through the power plant, zero cfs through the river outlet gates, and 745 cfs for the HVP).

June 27, 2014: The HVID requested a decrease in diversion to Helena Valley Reservoir. In response, releases out of Canyon Ferry to the Missouri River were decreased to a total release of 4,100 cfs (≈ 3,700 cfs through the power plant, zero cfs through the river outlet gates, and 400 cfs for the HVP).

June 28, 2014 through June 30, 2014: Streamflows into Canyon Ferry increased due to recent precipitation in the basin. Canyon Ferry was one foot from full; therefore to control the rate of fill releases out of Canyon Ferry to the Missouri River were increased 500 cfs a day for 3 days. A total release out of Canyon Ferry Lake was increased to 4,600 cfs on the June 28, 2014 (≈ 3,700 cfs through the power plant, zero cfs through the river outlet gates, and 400 cfs for the HVP). On the June 29, 2014, total release out of Canyon Ferry Lake was increased to 5,100 cfs (≈ 4,700 cfs through the power plant, zero cfs through the river outlet gates, and 400 cfs for the HVP). On the June 30, 2014, total release out of Canyon Ferry Lake was increased to 6,150 cfs (≈ 5,100 cfs through the power plant, 600 cfs through the river outlet gates, and 450 cfs for the HVP).

July 1, 2014: Inflows into Canyon Ferry continued to slowly fill the reservoir above the top of the joint-use pool. To control the rate of fill and evacuate storage out of the exclusive flood pool releases out of Canyon Ferry to the Missouri River were increased to a total release of 6,650 cfs (≈5,100 cfs through the power plant, 1,100 cfs through the river outlet gates, and 450 cfs for the HVP).

July 2, 2014: Inflows into Canyon Ferry continued to slowly fill the reservoir above the top of the joint-use pool. To control the rate of fill and evacuate storage out of the exclusive flood pool releases out of Canyon Ferry to the Missouri River were increased to a total release of 7,000 cfs (≈5,000 cfs through the power plant, 1,550 cfs through the river outlet gates, and 450 cfs for the HVP).

July 8, 2014: The HVID requested an increase in diversion to Helena Valley Reservoir. In response, releases out of Canyon Ferry to the Missouri River were maintained at a total release

of 7,000 cfs (≈ 4,900 cfs through the power plant, 1,540 cfs through the river outlet gates, and 560 cfs for the HVP).
July 9, 2014: The HVID requested an increase in diversion to Helena Valley Reservoir. In response, releases out of Canyon Ferry to the Missouri River were maintained at a total release of 7,000 cfs (≈ 4,900 cfs through the power plant, 1,475 cfs through the river outlet gates, and 625 cfs for the HVP).

July 10, 2014: The HVID requested an increase in diversion to Helena Valley Reservoir. In response, releases out of Canyon Ferry to the Missouri River were maintained at a total release of 7,000 cfs (≈ 4,900 cfs through the power plant, 1,430 cfs through the river outlet gates, and 670 cfs for the HVP).

July 11, 2014 through July 14, 2014: Inflows into Canyon Ferry declined while releases continued to evacuate storage out of the exclusive flood pool. To balance the rate of evacuation and flow reductions, the releases out of Canyon Ferry to the Missouri River were decreased 500 cfs a day for 4 days. A total release out of Canyon Ferry Lake was decreased to 6,500 cfs on the 11th (≈ 4,900 cfs through the power plant, 930 cfs through the river outlet gates, and 670 cfs for the HVP). On the 12th, total release out of Canyon Ferry Lake was decreased to 6,000 cfs (≈ 4,900 cfs through the power plant, 430 cfs through the river outlet gates, and 670 cfs for the HVP).

On the 13, 2014, total release out of Canyon Ferry Lake was decreased to 5,500 cfs (≈ 4,830 cfs through the power plant, zero cfs through the river outlet gates, and 670 cfs for the HVP). On the 14, 2014, total release out of Canyon Ferry Lake was decreased to 5,000 cfs (≈ 4,330 cfs through the power plant, zero cfs through the river outlet gates, and 670 cfs for the HVP).

July 15, 2014: Inflows into Canyon Ferry continued to decline while releases continued to evacuate storage out of the exclusive flood pool. To balance the rate of evacuation and flow reductions, releases out of Canyon Ferry to the Missouri River were decreased to a total release of 4,480 cfs (≈ 3,800 cfs through the power plant, 0 cfs through the river outlet gates, and 680 cfs for the HVP).

July 18, 2014: The storage in the exclusive flood pool was nearly evacuated. To maintain flows in the Missouri River below Holter Dam at or above 4,100 cfs, releases out of Canyon Ferry to the Missouri River were decreased to a total release of 4,380 cfs (≈ 3,700 cfs through the power plant, zero cfs through the river outlet gates, and 680 cfs for the HVP).

July 22, 2014: Inflows into Canyon Ferry continued to decline. To conserve storage and maintain flows in the Missouri River below Holter Dam near 4,100 cfs, releases out of Canyon Ferry to the Missouri River were decreased to a total release of 4,200 cfs (≈ 3,500 cfs through the power plant, zero cfs through the river outlet gates, and 700 cfs for the HVP).

August 26, 2014: The HVID decreased diversions to Helena Valley Reservoir. In response, total releases out of Canyon Ferry were decreased to 4,130 cfs (≈ 3,600 cfs through the power plant, zero cfs through the river outlet gates, and 530 cfs for the HVP).

August 29, 2014: The HVID decreased diversions to Helena Valley Reservoir. In response,

total releases out of Canyon Ferry were decreased to 3,960 cfs (≈ 3,550 cfs through the power plant, zero cfs through the river outlet gates, and 410 cfs for the HVP).
September 10, 2014: The HVID decreased diversions to Helena Valley Reservoir. In response, total releases out of Canyon Ferry were decreased to 3,770 cfs (≈ 3,550 cfs through the power plant, zero cfs through the river outlet gates, and 380 cfs for the HVP).

September 16, 2014: Maintenance on the fixed wheel gates of each of the power plant turbine penstocks occurred; therefore, the releases were restricted and limited to a 2-unit capacity. Releases were not changed for this water order. Total releases out of Canyon Ferry were maintained at 3,890 cfs (≈ 3,550 cfs through the power plant, zero cfs through the river outlet gates, and 340 cfs for the HVP).

September 18, 2014: Maintenance on the power plants required releases to be restricted and limited to a 2-unit capacity. Releases were not changed for this water order. Total releases out of Canyon Ferry were maintained at 3,850 cfs (≈ 3,550 cfs through the power plant, zero cfs through the river outlet gates, and 300 cfs for the HVP).

September 22, 2014 through 24, 2014: Continual maintenance on the power plant throughout the daytime, which required releases to be restricted and limited to a 2-unit capacity. Releases were not changed for this water order. Total releases out of Canyon Ferry were maintained at 3,880 cfs (≈ 3,580 cfs through the power plant, zero cfs through the river outlet gates, and 300 cfs for the HVP).

September 24, 2014: The HVID increased diversions to Helena Valley Reservoir. In response, total releases out of Canyon Ferry were increased to 4,030 cfs (≈ 3,580 cfs through the power plant, zero cfs through the river outlet gates, and 450 cfs for the HVP).

September 28, 2014: The preliminary October operations plans forecasted above average inflows. In order to control reservoir storage, total releases out of Canyon Ferry were increased to 4,280 cfs (≈ 3,850 cfs through the power plant, zero cfs through the river outlet gates, and 430 cfs for the HVP).

October 1, 2014: The irrigation season came to a close. The HVID has discontinued all irrigation deliveries to Helena Valley Reservoir. Also, to control the reservoir storage, total releases out of Canyon Ferry were increased to 4,300 cfs (≈ 4,300 cfs through the power plant, zero cfs through the river outlet gates, and zero cfs for the HVP).

Additional statistical information of Canyon Ferry Reservoir and its operations during 2014 can be found on Table MTT6 and Figure MTG4.

TABLE MTT6
HYDROLOGIC DATA FOR 2014
CANYON FERRY RESERVOIR

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	3728.00	396,031	396,031
TOP OF ACTIVE CONSERVATION	3770.00	1,097,599	701,568
TOP OF JOINT USE	3797.00	1,891,888	794,289
TOP OF EXCLUSIVE FLOOD CONTROL	3800.00	1,992,977	101,089

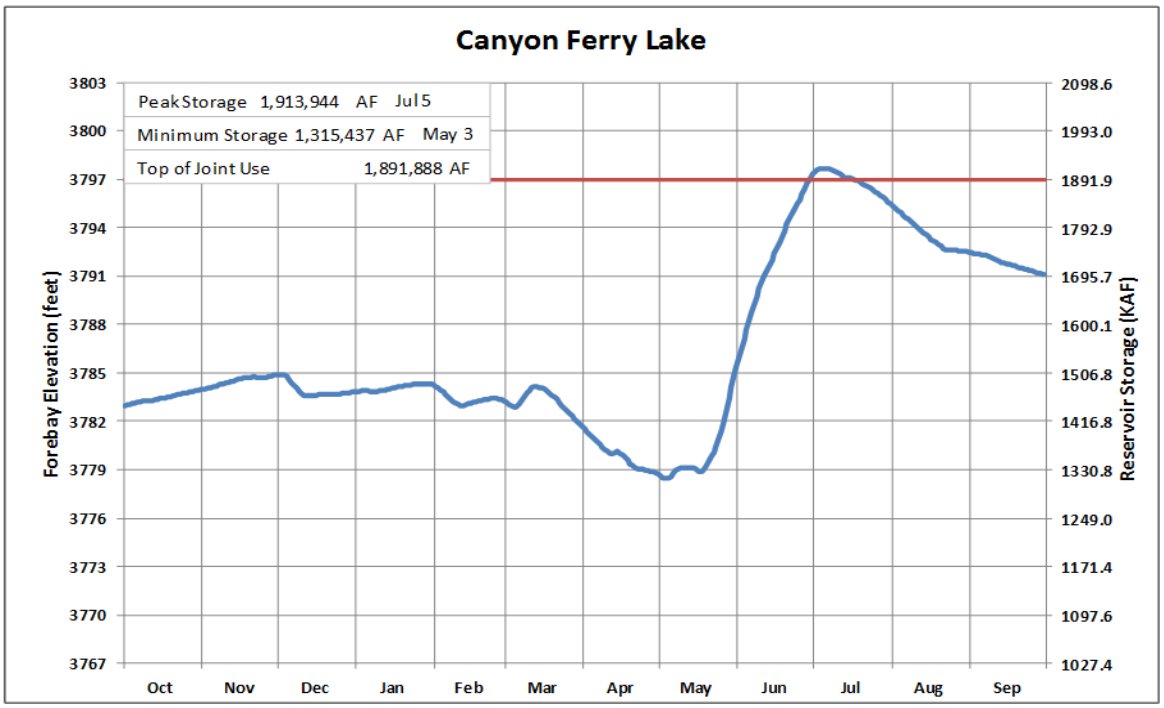
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	3783.00	1,446,324	OCT 01, 2013
END OF YEAR	3791.11	1,699,195	SEP 30, 2014
ANNUAL LOW	3778.45	1,315,437	MAY 03, 2014
ANNUAL HIGH	3797.66	1,913,944	JUL 05, 2014
HISTORIC HIGH	3800.00	2,050,900	JUN 23, 1964

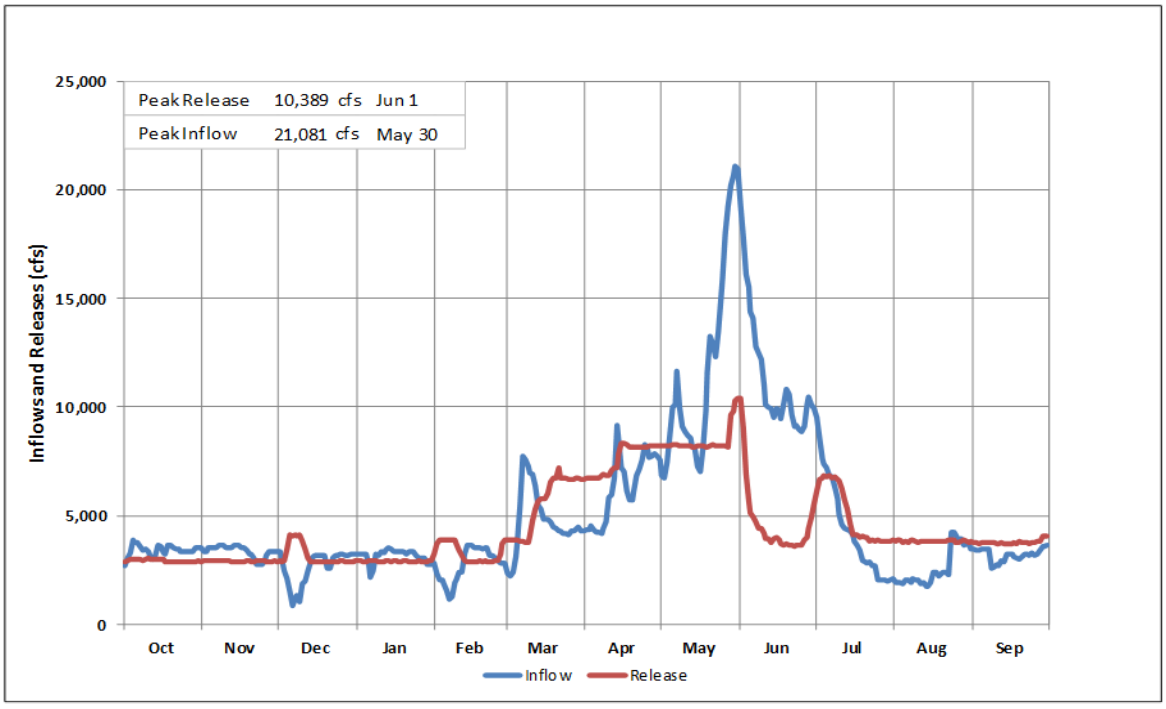
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	3,617,693	OCT 13-SEP 14	3,267,147	OCT 13-SEP 14
DAILY PEAK (CFS)	21,081	MAY 30, 2014	10,389	JUN 01, 2014
DAILY MINIMUM (CFS)	861	DEC 06, 2013	2,845	JAN 11, 2014
PEAK SPILL (CFS)			4,387	JUN 01, 2014
TOTAL SPILL (AF)			360,625	03/10-06-03/14 06/30-07/13/14

MONTH	INFLOW		OUTFLOW*				CONTENT	
	KAF	% OF AVG	PUMPED TO HELENA VALLEY (KAF)	% OF AVG	RIVER KAF	% OF AVG	KAF	% OF AVG
OCTOBER	209.5	85	0.0	---	180.7	70	1,475.1	93
NOVEMBER	200.4	78	0.0	---	172.8	65	1,505.8	94
DECEMBER	162.5	76	0.0	---	194.1	67	1,471.2	95
JANUARY	192.7	91	0.0	---	179.0	61	1,484.8	100
FEBRUARY	152.7	76	0.0	---	183.4	69	1,454.1	101
MARCH	293.8	117	0.0	---	341.0	115	1,408.0	99
APRIL	377.1	123	8.1	130	453.1	149	1,323.8	92
MAY	733.9	153	17.8	125	519.2	142	1,520.6	96
JUNE	677.9	102	21.4	128	275.2	57	1,901.9	105
JULY	267.8	95	20.3	109	308.3	85	1,841.1	106
AUGUST	158.9	108	21.4	124	235.2	94	1,743.4	107
SEPTEMBER	190.4	111	10.1	114	225.0	98	1,699.2	109
ANNUAL	3,617.7	105	99.0	118	3,267.1	89		
APRIL-JULY	2,056.7	119						

* Average for the 1955-2014 period.

FIGURE MTG4





Water Year 2014

Helena Valley Reservoir

Helena Valley Reservoir is a regulating offstream reservoir for Helena Valley Unit (P-S MBP), located west of Canyon Ferry Reservoir. It has a total capacity of 10,451 AF, which is used for irrigation and for furnishing a supplemental municipal supply to the city of Helena, Montana. Helena Valley Reservoir receives its entire water supply by pumping from Canyon Ferry Reservoir. When fully developed, Helena Valley Unit will irrigate about 14,100 acres of full-service land plus 3,500 acres of supplemental service lands. Present development is about 13,867 full-service acres, including 5,200 acres previously irrigated by pumping from Helena Valley Reservoir or from other streams.

At the beginning of the year, storage in Helena Valley Reservoir was 8,682 AF at an elevation of 3816.44 feet. Helena Valley Reservoir reached a low for the year of 7,005 AF at an elevation of 3812.45 feet on April 6, 2014. With new operating criteria in place, goals were to fill Helena Valley Reservoir by May 1 and maintain it nearly full through June. In response, diversions to the Helena Valley Unit from Canyon Ferry Reservoir were started on April 7, 2014. Storage in Helena Valley Reservoir then steadily increased to a spring peak of 10,373 AF at an elevation of 3819.92 feet on April 30, 2014. Normal irrigation and municipal demands slowly drafted storage to 7,955 AF at an elevation of 3814.79 ft on June 13, 2014, before filling to a peak for the year of 10,451 AF at an elevation of 3820.07 ft on June 27, 2014. By the end of WY 2014, Helena Valley Reservoir ended with a storage content of 8,209 AF at elevation 3815.38 ft. During 2014, 99,035 AF of water was pumped to Helena Valley Reservoir from Canyon Ferry Reservoir. Helena Valley Irrigation District released 82,062 AF for irrigation. All irrigation deliveries were discontinued on October 1, 2014.

The reservoir provided an adequate water supply to satisfy all irrigation requirements for the Helena Valley Unit in 2014 and supplement the city of Helena's municipal water supply.

Statistical information pertaining to Helena Valley Reservoir is shown on Table MTT7 below.

TABLE MTT7
HYDROLOGIC DATA FOR 2014
HELENA VALLEY RESERVOIR

RESERVOIR ALLOCATIONS	ELEVATION (FT)	RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE STORAGE	3805.00	4,554	4,554
TOP OF ACTIVE CONSERVATION STORAGE	3820.07	10,451	5,897
STORAGE ELEVATION DATA	**ELEVATION (FT)**	**STORAGE (AF)**	**DATE**
BGINNING OF YEAR	3816.44	8,682	10/01/13
END OF YEAR	3815.38	8,209	09/30/14
ANNUAL LOW	3812.45	7,005	04/06/14
ANNUAL HIGH	3820.07	10,451	06/27/14
HISTORIC HIGH	3820.60	10,738	6/02/75
INFLOW-OUTFLOW DATA			**ANNUAL**
PUMPED FROM CANYON FERRY TO HELENA VALLEY UNIT			99,035 AF
INFLOW TO HELENA VALLEY RESERVOIR			82,305 AF
RELEASED FROM RESERVOIR FOR IRRIGATION			82,062AF
DELIVERED TO THE CITY OF HELENA FOR MUNCIPAL USE			1,444 AF

MONTH	RESERVOIR		
	FOREBAY ELEVATION (FEET)	STORAGE CONTENT (KAF)	PUMPED TO HELENA VALLEY (KAF)
OCTOBER	3815.55	8.3	0
NOVEMBER	3814.90	8.0	0
DECEMBER	3814.18	7.7	0
JANUARY	3813.49	7.4	0
FEBRUARY	3812.98	7.2	0
MARCH	3812.62	7.1	0
APRIL	3819.92	10.4	8.1
MAY	3816.99	8.9	17.8
JUNE	3819.54	10.2	21.4
JULY	3813.64	7.5	20.3
AUGUST	3817.66	9.3	21.4
SEPTEMBER	3815.38	8.2	10.0
ANNUAL			99.0

Sun River Project

Storage for the Sun River Project is provided by Gibson, Willow Creek, and Pishkun Reservoirs, which are all single purpose irrigation structures. The project serves 95,000 acres on the Greenfields and Fort Shaw Irrigation Districts. A diversion dam is located on the Sun River about 3 miles below Gibson Reservoir to allow flows to be diverted down the Pishkun Supply Canal to Pishkun Reservoir, or down the Willow Creek Feeder Canal to Willow Creek Reservoir. Releases are made from Pishkun Reservoir to supply the canals of the Greenfields Irrigation District. Releases from Willow Creek Reservoir re-enter the Sun River where they can be diverted at the Fort Shaw Diversion Dam to supply the canals of the Fort Shaw Irrigation District.

Gibson Reservoir is located on the Sun River west of Augusta, Montana, and has a total capacity of 96,477 AF. In 2009, a new hydrographic and topographic survey was conducted to measure the reservoir volume. The previous survey was completed in 1996 to measure the reservoir volume changes attributed to sediment accumulations that occurred in the drainage basin since the major forest fires that occurred in 1988. As a result of the 2009 survey, a new elevation-area-capacity table and curve were developed.

The 2009 survey resulted in a capacity increase of 2,211 AF at elevation 4724.0 ft from the previous survey conducted in 1996. This measured increase was likely due to more detailed data collection and improved geographic information system capabilities since 1996. Therefore, the 2009 survey determined that Gibson Reservoir has a storage capacity of 98,688 AF and a surface area of 1,334 acres at reservoir elevation 4724.0 ft (top of active conservation). Since closure in 1929, the reservoir has accumulated a sediment volume of 6,172 AF below reservoir elevation 4724 ft. The revised area-capacity table was placed into effect on January 1, 2013, reflecting the new storage levels.

The spillway crest is at elevation 4712.0 ft (83,248 AF). Depending on the runoff conditions and reservoir levels, the spillway gates remain open during the spring runoff season until the inflows and remaining snow cover indicate that the runoff is receding. Once it is apparent that the runoff has peaked and started to recede, the spillway gates are progressively closed to allow the reservoir to fill another 12 ft to the top of the conservation pool at elevation 4724.0 (98,688 AF).

Weather conditions in WY 2013 were dry during August, but rebounded with a wet September. The August through September inflow to Gibson Reservoir totaled about 28,900 AF, 70 percent of average. During September inflows averaged approximately 208 cfs. Gibson Reservoir ended the WY 2013 with a storage content of 7,315 AF at elevation 4615.22 ft on September 30,. This was 37 percent of average and 7 percent of capacity.

At the conclusion of the 2013 irrigation season, fall releases from Gibson Reservoir continued to be diverted to Willow Creek Reservoir to bring the reservoir storage back to desired winter carry-over levels, as well as to prevent the need to move water before the snow had a chance to settle in the canals. Once all diversions to Willow Creek Reservoir were discontinued for the year, winter releases to the Sun River were reduced and maintained between 120 and 150 cfs.

During WY 2014, the valley precipitation in the Sun River Basin was much below average for October through December. The mountain precipitation started out at 47 percent of average and only increased slightly during November and December. Cumulative valley precipitation for October through December was 75 percent of average while the cumulative mountain precipitation was only 65 percent of average.

On January 1, 2014 the NRCS measured the snow-water equivalent in the mountain snowpack in the Sun River Basin at 95 percent of median. Precipitation in the Sun River Basin improved considerably during February through March. Several snow storms in the basin brought the cumulative mountain precipitation to 116 percent of average and the cumulative valley precipitation to 122 percent of average by the end of March. Due to the above average precipitation accumulation during the past 2 months, the NRCS measured the April 1, 2014 snow-water content at 109 percent of median.

On April 1, 2014 Reclamation forecasted an April through July runoff volume into Gibson Reservoir of 528,000 AF, 131 percent of average. In preparation to safely store the anticipated volume, the Greenfield Irrigation District began to increase releases to draw down the reservoir and to start refilling Pishkun and Willow Creek Reservoirs through the Pishkun Supply Canal. Throughout April, inflows into Gibson Reservoir slowly raised to above 1,200 cfs as the snowmelt runoff began. The snowpack in the Sun River Basin reached a peak accumulation on April 27 which was near 160 percent of average.

On May 1, 2014 the storage level of Gibson Reservoir was at elevation 4647.42 ft, 77 ft below the top of the conservation pool. The weather conditions through May were near normal temperatures, but dry, as the precipitation in the valley and mountain areas was below average at 43 and 40 percent of average, respectively. As the snowmelt runoff increased, storage in Gibson Reservoir continued to increase. On May 24, 2014 a peak inflow of 5,785 cfs was recorded. Concurrently, to control the rate of fill releases were gradually increased to the peak for the year at 3,343 cfs on June 11, 2014.

Valley and mountain precipitation during June was 107 and 140 percent of average, respectively. June's temperatures were cooler, which aided in a gradual snowmelt runoff. On June 25, 2014 the peak discharge to the Sun River over the Sun River Diversion Dam was recorded near 3,190 cfs. By the end of June, Gibson Reservoir had reached a near full pool. For the remainder of the runoff season, releases were adjusted as necessary to pass inflows while keeping the reservoir full.

Weather conditions turned warmer and dry in July, as precipitation in the valley and mountain areas were below average at 65 and 62 percent of average, respectively. The

above average snowpack produced an actual April-July runoff total of 487,500 AF, 121 percent of average for the basin. The inflows during April, May, June, and July were 90, 137, 115, and 121 percent of average, respectively.

Temperatures during August varied throughout the month, while a heavy storm system over the state produced above average precipitation. The valley precipitation in August was 178 percent of average, while the mountain precipitation was 141percent of average. These late rains assisted in higher than average reservoir elevations and ensured a full water supply for the irrigation district. September weather was warmer than normal with below average precipitation in the Sun River Basin. The August through September inflow to Gibson Reservoir totaled about 40,300 AF, 100 percent of average. During September the average inflow was approximately 260 cfs. Gibson Reservoir ended the water year with a content of 16,454 AF of storage at elevation 4634.69 ft on September 30, 2014. This was 86 percent of average and 17 percent of normal full. Total annual inflow to Gibson Reservoir for WY 2014 was 112 percent of average.

Even though there is no space allocated to flood control in Gibson Reservoir, the Corps of Engineers still estimates flood damages prevented by Gibson Reservoir. The Corps determined that during 2014, Gibson Reservoir prevented $10,500 in local flood damages but prevented no flood damages downstream on the Missouri River below Fort Peck Reservoir. Since 1950 Gibson Reservoir has prevented $3,085,600 in flood damages.

Pishkun Reservoir, near Augusta, Montana, is an off-stream reservoir supplied by a feeder canal which diverts water from the Sun River below Gibson Reservoir. The reservoir serves the 81,000 acre Greenfields Division. The total capacity of the reservoir is 46,670 AF at elevation 4370.0 ft.

In 2002, Reclamation surveyed Pishkun Reservoir to develop a topographic map and compute a present storage-elevation relationship (area-capacity tables). The data was used to calculate reservoir capacity since the previous survey was completed in 1940. The 2002 survey determined that Pishkun Reservoir has a storage capacity of 46,694 AF and a surface area of 1,522 acres at reservoir elevation 4370.0 ft. Comparisons show that the total reservoir capacity in 2002 is slightly greater in volume than the original published volume. It is the general conclusion that the small difference between the 1940 and 2002 surveys is due to the differences in the detail of the two surveys. The revised area-capacity table was put into effect on October 1, 2005, reflecting the new storage levels.

All canal diversions from the Sun River to Pishkun Reservoir during the 2013 irrigation season were discontinued on August 1, 2013. Reservoir content in Pishkun Reservoir at the beginning of WY 2014 was 22,124 AF at elevation 4349.70 ft.

Storage during the fall and winter of WY 2014 was maintained at 22,124 AF, about

47 percent of full or approximately 24,570 AF below the top of the active conservation pool. Diversions to refill the reservoir began in early April. On May 17, 2014 storage had successfully reached the top of active conservation pool at elevation 4370.0 ft. On May 19, 2014 irrigation releases from Pishkun Reservoir began.

Once irrigation releases began, storage fluctuated, based on meeting irrigation demands. A maximum release of approximately 1,700 cfs was recorded on June 12, 2014 through July 11, 2014 while the maximum inflow of 1,434 cfs was on June 16, 2014. All diversions from the Sun River into Pishkun Reservoir were discontinued on October 2, 2014, and all irrigation releases out of Pishkun Reservoir were discontinued on October 2, 2014.

Based on average diversions to Pishkun Reservoir, Greenfields delivered the full allotments to all of its water users in 2014. Approximately 265,623 AF of water was released from Pishkun Reservoir from May 19, 2014 through October 1, 2014 to help meet the irrigation demands on the Sun River Project. By the end of the WY, the reservoir storage was 35,811 AF at elevation 4362.40 ft. This was 124 percent of average and 77 percent of full capacity.

Additional hydrologic and statistical data pertaining to Pishkun Reservoir can be found in Table MTT8-B and Figure MTG6.

Willow Creek Reservoir obtains its water supply from Willow Creek and the Sun River via the Willow Creek Feeder Canal. The total reservoir capacity is 32,300 AF at elevation 4142.0 ft. Releases from Willow Creek Reservoir enter the Sun River and can be diverted for irrigation at the Fort Shaw Diversion Dam, the Floweree Canal of the Broken O Ranch, and other downstream senior water users.

In 2002, Reclamation surveyed Willow Creek Reservoir to develop a topographic map and compute a present storage-elevation relationship (area-capacity tables). The data was used to calculate reservoir capacity since dam closure in 1911. The 2002 survey determined that Willow Creek Reservoir has a storage capacity of 34,819 AF and a surface area of 1,509 acres at a reservoir elevation of 4144.00 ft. Since closure in 1911, the reservoir had an estimated volume change of 431 AF below reservoir elevation 4144.00 ft. This volume represents a 1.2 percent change in total capacity at this elevation. The revised area-capacity table was put into effect on October 1, 2005, reflecting the new storage levels.

All diversions from the Sun River to Willow Creek Reservoir during the 2013 irrigation season were discontinued on July 23, 2013. Reservoir content in Willow Creek at the beginning of WY 2014 was 21,430 AF at elevation 4134.43 ft.

Since storage in Willow Creek Reservoir was lower than average to start WY 2014, diversions continued throughout the fall and early winter to gain approximately 6,600 AF

of storage or 4.75 ft in reservoir elevation. Diversions from the Sun River to Willow Creek Reservoir during 2014 were initiated on May 24, 2014 at a rate of approximately 30 cfs. The diversions began to reach Willow Creek Reservoir and peak storage content for the year of 31,555 AF at elevation 4141.79 ft was recorded on July 2, 2014. This storage level was 111 percent of average and was at 99 percent of full capacity. The peak inflow for the year was 51 cfs on June 17, 2014.

To help meet irrigation demands within the Sun River Irrigation Project releases were made from Willow Creek Reservoir from July 21, 2014 through August 27, 2014. Approximately 6,298 AF of storage was released from Willow Creek Reservoir to help meet the irrigation demands in 2014.

Willow Creek Reservoir ended the water year on September 30, 2014 with a storage content of 24,322 AF at elevation 4136.63 ft. This was 123 percent of average and 76 percent of normal full capacity. However, fall and winter diversions continued into Willow Creek Reservoir into the fall in attempt to refill the reservoir to a content of 28,000 AF.

Additional hydrologic and statistical data pertaining to Willow Creek Reservoir can be found in Table MTT8-C and Figure MTG7.

Important Events During WY 2014

December 16, 2013: Diversion to Willow Creek was discontinued.

January 1, 2014: NRCS snowpack was reported at 95 percent of median.

February 1, 2014: NRCS snowpack was reported at 109 percent of median.

March 1, 2014: NRCS snowpack was reported at 106 percent of median.

April 1, 2014: NRCS snowpack was reported at 122 percent of median.

April 8, 2014: Diversions to the Pishkun Supply Canal were initiated.

May 1, 2014: NRCS snowpack was reported at 128 percent of median.

May 19, 2014: Storage in Pishkun Reservoir reached peak content for the year of 47,168 AF at elevation 4370.31 ft and releases out of Pishkun Reservoir were initiated.

May 24, 2014: Peak Inflow to Gibson Reservoir is 5,785 cfs. Diversions to the Willow Creek Feeder Canal were initiated.

June 10, 2014: Storage in Gibson Reservoir reached the top of the conservation pool at elevation 4724 ft.

June 11, 2014: Peak outflow from Gibson Reservoir is 3,343 cfs.

June 16, 2014: Inflows into Pishkun Reservoir peaked at 1,434 cfs.

July 2, 2014: Storage in Willow Creek Reservoir reached peak content for the year of 31,555 AF at elevation 4141.80 ft.

July 11, 2014: Release from Pishkun Reservoir is 1,705 cfs.

July 21, 2014: Releases out of Willow Creek Reservoir were initiated.

August 6, 2014: Willow Creek Reservoir peak release of 106 cfs.

August 27, 2014: Releases from Willow Creek Reservoir were discontinued for the season.

October 2014: Diversions to Pishkun Supply Canal were discontinued for the year and releases from Pishkun Reservoir were discontinued for the season.

TABLE MTT8-A
HYDROLOGIC DATA FOR 2014
GIBSON RESERVOIR (SUN RIVER PROJECT)
NEW SEDIMENT SURVEY DATA EFFECTIVE 01/01/2013

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	4557.50	0	0
TOP OF ACTIVE CONSERVATION	4724.00	98,687	98,687

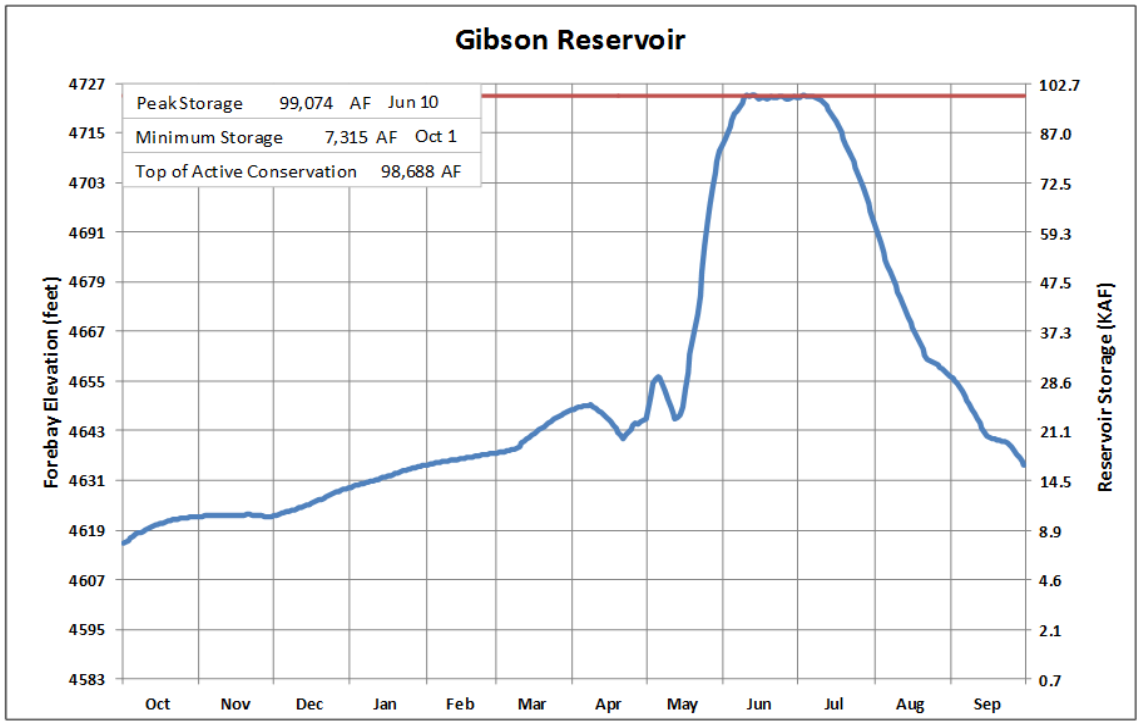
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	4615.22	7,315	OCT 01, 2013
END OF YEAR	4634.69	16,454	SEP 30, 2014
ANNUAL LOW	4615.22	7,315	OCT 01, 2013
ANNUAL HIGH	4724.29	99,074	JUN 10, 2014
HISTORIC HIGH	4732.23	116,400	JUN 08, 1964

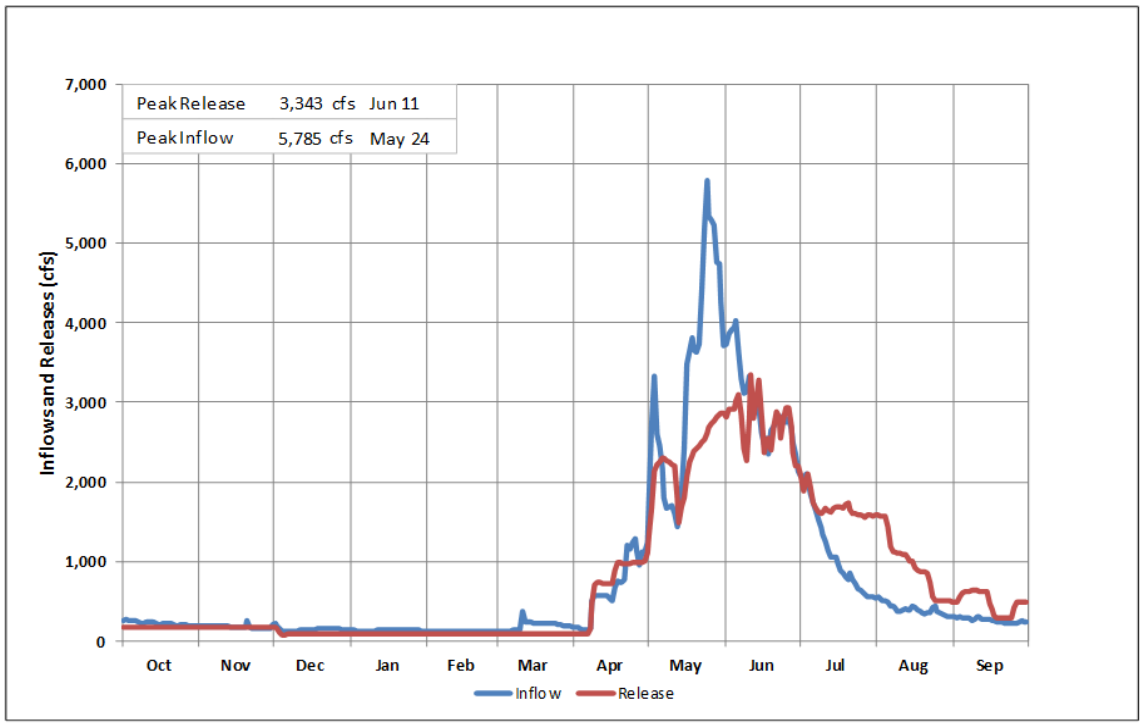
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	587,426	OCT 13-SEP 14	381,320	OCT 13-SEP 14
DAILY PEAK (CFS)	5,785	MAY 24, 2014	3,194	JUN 25, 2014
DAILY MINIMUM (CFS)	116	FEB 10, 2014	94	OCT 01, 2013

MONTH	INFLOW		OUTFLOW*				CONTENT	
	KAF	% OF AVG	TOTAL CANAL KAF	% OF AVG	RIVER KAF	% OF AVG	KAF	% OF AVG
OCTOBER	13.6	87	4.8	133	7.7	80	10.3	42
NOVEMBER	10.7	66	4.6	303	8.0	74	10.3	36
DECEMBER	8.9	68	0.2	123	7.9	73	13.6	43
JANUARY	8.2	71	0.0	---	8.6	87	16.5	48
FEBRUARY	6.5	64	0.0	---	7.7	94	18.0	48
MARCH	11.8	84	0.0	---	9.5	98	24.1	58
APRIL	40.1	90	24.2	268	21.0	96	22.9	39
MAY	201.1	137	22.5	56	150.3	155	83.2	92
JUNE	177.8	115	68.7	121	117.3	88	98.2	108
JULY	68.6	121	85.1	116	25.1	93	62.7	133
AUGUST	24.7	104	48.6	117	10.3	79	29.5	121
SEPTEMBER	15.6	92	19.9	163	7.8	77	16.5	86
ANNUAL	587.4	112	278.7	116	381.3	106		
APRIL-JULY	487.5	121						

* Average for the 1931-2014 period.

FIGURE MTG5





Water Year 2014

TABLE MTT8-B
HYDROLOGIC DATA FOR 2014
PISHKUN RESERVOIR (SUN RIVER PROJECT)
NEW SEDIMENT SURVEY DATA EFFECTIVE 10/01/2005

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	4342.00	16,008	16,008
TOP OF ACTIVE CONSERVATION	4370.00	46,694	30,686

STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	4349.70	22,124	OCT 01, 2013
END OF YEAR	4362.40	35,811	SEP 30, 2014
ANNUAL LOW	4349.70	22,124	OCT 01, 2013
ANNUAL HIGH	4370.31	47,168	MAY 19, 2014
HISTORIC HIGH	4371.40	48,950	JUL 04, 1953

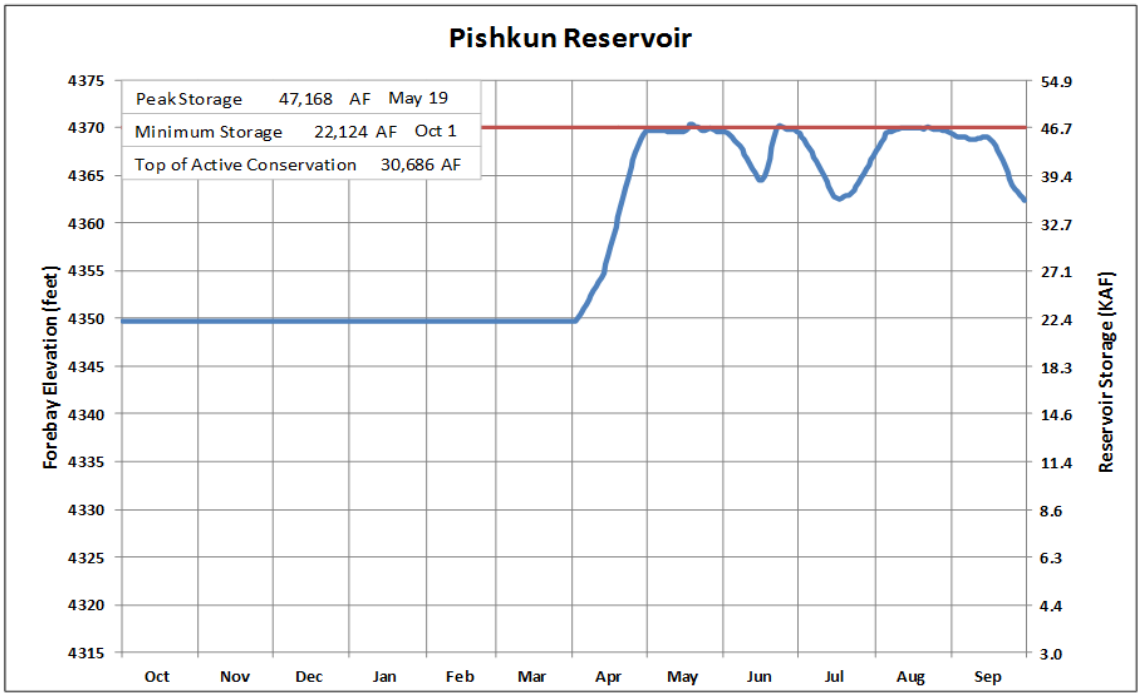
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	279,310	OCT 13-SEP 14	265,623	OCT 13-SEP 14
DAILY PEAK (CFS)	1,434	JUN 16, 2014	1,705	JUL 11, 2014
DAILY MINIMUM (CFS)	0	*	0	*

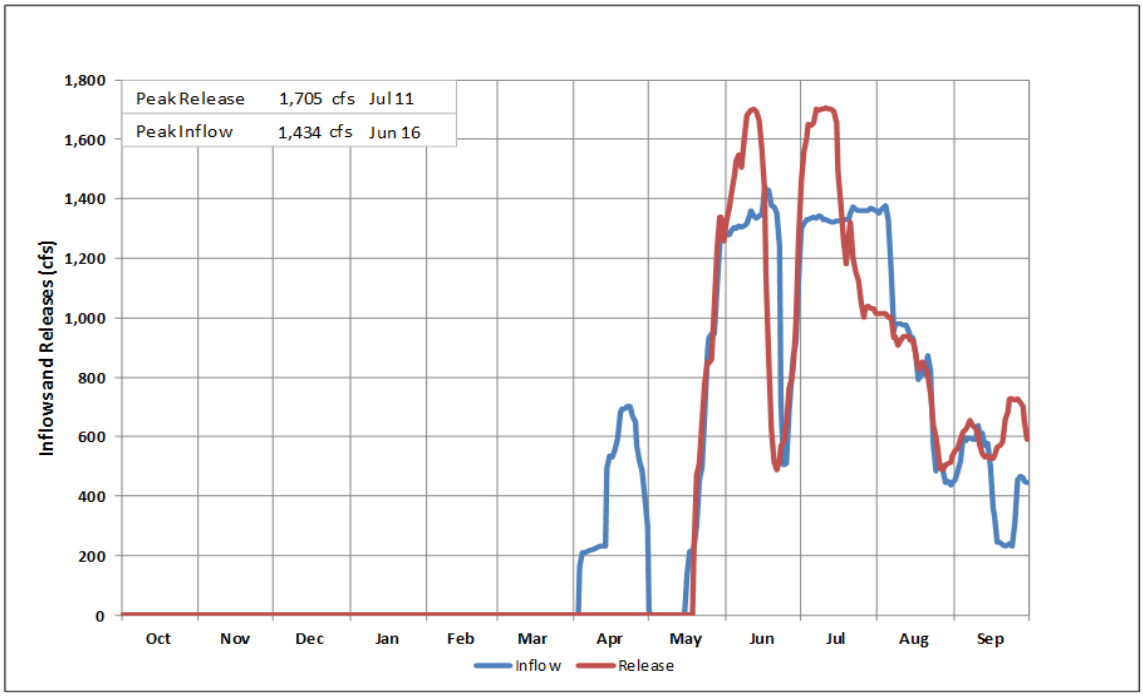
* During nonirrigation season

MONTH	INFLOW*		OUTFLOW*		CONTENT	
	KAF	% OF AVG	KAF	% OF AVG	KAF	% OF AVG
OCTOBER	0.0	---	0.0	---	22.1	75
NOVEMBER	0.0	---	0.0	---	22.1	71
DECEMBER	0.0	---	0.0	---	22.1	71
JANUARY	0.0	---	0.0	---	22.1	72
FEBRUARY	0.0	---	0.0	---	22.1	72
MARCH	0.0	---	0.0	---	22.1	68
APRIL	24.1	342	0.0	---	46.2	121
MAY	22.4	61	22.6	74	46.0	100
JUNE	70.5	121	70.4	114	46.1	114
JULY	82.4	116	86.2	114	42.3	119
AUGUST	53.2	125	49.7	113	45.8	132
SEPTEMBER	26.7	207	36.7	224	35.8	124
ANNUAL	279.3	121	265.6	115		
APRIL-JULY	199.4	116				

* Average for the 1947-2014 period.

FIGURE MTG6





Water Year 2014

TABLE MTT8-C
HYDROLOGIC DATA FOR 2014
WILLOW CREEK RESERVOIR (SUN RIVER PROJECT)
NEW SEDIMENT SURVEY DATA EFFECTIVE 10/01/2005

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	4085.28	1	1
TOP OF ACTIVE CONSERVATION	4142.00	31,848	31,847

STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	4134.43	21,430	OCT 01, 2013
END OF YEAR	4136.63	24,322	SEP 30, 2014
ANNUAL LOW	4134.43	21,430	OCT 01, 2013
ANNUAL HIGH	4141.80	31,555	JUL 01, 2014
HISTORIC HIGH	4144.00	35,300	JUN 22, 1975

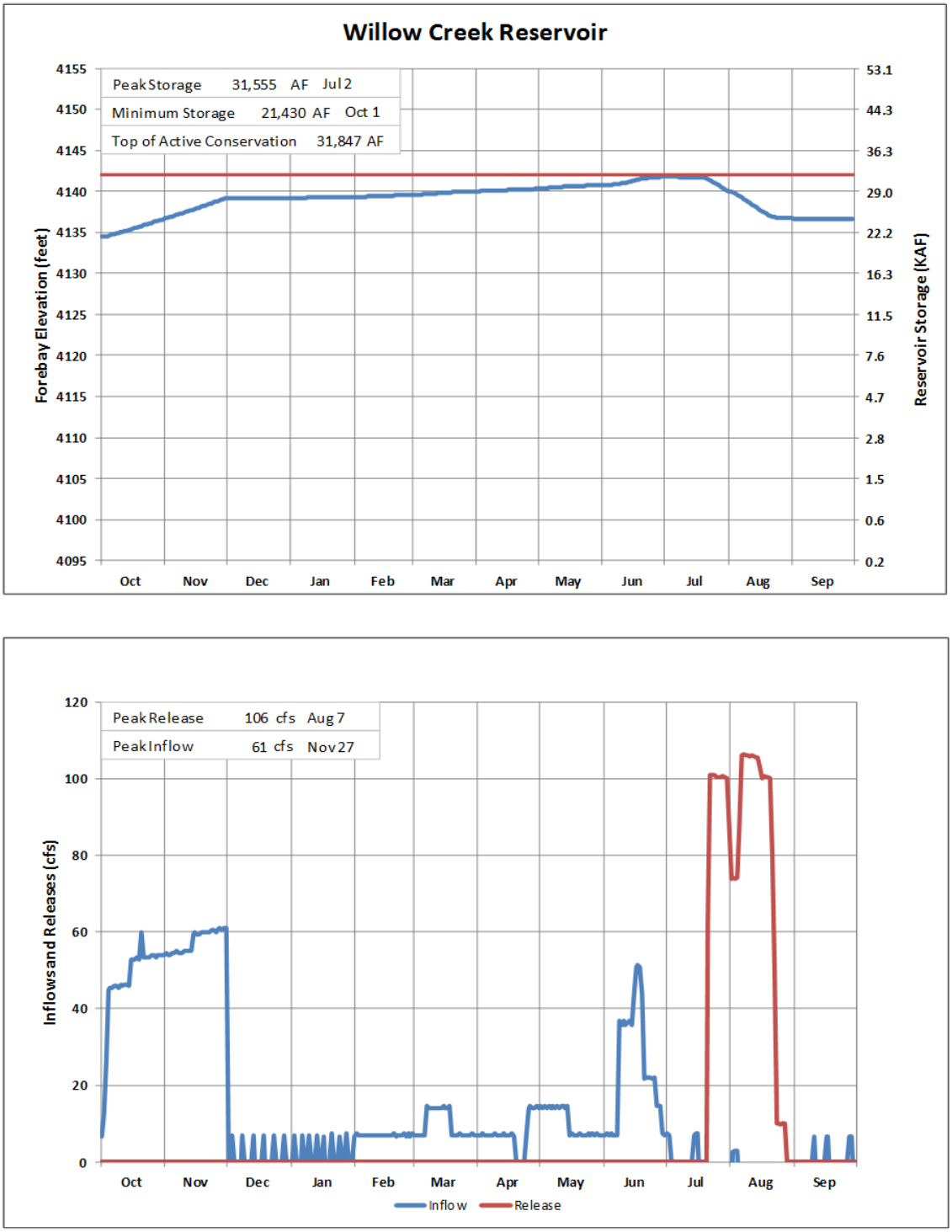
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	9,190	OCT 13-SEP 14	6,298	OCT 13-SEP 14
DAILY PEAK (CFS)	61	NOV 27, 2013	106	AUG 07, 2014
DAILY MINIMUM (CFS)	0	*	0	*

* During nonirrigation season

MONTH	INFLOW*		OUTFLOW*		CONTENT	
	KAF	% OF AVG	KAF	% OF AVG	KAF	% OF AVG
OCTOBER	2.9	343	0.0	---	24.3	119
NOVEMBER	3.4	413	0.0	---	27.8	128
DECEMBER	0.1	19	0.0	---	27.9	125
JANUARY	0.1	36	0.0	---	28.0	123
FEBRUARY	0.4	91	0.0	---	28.4	123
MARCH	0.6	72	0.0	---	29.0	122
APRIL	0.4	22	0.0	---	29.4	115
MAY	0.7	17	0.0	---	30.1	106
JUNE	1.5	39	0.0	---	31.5	111
JULY	---	---	2.1	40	29.2	125
AUGUST	---	---	4.2	116	24.4	122
SEPTEMBER	---	---	0.0	---	24.3	123
ANNUAL	9.2	65	6.3	45		
APRIL-JULY	2.3	22				

* Average for the 1952-2014 period.

FIGURE MTG7



Water Year 2014

Lake Elwell (Tiber Dam)

Lake Elwell (Tiber Dam) (P-S M.B.P.) is located on the Marias River near Chester, Montana. It was built to provide an adequate water supply for 127,000 acres in the Lower Marias Unit and for flood control. The crest section of Tiber Dam spillway began settling in 1956, following initial filling of the reservoir. Restrictions were placed on reservoir operating levels in the late 1950s to safeguard the structure until repairs could be made. The settling continued despite attempts to halt it. The rate of settlement was alarming following the flood of 1964 and the heavy runoff of 1965. This settlement was attributed to a weakness of the underlying shale formation in which small lenses of gypsum were slowly being dissolved as water passed through the shale. Measures to protect the structure were approved by Congress, and construction was initiated in 1967 and completed in 1970. This construction consisted of modifying the canal outlet works for use as an auxiliary outlet works and closing the entrance channel of the spillway by a temporary earthfill cofferdam. To accommodate these changed conditions, the reservoir operating criteria was further revised and the active capacity was eliminated. Work on modification of the spillway to restore active conservation capacity started in 1976 and completed in October 1981. This construction consisted of replacing the upstream section of the spillway and raising the dam 5 ft. Since that time, all restrictions on operating levels were lifted and normal operations were restored at Lake Elwell.

Because the irrigation distribution works have not yet been constructed, the reservoir is operated primarily for flood control and for increased fishery and recreation benefits. However, the reservoir provides irrigation water to several individual operators by water service contracts and provides about 1,500 AF to the Tiber County Water District for municipal, industrial, rural domestic, and livestock use. The city of Chester, Montana, receives a small amount of water from the reservoir annually for municipal use. Approximately 3,000 acres are irrigated by contract from Lake Elwell storage.

In 2002, Reclamation surveyed Lake Elwell to develop a topographic map and compute a present storage-elevation relationship (area-capacity tables). The data was used to calculate reservoir sediment accumulation since dam closure in October of 1957. The 2002 survey determined that Lake Elwell has a storage capacity of 925,649 AF and a surface area of 18,275 acres at a reservoir elevation of 2993.00 ft. Since closure in 1957, the reservoir has accumulated a sediment volume of 42,179 AF below elevation 2993.00 ft. This volume represents a 4.4 percent change in total capacity at this elevation. The revised area-capacity table was put into effect on October 1, 2005, reflecting the new storage levels.

In September of 2003, construction of a power plant was permitted by the Federal Energy Regulatory Commission (FERC). The river outlet works underwent extensive modification to incorporate the addition of a 7.5 mega-watts (MW) power plant, privately owned by Tiber Montana, LLC.

A bifurcation pipe was installed in the river outlet works tunnel at the downstream end to divert flow from the existing 72-inch outlet pipe through a bifurcation and 96-inch butterfly valve to the power plant. Construction of the power plant was completed and brought on-line in June 2004.

Inflow during August 2013 totaled 12,648 AF. This was 97 percent of average. In an effort to conserve storage in Lake Elwell, releases to the Marias River were reduced to the expected winter flow of 600 cfs on September 5, 2013. Inflows during September 2013 totaled 7,806 AF, 63 percent of average. By the end of September 2013, Lake Elwell storage was at 833,321 AF at an elevation of 2987.67 ft, 107 percent of average.

Both the valley and mountain precipitation in the Marias River Basin above Lake Elwell was above normal during September. Valley precipitation was recorded at 132 percent of average while mountain precipitation was 170 percent of average.

Conditions were drier in October followed by above average valley precipitation during November and December. The valley precipitation during October through December was 72, 130, and 208 percent of average while the mountain precipitation was 37, 89, and 80 percent of average. Inflows during this period totaled 42,164 AF, 75 percent of average. Releases were maintained at 600 cfs during October through December. By the end of December, Lake Elwell storage drafted to 765,407 AF, 105 percent of average.

On January 1, 2014 the NRCS reported the mountain snowpack in the Marias River Basin above Lake Elwell was at 97 percent of average. The January 1, 2014 water supply forecast, based on mountain snowpack, indicated the April through July runoff into Lake Elwell would be 381,800 AF, which was 105 percent of average.

During January, valley precipitation continued to remain above average at 195 percent of average, while mountain precipitation was 108 percent of average. On February 1, 2014 the NRCS reported the mountain snowpack in the Marias River Basin above Lake Elwell was 105 percent of average. The February 1, 2014 water supply forecast indicated the April through July runoff into Lake Elwell would be about 368,200 AF at 101 percent of average.

Valley precipitation was 75 percent of average and mountain precipitation 177 percent of average in February. On March 1, 2014 the NRCS reported the mountain snowpack in the Marias River Basin above Lake Elwell was well above average at 126 percent of average. The March 1, 2014 water supply forecast indicated the April through July runoff into Lake Elwell would be 412,500 AF, which was 114 percent of average.

The snowpack continued to increase at an above average rate through March. Storage in Lake Elwell reached a low content for the year of 719,747 AF at elevation 2979.99 ft on March 8, 2014. Warm weather during the second week of March melted off some of the low elevation snow and inflows peaked at approximately 6,750 cfs on March 11, 2014. In response, releases were increased to full power plant capacity of 680 cfs, on March 25, 2014.

On April 1, 2014 the NRCS reported the mountain snowpack in the Marias River Basin above

Lake Elwell increased to 140 percent of average. The snowpack in the Marias River Basin continued to increase and reached its peak accumulation for the year on April 27, 2014. The water supply forecast prepared on April 1, 2014 indicated the April through July runoff into Lake Elwell was expected to be 136 percent of average, totaling 494,000 AF.

April precipitation was above average in the valley and mountains. On May 1, 2014 the NRCS indicated the snow water content of the snowpack above Lake Elwell had increased to 156 percent of average with little to no melting in April. The May 1, 2014 water supply forecast indicated May through July runoff into Lake Elwell would be 453,000 AF, which was 146 percent of average. Based on the May 1, 2014 water supply outlook, it appeared releases out of Tiber Dam would need to be increased to control the rate of fill in Lake Elwell. In response, releases were increased in early May to approximately 1,070 cfs with 390 cfs being released through the spillway. Large blocks of ice that built up behind the gates during the winter were washed away from the spillway gates during startup of spillway flows.

On April 17, 2014 forecasts were prepared and proposed operations of Tiber Dam were presented at the Marias River Water Management Committee's annual meeting. Shortly after the meeting, Montana Fish, Wildlife, and Parks inquired about the possibility of providing a flushing flow release up to 5,000 cfs out of Tiber Dam to the Marias River. Along with releases from Canyon Ferry and other tributary flows, the goal was to see river flows at the United States Geological Survey (USGS) Virgelle gage on the Missouri River approach 50,000 cfs. As part of an ongoing Upper Missouri River Fishery Study, this release rate was being considered to collect more information as to when Sturgeon move up the Marias River to spawn and what flow rate triggers their spawning.

On May 27, 2014 a water order was issued to gradually increase releases to 5,000 cfs over a 2 week period from May 29, 2014 through June 13, 2014 and maintain that rate until June 24, 2014. Releases would then be gradually decreased back to 1,100 cfs by the end of June. A press release was issued to inform downstream landowners and others of the expected operations. Additionally, several people downstream were sent a letter and contacted by telephone regarding the planned releases.

However, conditions were drier in May and the inflow forecast was revised downward. The June 1, 2014 forecast for June through July inflows was 225,000 AF, 121 percent of average. Releases ended up peaking at 4,000 cfs from June 3, 2014 through June 9, 2014 and were back to 2,000 cfs by June 12, 2014 and back to 1,200 cfs by June 17, 2014. Releases continued to slowly increase with a rising lake level.

On May 25, 2014 inflows from snowmelt runoff reached a peak of 4,505 cfs on May 25, 2014. Precipitation in May was 68 and 41 percent of average in the valley and mountains. However, 6 to 7 inches of rain fell over part of the basin upstream of Lake Elwell on June 17, 2014 through June 19, 2014. Monthly precipitation percentages for June were 183 and 138 percent of average for the valley and mountains. This rain event caused inflows to peak for the year at 10,770 cfs on June 20, 2014.

Lake Elwell reached normal full pool, 2993.0 ft, on July 1, 2014 and peaked in storage on

July 6, 2014 at elevation 2993.33 ft, 931,693 AF. Through coordination with the U.S. Army Corps of Engineers, releases were increased on July 2, 2014 to 1,690 cfs to evacuate storage out of the exclusive flood control pool.

Valley and mountain precipitation during July was 53 and 63 percent of average, respectively. However, inflows into Lake Elwell during July were above average. Lake Elwell fell below elevation 2993.0 ft on July 15, 2014. Releases were reduced to 1,270 cfs, on July 18, 2014 and again to 1,090 cfs on July 22, 2014 to conserve storage. Releases were changed from the spillway to the auxiliary outlet work and slightly reduced to 1,000 cfs on July 30, 2014 to improve water temperatures in the Marias River.

Both the valley and mountain precipitation in the Marias River Basin above Lake Elwell was above normal during August. Valley precipitation was recorded at 219 percent of average while mountain precipitation was 139 percent of average. Another large storm event moved through Montana during August 23, 2014 through August 25, 2014 that brought lots of precipitation further east with some still falling upstream of Lake Elwell. September precipitation was near average. By the end of the water year, the total annual valley precipitation and the total annual mountain precipitation were 123 and 105 percent of average, respectively.

The April-July runoff into Lake Elwell during 2014 was 133 percent of average, totaling 480,600 AF and was 163,700 AF more than the April through July inflow in 2013. The total annual inflow to Lake Elwell was 125 percent of average, totaling 652,700 AF. This was 187,000 AF more than the total annual inflow in WY 2013.

Inflows during August and September totaled 23,055 AF and 15,576 AF, respectively, which was 177 and 129 percent of average. In an effort to conserve storage in Lake Elwell, releases from Lake Elwell to the Marias River were reduced to 700 cfs, approximate power plant capacity, on September 19, 2013. They were reduced once more to the winter release rate of 600 cfs on October 2, 2013.

By the end of the year, normal operations of Lake Elwell drafted storage to 830,583 AF at an elevation of 2987.50 ft. This was 106 percent of normal and only 2,738 AF or 0.17 ft lower than reported on September 30, 2013.

The Corps of Engineers determined that during 2014, Lake Elwell did not prevent any local flood damages but prevented $2,731,500 in mainstem flood damages downstream on the Missouri River below Fort Peck Reservoir. Since closure of Tiber Dam in 1954, Lake Elwell has reduced flood damages by a total of $95,694,900.

Important Events During 2014

January 1, 2014: NRCS reported snowpack conditions in the watershed above Lake Elwell were about 97 percent of average. The January water supply forecast indicates the April through July runoff into Lake Elwell would be 381,800 AF which is 105 percent of average.

February 1, 2014: NRCS reported snowpack conditions in the watershed above Lake Elwell were about 105 percent of average. The February water supply forecast indicates the April through July runoff into Lake Elwell would be 368,200 AF which was 101 percent of average.

March 1, 2014: NRCS reported snowpack conditions in the Marias River Basin upstream of Lake Elwell were about 126 percent of average. The March water supply forecast indicates the April through July runoff into Lake Elwell would be 412,500 AF which is 114 percent of average.

March 8, 2014: Storage in Lake Elwell slowly drafted to a low content for the year of 719,747 AF at elevation 2979.99 ft.

March 25, 2014: To control the rate of fill in Lake Elwell and meet target objectives, releases to the Marias River were increased to 680 cfs.

April 1, 2014: NRCS reported snowpack conditions in the watershed above Lake Elwell were 140 percent of average. Water supply forecast indicated the April through July runoff into Lake Elwell would be 494,000 AF or 136 percent of average.

May 1, 2014: NRCS reported snowpack conditions in the watershed above Lake Elwell were 157 percent of average. The May 1, 2014 water supply forecast indicates the May through July runoff into Lake Elwell would be 453,000 AF which is 146 percent of average.

May 2, 2014 through 5, 2014: To control the rate of fill in Lake Elwell and meet target objectives, releases were initiated through the spillway and the total release was increased to 1,070 cfs.

May 29, 2014 through June 9, 2014: To control the rate of fill and assist MFWP with a fishery study, releases were increased through the spillway and the total release to the Marias River was increased to 4,000 cfs.

June 1, 2014: NRCS reported snowpack conditions in the watershed above Lake Elwell were 154 percent of average. The June 1 water supply forecast indicates the June through July runoff into Lake Elwell would be 225,000 AF which is 121 percent of average.

June 9, 2014 through 12, 2014: To conserve storage, releases were decreased through the spillway and the total release to the Marias River was decreased to 2,000 cfs.

June 16, 2014 through 17, 2014: To conserve storage, releases were decreased through the spillway and the total release to the Marias River was decreased to 1,200 cfs.

June 16, 2014 through 17, 2014: To conserve storage, releases were decreased through the spillway and the total release to the Marias River was decreased to 1,200 cfs.

June 20, 2014: Inflow into Lake Elwell reached peak for the year at 10,770 cfs.

July 2, 2014: As coordinated with the U.S. Army Corps of Engineers, releases were increased through the spillway and the total release to the Marias River was increased to 1,690 cfs to evacuate storage from the exclusive flood control pool.

July 1, 2014 through July 15, 2014: Lake Elwell was in the exclusive flood control pool above elevation 2993.0 feet. Reservoir releases were coordinated with the U.S. Army Corps of Engineers.

July 8, 2014: Storage in Lake Elwell reached peak content for the year of 931,693 AF at elevation 2993.33 ft. This was 0.33 ft above the top of the conservation pool.

July 18, 2014: To conserve storage, releases were decreased through the spillway and the total release to the Marias River was decreased to 1,270 cfs.

July 22, 2014: To conserve storage, releases were decreased through the spillway and the total release to the Marias River was decreased to 1,090 cfs.

July 24, 2014: Tiber Montana LLC conducted an efficiency test of the power plant turbine. Releases were fluctuated between 1,010 cfs and 1,090 cfs.

July 30, 2014: Releases were discontinued through the spillway and started through the auxiliary outlet works. The total release to the Marias River was slightly decreased to 1,000 cfs.

September 15, 2014 and September 19, 2014: To conserve storage, releases were discontinued through the auxiliary outlet works and the total release to the Marias River was decreased to 700 cfs.

September 24, 2014: Tiber Montana LLC conducted an efficiency test of the power plant turbine. Releases were fluctuated between 550 cfs and 715 cfs.

October 2, 2014: To conserve storage and gradually reduce releases to the Marias River for the winter, releases were reduced to 600 cfs.

Additional hydrologic and statistical information pertaining to the operation of Lake Elwell during 2014 can be found in Table MTT9 and Figure MTG8.

TABLE MTT9
HYDROLOGIC DATA FOR 2014
LAKE ELWELL (TIBER DAM)
NEW SEDIMENT SURVEY DATA EFFECTIVE 10/01/2005

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	2966.40	554,330	554,330
TOP OF ACTIVE CONSERVATION	2976.00	667,213	112,883
TOP OF JOINT USE	2993.00	925,649	258,436
TOP OF EXCLUSIVE FLOOD CONTROL	3012.50	1,328,723	403,074

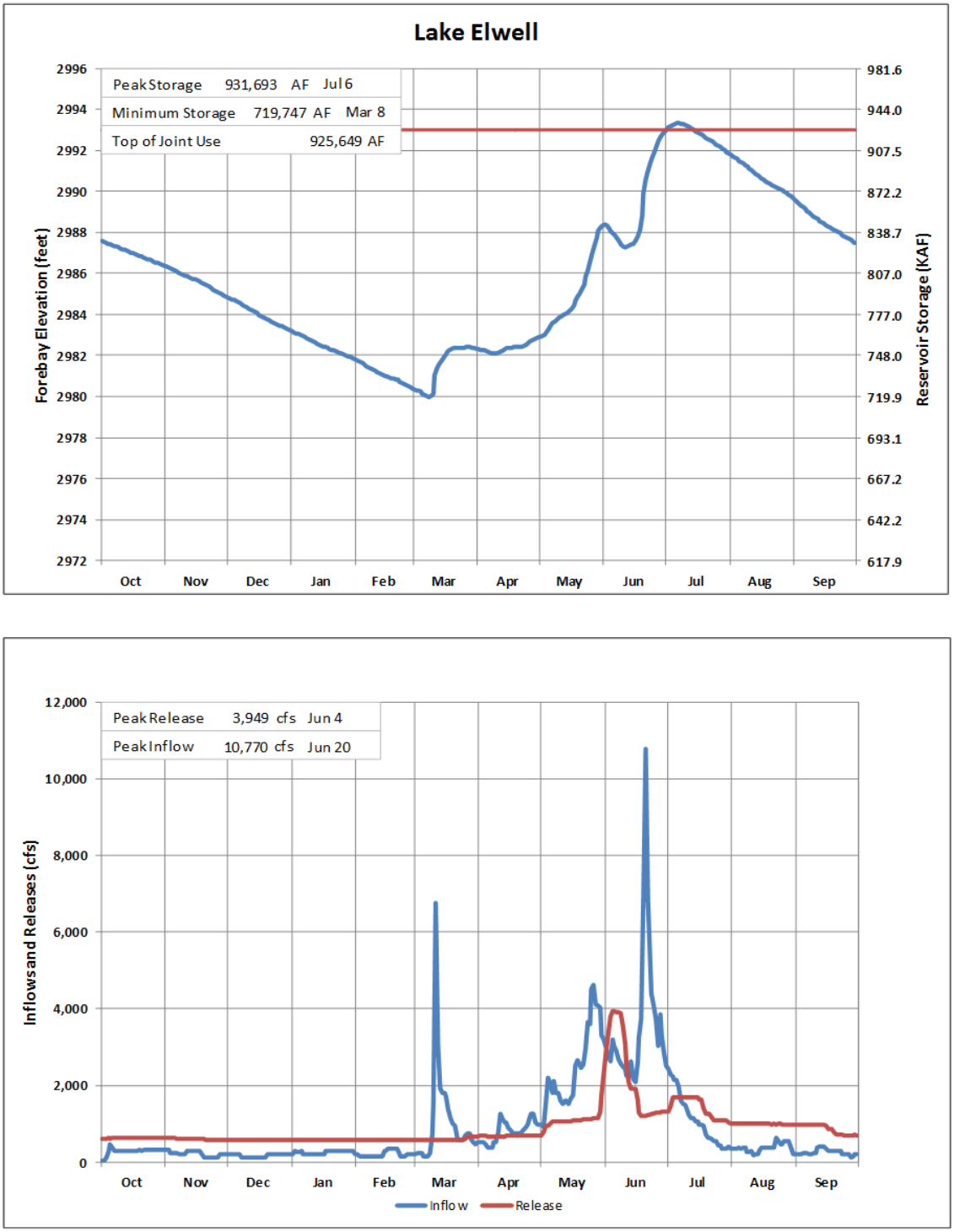
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	2987.67	833,321	OCT 01, 2013
END OF YEAR	2987.50	830,583	SEP 30, 2014
ANNUAL LOW	2979.99	719,747	MAR 08, 2014
ANNUAL HIGH	2993.33	931,693	JUL 06, 2014
HISTORIC HIGH	3011.42	1,303,858	JUL 19, 2011

INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	652,722	OCT 13-SEP14	655,460	OCT 13-SEP 14
DAILY PEAK (CFS)	10,770	JUN 20, 2014	3,949	JUN 04, 2014
DAILY MINIMUM (CFS)	53	OCT 02, 2013	570	FEB 27, 2014
PEAK SPILL (CFS)			3,252	JUN 04, 2014
TOTAL SPILL (AF)			182,313	05/02-09/19/14

MONTH	INFLOW		OUTFLOW*		CONTENT	
	KAF	% OF AVG	KAF	% OF AVG	KAF	% OF AVG
OCTOBER	18.2	108	38.7	85	812.9	108
NOVEMBER	13.2	60	35.9	100	790.2	106
DECEMBER	10.7	63	35.5	126	765.4	105
JANUARY	15.7	100	35.4	133	745.7	104
FEBRUARY	11.9	56	31.9	124	725.7	103
MARCH	63.7	161	36.7	105	752.7	106
APRIL	48.5	91	40.5	92	760.6	105
MAY	153.4	124	69.5	106	844.6	105
JUNE	210.8	148	131.0	141	924.4	106
JULY	67.9	158	87.5	118	904.8	106
AUGUST	23.1	177	61.3	104	866.5	106
SEPTEMBER	15.6	127	51.5	100	830.6	106
ANNUAL	652.7	125	655.5	112		
APRIL-JULY	480.7	132				

* Average for the 1957-2014 period.

FIGURE MTG8



Water Year 2014

Milk River Project

The 117,000 acre Milk River Project, located in north-central Montana, is served by Sherburne, Fresno, and Nelson Reservoirs. Sherburne and Nelson Reservoirs are single-purpose irrigation structures. Fresno Reservoir has joint-use flood control space, provides a municipal water supply to several municipalities on or near the project, and serves as the primary irrigation storage structure for the Milk River Project. Approximately 101,500 acres are presently served by irrigation districts, 9,500 acres are served by private facilities; and between 5,000 and 6,000 acres are served supplemental water by the Fort Belknap Indian Irrigation Project.

Lake Sherburne is located in Glacier National Park on Swiftcurrent Creek, a tributary of the St. Mary River in the Hudson Bay Drainage Basin. Lake Sherburne has a total capacity of 66,147 AF at elevation 4788.0 ft. The use of boundary waters of the St. Mary and Milk Rivers are divided between Canada and the United States by the 1909 Boundary Waters Treaty. The United States utilizes its entitlement to St. Mary River water by regulating flows through storage in Lake Sherburne and diverting St. Mary River flows through the St. Mary Canal to the Milk River Basin. The river outlet works has a capacity of 2,100 cfs at elevation 4788.0 ft. The maximum combined discharge of the spillway and river outlet works is 4,000 cfs at a maximum water surface elevation of 4810.0 ft.

In 2002, Reclamation surveyed Lake Sherburne to develop a topographic map and compute a present storage-elevation relationship (area-capacity tables). The data was used to calculate sediment accumulation since dam closure in 1919. The 2002 survey determined that Lake Sherburne has a storage capacity of 66,147 AF and a surface area of 1,719 acres at a reservoir elevation of 4788.00 ft. Since Lake Sherburne closure in 1919, the measured total volume change at reservoir elevation 4788.00 ft was estimated to be 343 AF between the 1948 and 2002 surveys and 1,707 AF between the 1983 and 2002 surveys. It is assumed the volume differences between the surveys are due to survey methods and the vertical datum. The revised area-capacity table was put into effect on October 1, 2005, reflecting the new storage levels.

Hydrologic conditions in the St. Mary River Basin were above average for WY 2013. The cumulative precipitation through the end of September for valley and mountain areas was 139 and 112 percent of average, respectively. Inflows during August and September were 108 and 111 percent of average, respectively. Inflows for the water year totaled 158,400 AF, 113 percent of average. Lake Sherburne storage on September 30, 2013, was 17,651 AF, elevation 4750.85 ft, which is 116 percent of average.

The new water year began with below average precipitation from October to the end of December in both valley and mountain areas.

Cumulative valley precipitation from October to the end of December was 73 percent of average. During the same period, cumulative mountain precipitation was 84 percent of average. As a result, inflows during October through December were only 74 percent of average. Storage in Lake Sherburne at the end of December was 30,514 AF at elevation 4763.16 ft, 112 percent of average.

On January 1, 2014 the NRCS reported mountain snowpack in the St. Mary Basin was 97 percent of normal. Precipitation in the mountains was below average during January and as a result, the February 1, 2014 snowpack for the St. Mary Basin dropped to 94 percent of average. With improved snowfall during February, the snowpack for the St. Mary Basin had now increased to 101percent of average by March 1, 2014. Total inflow during January through March was approximately 7,500 AF, 87 percent of average.

The recorded valley and mountain precipitation was well above average during March. By April 1, 2014 mountain snow water content had increased to 128 percent of average. The snow pack peaked on April 7, 2014 at 130 percent of the average peak. The water supply forecast prepared on April 1, indicated that the April through July runoff into Lake Sherburne was expected to be 106,600 AF, 107 percent of normal.

Due to the good carryover conditions in Fresno and Nelson Reservoirs, spring startup of the St. Mary Canal was not necessary until the middle of May. This provided an opportunity to conduct an inspection and some minor repairs on canal structures during the spring. Diversions to the St. Mary Canal were initiated on May 13, 2014. With storage in Lake Sherburne at 175 percent of average on April 15, a decision was made to delay the start of releasing water out of Lake Sherburne until April 21, 2014. Releases from Lake Sherburne were gradually increased to approximately 450 cfs by May 1, 2014.

Storage during the runoff season reached a low on May 14, 2014 at 35,116 AF when inflows from snowmelt runoff started to exceed the 450 cfs release. Sherburne releases were varied to control the runoff from the basin and allow the reservoir to fill to near full pool in mid July.

Diversions to the St. Mary Canal were begun on May 13, 2014 and gradually increased to 600 cfs by the end of May and remained at this rate through nearly the entire irrigation season.

Precipitation for April and May was below average but June precipitation was above. A storm event over June 18, 2014 through June 20, 2014 dumped approximately 20 inches of snow in Glacier National Park. Over 8 inches of rain fell in the St. Mary Basin. Inflows into Lake Sherburne peaked at 1,970 cfs during the event, a high for the water year. Releases were increased to 1,400 cfs during the event which was also a high for the water year. St. Mary River flows at the international boarder peaked at 8,340 cfs. The headgates of the St. Mary Canal were nearly closed to protect the canal from overtopping from the runoff.

The snowmelt runoff was essentially done by the first week of July. Lake Sherburne storage peaked on June 21, 2014 at 65,837 AF, at elevation 4787.82 ft, 0.18 ft below the top of normal full capacity. The actual April through July runoff was 128 percent of average, totaling 127,200 AF.

July brought on dry conditions with well below average precipitation to the mountain and valley regions at 61 and 47 percent of average, respectively. Mountain and valley precipitation rebounded and were above average in August and below average again in September. The cumulative precipitation was 113 and 101 percent of average through the end of September for valley and mountain areas, respectively. Inflows during June, July, August, and September were 142, 139, 108 and 76 percent of average. Inflows for the water year totaled 161,900 AF, 114 percent of average. This was approximately 3,580 AF more than the inflow experienced during WY 2013. On September 30, 2014, the storage content in Lake Sherburne was 31,250 AF at elevation 4763.80 ft, 203 percent of average.

According to preliminary data, diversions from the St. Mary River to the Milk River totaled 131,206 AF, 87 percent of the long-term average. The long-term average annual diversion is 150,500 AF. The largest diversion previously recorded was 277,500 AF during 1989. Releases from Lake Sherburne were discontinued for WY 2014 on September 22, 2014 while canal diversions from the St. Mary River to the Milk River were discontinued on September 12, 2014.

During the 2014 irrigation season two conference calls were conducted with the International Joint Commission Field Representatives to discuss accumulated deficits by the United States and Alberta, Canada on the St. Mary and Milk Rivers, respectively. One was conducted in July and the second one was conducted in August.

During 2014, the Corps of Engineers determined Lake Sherburne prevented $1,594,900 of local flood damages but did not contribute to the reduction of flood damages downstream on the Missouri River below Fort Peck Reservoir. Since 1950 Lake Sherburne has prevented $10,412,000 in flood damages.

Additional hydrologic and statistical information pertaining to the operation of Sherburne Reservoir during 2014 can be found in Table MTT10-A and Figure MTG9.

Fresno Reservoir is located above all project lands on the Milk River near Havre, Montana. A sediment re-survey done during 2010 and finalized during 2013 determined the normal full pool capacity was 91,746 AF, a sediment accumulation of 1,134 AF from the previous capacity. The new revised elevation-area-capacity data was used beginning in WY 2014. The top 33,841 AF is used jointly for flood control and conservation and is not filled until the start of the spring runoff. Fresno Reservoir stores the natural

flow of the Milk River along with water diverted into the Milk River from the St. Mary River and Lake Sherburne. Stored water is used principally for irrigation, but Havre and Chinook, Montana, have contracted for a minimum flow in the river of 25 cfs during the winter to maintain suitable water for municipal use. The city of Harlem and the Hill County Water District have also contracted for municipal use.

During WY 2013, runoff conditions in the Milk River Basin were above average. Precipitation stayed well above average through the end of the water year from July through September. Cumulative precipitation was 162 percent of average at the end of September. Inflow into Fresno Reservoir during September was 28,500 AF, 124 percent of average. On September 21, 2014 releases for irrigation for the Milk River Project users were discontinued. The storage content in Fresno Reservoir concluded the water year at 63,495 AF at elevation 2567.94 ft, 161 percent of average to begin WY 2014. On October 8, 2014, releases from Fresno Reservoir were reduced to approximately 45 cfs until the start of the irrigation season.

The valley precipitation for October and November was below average and December was above average. The accumulated year to date precipitation from October through December was 100 percent of average. Reservoir inflows were below average from October through December. However, due to good carryover, the end of December storage was 58,220 AF at elevation 2567.09 ft, 158 percent of average.

By January 1, 2014 the NRCS reported the snowpack in the Milk River Basin was 200 percent of average. The NRCS reported snowpack had decreased to 159 percent of average on March 1, 2014. In the Milk River Basin, the spring runoff season generally occurs from March through June. Therefore, the peak snowpack and most reliable water supply runoff forecast for the Milk River Basin is generally considered to be around the first of March. The NRCS reported a March 1, 2014 forecast for natural runoff above Fresno Reservoir for March through September of 70,000 AF, 86 percent of average. This forecast came from Alberta, Canada. Based on this forecast and expected St. Mary Canal operations, storage in Fresno Reservoir was expected to fill to the top of the conservation pool at elevation 2575 ft by the end of April.

Warmer temperatures during the second week of March melted low elevation snow. Inflows into Fresno Reservoir increased to 3,250 cfs. Releases were increased to almost 800 cfs to control the rate of fill of Fresno Reservoir. At the end of March, the storage content in Fresno Reservoir was 75,617 AF at elevation 2571.60 ft. This was 156 percent of average and only 3.4 feet below the top of the conservation pool.

During April releases were decreased to 200 cfs. Releases were decreased further at the end of April to allow the irrigation districts to install their diversion works. Precipitation was 108 percent of average in April. By the end of April, the storage content in Fresno Reservoir was 90,309 AF at elevation 2574.72 ft. This was only 0.28 ft below normal full pool.

Fresno Reservoir filled to the top of the conservation pool at elevation 2575 ft on May 4, 2014 from natural flow runoff, as water from the St. Mary Basin through the St. Mary Canal did not reach Fresno Reservoir until approximately May 22, 2014. It was not until May 8, 2014 that irrigation demands were greater than the releases out of Fresno Reservoir. With May precipitation at only 61 percent of average, inflow into Fresno Reservoir was below average and also partially due to the late start of diversions from the St. Mary Canal. On June 9, 2014 the Milk River Joint Board of Control (MRJBC) set the initial annual allotments at 2.5 AF/acre.

During a June 18, 2014 through June 20, 2014 weather event, several inches of rain fell in the Milk River Basin. As a result, inflows into Fresno Reservoir peaked at 4,550 cfs on June 21, 2014 while releases peaked at 1,566 cfs on June 26, 2014. On June 25, 2014 storage in Fresno Reservoir peaked at 99,843 AF, at elevation 2576.51 ft, about 1.51 ft above the spillway crest. These values were, respectively, the peak inflow, release and storage for the year. Water continued to spill over the ungated spillway at Fresno Reservoir through July 17, 2014. It was not until July 11, 2014 the irrigation demands exceeded the Fresno releases.

Again in August 23, 2014 through August 25, 2014, there was a weather event that dumped several inches of rain in the basin. This time more of the rain fell downstream of Fresno Reservoir. There was flooding along the Milk River from this storm. Following this weather event, there were essentially no irrigation demands for storage out of Fresno Reservoir for the rest of the irrigation season. Flows on the Milk River at Dodson peaked at 6,130 cfs. Flows at Tampico peaked at 8,680 cfs.

The actual March through September inflow for Fresno Reservoir, excluding St. Mary Canal water was approximately 76,113 AF, 94 percent of average, based on the United States Geological Survey (USGS) computation for natural flow at the Milk River at Eastern Crossing gauging station.

The cumulative valley precipitation through the end of September was 120 percent of average. Total inflow into Fresno Reservoir for the water year was 261,400 AF, 102 percent of average. Diversions from the St. Mary River Basin to the Milk River Basin accounted for about 45 percent of the inflow to Fresno Reservoir during 2014. Releases were reduced to 110 cfs on September 21, 5014 allowing storage to be slowly drafted to 63,495 AF at elevation 2567.94 ft on September 30, 2014 at 161 percent of average and 69 percent of normal full capacity. Winter releases were set on October 8, 2014 at approximately 100 cfs to get close to the desired spring flood control target level at elevation 2567.0 ft. They winter release rate was changed twice on October 9, 2014 and again on November 6, 2014 to an eventual winter release rate of 75 cfs.

The Corps determined that during 2014, Fresno Reservoir prevented $111,400 in local flood damages but did not contribute to the reduction of flood damages downstream on the Missouri River below Fort Peck Reservoir. Since 1950 Fresno Dam and Reservoir has reduced flood damages by a total of $15,500,900.

Additional hydrologic and statistical information pertaining to the operation of Fresno Reservoir during 2014 can be found in Table MTT10-B and Figure MTG10.

Nelson Reservoir, located near Malta, Montana, is an off-stream reservoir which receives its water supply from the Milk River by diversion through the Dodson South Canal. Nelson Reservoir is the only source of supply for the lower portion of the Malta Irrigation District. Nelson Reservoir can also serve the Glasgow Irrigation District when water is not available from Fresno Reservoir. In 1999 a sediment re-survey was performed and then finalized during 2000-2001. Since Nelson Reservoir operation began in 1916, the measured total sediment accumulation was 446 AF. The new revised elevation-area capacity data was implemented at the beginning of WY 2002. Nelson Reservoir now has a total capacity of 78,950 AF and an active capacity of 60,810 AF.

Throughout September of WY 2013, diversions were made into Nelson Reservoir. This allowed the storage to continue to increase and thus started WY 2014 with a storage content of 75,161 AF, at elevation 2220.71 ft, 144 percent of average and 95 percent of normal full capacity. A small quantity of diversion into Nelson Reservoir continued through most of October. Once the diversions ceased, storage slowly decreased due to seepage from November 2013 through March 2014.

Diversions to Nelson Reservoir began on March 14, 2014. Releases for irrigation demands started on May 5, 2014. Since much of the demand from Malta Irrigation District is for early irrigation, releases are generally discontinued in mid-June for harvest. Irrigation releases through the Nelson South and North Canals were discontinued from approximately June 19, 2014 through July 11, 2014. A portion of the shutdown was due to the rain that fell over June 18, 2014 through June 20, 2014 and part of it was for harvesting.

From March 14, 2014 storage steadily increased until mid-May when the reservoir reached near full pool. Storage in Nelson Reservoir peaked once at 78,173 AF at elevation 2221.42 ft on May 9, 2014 which was approximately 0.18 ft below normal full pool. It peaked again at 2221.35 ft on July 10, 2014. The low storage content for the year was 63,522 AF at elevation 2217.80 ft on August 19, 2014. Typically, the district prefers to keep the reservoir about a foot below full pool to reduce wave action on the dikes.

After the rain storms on August 23, 2014 through August 25, 2014, releases were discontinued out of the north and the south canals. Inflows to the reservoir continued until September 12, 2014. Total net inflow to Nelson Reservoir during WY 2013 was 51,900 AF. Storage on September 30, 2014, was 71,491 AF at elevation 2219.82 ft, 134 percent of average and 91 percent of normal full capacity.

Additional hydrologic and statistical information pertaining to the operation of Nelson Reservoir during 2014 can be found in Table MTT10-C and Figure MTG11.

Important Events During WY 2014

March 1, 2014: Milk River runoff forecast indicates March through September runoff to be 86 percent of average.

March 14, 2014: Diversions are initiated to Nelson Reservoir.

April 1, 2014: Lake Sherburne runoff forecast indicates April through July runoff to be 107 percent of average.

April 21, 2014: Releases begin from Lake Sherburne.

May 4, 2014: Fresno Reservoir fills and begins spilling water over the ungated spillway.

May 5, 2014: Releases are initiated from Nelson Reservoir for irrigation.

May 8, 2014: Fresno Reservoir releases are increased for the first time for the year to meet irrigation demand.

May 9, 2014: Storage in Nelson Reservoir reached a peak content for the year of 78,173 AF at elevation 2221.42 ft, 0.18 ft below normal full pool.

May 13, 2014: St. Mary Canal begins to divert water to the Milk River.

June 9, 2014: MRJBC sets the irrigation allotment to 2.5 AF per acre.

June 18, 2014 through June 20, 2014: Large precipitation event occurs in the St. Mary River Basin and Milk River Basin, mainly upstream of Fresno Reservoir.

June 19, 2014: Inflow to Lake Sherburne peaked at 1,970 cfs.

June 21, 2014: Storage in Lake Sherburne reached a peak content for the year of 65,837 AF, at elevation 4787.82 ft, 0.18 feet below normal full pool.

June 21, 2014: Inflow to Fresno Reservoir peaked at 4,554 cfs.

June 23, 2014: Fresno Reservoir refills and begins spilling water over the ungated spillway.

June 25, 2014: Storage in Fresno Reservoir reached a peak content for the year of 99,843 AF at elevation 2576.51 ft, 1.51 ft above normal full pool.

July 8, 2014: A conference call was held with the IJC Field Representatives to discuss St. Mary and Milk River apportionments.

August 23, 2014 through August 25, 2014: Large precipitation event occurs in the Milk River

Basin causing flooding along the Milk River. This essentially ended up being the end of the irrigation season after this rain event.

August 24, 2014: Releases from Nelson Reservoir are discontinued.

August 27, 2014: A conference call was held with the IJC Field Representatives to discuss St. Mary and Milk River apportionments.

September 12, 2014: St. Mary Canal diversions are discontinued.

September 22, 2014: Lake Sherburne releases are discontinued.

November 6, 2014: Releases from Fresno Reservoir are set at approximately 75 cfs for the duration of the winter.

TABLE MTT10-A
HYDROLOGIC DATA FOR 2014
SHERBURNE RESERVOIR (MILK RIVER PROJECT)
NEW SEDIMENT SURVEY DATA EFFECTIVE 10/01/2005

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	4729.30	1,899	1,899
TOP OF ACTIVE CONSERVATION	4788.00	66,147	64,248

STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	4750.85	17,651	OCT 01, 2013
END OF YEAR	4763.80	31,250	SEP 30, 2014
ANNUAL LOW	4750.85	17,651	OCT 01, 2013
ANNUAL HIGH	4787.82	65,837	JUN 21, 2014
HISTORIC HIGH	4788.30	68,371	JUN 30, 1986

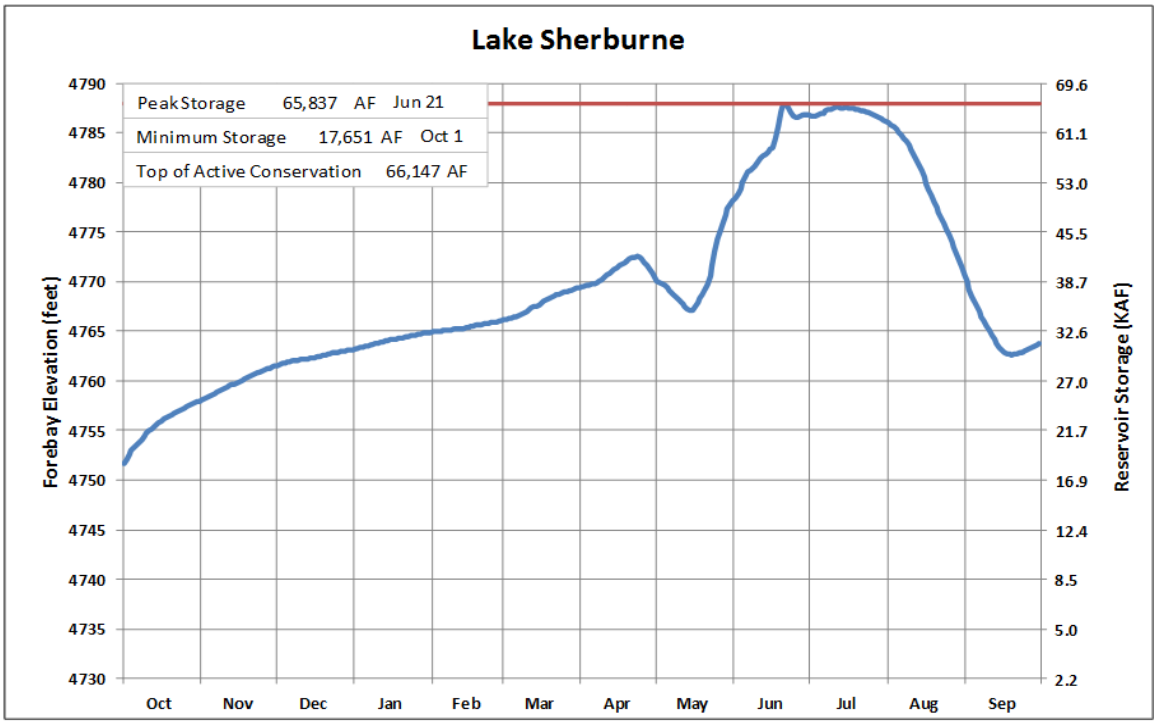
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	161,932	OCT 13-SEP 14	148,333	OCT 13-SEP 14
DAILY PEAK (CFS)	1,970	JUN 19, 2014	1,405	JUN 23, 2014
DAILY MINIMUM (CFS)	6	JAN 31, 2014	0	*

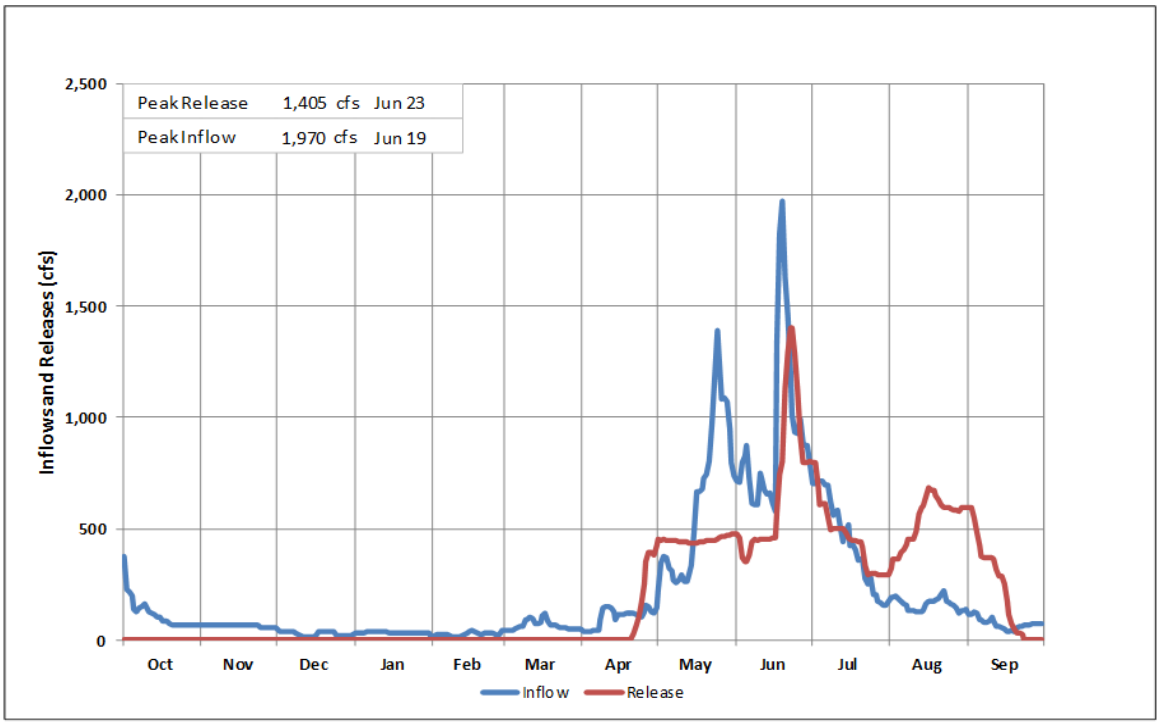
* During nonirrigation season

MONTH	INFLOW		OUTFLOW*		CONTENT	
	KAF	% OF AVG	KAF	% OF AVG	KAF	% OF AVG
OCTOBER	7.2	107	0.0	---	24.8	132
NOVEMBER	3.8	52	0.0	---	28.6	117
DECEMBER	1.9	57	0.0	---	30.5	112
JANUARY	2.0	69	0.0	---	32.5	108
FEBRUARY	1.4	62	0.0	---	33.9	105
MARCH	4.1	117	0.0	---	38.0	132
APRIL	6.3	56	5.1	34	39.2	200
MAY	38.7	126	27.7	135	50.2	150
JUNE	55.2	145	41.2	210	64.2	116
JULY	27.0	141	28.2	110	62.9	131
AUGUST	9.9	109	33.2	101	39.7	149
SEPTEMBER	4.5	74	12.9	60	31.2	203
ANNUAL	161.9	115	148.3	102		
APRIL-JULY	127.2	128				

* Average for the 1955-2014 period.

FIGURE MTG9





Water Year 2014

TABLE MTT10-B
HYDROLOGIC DATA FOR 2014
FRESNO RESERVOIR (MILK RIVER PROJECT)
NEW SEDIMENT SURVEY DATA EFFECTIVE 10/1/2013

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	2530.00	158	158
TOP OF ACTIVE CONSERVATION	2567.00	57,905	57,747
TOP OF JOINT USE	2575.00	91,746	33,841

STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	2567.94	63,495	OCT 01, 2013
END OF YEAR	2570.71	71,866	SEP 30, 2014
ANNUAL LOW	2565.69	53,464	MAR 08, 2014
ANNUAL HIGH	2576.51	99,843	JUN 25, 2014
HISTORIC HIGH	2579.35	154,023	APR 03, 1952

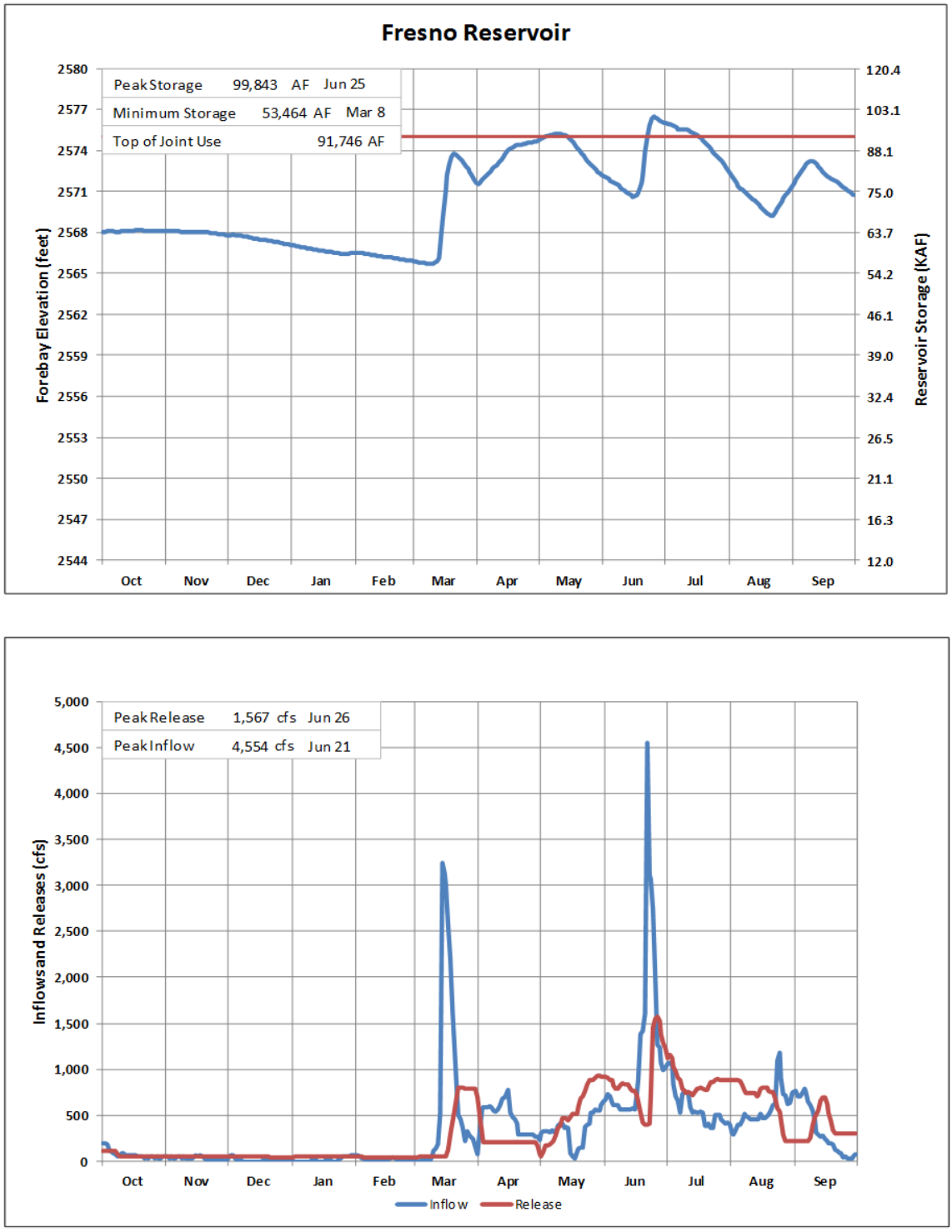
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	261,420	OCT 13-SEP 14	250,824	OCT 13-SEP 14
DAILY PEAK (CFS)	4,554	JUN 21, 2014	1,567	JUN 26, 2014
DAILY MINIMUM (CFS)	0	*	46	MAR 02, 2014

* During non-irrigation season

MONTH	INFLOW		OUTFLOW*		CONTENT	
	KAF	% OF AVG	KAF	% OF AVG	KAF	% OF AVG
OCTOBER	4.4	57	3.9	52	61.8	159
NOVEMBER	1.9	80	3.0	93	60.8	158
DECEMBER	0.3	23	2.9	106	58.2	158
JANUARY	1.0	90	3.1	115	56.1	159
FEBRUARY	0.6	15	2.6	105	54.2	151
MARCH	42.8	177	21.3	310	75.6	156
APRIL	27.6	91	12.9	64	90.3	141
MAY	21.3	48	33.3	69	78.2	131
JUNE	71.7	139	52.9	106	97.0	154
JULY	36.1	111	53.1	96	80.0	174
AUGUST	34.8	114	40.1	88	74.8	198
SEPTEMBER	19.0	86	21.9	99	71.9	182
ANNUAL	261.4	104	250.8	94		
APRIL-JULY	156.6	99				

* Average for the 1949-2014 period.

FIGURE MTG10



Water Year 2014

TABLE MTT10-C
HYDROLOGIC DATA FOR 2014
NELSON RESERVOIR (MILK RIVER PROJECT)
NEW SEDIMENT SURVEY DATA EFFECTIVE 10/1/2001

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	2200.00	18,140	18,140
TOP OF ACTIVE CONSERVATION	2221.60	78,950	60,810

STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	2220.71	75,161	OCT 01, 2013
END OF YEAR	2219.82	71,491	SEP 30, 2014
ANNUAL LOW	2217.80	63,599	AUG 19, 2014
ANNUAL HIGH	2221.42	78,173	MAY 08, 2014
HISTORIC HIGH	2221.68	79,297	JUN 01, 2007

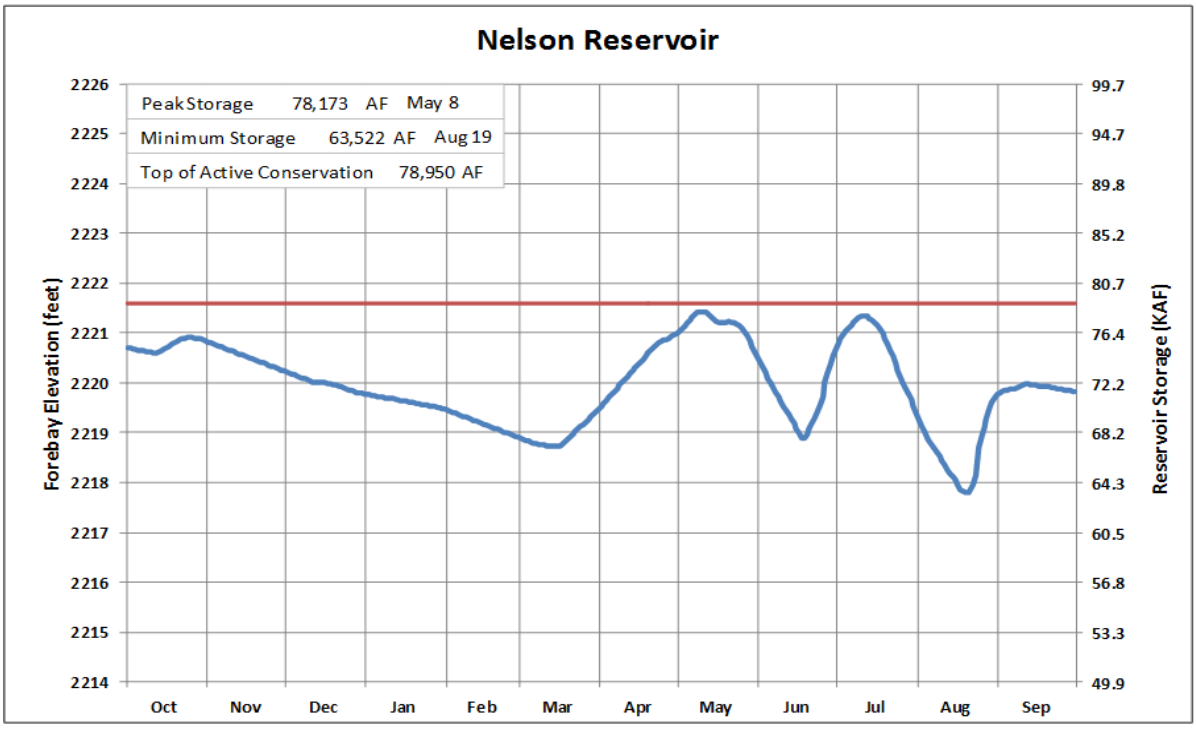
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	51,938	OCT 13-SEP 14	55,608	OCT 13-SEP 14
DAILY PEAK (CFS)	1,117	AUG 24, 2014	420	JUN 07, 2014
DAILY MINIMUM (CFS)	0	*	0	*

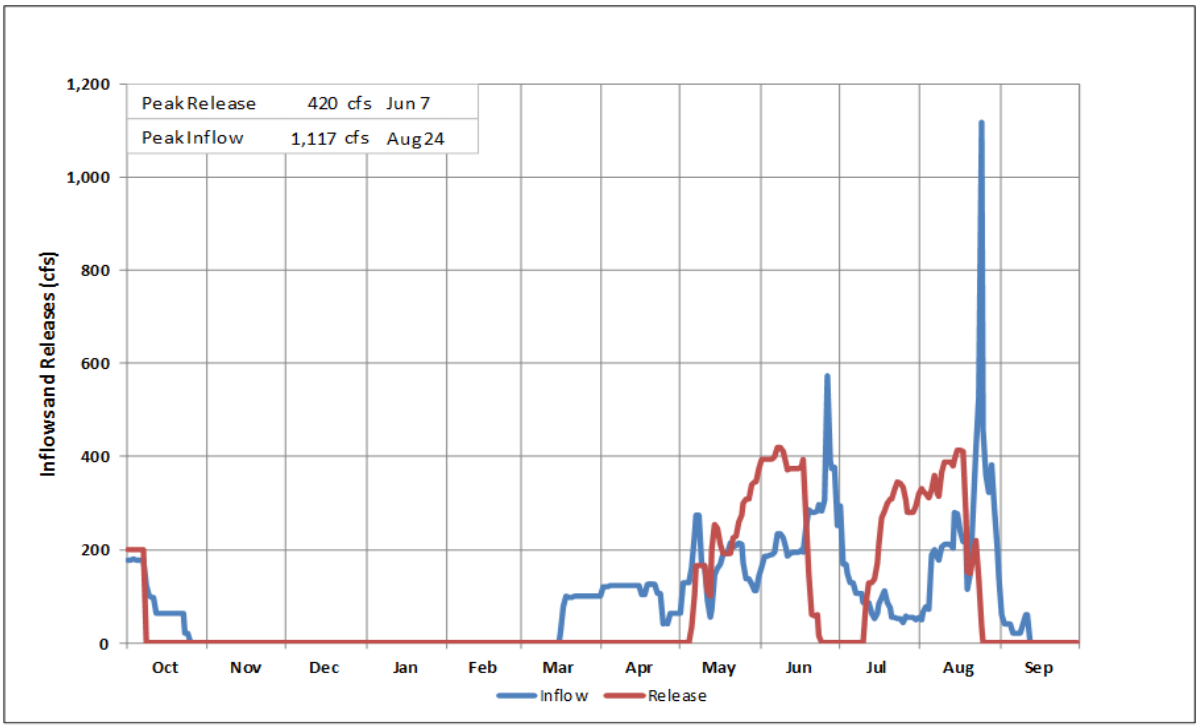
* During nonirrigation season

MONTH	INFLOW*		OUTFLOW*		CONTENT	
	KAF	% OF AVG	KAF	% OF AVG	KAF	% OF AVG
OCTOBER	4.5	115	3.9	242	75.7	140
NOVEMBER	-2.5	---	0.0	---	73.2	139
DECEMBER	-1.9	---	0.0	---	71.3	140
JANUARY	-1.3	---	0.0	---	70.1	141
FEBRUARY	-2.2	---	0.0	---	67.8	140
MARCH	2.2	146	0.0	---	70.1	135
APRIL	6.3	83	0.0	---	76.3	126
MAY	9.9	143	11.9	155	74.3	129
JUNE	15.1	188	14.4	188	75.0	130
JULY	5.7	110	10.8	103	69.8	137
AUGUST	16.0	210	14.5	174	71.3	143
SEPTEMBER	0.2	3	0.0	---	71.5	134
ANNUAL	51.9	124	55.6	134		
APRIL-JULY	37.1	140				

* Average for the 1947-2014 period.

FIGURE MTG11





Water Year 2014

Bighorn Lake and Yellowtail Powerplant

Bighorn Lake (P-S, MBP) is located on the Bighorn River about 45 miles southwest of Hardin, Montana. It has a total capacity of 1,331,725 AF. The dam and reservoir were built for power generation, irrigation, flood control, fish and wildlife and recreation. The nameplate capacity of Yellowtail Power plant is 250,000 kilowatts. Reclamation has a storage allocation agreement with the Northern Cheyenne Tribe for 30,000 AF. The water can be used for multiple beneficial uses. A separate piece of legislation has allocated up to 300,000 AF of water for the Crow Tribe. Reclamation has an industrial water service contract with Pennsylvania Power and Light, Montana (PPL-MT) for 6,000 AF. No additional water can be contracted out of Yellowtail Dam after the passage of the Crow Tribe Water Rights Settlement Act of 2010. Bull Lake, Boysen, and Buffalo Bill Reservoirs are three major tributary reservoirs located in Wyoming upstream of Bighorn Lake. Because these reservoirs are operated and managed by the WYAO, all reservoir and river operations in the Bighorn River Basin are closely coordinated between the MTAO and WYAO.

In July 2007, a hydrographic and a topographic survey were conducted and a new elevation-area-capacity table and curve was developed. The 2007 survey determined that Bighorn Lake has a storage capacity of 1,278,896 AF and a surface area of 17,279 acres at reservoir elevation 3657.0 ft (the top of the spillway gates). Since closure of the dam in November 1965, the reservoir has accumulated a sediment volume of 103,415 AF below reservoir elevation 3657 ft. This volume represents a 7.5 percent reduction in capacity and an average annual sedment storage rate of 2,480 AF from November 1965 through July 2007. The revised area-capacity table was put into effect on January 1, 2011, reflecting the new storage levels.

WY 2013 was drier than average. Valley precipitation during June through August was only 37 percent of average while the mountain precipitation was only 63 percent of average. However, rains in the valley and mountains in September were much above average at 259 and 235 percent of average respectively. As a result, the inflow into Bighorn Lake during September rebounded to 96 percent of average annual inflow. After a peak content of 1,004,958 AF on July 10, 2013 storage in Bighorn Lake steadily declined to a content of 931,423 AF at elevation 3632.11 ft by September 13, 2013. Inflows picked up in late September and as a result, storage in Bighorn Lake ended the year with a content of 967,489 AF at elevation 3635.53 ft. This was 110 percent of average. Releases to the Bighorn River were reduced to 1,900 cfs on August 22, 2013 and stayed at this rate for the rest of WY 2013.

At the end of WY 2013, storages in Boysen and Buffalo Bill Reservoirs located on the Wind and Shoshone Rivers were drafted to 73 and 96 percent of average, respectively, to meet irrigation demands. The WYAO established the minimum winter releases out of these reservoirs at flow rates of 500 cfs and 200 cfs, respectively.

These releases were 59 percent of average and 77 percent of average, respectively. However, since the WGF requested a spring flushing flow out of Boysen Reservoir for late March, the WYAO set the fall and winter release out of Boysen Reservoir at 475 cfs to conserve the same amount of water that would be required to conduct the flushing flow.

Well above average valley and mountain precipitation continued into October 2013 at 242 and 145 percent of average, respectively. Inflows into Bighorn Lake increased to 114 percent of average and forced Bighorn Lake storage into the exclusive flood control pool above 3640.0 ft. Reservoir releases were coordinated with the U.S. Army Corps of Engineers while the reservoir was in the exclusive flood control pool and on October 15, 2013 releases were increased to 2,250 cfs to control the rate of fill.

On November 1, 2013 total storage in Bighorn Lake was 1,025,766 AF at elevation 3640.41 ft, 115 percent of average for this time of year. On November 7, 2013 Reclamation hosted a public meeting in Billings, Montana to discuss the water supply outlook and projected fall and winter operations of the Bighorn River Basin. With the wet conditions in September through October and storage in Bighorn Lake above the normal full pool at elevation 3640 ft, the fall/winter release from Yellowtail Dam was set at 2,330 cfs on November 12, 2013. The fall/winter release rate is based on operating criteria that uses a procedure to determine the expected November through March gains. These forecasted gains, the planned winter releases out of Boysen and Buffalo Bill Reservoirs, and the end of March elevation target of 3617.0 ft was used to calculate the fall/winter release from Yellowtail Dam of 2,330 cfs, 93 percent of average.

There was a possibility with the above average precipitation received in September and October, that there may be a one-time deviation to the process used to calculate the fall/winter release out of Buffalo Bill Reservoir. As it turned out, the deviation was approved, enabling the winter release rate from Buffalo Bill Reservoir to be increased to 355 cfs. In response, the winter release rate from Yellowtail Dam was increased proportionately to 2,480 cfs on November 27, 2013. On December 1, 2013 all storage in the exclusive flood control pool in Bighorn Lake was evacuated.

Total precipitation during October through December was above average. The valley precipitation was 160 percent of average while the mountain precipitation was 106 percent of average. Gains over the 3 month period were 145 percent of average. On January 1, 2014 the NRCS measured the snow water equivalent of the mountain snowpack at 110 percent of average. During February and March, snow fell in the mountains at well above average rates. The valley and mountain precipitation was 138 and 175 percent of average, respectively. By March 1, 2014 the NRCS measured the mountain snowpack at 128 percent of average. Based on the above average snowpack, releases were kept at the current release rate of 2,570 cfs.

On March 1, 2014 the April through July runoff was forecasted to be 1,646,700 AF, 154 percent of average. Storage in Bighorn Lake on March 1, 2014 was 884,119 AF, elevation 3626.92 ft or 116 percent of average. This was 8.8 ft or 68,200 AF higher than what was forecasted on November 1, 2013.

In early March a spring storm produced heavy snow in the valleys and mountains in the lower Bighorn River Basin. With warmer temperatures melting much of the low elevation snow, inflows into Bighorn Lake increased significantly during early March. On March 10, 2014 the daily average inflow peaked at 8,470 cfs. The increased inflow was not from Boysen or Buffalo Bill Reservoirs, but was due primarily to the rapid warming temperatures melting the low elevation snow. Releases from those two reservoirs were increased towards the end of March. With the objective to evacuate storage to elevation 3617 ft by the end of March, releases were continually increased through the month of March. By March 25, 2014 releases to the Bighorn River were 6,000 cfs.

The storage content in Bighorn Lake on April 1, 2014 was 819,942 AF at elevation 3618.7 ft. The mountain snowpack above Bighorn Lake continued to increase to 134 percent of average by April 1, 2014. April was near average for temperature and precipitation. Snowpack peaked on April 17, 2014 at 135 percent of the average snowpack peak. Starting on March 25, 2014 releases from Boysen and Buffalo Bill were increased based on forecasted inflows. The April 1, 2014 forecasted April through July runoff was 1,960,800 AF, 194 percent of average. In accordance with the operating criteria in preparation for the anticipated snowmelt runoff into Bighorn Lake, it was required to draw the reservoir down to near elevation 3600.40 ft by around the middle of May. Releases from Yellowtail Dam to the Bighorn River were increased to 7,500 cfs during April.

By May 1, 2014 storage in Bighorn Lake had increased to 729,269 AF at elevation 3603.7 ft. Snowpack on May 1, 2014 was 134 percent of average and the May through July runoff was forecast at 1,636,200 AF or 177 percent of average. Releases from Yellowtail Dam were increased to 8,500 cfs about mid-May due primarily to the increased releases out of Boysen and Buffalo Bill Reservoirs. The goal was to keep the level of Bighorn Lake at a low elevation during May in preparation of the anticipated snowmelt runoff. The low elevation for the year occurred on May 22, 2014 at 3602.38 ft. Cooler mountain temperatures and lower than average precipitation maintained inflows lower than anticipated for most of May. Finally, in late May and early June the snowmelt runoff began. The peak inflow into Bighorn Lake for the year occurred on May 30, 2014 at 13,778 cfs. Reservoir levels through Memorial Day weekend were much lower than the 3617.0 ft needed to launch boats at Horseshoe Bend, however, in late May and early June, storage in Bighorn Lake was quickly increasing and by June 7, 2014 storage in Bighorn Lake had increased to elevation 3617 ft.

On June 1, 2014 storage in Bighorn Lake was 768,233 AF, elevation 3610.7 ft. This was 95 percent of average. Snowpack on June 1, 2014 was 110 percent of average. The June 1, 2014 forecast of June through July runoff was 782,900 AF, 119 percent of average. June precipitation was above average while June temperatures were below average. The below average temperatures kept the higher elevation snow from melting. With the prolonged melt off of the remaining snow, inflows were decreasing and Boysen and Buffalo Bill Reservoir were reducing releases. Releases from Yellowtail Dam were decreased to as low as 2,540 cfs to conserve storage to try to fill Bighorn Lake. On June 26, 2014 the Bureau of Indian Affairs (BIA) requested a shutdown of the Bighorn Canal for emergency repairs. The diversions to the canal were moved to the river for a river release of 2,865 cfs.

Near the end of June, warmer weather returned and the remaining high elevation snow continued to quickly melt out. Along with rainfall, streamflows were increasing significantly. Over a 3 day period at the end of June into July, releases out of Yellowtail Dam were again increased to 4,500 cfs. The increases were due to the storage level in Bighorn Lake quickly approaching the top of the joint-use pool at elevation 3640 ft and increased releases from Boysen and Buffalo Bill Reservoirs.

On July 1, 2014 the storage content in Bighorn Lake was 981,570 AF at elevation 3636.80 ft, 107 percent of average. July was a warm and dry month. Storage in Bighorn Lake reached elevation 3640.0 ft, the top of the joint-use pool, on July 8, 2014. Reservoir releases were coordinated with the U.S. Army Corps of Engineers to manage the storage in the exclusive flood control pool. Releases were increased over a three day period, July 7, 2014 through July 9, 2014 to 7,000 cfs. After the middle of July, as the snowmelt continued to decline and releases out of Boysen and Buffalo Bill Reservoirs were gradually reduced to conserve storage, releases out of Yellowtail Dam to the Bighorn River were also slowly decreased to 2,500 cfs over approximately a 1 week period to conserve storage.

Conditions continued to be dry until the later part of August. Releases to the Bighorn River were slightly increased, as inflows remained higher than anticipated. During August 12, 2014 through August 14, 2014, flows in the Bighorn River were gradually decreased to 1,500 cfs and maintained at that rate for approximately 12 hours at the request of the Bighorn County Sheriff's Office and BIA law enforcement officer to conduct a search for a possible drowning victim. A large precipitation event hit the state of Montana and part of Wyoming on August 22, 2014 through August 25, 2014. Inflows into Bighorn Lake increased considerably and once again storage in Bighorn Lake increased above elevation 3640.0 ft, the top of the joint-use pool. Reservoir releases were again coordinated with the U.S. Army Corps of Engineers and releases to the Bighorn River were gradually increased to 4,500 cfs during late August through September, in attempt to evacuate storage from the exclusive flood pool. Valley and mountain precipitation in August were 253 and 185 percent of average.

Valley and mountain precipitation in September were 128 and 101 percent of average. Peak storage of the year occurred on September 17, 2014 at 1,043,430 AF or elevation 3641.77 ft. Storage in Bighorn Lake ended the year with a content of 1,021,582 AF at elevation 3640.1 ft. This was 117 percent of average and 54,093 AF or 4.55 ft higher than at the end of WY 2013. Winter releases in the November plans were expected to be 2,830 cfs.

Inflows into Bighorn Lake during April through July were 161 percent of average, totaling 1,724,878 AF. This was 1,096,993 AF higher than the April through July inflow which occurred in 2013. It was the eighth highest runoff on record. The annual runoff into Bighorn Lake during WY 2014 totaled 2,965,906 AF. This was 139 percent of average and 97 percent or 1,458,119 AF higher than the total runoff experienced during WY 2013.

The total amount of water released to the Bighorn River during 2014 was 2,304,718 AF or 139 percent of average. This was about 112 percent or 1,518,130 AF higher than what was released to the Bighorn River in 2013. Releases to the river were highest of record in April through May.

The water levels of Bighorn Lake during 2014 allowed for full service recreation at all marinas around Bighorn Lake for part of the recreation season from June 7, 2014 through Labor Day weekend. Bighorn Lake was drawing down over Memorial Day weekend to provide storage for the forecasted runoff.

Total generation produced at Yellowtail Power plant during 2014 was 1,019,861 kilowatt-hours, 138 percent of average. This was 596,739 kilowatt-hours more than generated in 2013. Approximately 94 percent of all the water released from Yellowtail Dam during 2014 was released through the power plant (2,754,939 AF). The remainder of the water (161,730 AF) was released either through the evacuation outlet gates or the spillway gates.

The Corps estimated that during 2014, Bighorn Lake prevented $270,800 local flood damages and prevented $9,361,300 in flood damages downstream on the Missouri River below Fort Peck Reservoir. Since construction of Yellowtail Dam in 1965, Bighorn Lake has reduced flood damages by a total of $165,282,300.

Important Events During WY 2014

October 7, 2013 through December 19, 2013: Maintenance was required of hollow-jet valves. To accommodate the maintenance, the Yellowtail Afterbay Reservoir was maintained below 3190.0 ft.

October 9, 2013: With the 2013 irrigation season coming to a close, the BIA requested all diversions to the Bighorn Canal be discontinued on October 8, 2013. Total releases were gradually reduced to 1,900 cfs. Streamflow measurements indicated actual river flows were lower than anticipated. A shift change was applied to the river gage. (1,900 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

October 15, 2013: Inflows into Bighorn Lake averaged over 3,400 cfs and storage continued to increase, approaching the top of the joint-use pool. To slow and control the rate of fill of storage in Bighorn Lake, releases out of Yellowtail Dam were increased to 2,250 cfs. Power generation also indicates actual river flow was lower than anticipated so a shift change was applied to the river gage. (2,250 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

October 21, 2013: Streamflow measurements conducted by the USGS indicated actual river flow was lower than anticipated. A shift change was applied to the river gage. (2,250 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

October 22, 2013 through October 31, 2013: Maintenance was required of sluice gate number 3 due to mechanical and electrical failure. The Yellowtail Afterbay Reservoir was maintained between 3186.0 ft and 3190.0 ft to accommodate the maintenance.

October 25, 2013 through December 1, 2013: Storage in Bighorn Lake entered the exclusive flood control pool above elevation 3640.0 ft. Reservoir releases were coordinated with the U.S. Army Corps of Engineers.

October 29, 2013: Streamflow data indicated actual river flow was lower than anticipated. A shift change was applied to the river gage. (2,250 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

October 31, 2013: Streamflow data indicated actual river flow was lower than anticipated. A shift change was applied to the river gage. To slow and control the rate of fill of storage in Bighorn Lake, releases out of Yellowtail Dam were increased. (2,300 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

November 7, 2013: Reclamation hosted a combined Annual Fall Water Supply Meeting and Bighorn River System Issues Group Meeting at the Great Plains Regional Office in downtown Billings, Montana to discuss the operations and operating criteria of the Bighorn River Basin. Clayton Jordan, Engineer in the Reservoir Operations Group for MTAO, presented the water supply outlook and the proposed operations of Bighorn Lake and Bighorn River for the fall and winter of the 2013-2014.

November 12, 2013: Based on the operating criteria, Reclamation increased and maintained the fall and winter release out of Bighorn Lake to the Bighorn River at 2,330 cfs (2,330 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

November 13, 2013: Streamflow data indicated actual river flow was lower than anticipated. A shift change was applied to the river gage. (2,330 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

November 19, 2013: Streamflow measurements conducted by the USGS indicated actual river flow was lower than anticipated. A shift change was applied to the river gage. (2,330 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

November 25, 2013: Storage in Bighorn Lake continues to remain in the exclusive flood control pool and has not been evacuated as previously anticipated. Releases to the Bighorn River were increased to evacuate storage out of the exclusive flood control pool (2,400 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

November 27, 2013: The planned winter release from Buffalo Bill Reservoir was increased from 200 cfs to 350 cfs. Based on the operating criteria for setting the fall/winter release rate, Reclamation increased and maintained the fall and winter release out of Bighorn Lake to the Bighorn River at 2,480 cfs (2,480 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

December 9, 2013 through December 11, 2013: Ventilation testing was conducted on Unit 3 of the Yellowtail Power plant.

December 16, 2013: Maintenance was conducted on Unit 4 of the Yellowtail Power plant.

December 17, 2013: Streamflow data indicated actual river flow was higher than anticipated. A shift change was applied to the river gage. (2,330 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

December 31, 2013: Streamflow data indicated actual river flow was higher than anticipated. A shift change was applied to the river gage. (2,480 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

January 6, 2014 through January 15, 2014: Turbine releases were limited and restricted to 3-unit capacity to allow for a 10-day maintenance outage on Unit 1 of the Yellowtail Power plant.

January 17, 2014: Streamflow measurements conducted by the USGS indicated actual river flow was higher than anticipated. A shift change was applied to the river gage. (2,480 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

January 21, 2014 through February 19, 2014: Turbine releases were limited and restricted to 3 unit capacity to allow for a 30-day maintenance outage on Unit 2 of the Yellowtail Power plant.

January 27, 2014: Streamflow data indicated actual river flow was higher than anticipated. A shift change was applied to the river gage. Two separate shifts were applied the same day (2,480 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

February 20, 2014: Streamflow data indicated actual river flow was higher than anticipated. A shift change was applied to the river gage. However, due to the above normal rate of snow accumulation in the Bighorn River Basin over the two prior weeks, no change in operations was made to adjust for the variation in flows. A new shift was applied to the river gage but river releases were maintained at the current stage and rate. (2,570 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

February 24, 2014 through March 5, 2014: Turbine releases were limited and restricted to 3 unit capacity to allow for a 10-day maintenance outage on Unit 3 of the Yellowtail Power plant.

March 5, 2014 through March 6, 2014: Mountain snowpack in the Bighorn River Basin was at 131 percent of average. The March water supply forecast indicated a need to increase releases in preparation for the snowmelt runoff. Releases were increased by 430 cfs. (3,000 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

March 10, 2014 through March 13, 2014: Unseasonably warm weather quickly melted the low elevation snow causing inflows into Bighorn Lake to increase to over 7,400 cfs. As a result, storage in Bighorn Lake was slowly refilling. To continue evacuating storage as planned in preparation for the snowmelt runoff, releases were increased by 2,000 cfs over a 4 day period. (5,000 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

March 10, 2014 through March 19, 2014: Turbine releases were limited and restricted to 3 unit capacity to allow for a 10-day maintenance outage on Unit 4 of the Yellowtail Power plant.

March 24, 2014 through April 22, 2014: To allow for maintenance on the hollow-jet valves, Yellowtail Afterbay Reservoir was maintained below 3190.0 ft.

March 20, 2014: Unseasonably warm weather continued to melt the low elevation snow keeping inflows into Bighorn Lake higher than anticipated. To continue evacuating storage as planned in preparation for the snowmelt runoff, releases were increased by 500 cfs. (5,500 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

March 25, 2014: The Wyoming Area Office increased releases out of Buffalo Bill and Boysen Reservoirs to control the rate of fill of storages in these reservoirs. In response, releases out of Bighorn Lake were also increased by 500 cfs to continue evacuating storage as planned in preparation for the snowmelt runoff. (6,000 cfs to the river and zero cfs to the Bighorn Canal).

April 2, 2014: Mountain snowpack in the Bighorn River Basin was at 134 percent of average. The April water supply forecast indicated a need to increase releases in preparation for the snowmelt runoff. In response, the WYAO increased releases out of Boysen and Buffalo Bill Reservoirs. Releases out of Bighorn Lake were also increased by 500 cfs. (6,500 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

April 3, 2014: Streamflow measurements conducted by the USGS indicated actual river flow was lower than anticipated. A shift change was applied to the river gage. (6,500 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

April 14, 2014 through April 25, 2014: Semi-annual maintenance of the Yellowtail Afterbay Dam sluicegates required the Yellowtail Afterbay Reservoir be maintained above elevation 3186.0 ft to maintain river flows through the radial gates and below elevation 3190.0 ft for stoplog protection.

April 14, 2014: Streamflow measurements conducted by the USGS indicated actual river flow was lower than anticipated. A shift change was applied to the river gage. (6,500 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

April 18, 2014 through April 19, 2014: Mountain snowpack in the Bighorn River Basin was at 135 percent of average. Releases out of Boysen and Buffalo Bill Reservoirs were being increased. To continue evacuating storage in Bighorn Lake as planned in preparation for the anticipated snowmelt runoff, releases out of Yellowtail Dam were increased by 1,000 cfs in 500 cfs increments over a 2 day period. (7,500 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

May 12, 2014 through May 15, 2014: Turbine releases were limited and restricted to 2-unit capacity. There was a rotating outage of Units 1 and 2 and Units 3 and 4 for online relay and instrument transformer testing. This required the initiating a bypass flow through the Yellowtail spillway.

May 13, 2014: The BIA requested diversions to the Bighorn Canal begin at 100 cfs. In response, the total release out of Yellowtail Afterbay Reservoir was adjusted to 7,600 cfs (7,500 cfs to the Bighorn River and 100 cfs to the Bighorn Canal). Throughout the remainder of the year, as irrigation demands varied, diversions to the Bighorn Canal and releases to the Bighorn River were adjusted as needed to meet the irrigation demands and the desired river flows.

May 13, 2014 through May 14, 2014: Releases out of Boysen and Buffalo Bill Reservoirs were being increased. In preparation for the anticipated snowmelt runoff, releases out of Yellowtail Dam were increased by 1,000 cfs in 500 cfs increments over a 2 day period. (8,500 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

May 19, 2014: Streamflow measurements conducted by the USGS indicated actual river flow was lower than anticipated. A shift change was applied to the river gage. However, due to the balance of system operations including the bypass through the Yellowtail spillway, no change in operations was made to adjust for the variation in flows. A new shift was applied to the river gage but river releases were maintained at the current stage and rate. (8,320 cfs to the Bighorn River and 100 cfs to the Bighorn Canal).

May 22, 2014: The BIA requested an increase of 100 cfs in diversions to the Bighorn Canal (8,320 cfs to the river and 200 cfs to the Bighorn Canal).

May 28, 2014 through May 29, 2014: The BIA requested an increase of 200 cfs in diversions to the Bighorn Canal (8,320 cfs to the river and 400 cfs to the Bighorn Canal).

May 30, 2014: Streamflow measurements conducted by the USGS indicated actual canal flow was lower than anticipated. A shift change was applied to the canal gage. Current flows in the canal were meeting irrigation demands therefore a change in diversions to the Bighorn Canal was not made. (8,320 cfs to the Bighorn River and 367 cfs to the Bighorn Canal).

June 3, 2014 through June 5, 2014: As Boysen and Buffalo Bill Reservoirs releases were being reduced, inflows into Bighorn Lake began to decline. Releases to the Bighorn River were reduced by 1,050 cfs to approximate generation capacity to conserve storage and control the rate of fill. (7,270 cfs to the Bighorn River and 367 cfs to the Bighorn Canal).

June 5, 2014: The BIA requested an increase of 83 cfs in diversions to the Bighorn Canal. Releases to the Bighorn River were reduced by 450 cfs to maintain total releases under generation capacity. (6,820 cfs to the river and 450 cfs to the Bighorn Canal).

June 9, 2014: The start of the rewind project of Unit 3 of the Yellowtail Power plant. A bypass through the Yellowtail river outlet works was started with smaller generation capacity of Yellowtail Power plant.

June 9, 2014 through June 12, 2014: Inflows into Bighorn Lake continued to decline. Boysen Reservoir releases were being reduced. Releases to the Bighorn River were reduced by 1,800 cfs over 4 day period to approximate generation capacity to conserve storage and control the rate of fill. At the same time, the BIA requested an increase of 50 cfs in diversion to the Bighorn Canal. (5,020 cfs to the Bighorn River and 500 cfs to the Bighorn Canal).

June 12, 2014: The Yellowtail Power plant was operating at a higher efficiency than anticipated. To remain at power plant generation capacity as recommended by Western Area Power Administration (WAPA), releases to the Bighorn River were reduced by 100 cfs. (4,920 cfs to the Bighorn River and 500 cfs to the Bighorn Canal).

June 15, 2014: WAPA requested a temporary emergency bypass of the Yellowtail Power plant due to overloading of system conditions. The river outlet works were used on June 15, 2014, from approximately 1100 hour to 1600 hour. The bypass flow was approximately 2,150 cfs.

June 17, 2014 through June 19, 2014: Inflows into Bighorn Lake continued to decline. Boysen Reservoir releases were being reduced. Releases to the Bighorn River were reduced by 1,920 cfs over 4 day period to conserve storage. At the same time, the BIA requested a decrease of 125 cfs in diversion to the Bighorn Canal.

Streamflow measurements conducted by the USGS indicated actual river and canal flow was lower than anticipated. A shift change was applied to the river and canal gage. (3,000 cfs to the Bighorn River and 375 cfs to the Bighorn Canal).

June 25, 2014: Streamflow measurements conducted by the USGS indicated actual river and canal flow was lower than anticipated. A shift change was applied to the river and canal gage. Current flows in the canal were meeting irrigation demands; therefore, a change in diversions to the Bighorn Canal was not made. River releases were maintained at the current stage and rate to conserve storage. (2,540 cfs to the Bighorn River and 325 cfs to the Bighorn Canal).

June 26, 2014: The BIA requested a shutdown of the canal for repairs. The total release from the Yellowtail Afterbay will be maintained with an increase in releases to the Bighorn River. (2,865 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

June 30, 2014 through July 2, 2014: Bighorn Lake was nearing normal full pool elevation of 3640.0 ft. Releases out of Boysen and Buffalo Bill Reservoirs were being increased. To control the rate of fill in Bighorn Lake, releases out of Yellowtail Dam were increased by 1,635 cfs in roughly 500 cfs increments over a 3 day period. (4,500 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

July 2, 2014: The BIA requested a restart of the Bighorn Canal. Diversions to the Bighorn Canal were increased to 450 cfs over a 2 day period. (4,500 cfs to the river and 450 cfs to the Bighorn Canal).

July 3, 2014: Recent power generation and streamflow data indicated the need to apply a new shift to the Bighorn River gage. A new shift was also applied to the Bighorn Canal with the recent shutdown of the canal. (4,500 cfs to the river and 450 cfs to the Bighorn Canal).

July 7, 2014 through July 9, 2014: The BIA requested an increase in diversion to the Bighorn Canal. Diversions to the Bighorn Canal were increased by 150 cfs over a 2 day period. Bighorn Lake was in the exclusive flood control pool. Bighorn River releases were increased by 2,500 cfs in roughly 500 cfs increments over a 3 day period to evacuate storage from the exclusive flood control pool. (7,000 cfs to the Bighorn River and 600 cfs to the Bighorn Canal).

July 7, 2014 through July 23, 2014: Bighorn Lake was in the exclusive flood control pool above elevation 3640.0 ft. Reservoir releases were coordinated with the U.S. Army Corps of Engineers.

July 15, 2014 through July 23, 2014: Inflows into Bighorn Lake started to decline. Boysen and Buffalo Bill Reservoirs releases were being reduced. Releases to the Bighorn River were reduced by 5,000 cfs over 9 day period to conserve storage. At the same time, the BIA requested a decrease in diversion to the Bighorn Canal. Streamflow and power generation data indicated actual river was lower than anticipated. A shifts change was applied to the river gage. (3,000 cfs to the Bighorn River and 375 cfs to the Bighorn Canal).

July 25, 2014: Streamflow measurements conducted by the USGS indicated actual river and canal flow was lower than anticipated. A shift change was applied to the river and canal gage. Current flows in the canal were meeting irrigation demands therefore; a change in diversions to the Bighorn Canal was not made. River releases were also maintained at the current stage and rate. (2,880 cfs to the Bighorn River and 420 cfs to the Bighorn Canal).

July 28, 2014 through July 31, 2014: The BIA requested the diversions to the Bighorn Canal be decreased and maintained at 200 cfs for approximately 1 day to allow them to chemically treat the heavy algae growth in the Bighorn Canal. The Yellowtail Power plant was limited to two units on July 29, 2014 and July 30, 2014 for breaker upgrades and testing. To continue conserving storage in Bighorn Lake, releases were decreased by 330 cfs. (2,500 cfs to the Bighorn River and 500 cfs to the Bighorn Canal).

August 4, 2014: The BIA requested a decrease of 75 cfs in diversions to the Bighorn Canal. (2,500 cfs to the river and 425 cfs to the Bighorn Canal).

August 6, 2014: Inflows into Bighorn Lake continued to stay above average. In response, releases to the Bighorn River were increased by 100 cfs. (2,600 cfs to the Bighorn River and 425 cfs to the Bighorn Canal).

August 11, 2014: Streamflow measurements conducted by the USGS indicated actual river flow was lower than anticipated. A shift change was applied to the river gage. The BIA requested a decrease of 75 cfs in diversions to the Bighorn Canal. (2,600 cfs to the Bighorn River and 375 cfs to the Bighorn Canal).

August 12, 2014 through August 13, 2014: The Chief Investigating Officer for the BIA called and requested a reduction in releases for 12 hours to assist in a recovery effort of a drowning victim near the Two Leggins fishing access site. To assist in this recovery effort, releases to the Bighorn River were decreased to 1,500 cfs for 12 hours and brought back up to 2,625 cfs. (2,625 cfs to the Bighorn River and 375 cfs to the Bighorn Canal).

August 18, 2014 through August 29, 2014: Semi-annual maintenance of the Yellowtail Afterbay Dam sluicegates required the Yellowtail Afterbay Reservoir be maintained above elevation 3186.0 ft to maintain river flows through the radial gates and below elevation 3190.0 ft for stoplog protection.

August 24, 2014 through October 1, 2014: Bighorn Lake was in the exclusive flood control pool above elevation 3640.0 ft. Reservoir releases were coordinated with the U.S. Army Corps of Engineers.

August 25, 2014: Rains caused streamflows to increase and fill Bighorn Lake into the exclusive flood pool. Releases from Yellowtail Dam were increased by 375 cfs to evacuate storage out of the exclusive flood control pool. The BIA has also requested a decrease in diversions to the Bighorn Canal by 50 cfs. In addition, streamflow measurements indicate actual river flows are lower than anticipated. A shift was applied to the river gage. (3,000 cfs to the Bighorn River and 325 cfs to the Bighorn Canal).

August 27, 2014: The BIA requested a decrease of 50 cfs in diversions to the Bighorn Canal. The waster was moved from the canal to the Bighorn River. (3,050 cfs to the river and 275 cfs to the Bighorn Canal).

September 2, 2014 through September 3, 2014: Releases from Yellowtail Dam were increased by 500 cfs over a 2 day period to evacuate storage out of the exclusive flood control pool. Streamflow data indicated the need to apply a new shift to the Bighorn River gage. (3,500 cfs to the Bighorn River and 275 cfs to the Bighorn Canal).

September 9, 2014: Releases from Yellowtail Dam were increased by 250 cfs to evacuate storage out of the exclusive flood control pool. Streamflow data indicated the need to apply a new shift to the Bighorn River gage. (3,750 cfs to the Bighorn River and 275 cfs to the Bighorn Canal).

September 17, 2014: Releases from Yellowtail Dam were increased by 150 cfs to evacuate storage out of the exclusive flood control pool. Streamflow data indicated the need to apply a new shift to the Bighorn River gage. The BIA requested a decrease of 50 cfs in diversions to the Bighorn Canal. (3,900 cfs to the Bighorn River and 225 cfs to the Bighorn Canal).

September 23, 2014 through September 24, 2014: Annual Yellowtail Afterbay radial gate maintenance and spillway tunnel and hollow jet discharge area inspections required the Yellowtail Afterbay Reservoir level be maintained below 3178.5 ft.

September 25, 2014: The BIA requested a shutdown of the Bighorn Canal for the irrigation season. In addition, to continue evacuating storage from the exclusive flood control pool, releases to the Bighorn River were increased. Due to a generation limit set by WAPA, a bypass through the river outlet works was initiated. (4,500 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

September 29, 2014 through September 30, 2014: Unscheduled maintenance of the Yellowtail Afterbay Dam sluicegates required the Yellowtail Afterbay Reservoir be maintained above elevation 3186.0 ft to maintain river flows through the radial gates and below elevation 3190.0 ft for stoplog protection.

Additional hydrologic and statistical information pertaining to the operations of Bighorn Lake during 2014 can be found on Table MTT11 and MTG12.

For more detailed information on the operations of Boysen and Buffalo Bill Reservoirs during 2014, refer to the narratives for Boysen Reservoir and Power plant and Shoshone Project under the responsibility of the WYAO.

TABLE MTT11
HYDROLOGIC DATA FOR 2014
BIGHORN LAKE (YELLOWTAIL DAM)
NEW SEDIMENT SURVEY DATA EFFECTIVE 01/01/2011

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	3547.00	493,584	493,584
TOP OF ACTIVE CONSERVATION	3614.00	829,687	336,103
TOP OF JOINT USE	3640.00	1,070,029	240,342
TOP OF EXCLUSIVE FLOOD CONTROL	3657.00	1,328,360	258,331

STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	3635.54	967,489	OCT 01, 2013
END OF YEAR	3640.08	1,020,582	SEP 30, 2014
ANNUAL LOW	3602.38	722,354	MAY 22, 2014
ANNUAL HIGH	3641.77	1,043,430	SEP 17, 2014
HISTORIC HIGH	3656.43	1,365,198	JUL 06, 1967

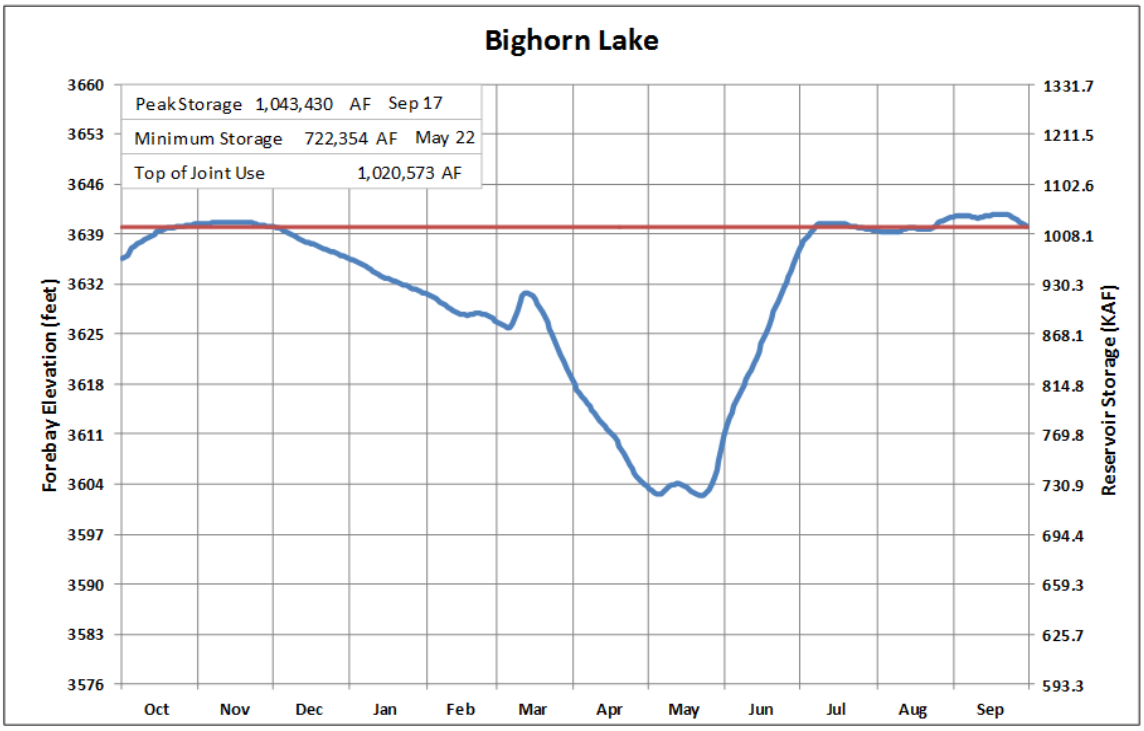
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW*	DATE
ANNUAL TOTAL (AF)	2,965,908	OCT 13-SEP 14	2,870,888	OCT 13-SEP 14
DAILY PEAK (CFS)	13,778	MAY 30, 2014	8,525	MAY 15, 2014
DAILY MINIMUM (CFS)	940	DEC 06, 2013	1,784	AUG 13, 2014
PEAK SPILL (CFS)			4,613	MAY 14,2014
TOTAL SPILL (KAF)			161,730	5/12-6/5/2014
				6/9-12,15/2014
				7/03-21/2014
				9/25-30/2014

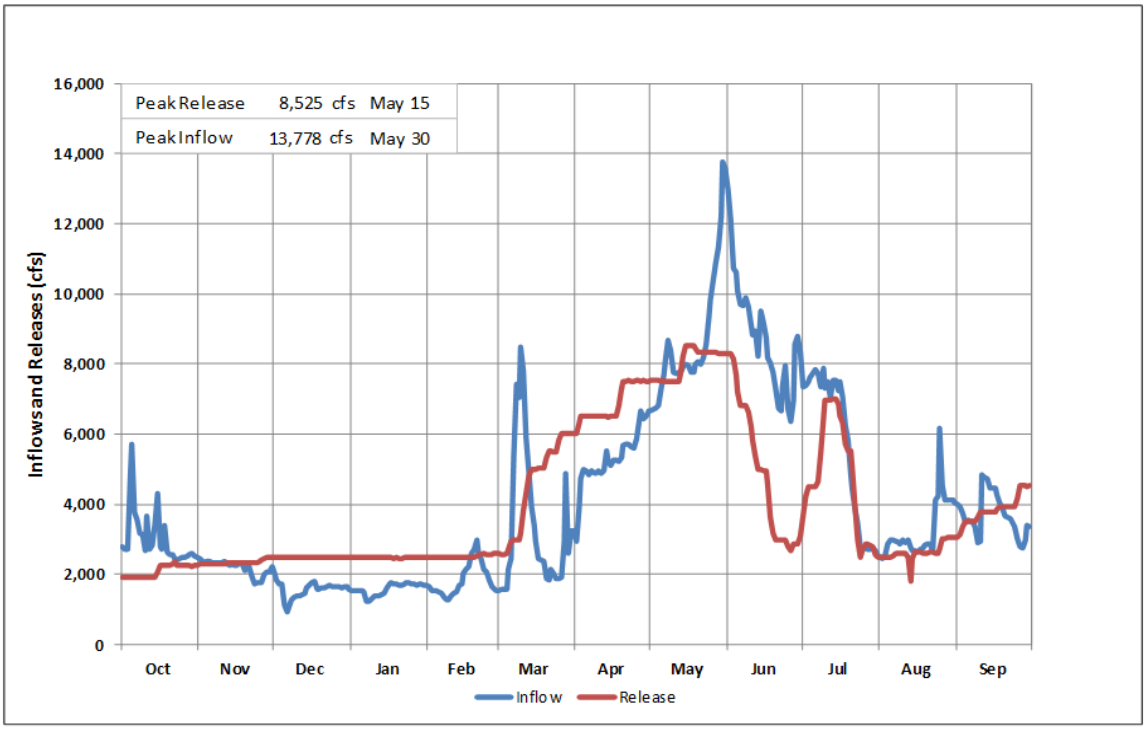
*Discharge to the Bighorn River

MONTH	INFLOW		OUTFLOW*				CONTENT	
	KAF	% OF AVG	CANAL KAF	% OF AVG	RIVER KAF	% OF AVG	KAF	% OF AVG
OCTOBER	185.7	114	2.9	79	129.1	76	1,025.8	116
NOVEMBER	130.3	105	0.0	---	139.2	80	1,021.2	118
DECEMBER	96.1	92	0.0	---	152.6	85	968.7	117
JANUARY	97.3	92	0.0	---	152.9	87	917.4	116
FEBRUARY	102.2	96	0.0	---	139.4	87	884.1	116
MARCH	209.5	144	0.0	---	278.3	153	819.9	108
APRIL	316.2	216	0.0	---	410.4	225	729.3	98
MAY	534.3	203	6.7	60	492.9	251	768.2	94
JUNE	522.7	128	21.3	101	292.4	104	981.6	107
JULY	351.7	140	30.3	109	292.8	105	1,104.6	112
AUGUST	199.9	135	23.3	88	162.1	94	1,038.6	120
SEPTEMBER	220.0	135	12.4	68	228.8	150	1,021.6	117
ANNUAL	2,965.9	139	96.9	88	2,870.9	125		
APRIL-JULY	1,724.9	161						

* Average for the 1967-2014 period.

FIGURE MTG12





Water Year 2014

SUMMARY

OF OPERATIONS

FOR WY 2014

FOR BIGHORN BASIN RESERVOIRS

(BULL LAKE, PILOT BUTTE, BOYSEN, ANCHOR, BUFFALO BILL)

UNDER THE RESPONSIBILITY

OF THE

WYOMING AREA OFFICE

CLIMATE SUMMARY

September 2013 was one of the wettest Septembers of record in the Bighorn Basin and the trend continued into the new water year. Widespread, heavy snowfall occurred over much of Wyoming beginning on October 3, 2013. Storm totals of over two feet of heavy, wet snow were recorded at SNOTEL sites in the Absaroka and Wind River Ranges while many lower elevation sites received about a foot of snow. Early season snowpack continued to build as a low pressure system brought over a foot of snow to the Absaroka's and the southern end of the Wind River Mountains on October 13, 2013 and October 14, 2013. The final precipitation event of the month occurred on October 28, 2013 with the majority of the moisture falling in the Wind River basin. For the month, temperatures were about five degrees colder than normal in the Bighorn Basin while precipitation at lower elevation weather stations was about 150 percent of average in the Buffalo Bill drainage and 240 percent of average in the Boysen watershed. On November 1, 2013the snowpack in the mountains above both Boysen and Buffalo Bill Reservoirs stood at about 180 percent of average.

Following the wet October, November was drier than normal with temperatures about three degrees above normal. Storms on November 16, 2013 and November 21, 2013 brought some precipitation to the mountains but little moisture to the lower elevations, and the snowpack moved closer to average as the month progressed. Clearing and cold followed the storm on November 21, 2013 with temperatures falling below zero. New record lows for the date were set at Riverton and Worland, which reported lows of -1 and -16 degrees, respectively. By December 1, 2013 the snowpack in the Boysen watershed had dropped to 101 percent of average while the drainage above Buffalo Bill was 114 percent of average. Snow began falling on December 2, 2013 and continued through December 4, 2013 with storm totals of around one foot in the Wind River Mountains and close to two feet in the Absaroka's. Once again, arctic air filled in behind the storm and temperatures in the -20 degrees range were common over a widespread area. Storms on December 19, 23, 28, and 31 brought some snow to the Basin, but accumulations were generally less than six inches. December temperatures were about four degrees below average in the Shoshone basin and two degrees below average in the Wind River basin. Precipitation was above average at lower elevation weather stations but mountain snowpack fell to 93 percent of average above Boysen and 110 percent of average in the Shoshone drainage on January 1, 2014.

The new year brought unsettled conditions to the Bighorn Basin as a series of storms moved through the area during the first half of the month. A blast of arctic air on January 6, 2014 took temperatures into the -20 degree range once again, with the Riverton area reporting as low as 29 degrees below zero. On January 12, 2014 there was widespread snowfall in western Wyoming, with the mountains above Buffalo Bill receiving over two feet of snow while about 18 inches fell in the headwaters of the Wind River. Dry air dominated most of the last half of the month until a storm on January 29, 2014 brought about a foot of snow and 60 mile per hour wind to the western mountains. While precipitation was above average at the lower elevation weather stations in both the Shoshone and Wind River valleys, the mountain snowpack accumulated at a less than average pace. On February 1, 2014 the snow water equivalent in the Buffalo Bill watershed was 105 percent of average and the Boysen drainage 84 percent of average.

Temperatures in the Bighorn Basin were about three degrees warmer than normal for the month of January.

The first week of February saw the return of extreme cold in the Bighorn Basin with the area around Dubois being the cold spot at 35 degrees below zero on the morning of February 5, 2014. Highs for the day remained below zero at many locations and February 6 had even more stations reporting lows of -30 degrees or colder. A Pacific front followed the arctic air and brought heavy snow to western and northern Wyoming beginning on February 8, 2014. The South Pass SNOTEL site in the Wind River Range reported 28 inches of new snow, with many other sites receiving close to two feet of snow from the storm. Another system moved into the State on February 12, 2014 bringing the heaviest snowfall to the Absaroka's where the Blackwater and Evening Star SNOTEL sites each received a foot of snow. Snow continued to steadily accumulate during the last half of February as one front after another passed through the Basin and by March 1, 2014 the snowpack above Buffalo Bill and Boysen had improved to 131 and 107 percent of average, respectively. February precipitation was well above average in the mountains and at lower elevation weather stations in the Shoshone watershed, but precipitation at lower elevation sites in the Wind River valley was less than the February average. February was quite a bit colder than normal, especially along the Shoshone River where temperatures were about ten degrees below average. The average temperature in the Wind River basin during February was about five degrees colder than normal.

The wet weather pattern that began in February continued into March as moisture laden fronts moved into Wyoming on March 1, 6, 8, 17, 26, and 29. The first storm of the month dropped close to two feet of snow in the Wind River and Absaroka Mountains, while each of the subsequent systems brought from six to twelve inches of snow to the high country. High winds accompanied the storms on March 17, 2014 and March 29, 2014 with gusts in excess of 90 miles per hour recorded on those dates at Boysen Peak. With warmer temperatures during the first week of March, river ice in the Bighorn River began to break up and move downstream, creating ice jams and causing significant flooding in the Worland area between March 7, 2014 through March 10, 2014. Temperatures were very close to normal during March and the snowpack increased to 138 percent of average in the Shoshone watershed and 114 percent of average in the Wind River basin on April 1, 2014. The Shoshone valley received almost twice the normal precipitation for March, with the weather station at Lake Yellowstone receiving the second highest March precipitation of record.

April began with light snow falling over most of the Bighorn Basin followed by a period of dry and mild conditions. A cold front on April 12, 2014 brought a return of winter weather as rain turned to snow during the evening hours, with snowfall continuing into April 13, 2014. The Lander foothills reported the heaviest snow, receiving up to two feet of new snow, while most locations reported from six to twelve inches. Following the spring storm, skies cleared and temperatures dropped into the teens or lower over most of Wyoming. Temperatures moderated for the remainder of the month and both the Shoshone and Wind River basins were within one degree of average for April. Precipitation in the Buffalo Bill watershed was well above average but the Boysen drainage received less than half the normal April precipitation. The snowpack above Buffalo Bill held constant through April and was 137 percent of average on May 1, 2014. In the Boysen watershed, the snowpack dropped six percent over the month to 108 percent of average on May 1, 2014.

The first few days of May were mild and dry, followed by more unsettled conditions which brought precipitation to Wyoming beginning on May 6, 2014. A strong spring storm on May 11, 2014 brought significant snowfall and high winds to the southern end of the Wind River Range, with amounts of 12 to 18 inches over a large area and almost two feet of snow reported at the Townsend Creek SNOTEL. Little precipitation fell during the remainder of the month and monthly totals in both the Shoshone and Wind River basins were below average. Temperatures were about two degrees above average for the month in both the Wind and Shoshone drainages and as temperatures rose during the last half of May, streamflow began to increase from snowmelt runoff. On June 1, 2014 the snowpack above Boysen was 79 percent of average and in the Buffalo Bill watershed, the snowpack stood at 112 percent of normal.

Precipitation during June was above average at lower elevation weather stations in the Buffalo Bill watershed, but less than average in the mountains above Buffalo Bill. Both the mountains and lower elevation stations in the Boysen drainage reported less than average precipitation. A strong cold front combined with a low pressure system to bring rain and snow to western Wyoming from June 16 to June 18, with the Togwotee Pass SNOTEL reporting seven inches of snow from the late spring storm. A cold front that moved through the Bighorn Basin on June 26, 2014 through June 27, 2014 brought rain and well below normal temperatures to the area. On June 27, 2014 the high of 52 degrees at Lake Yellowstone and 69 degrees at Riverton set new records for lowest high temperatures on that date. For the month, both the Shoshone and Wind River basins experienced temperatures that were about two degrees below average. There was still snow in the mountains above Buffalo Bill Reservoir on July 1, 2014 about 25 percent of average, but the snowpack at the SNOTEL sites in the Wind River basin was basically gone by the end of June.

Clear skies dominated in the Bighorn Basin during the first ten days of July, followed by a period of scattered thunderstorms from July 11, 2014 through July 16, 2014. The warmest temperatures of the summer were reported on July 23, 2014 through July 24, 2014 as highs in the upper 90's were common across the Basin and rose above 100 degrees at Worland, which tied the record high temperature for July 24, 2014 of 104 degrees. A storm on July 29 brought from one half to over three quarters of an inch of rain to the Wind River basin, but for the month of July precipitation was below average in both the Wind and Shoshone River basins. Temperatures in July were about three degrees above average in the Buffalo Bill watershed and one degree warmer than normal in the Wind River drainage.

Precipitation during August was more than double the thirty year average in both the Shoshone and Wind River valleys. Storms on August 5, 22, and 27 brought significant widespread precipitation to the Bighorn Basin. August 27, 2014 came with welcomed rainfall that brought well below normal temperatures to the area. In Riverton, the high for the day on August 27, 2014 of 62 degrees was two degrees colder than the previous low maximum temperature for the date while Lander's high of 61 degrees was the third lowest high for August 27, 2014 in 124 years of record. August temperatures were two to three degrees below average in the Bighorn Basin.

September was a month of extremes in the Bighorn Basin. Well below average temperatures and a rare early September snow storm transitioned into record high temperatures later in the month. On September 11, 2014 a cold front brought freezing temperatures and snow to the east side of

the continental divide. This was the earliest recorded snowfall for Cody with records dating back to 1915. The mountains above Buffalo Bill Reservoir saw the greatest accumulation with eight inches of snow falling at the Blackwater SNOTEL site while six inches of snow was reported over a wide area. Lake Yellowstone and Riverton recorded new record lows for September 12, 2014 at 18 degrees and 28 degrees, respectively. In contrast, on September 18, 2014 new record highs were established at Lander when the temperature rose to 89 degrees and at Riverton with a high of 90 degrees. The warm weather continued with more record highs on September 23, 24, and 25. On September 23, 2014 Lander's high of 87 degrees and Worland's high of 89 degrees were records. On September 24, 2014 Lander's high of 88 degrees, Riverton's high of 88 degrees, and Worland's high of 94 degrees were records. On September 25, Riverton's high of 89 degrees and Worland's high of 92 degrees were records. On September 26, 2014 cooler temperatures and rain moved into the Basin. Over the period from September 26, 2014 through September 29, 2014 the Wind River basin generally received from one and a half to two inches of rain, with a localized site on the North Fork of the Little Wind River reporting over four inches of rain. For the month, precipitation in the Basin was about 160 percent of average and temperatures were about two degrees above normal.

The 2014 mountain snow water content for the drainage basins in Wyoming is shown on Table WYT1. The 2014 water supply forecasts are shown on Table WYT2 and the 2014 precipitation in inches and the percent of average is shown on Table WYT3.

TABLE WYT1
2014 MOUNTAIN SNOW WATER CONTENT[1]
AS A PERCENT OF THE 1981-2010 AVERAGE

DRAINAGE BASIN	JAN 1		FEB 1		MAR 1		APR 1		MAY 1	
	INCHES	%	INCHES	%	INCHES	%	INCHES	%	INCHES	%
BULL LAKE	5.00	104	6.20	98	9.60	120	11.95	119	10.23	113
BOYSEN	5.70	93	7.03	84	11.19	107	14.76	114	13.73	108
BUFFALO BILL	9.17	110	12.30	105	18.88	131	24.10	138	24.45	137

[1]A composite of the following Natural Resources Conservation Service SNOTEL sites was used to determine snow water content and percent of average for the basins.
Bull Lake…….. Cold Springs, Hobbs Parks, and St. Lawrence Alt;
Boysen…….. Burroughs Creek, Cold Springs, Deer Park, Hobbs Park, Little Warm, St. Lawrence Alt, South Pass, Togwotee Pass, and Townsend Creek;
Buffalo Bill……Blackwater, Evening Star, Kirwin, Marquette, Sylvan Lake, Sylvan Road, and Younts Peak

TABLE WYT2
2014 WATER SUPPLY FORECAST
APRIL – JULY SNOWMELT RUNOFF

	JAN 1		FEB 1		MAR 1		APR 1		MAY 1		JUN 1		ACTUAL	APR-JULY	% OF APRIL
	KAF	% OF AVG	KAF	% OF AVG	KAF	% OF AVG	KAF	% OF AVG	KAF	% OF AVG	KAF	% OF AVG	KAF	% OF AVG	FORECAST RECEIVED
BULL LAKE	130	95	130	95	160	117	175	128	165	120	135	98	147.5	108	84
BOYSEN	500	94	475	89	650	122	850	159	750	140	600	112	694.5	130	82
BUFFALO BILL	720	108	720	108	900	135	1000	150	1075	162	950	143	1062.4	160	106

Averages are based on the 1984-2013 period

TABLE WYT3
WY2014 PRECIPITATION IN INCHES AND PERCENT OF AVERAGE

BASIN	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP	
	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%
VALLEY PRECIPITATION [1]																								
BUFFALO BILL																								
MONTHLY PRECIP AND % OF AVERAGE	1.70	147	0.85	74	1.14	109	1.23	115	1.83	214	2.20	194	2.17	153	1.72	82	2.51	123	0.82	59	3.12	259	1.97	164
YEAR-TO-DATE PRECIP AND % OF AVERAGE	1.70	147	2.55	110	3.69	110	4.92	111	6.75	128	8.95	139	11.12	142	12.84	129	15.35	128	16.17	121	19.29	132	21.26	135
BOYSEN																								
MONTHLY PRECIP AND % OF AVERAGE	2.07	241	0.16	33	0.41	140	0.35	141	0.33	90	0.65	116	0.43	36	1.24	65	1.06	89	0.78	93	1.38	245	1.51	161
YEAR-TO-DATE PRECIP AND % OF AVERAGE	2.07	241	2.23	166	2.64	161	2.99	158	3.32	147	3.97	141	4.40	110	5.64	95	6.70	94	7.48	94	8.86	104	10.37	110
BULL LAKE																								
MONTHLY PRECIP AND % OF AVERAGE	1.93	261	0.21	52	0.40	183	0.26	140	0.54	180	0.40	94	0.39	35	1.33	71	0.86	71	0.80	87	1.40	215	1.83	188
YEAR-TO-DATE PRECIP AND % OF AVERAGE	1.93	261	2.14	186	2.54	185	2.80	181	3.34	181	3.74	165	4.13	122	5.46	104	6.32	98	7.12	96	8.52	106	10.35	115
MOUNTAIN PRECIPITATION [2]																								
BUFFALO BILL																								
MONTHLY PRECIP AND % OF AVERAGE	2.70	113	2.50	68	3.10	100	3.00	100	4.70	188	4.90	175	3.60	106	1.80	47	2.70	90	0.80	36	2.50	156	2.50	114
YEAR-TO-DATE PRECIP AND % OF AVERAGE	2.70	113	5.20	85	8.30	90	11.30	93	16.00	109	20.90	119	24.50	117	26.30	106	29.00	105	29.80	100	32.30	103	34.80	103
BOYSEN																								
MONTHLY PRECIP AND % OF AVERAGE	2.70	129	1.20	40	1.50	60	1.30	52	3.30	150	3.10	107	1.70	49	2.50	74	1.10	46	1.00	59	1.60	114	1.60	80
YEAR-TO-DATE PRECIP AND % OF AVERAGE	2.70	129	3.90	76	5.40	71	6.70	68	10.00	81	13.10	86	14.80	79	17.30	78	18.40	75	19.40	74	21.00	76	22.60	76
BULL LAKE																								
MONTHLY PRECIP AND % OF AVERAGE	3.30	165	1.20	55	1.60	94	1.20	75	3.10	194	2.50	104	1.70	53	3.10	91	1.80	78	1.30	87	1.70	121	2.30	121
YEAR-TO-DATE PRECIP AND % OF AVERAGE	3.30	165	4.50	107	6.10	103	7.30	97	10.40	114	12.90	112	14.60	99	17.70	98	19.50	96	20.80	95	22.50	97	24.80	98

[1] A composite of the following National Weather Service stations was used to determine monthly valley precipitation and percent of average for the drainage basins:
Bull Lake.....Burris, Diversion Dam, and Dubois;
Boysen.....Boysen Dam, Burris, Diversion Dam, Dubois, Lander, and Riverton;
Buffalo Bill.....Buffalo Bill Dam, Lake Yellowstone, and Tower Falls

[2] A composite of the following Natural Resources Conservation Service SNOTEL sites was used to determine monthly mountain precipitation and percent of average for the drainage basins:
Bull Lake.....Cold Springs, Elkhart Park, Hobbs Park, and St. Lawrence Alt;
Boysen.....Burroughs Creek, Cold Springs, Deer Park, Hobbs Park, Little Warm, St. Lawrence Alt, South Pass, Togwotee Pass, and Townsend Creek;
Buffalo Bill.....Blackwater, Evening Star, Kirwin, Marquette, Sylvan Lake, Sylvan Road, and Younts Peak

Averages for Valley Precipitation are based on the 1984-2013 period
Averages for Mountain Precipitation are based on the 1981-2010 period

FLOOD BENEFITS

Reservoir	Local	Main Stem	2014 Total	Previous Accumulation[3]	1950 - 2014 Accumulation Total
Bull Lake[2]	$ 157,600	$ 0	$ 157,600	$ 3,221,000	$ 3,378,600
Boysen	$ 126,400	$ 9,548,100	$ 9,674,500	$109,181,300[4]	$118,855,800
Buffalo Bill[2]	$ 1,334,500	$ 0	$ 1,334,500	$ 29,167,900	$30,502,400

1/ This data is received from the Army Corps of Engineers Omaha District Office and is revised every October. The period of assessment is 1950 - 2014.
2/ No space is allocated to flood control, but some flood protection is provided by operation for other purposes.
3/ Adjusted in 2006 by 0.1 to 0.5 to account for previous rounding of cumulative total to nearest 1.0.
4/ In 2012, flood damages prevented in 2011 at Boysen Reservoir were revised. The accumulated total for Boysen Reservoir has been corrected to reflect the revision

Riverton Unit

The Riverton Project was reauthorized as the Riverton Unit Pick-Sloan Missouri Basin Program (P-S MBP) on September 25, 1970. Major facilities of this unit are Bull Lake Reservoir, Wind River Diversion Dam, Wyoming Canal, Pilot Butte Powerplant, Pilot Butte Reservoir, and Pilot Butte Canal. The major facilities provide water for irrigation of about 73,000 acres on the Midvale Irrigation District (Midvale). The water supply comes partly from the natural flow of the Wind River and partly from water stored in Bull Lake and Pilot Butte Reservoirs.

Bull Lake Reservoir is located on Bull Lake Creek, a tributary of the Wind River near Crowheart, Wyoming. Bull Lake has an active capacity of 151,737 AF, and is above all unit land. It is the principal storage facility for the unit and is operated by Midvale under contract with Reclamation. A small amount of incidental flood control benefit is provided by normal operation for other purposes.

Precipitation during September of 2013 was well above average in the Wind River basin and releases from Bull Lake were reduced to about 40 cfs on September 17 as the need for irrigation water declined. Diversion into the Wyoming Canal was discontinued on September 21, marking the end of the 2013 irrigation season on the Riverton Unit. At the start of WY 2014, Bull Lake held 89,167 AF of water at elevation 5783.05 ft. This was 118 percent of average and 58 percent of capacity.

During WY 2013, Midvale entered into an agreement with Reclamation that allowed the storage of Boysen water in Bull Lake by exchange. Because of this agreement, Bull Lake ended the water year at a higher content. Bull Lake releases averaged about 25 cfs during the first half of October as the Boysen water in Bull Lake was transferred back to Boysen to provide a winter flow in Bull Lake Creek. Inflow during October was 270 percent of average. The release from the dam was increased on October 18, 2013 to maintain the reservoir at the desired winter level. At the end of October, releases from the dam were over 100 cfs, storage in Bull Lake was 99,775 AF and the water surface elevation was 5787.05 ft. Releases were gradually reduced during November and December to maintain a stable reservoir level and at the end of December storage in Bull Lake was 100,102 AF, which was 131 percent of average.

On January 1, 2014 snowpack in the basin above Bull Lake was 104 percent of average. Water supply forecasts of the April through July snowmelt runoff were prepared each month, beginning in January and continuing through June. The January forecast indicated the April through July snowmelt runoff would be approximately 130,000 AF, which was 95 percent of average. Inflow during January was below average and the release from the dam was set at about 20 cfs, where it remained until mid-April. Precipitation in the Wind River valley was above average but the mountains above Bull Lake received less than average snowfall during January and the snowpack decreased to 98 percent of average on February 1, 2014. The February 1, 2014 snowmelt runoff forecast remained at 130,000 AF. Inflow during February continued to be less than average and at the end of the month the reservoir held 99,749 AF of water. February precipitation was well above average in the Wind River valley and in the mountains above Bull Lake, with the snowpack increasing to 120 percent of average on March 1, 2014. The March 1, 2014 snowmelt runoff forecast was increased to 160,000 AF.

Precipitation during March was very close to normal, as was the inflow to Bull Lake. The release from the dam was slightly less than the inflow and the reservoir level increased to 100,156 AF at the end of the month. The snowpack on April 1, 2014 was 119 percent of average and the April 1, 2014 snowmelt runoff forecast was increased to 175,000 AF, which was 128 percent of average. Temperatures were close to average but it was much drier than normal in the Bull Lake drainage during April as low elevation weather stations in the area only received 35 percent of average precipitation while the mountains received 53 percent of average. Midvale began diverting water into the Wyoming Canal on April 15, 2014 to flush the canal system and finish filling Pilot Butte. As temperatures reached the upper 60's around April 22, 2014, inflow to Bull Lake began to increase and releases were adjusted upward to maintain the reservoir level. With the warmer weather during the last half of the month came some melting of the snowpack and on May 1, 2014 it was down to 113 percent of average. The May 1, 2014 snowmelt runoff forecast was lowered to 165,000 AF, which was 120 percent of average. Bull Lake storage slowly increased through the month to 101,867 AF on April 30, 2014. Irrigation releases on the Riverton Unit began on May 5, 2014, with flows in the Wind River satisfying the diversion into the Wyoming Canal. The release from Bull Lake was adjusted through the month as inflows increased, and the reservoir gradually rose through most of May. The last week of May brought the highest inflows of the runoff season and the reservoir level rose more rapidly, ending the month at 133 percent of average with 120,094 AF in storage. The runoff peaked on May 29, 2014 at 1,776 cfs and the total inflow during May was 122 percent of average. Releases of almost 500 cfs were made for a portion of the month to slow the rate of fill. By June 1, 2014 much of the snowpack had melted at the SNOTEL sites used to indicate conditions in the mountains above Bull Lake and the snow water equivalent stood at 43 percent of average. A further reduction, to 135,000 AF, was made to the June 1, 2014 snowmelt runoff forecast as a result of the below average remaining snowpack.

Inflow of 1,000 cfs or more continued to enter Bull Lake during the first half of June and the reservoir continued to fill. As Bull Lake approached 145,000 AF on June 17, 2014 the outflow from the dam was increased to more closely match the inflow and the lake level held steady for the remainder of June. With temperatures approaching 80 degrees, inflows rose to over 1,000 cfs during the last week of June. Releases were increased to a maximum for the year of 1,168 cfs on June 28, 2014 to conserve the limited space remaining in the reservoir. On June 30, 2014 Bull Lake content of 145,603 AF was 115 percent of average at elevation 5802.81 ft. June inflow was slightly less than average with releases that were 136 percent of average. There was still quite a bit of high elevation snow left to melt after the SNOTEL sites went to zero and the inflow to Bull Lake remained above 1,000 cfs for most of the first half of July. The reservoir was allowed to slowly rise, reaching a maximum content for the year of 150,037 AF at elevation 5804.23 ft on July 23, 2014. This was only 2,422 AF short of a full reservoir and 0.77 ft below the top of the active conservation pool. As inflow decreased through the remainder of July, the outflow was also reduced and the content at the end of July was 149,785 AF, which was 116 percent of average. Bull Lake inflow was 116 percent of average during July and the release from Bull Lake was also above average.

Above average inflow to Bull Lake continued during August and the flow of the Wind River above Bull Lake Creek was also above average. Most of Midvale's irrigation demand was met by natural flow in the Wind River and Bull Lake releases were made to control the reservoir

level. Storage remained above 149,000 AF through August 18 when releases were increased to begin reducing the content of the lake. By the end of August, Bull Lake had been drawn down to 132,563 AF but this was still 130 percent of the 30 year average end of August content. September inflow remained higher than normal and releases from Bull Lake were maintained around 650 cfs for most of the month in order to get the lake down closer to the winter target content of 100,000 AF. On September 30, 2013 storage in Bull Lake was 104,768 AF at elevation 5788.88 ft. This was 140 percent of average and the highest end of September content since 1999.

April through July inflows totaled 147,548 AF, 108 percent of average. Total inflow to Bull Lake for the water year was 204,280 AF, which was 112 percent of average. The flow of the Wind River above the mouth of Bull Lake Creek during the April through July period was estimated to be 136 percent of average, totaling 539,853 AF. The total diversion into the Wyoming Canal for the April through September period was 341,559 AF, 102 percent of average.

Additional hydrologic and statistical information pertaining to Bull Lake operations during 2014 can be found in Table WYT4 and Figure WYG1.

Pilot Butte Reservoir, an off-stream reservoir near Kinnear, Wyoming, receives its water supply from the Wind River through the Wyoming Canal. Pilot Butte Reservoir has a total capacity of 33,721 AF. Of this amount 3,803 AF is allocated for inactive and dead storage and 29,918 AF for active conservation storage. Pilot Butte Dam and the Wyoming Canal which supplies the reservoir are operated by Midvale under contract with Reclamation.

Pilot Butte Reservoir began WY 2014 with a total storage content of approximately 19,841 AF at elevation 5442.79 ft. The 2013 irrigation season on the Riverton Unit ended on September 21, 2013 and diversion into the Wyoming Canal as well as releases from Pilot Canal ended at that time. With the new water year commencing in October, diversion into the Wyoming Canal was restarted to begin filling Pilot Butte Reservoir. Diversions continued until October 7, 2014 when Pilot Butte storage reached 28,359 AF at elevation 5453.82 ft. Once diversions into Pilot Butte were discontinued, the reservoir level began to slowly fall through the winter due to evaporation. By the end of March evaporation had reduced the content of the reservoir to 27,564 AF. Diversion into Wyoming Canal resumed on April 15, 2014 to continue filling Pilot Butte and flush the canal system. Storage increased to 29,199 AF at the end of April and irrigation deliveries began on May 5, 2014. Pilot Butte storage was used during May and at the end of the month the content was 23,683 AF at 5447.99 ft. In June, as flow in the Wind River was used to satisfy irrigation demand, additional water was stored in Pilot Butte and the content increased to 29,853 AF at the end of the month. Wind River flow continued to meet Midvale's demands and Pilot Butte storage peaked at 30,289 AF at elevation 5456.10 ft on July 19, 2014. Pilot Butte storage was not required and the content remained near 28,000 AF well into September. At the end of the water year on September 30, 2013 Pilot Butte content was 25,048 AF, which was 141 percent of average. The end of September lake elevation was 5449.74 ft.

Pilot Butte Powerplant was unavailable for service during WY 2014 and did not generate any electricity. In June of 2009, both units at Pilot Butte Powerplant were taken out of service and a determination of whether the units will be returned to service is pending.

Additional hydrologic and statistical information pertaining to Pilot Butte Reservoir during 2014 can be found in Table WYT5 and Figure WYG2.

TABLE WYT4
HYDROLOGIC DATA FOR WY 2014
BULL LAKE RESERVOIR

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	5739.00	722	722
TOP OF ACTIVE CONSERVATION	5805.00	152,459	151,737

STORAGE-ELEVATION DATA	ELEVATION (FEET)	STORAGE (AF)	DATE
BEGINNING OF YEAR	5783.05	89,167	OCT 01, 2013
END OF YEAR	5788.88	104,768	SEP 30, 2014
ANNUAL LOW	5783.05	89,167	OCT 01, 2013
HISTORIC LOW*	5743.03	6,228	MAR 31, 1950
ANNUAL HIGH	5804.23	150,037	JUL 23, 2014
HISTORIC HIGH	5805.70	154,677	AUG 10, 1965

* Prior to 1952 daily records are not available. End of month data was used to determine the historic low.

INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	204,280	OCT 13-SEP 14	188,679	OCT 13-SEP 14
DAILY PEAK (cfs)	1,776	MAY 29, 2014	1,168	JUN 28, 2014
DAILY MINIMUM (cfs)	0	DEC 15, 2013	22	JAN 14, 2014
PEAK SPILLWAY FLOW (cfs)			0	
TOTAL SPILLWAY FLOW (AF)			0	

	INFLOW		OUTFLOW		CONTENT	
MONTH	KAF	% of Avg**	KAF	% of Avg**	KAF	% of Avg**
OCTOBER	14.6	270	4.0	70	99.8	133
NOVEMBER	3.9	125	3.6	148	100.1	132
DECEMBER	2.1	89	2.1	111	100.1	131
JANUARY	1.2	59	1.5	79	99.8	130
FEBRUARY	1.1	70	1.2	75	99.7	130
MARCH	1.7	97	1.3	74	100.2	131
APRIL	3.8	97	2.1	56	101.9	133
MAY	34.5	122	16.2	114	120.1	133
JUNE	56.7	95	31.2	136	145.6	115
JULY	52.5	116	48.4	112	149.8	116
AUGUST	21.2	109	38.4	81	132.6	130
SEPTEMBER	10.9	117	38.7	108	104.8	140

* Average for the 1984-2013 period

FIGURE WYG1

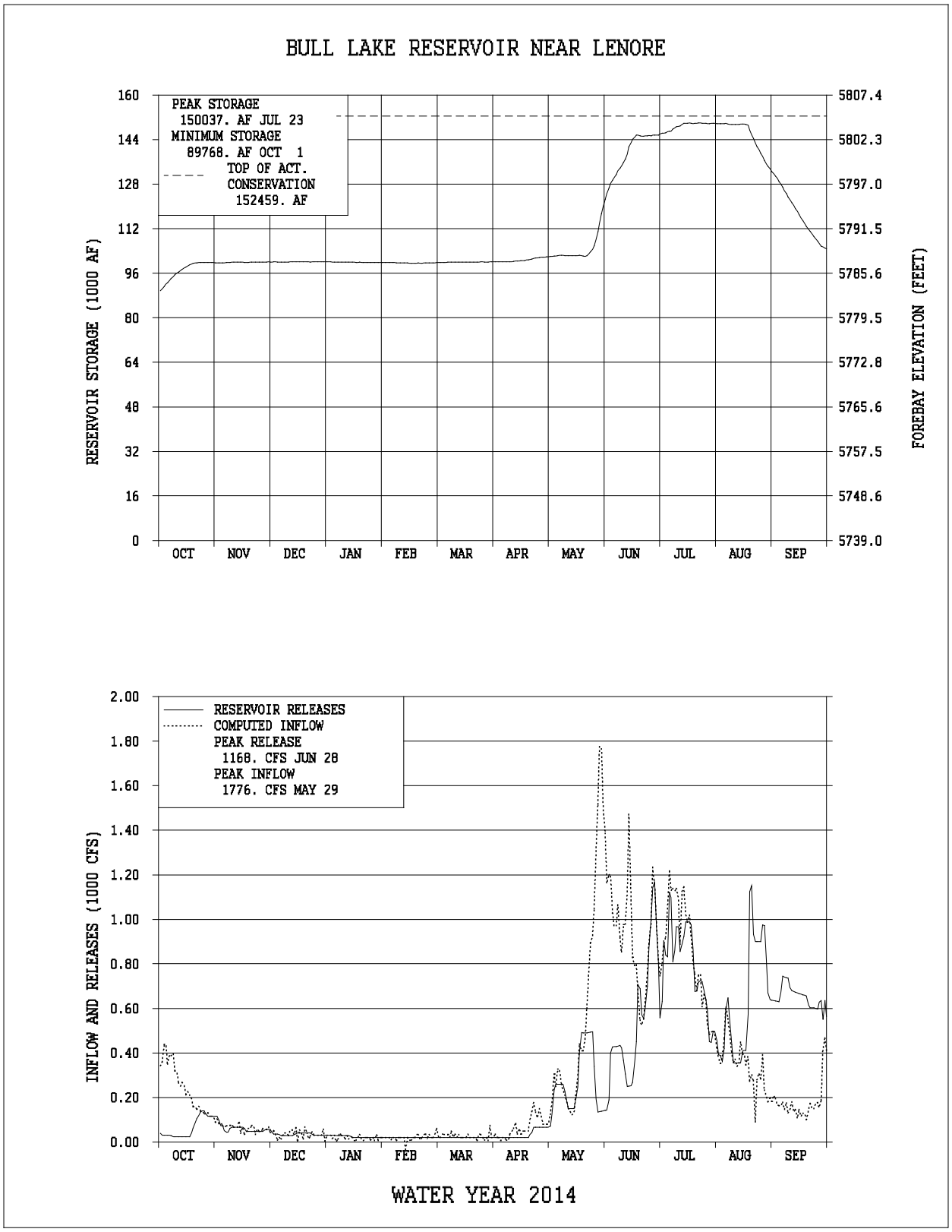

BULL LAKE RESERVOIR NEAR LENORE
PEAK STORAGE
150037. AF JUL 23
MINIMUM STORAGE
89768. AF OCT 1
TOP OF ACT.
CONSERVATION
152459. AF
RESERVOIR STORAGE (1000 AF)
FOREBAY ELEVATION (FEET)
160
144
128
112
96
80
64
48
32
16
0
5807.4
5802.3
5797.0
5791.5
5785.6
5779.5
5772.8
5765.6
5757.5
5748.6
5739.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
RESERVOIR RELEASES
COMPUTED INFLOW
PEAK RELEASE
1168. CFS JUN 28
PEAK INFLOW
1776. CFS MAY 29
INFLOW AND RELEASES (1000 CFS)
2.00
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
WATER YEAR 2014

TABLE WYT5
HYDROLOGIC DATA FOR WY 2014
PILOT BUTTE RESERVOIR

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	5410.00	3,803	3,803
TOP OF ACTIVE CONSERVATION	5460.00	33,721	29,918

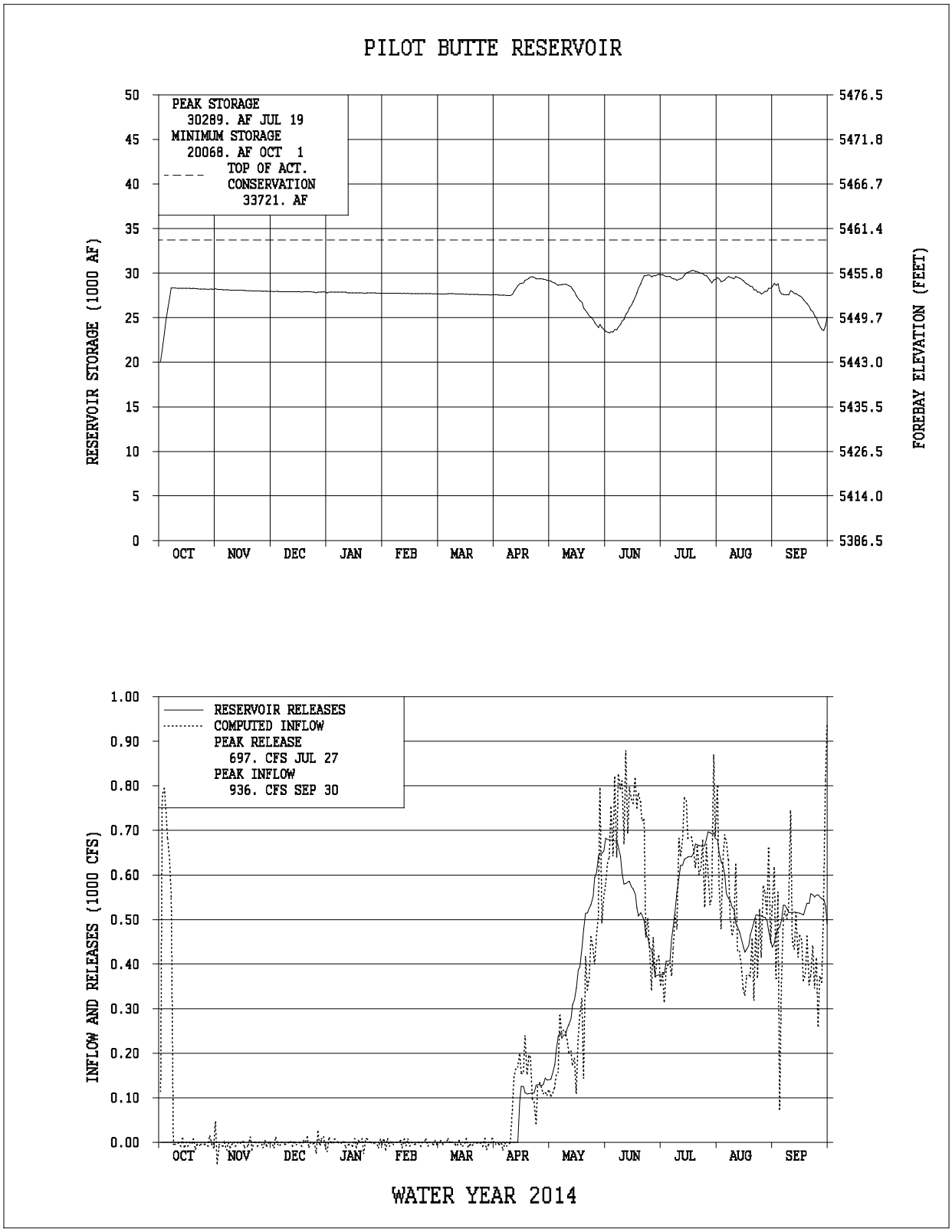
STORAGE-ELEVATION DATA	ELEVATION (FEET)	STORAGE (AF)	DATE
BEGINNING OF YEAR	5442.79	19,841	OCT 01, 2013
END OF YEAR	5449.74	25,048	SEP 30, 2014
ANNUAL LOW	5442.79	19,841	OCT 01, 2013
HISTORIC LOW	5409.80	3,748	DEC 01, 2006
ANNUAL HIGH	5456.10	30,289	JUL 19, 2014
HISTORIC HIGH	5460.60	37,465	APR 20, 1988

INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	164,147	OCT 13-SEP 14	158,940	OCT 13-SEP 14
DAILY PEAK (cfs)	936	SEP 30, 2014	697	JUL 27, 2014
DAILY MINIMUM (cfs)	0	WINTER MONTHS	0	WINTER MONTHS
PEAK SPILLWAY FLOW (cfs)			0	
TOTAL SPILLWAY FLOW (AF)			0	

	INFLOW*		OUTFLOW		CONTENT	
MONTH	KAF	% of Avg**	KAF	% of Avg**	KAF	% of Avg**
OCTOBER	8.4	70	0.0	N/A	28.3	104
NOVEMBER	-0.3	N/A	0.0	N/A	28.0	99
DECEMBER	-0.1	N/A	0.0	N/A	27.8	98
JANUARY	0.0	N/A	0.0	N/A	27.8	97
FEBRUARY	-0.1	N/A	0.0	N/A	27.7	97
MARCH	-0.1	N/A	0.0	N/A	27.6	94
APRIL	5.5	79	3.8	63	29.2	97
MAY	18.1	76	23.6	86	23.7	89
JUNE	39.0	106	32.9	98	29.9	101
JULY	35.5	90	36.1	81	29.3	118
AUGUST	30.7	95	31.5	87	28.5	138
SEPTEMBER	27.5	118	31.0	118	25.0	141

* Negative values are the result of calculated inflow based on reservoir release and change in reservoir content.
** Average for the 1984-2013 period.

FIGURE WYG2


PILOT BUTTE RESERVOIR
PEAK STORAGE
30289. AF JUL 19
MINIMUM STORAGE
20068. AF OCT 1
TOP OF ACT.
CONSERVATION
33721. AF
RESERVOIR STORAGE (1000 AF)
FOREBAY ELEVATION (FEET)
0
5
10
15
20
25
30
35
40
45
50
5386.5
5414.0
5426.5
5435.5
5443.0
5449.7
5455.8
5461.4
5466.7
5471.8
5476.5
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
RESERVOIR RELEASES
COMPUTED INFLOW
PEAK RELEASE
697. CFS JUL 27
PEAK INFLOW
936. CFS SEP 30
INFLOW AND RELEASES (1000 CFS)
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
1.00
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
WATER YEAR 2014

Boysen Reservoir and Powerplant

Boysen Reservoir (P-S MBP) is located on the Wind River above Thermopolis, Wyoming. The dam and reservoir were built for flood control, power generation, irrigation, recreation, and fish and wildlife. Boysen Reservoir has a total capacity of 892,226 AF. Of this amount, 219,181 AF is allocated for inactive and dead storage, 522,413 AF for active conservation storage, and 150,632 AF for exclusive flood control storage. Of the amount allocated for active conservation, 144,229 AF is specifically allocated for joint-use flood control storage. All of the joint-use space is located between elevation 4717.00 ft and elevation 4725.00 ft, which is the top of the spillway gates when closed. The exclusive flood control space is located between elevation 4725.00 ft and elevation 4732.20 ft. When the reservoir rises above elevation 4724.50 ft, the spillway gates must be partially opened to maintain ½ foot of the gates above the water to prevent over-topping of the gates. When all flood control space is filled, releases cannot be controlled to less than 14,000 cfs.

Irrigation water is provided from the reservoir for several units, both upstream and downstream of Boysen Dam. Water is furnished downstream to about 7,500 acres in the Hanover-Bluff Unit (P-S MBP) and 3,400 acres on the Lucerne Canal in the Owl Creek Unit (P-S MBP). Supplemental water is also furnished to other irrigation districts and to a number of individual water users below the Dam. The Bighorn Canal Irrigation District and Hanover Irrigation District receive water under long term contracts with Reclamation. Depending on availability, water is also provided to Bluff Irrigation District, Kirby Ditch Company, Lower Hanover Canal Association, Bighorn Canal Irrigation District, and Hanover Irrigation District utilizing temporary water service contracts.

WY 2014 began with 481,464 AF of water stored in Boysen Reservoir, which was 83 percent of the 30 year average. The corresponding reservoir elevation of 4709.18 ft was 15.82 ft below the top of the joint use pool. The winter release was set on September 30, 2013, when the release from the dam was reduced to 500 cfs. October inflow benefitted from well above average September precipitation and was 168 percent of average for the month. After consulting with Wyoming Game and Fish, the winter release was reduced to 475 cfs on October 31, 2013, with the additional stored water to be used to provide a flushing flow in March. Ongoing maintenance at Boysen Powerplant required both units be off-line, and all releases were made through the outlet works through early March. Inflow during November and December was also above average and at the end of 2013 Boysen held 581,139 AF of water at elevation 4715.99 ft, 102 percent of average. This was almost a 100,000 AF increase in storage from the start of the water year.

Forecasts of April through July snowmelt runoff were prepared at the beginning of each month starting in January and continuing through June. On January 1, 2014 the snowpack in the mountains above Boysen was 93 percent of average and the forecast indicated approximately 500,000 AF of water, 94 percent of average, would enter Boysen Reservoir during the April through July snowmelt runoff period. January inflow continued to be higher than normal and storage in the reservoir increased another 10,000 AF during the month. Precipitation during January was about 140 percent of average at lower elevations but the mountains only received 52 percent of average snowfall and the snowpack dropped nine percent to 84 percent of average

on February 1, 2014. The February 1, 2014 forecast was lowered to 475,000 AF, which was 89 percent of average. February precipitation in the Wind River valley was a little below average, but snowfall in the mountains was 150 percent of average, thanks to a series of fronts that passed through during the last half of the month. Reservoir inflow fell below average in February, but was still greater than the release from the dam and at the end of the month Boysen content stood at 597,038 AF at elevation 4716.98 ft. The snowpack increased to 107 percent of average on March 1 and the forecast of April through July runoff was increased to 650,000 AF, 122 percent of average.

March was wetter than normal in the Wind River basin as well spaced storms brought precipitation throughout the month. A major storm at the beginning of the month brought about two feet of snow to the Wind River Mountains, which boosted the snowpack to 114 percent of average and subsequent storms helped to maintain the snowpack at that level. Following the initial storm of the month, temperatures warmed and ice in the Bighorn River below Thermopolis began to break up and move downstream. Ice jams in the Worland area caused significant flooding from March 7, 2014 to March 10, 2014. Ice conditions in the river were closely monitored during the remainder of the month in preparation for a flushing flow, which was requested by the Wyoming Game and Fish Department. Flushing flows are designed to simulate high runoff events that occurred in the river prior to flows being controlled by the dam. The rapidly increasing flows flush the fine sediment from the spawning gravels in the river, improving the spawning habitat for trout. The flushing flow was scheduled to begin on March 25, 2014 and it was determined that the river was open and free of shore ice that could break loose as flows were increased. The flushing flow proceeded, but on a slightly modified schedule since only one of the units at Boysen Powerplant was available for releases. Late on the evening of March 25, 2014 the release from Boysen Dam was increased from 475 cfs to 1,000 cfs. This was followed by an increase from 1,000 cfs to 2,300 cfs early on the morning of March 26, 2014 with an increase to 5,000 cfs five hours later. The 5,000 cfs release was maintained for ten hours and then gradually reduced to 1,000 cfs where it remained through the end of March. During the flushing flow, approximately 5,870 AF of water was released above the 475 cfs winter release. Inflow during March was slightly less than average but Boysen storage increased by about 10,000 AF to 607,231 AF at the end of the month. The end of March water surface elevation was 4717.60 ft. On April 1, 2014 the snowpack in the Boysen watershed was 114 percent of average and the April 1, 2014 snowmelt runoff forecast were increased to 850,000 AF, which was 159 percent of average.

With both generating units back on line and well above average inflow expected for the April through July period, releases were increased to 1,500 cfs on April 1, 2014 to begin making space in the reservoir for the runoff. When warmer weather began melting some of the low elevation snow around April 18, 2014, inflows picked up and releases were increased to 2,000 cfs to keep the lake level going down. April precipitation was less than half of normal but surprisingly, the snowpack only fell six percent compared to average during the month. Inflow was above average but with releases that were 164 percent of average, the reservoir level fell almost three feet during April. At the end of the month Boysen content was down to 560,016 AF at elevation 4714.63 ft and the snowpack above the reservoir was 108 percent of average. On May 1, 2014 the April through July runoff forecast was reduced by 100,000 AF to 750,000 AF.

Below average precipitation continued during May with most of the moisture occurring in the first half of the month. Inflows fluctuated up and down with temperatures during the first three weeks of May but as highs climbed into the 80's and lows consistently stayed well above freezing during the last ten days of the month, the runoff got under way. Inflows increased to a maximum for the year of 9,041 cfs on May 31, 2014 and the total inflow for the month was 165 percent of average. The release from the dam was increased to 2,800 cfs on May 13, 2014 and held at that flow for the remainder of the month. The reservoir was drawn down to a content of 529,681 AF on May 20, 2014 before the inflow began to exceed the outflow and the reservoir began to fill. By the end of May storage had increased to 594,601 AF at elevation 4716.83 ft.

On June 1, 2014 the snowpack was down to 79 percent of average and the final snowmelt runoff forecast of the season indicated the April through July inflow to Boysen would be 600,000 AF, 150,000 AF less than was predicted one month earlier. In light of the lower forecast, releases were reduced to 2,500 cfs on June 4, 2014 and down to powerplant capacity of approximately 2,200 cfs on June 7, 2014. Precipitation continued to be below average for the third straight month and June was cooler than normal, which resulted in a slow but steady snowmelt. Inflows were above 6,000 cfs for the first few days of June but settled in around 4,500 cfs for much of the first half of the month. Inflows gradually fell through the last half of the month until warmer temperatures at the end of June caused inflow to spike back up to over 6,000 cfs. With the reservoir approaching the point where the spillway gates would have to be opened, releases were stepped up to 3,700 cfs between June 26, 2014 and June 30, 2014. Releases above powerplant capacity were transferred from the outlet works to the spillway on June 30, 2014 which provided additional freeboard on the spillway gates. June inflow was 113 percent of average and the content at the end of the month was 726,425 AF at elevation 4724.22 ft.

By July 1, 2014 all of the SNOTEL sites in the Wind River basin had melted out, but flows in excess of 3,500 cfs were the norm during the first half of the month. Reservoir storage peaked at 735,735 AF on July 12, 2014 only 0.3 ft from the top of the joint use pool. To keep the reservoir from rising into the flood pool, releases from the dam were maintained at 3,700 cfs until inflows fell below 3,000 cfs on July 18, 2014. As inflows continued to decline, the spillway gates were closed on July 21, 2014. At the end of July Boysen held 718,156 AF of water at elevation 4723.79 ft and releases were down to 1,500 cfs. The end of July storage was 114 percent of average while inflow for the month was 137 percent of average.

August precipitation in the Wind River valley was almost 250 percent of normal while rainfall in September was over 160 percent of average. August infow was 141 percent of average, which was about 1,200 cfs per day. The 1,500 cfs release was maintained through the month to slowly draft the reservoir. September inflow was slightly above average and the 1,500 cfs release was maintained until September 19, 2014 when it was reduced to 1,200 cfs, where it remained through the end of the water year.

Actual inflow for the April through July period totaled 694,421 AF, which was 130 percent of average. Total inflow to Boysen during WY 2014 was 1,129,167 AF, 125 percent of average. The reservoir ended the WY at 4721.03 ft with a content of 666,779 AF. This was 115 percent of the average end of September content and 11.85 ft higher than at the end of September 2013. The peak inflow for the year of 9,041 cfs occurred on May 31, 2014 and the maximum daily

release of 3,726 cfs was made on July 7, 2014. During WY 2014, Boysen Powerplant generated 58,693,000 kWh of electricity, about 94 percent of average and 20,054,000 kWh more than was generated in 2013. Of the 943,852 AF of water released from Boysen in WY 2014, 697,993 AF was discharged through the powerplant and 245,859 AF bypassed the powerplant.

Important Events During 2014

October 31, 2013: Release for the winter was set at 475 cfs.

March 19, 2014: Boysen Reservoir spring water information meeting was held in Worland to discuss the water supply and proposed operation of Boysen Reservoir in 2014.

March 25, 2014 through March 26, 2014: Reservoir releases were adjusted as requested by Wyoming Game and Fish to provide a flushing flow in the river below Boysen Dam.

June 30, 2014: Release through the Boysen spillway was initiated.

July 12, 2014: Boysen Reservoir reached its maximum elevation for the year of 4724.70 ft.

July 21, 2014: Release through the Boysen spillway was discontinued.

Additional hydrologic and statistical information pertaining to the operation of Boysen Reservoir can be found in Table WYT6 and Figure WYG3.

FIGURE WYG3

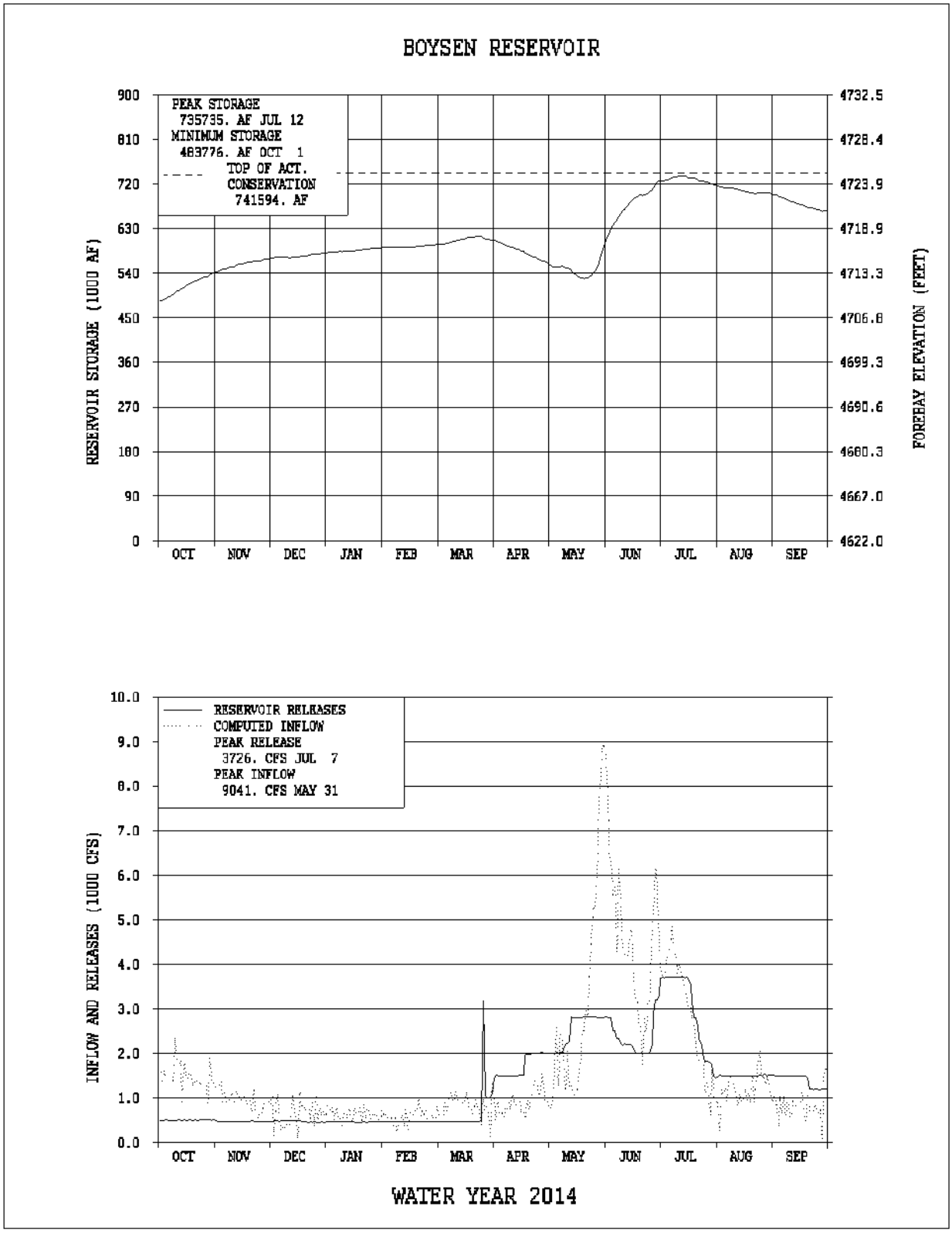

BOYSEN RESERVOIR
PEAK STORAGE
735735. AF JUL 12
MINIMUM STORAGE
483776. AF OCT 1
TOP OF ACT. CONSERVATION
741594. AF
RESERVOIR STORAGE (1000 AF)
FOREBAY ELEVATION (FEET)
900
810
720
630
540
450
360
270
180
90
0
4732.5
4728.4
4723.9
4718.9
4713.3
4706.8
4699.3
4690.6
4680.3
4667.0
4622.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
RESERVOIR RELEASES
COMPUTED INFLOW
PEAK RELEASE
3726. CFS JUL 7
PEAK INFLOW
9041. CFS MAY 31
INFLOW AND RELEASES (1000 CFS)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
WATER YEAR 2014

TABLE WYT6
HYDROLOGIC DATA FOR WY 2014
BOYSEN RESERVOIR

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	4685.00	219,181	219,181
TOP OF ACTIVE CONSERVATION	4717.00	597,365	378,184
TOP OF JOINT USE	4725.00	741,594	144,229
TOP OF EXCLUSIVE FLOOD CONTROL	4732.20	892,226	150,632

STORAGE-ELEVATION DATA	ELEVATION (FEET)	STORAGE (AF)	DATE
BEGINNING OF YEAR	4709.18	481,464	OCT 01, 2013
END OF YEAR	4721.03	666,779	SEP 30, 2014
ANNUAL LOW	4709.18	481,464	OCT 01, 2013
HISTORIC LOW ELEVATION *	4684.18		MAR 18, 1956
HISTORIC LOW CONTENT *		235,737	SEP 24, 2002
ANNUAL HIGH	4724.70	735,735	JUL 12, 2014
HISTORIC HIGH	4730.83	922,406	JUL 06, 1967

*Because storage space in a reservoir is lost as sediment is trapped behind the dam, reservoirs are resurveyed periodically to determine actual capacity. Based on the 1994 resurvey of Boysen Reservoir, the historic low content of 235,737 AF occurred at an elevation that was 2.69 feet higher than the historic low elevation.

INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	1,129,167	OCT 13-SEP 14	943,852**	OCT 13-SEP 14
DAILY PEAK (cfs)	9,041	MAY 31, 2014	3,726	JUL 07, 2014
DAILY MINIMUM (cfs)	20	SEP 27, 2014	467	JAN 17, 2014
PEAK SPILLWAY FLOW (cfs)			2,572	JUL 13, 2014
TOTAL SPILLWAY FLOW (AF)			52,553	JUN 30-JUL 21

** Of the 943,852 AF of water released from Boysen Reservoir, 245,859 AF bypassed the powerplant.

	INFLOW		OUTFLOW		CONTENT	
MONTH	KAF	% of Avg***	KAF	% of Avg***	KAF	% of Avg***
OCTOBER	91.3	168	31.1	56	541.6	93
NOVEMBER	57.1	118	28.7	57	570.0	98
DECEMBER	40.7	109	29.6	58	581.1	102
JANUARY	39.1	107	29.1	59	591.2	106
FEBRUARY	32.3	88	26.4	60	597.0	109
MARCH	50.5	97	40.3	72	607.2	111
APRIL	55.0	114	102.2	164	560.0	105
MAY	190.1	165	155.5	156	594.6	109
JUNE	273.5	113	141.7	94	726.4	114
JULY	175.9	137	184.1	136	718.2	114
AUGUST	73.5	141	92.4	107	699.2	117
SEPTEMBER	50.2	103	82.6	125	666.8	115

APRIL - JULY INFLOW (AF)	
ACTUAL	AVERAGE
694,421	534,000

*** Average for the 1984-2013 period

Anchor Reservoir

Anchor Reservoir (P-S MBP) is located on the South Fork of Owl Creek, a tributary of the Bighorn River near Thermopolis, Wyoming. It has a total storage capacity of 17,228 AF, of which 17,160 AF is active storage. It was constructed to furnish a supplemental irrigation supply for the Owl Creek Unit (P-S MBP). The dam was completed in November 1960. However, several major sinkholes developed in the lower portion of the reservoir after it began to fill, and corrective work to plug the sinkholes has not been successful. Two dikes, in service since 1979, partition off the portions of the reservoir with high seepage losses. The top of the dikes are at elevation 6415.00 ft. However, when the reservoir rises above elevation 6412.80 ft, water flows through a notch in one of the dikes into the sinkhole area. The reservoir is operated not to exceed elevation 6412.80 ft. Operation and maintenance of Anchor Dam is performed by Owl Creek Irrigation District under contract with Reclamation. Reclamation requires notification from the irrigation district any time the reservoir level is expected to exceed elevation 6400.00 ft. Operation above 6400.00 ft will be directed by WYAO staff to avoid overtopping of the dikes.

Storage in Anchor Reservoir at the beginning of WY 2014 was 354 AF at elevation 6358.27 ft. The reservoir level remained fairly stable through mid-April. Releases from the dam also began in mid-April and at the end of April, storage in Anchor was 374 AF. Inflow was 137 percent of average during May, with the peak inflow for the year of 218 cfs occurring on May 28, 2014. Reservoir storage increased through the month to 2,673 AF On May 31, 2014. Snowmelt runoff continued to provide good inflow into June and reservoir storage peaked on June 14, 2014 at 3,482 AF and elevation 6394.14 ft. During the last half of June, releases exceeded the inflow and the reservoir gradually declined through the end of the month to 3,097 AF on June 30, 2014. Above average inflow during July allowed for higher than normal releases, while maintaining good storage in the reservoir through much of July. As inflows declined late in the month, the reservoir was drawn down to 1,516 AF at the end of July 2014. August precipitation was well above average and inflow to Anchor was over 300 percent of normal. Releases from the dam were also higher than normal and by the end of August storage was depleted to 277 AF. Storage remained near 270 AF for the first half of September, but well above average precipitation during the last ten days of September caused the reservoir level to increase to elevation 6363.64 ft the end of the water year. The end of September storage of 564 AF was 171 percent of average.

Hydrologic and statistical data pertaining to Anchor Reservoir operations during 2014 can be found in Table WYT7 and Figure WYG4. The negative inflows displayed in Figure WYG4 are the result of calculated inflow based on reservoir release and change in reservoir content. During some periods, evaporation and seepage from the reservoir could exceed inflow.

TABLE WYT7
HYDROLOGIC DATA FOR WY 2014
ANCHOR RESERVOIR

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	6343.75	68	68
TOP OF ACTIVE CONSERVATION*	6441.00	17,228	17,160

* District operation has been restricted to elevation 6400.00 feet or less to prevent damage to the dikes and to minimize the chance of creating new sinkholes. Operations above elevation 6400.00 feet are directed by Reclamation.

STORAGE-ELEVATION DATA	ELEVATION (FEET)	STORAGE (AF)	DATE
BEGINNING OF YEAR	6358.27	354	OCT 01,2013
END OF YEAR	6363.64	564	SEP 30, 2014
ANNUAL LOW	6353.28	218	OCT 16, 2013
HISTORIC LOW			
ANNUAL HIGH	6394.14	3,482	JUN 14, 2014
HISTORIC HIGH	6418.52	9,252	JUL 03, 1967

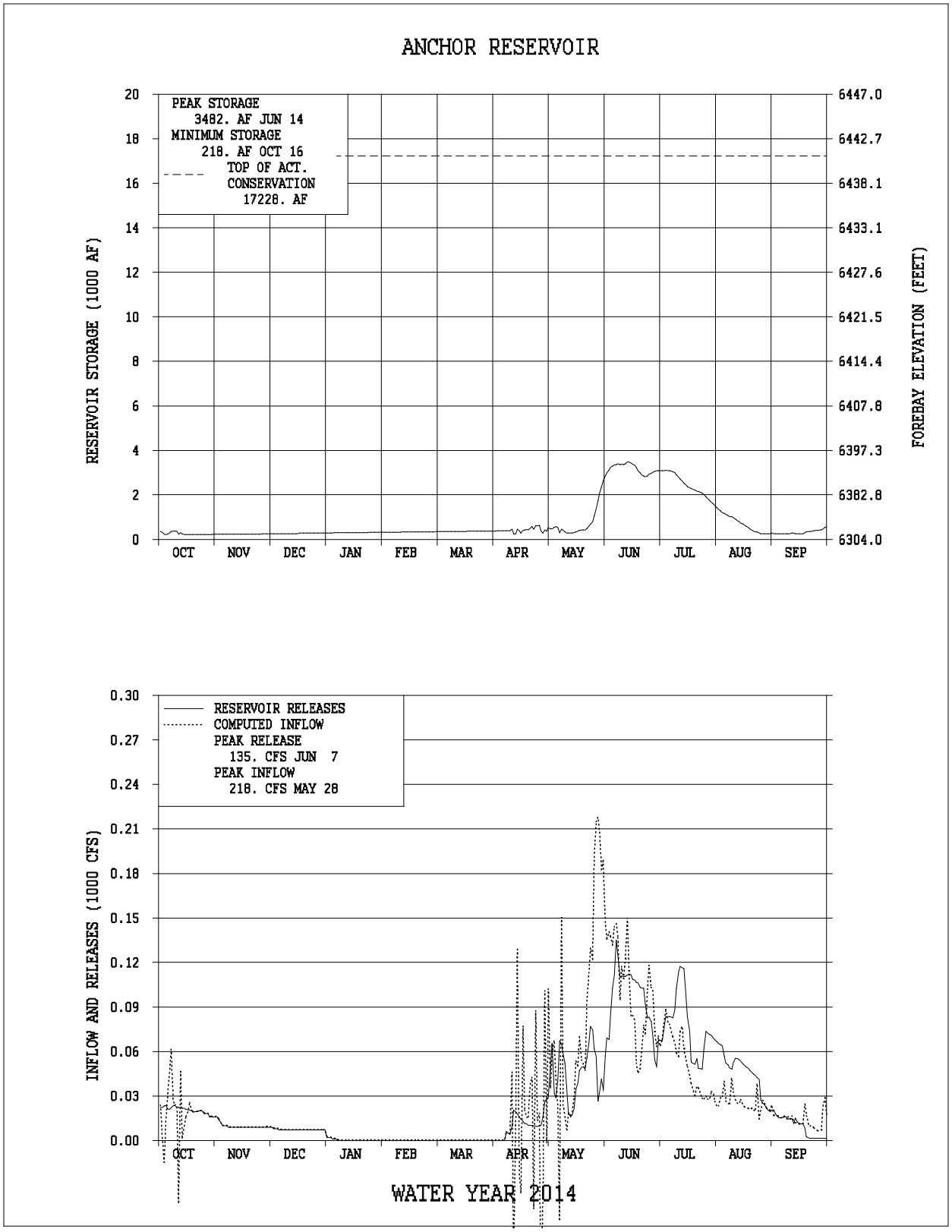
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW**	DATE
ANNUAL TOTAL (AF)	19,578	OCT 13-SEP 14	19,368	OCT 13-SEP 14
DAILY PEAK (cfs)	218	MAY 28, 2014	135	JUN 7, 2014
DAILY MINIMUM (cfs)	0	WINTER MONTHS	0	WINTER
PEAK SPILLWAY FLOW (cfs)			0	MONTHS
TOTAL SPILLWAY FLOW (AF)			0	

** Outflow is water released from the Dam to Owl Creek. When the reservoir level rises above approximately 6412.80 feet, water flows through a notch in one of the dikes into the sinkhole area. This water is neither measured nor accounted for. In 2014, no water flowed over the notch in the dike.

	INFLOW		OUTFLOW***		CONTENT	
MONTH	KAF	% of Avg***	KAF	% of Avg***	KAF	% of Avg***
OCTOBER	1.1	188	1.3	194	0.2	83
NOVEMBER	0.6	190	0.6	190	0.3	104
DECEMBER	0.5	244	0.4	430	0.3	119
JANUARY	0.0	NA	0.0	NA	0.3	135
FEBRUARY	0.0	NA	0.0	NA	0.3	131
MARCH	0.0	NA	0.0	NA	0.4	101
APRIL	0.6	98	0.6	125	0.4	77
MAY	5.1	137	2.8	102	2.7	181
JUNE	6.1	91	5.7	115	3.1	95
JULY	3.1	150	4.7	143	1.5	72
AUGUST	1.6	314	2.8	156	0.3	48
SEPTEMBER	0.8	140	0.6	69	0.6	171

*** Average is for the 1991-2013 period. This period was used because of the availability of data at Anchor Reservoir.

FIGURE WYG4


ANCHOR RESERVOIR
PEAK STORAGE
3482. AF JUN 14
MINIMUM STORAGE
218. AF OCT 16
TOP OF ACT.
CONSERVATION
17228. AF
RESERVOIR STORAGE (1000 AF)
FOREBAY ELEVATION (FEET)
20
18
16
14
12
10
8
6
4
2
0
6447.0
6442.7
6438.1
6433.1
6427.6
6421.5
6414.4
6407.8
6397.3
6382.8
6304.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
RESERVOIR RELEASES
COMPUTED INFLOW
PEAK RELEASE
135. CFS JUN 7
PEAK INFLOW
218. CFS MAY 28
INFLOW AND RELEASES (1000 CFS)
0.30
0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
0.03
0.00
WATER YEAR 2014

Shoshone Project and Buffalo Bill Unit

The primary features of the original Shoshone Project included Buffalo Bill Dam and Reservoir, Shoshone and Heart Mountain Powerplants, and the canal and lateral systems for the Willwood, Frannie, Garland, and Heart Mountain Divisions. In 1982, The Buffalo Bill Dam and Reservoir Modifications, Shoshone Project, Wyoming, was authorized as the Buffalo Bill Unit (P-S MBP). The principal modifications to Buffalo Bill Dam included raising the height of the Dam by 25 ft, reconstructing the Shoshone Powerplant, construction of the Buffalo Bill Powerplant, construction of the Spirit Mountain Energy Dissipation Structure, pressurizing a portion of the Shoshone Canyon Conduit, enlarging and gating the spillway, constructing a visitor's center, and constructing the North Fork, South Fork, and Diamond Creek Dikes. The North and South Fork dust abatement dikes were designed to impound water in areas of the enlarged reservoir that would be dry during periods when the reservoir elevation is low, thereby reducing the dust producing area of the reservoir. The Diamond Creek protective dike prevents the enlarged reservoir from inundating Irma Flats.

Controlled releases are made from Buffalo Bill Reservoir at four points: (1) Shoshone Canyon Conduit, (2) Shoshone Powerplant, (3) the gated spillway, and (4) two river outlets (jetflow valve and 4x5 high pressure gates). Water for the Willwood, Frannie, and Garland Divisions of the Shoshone Project is diverted from the Shoshone River below Buffalo Bill Reservoir. The Heart Mountain Division is irrigated by water released at the dam through a high-level outlet to the Shoshone Canyon Conduit and Heart Mountain Canal. Irrigation releases for the project land along the Shoshone River are made through the Shoshone Powerplant, the river outlets, or through the Shoshone Canyon Conduit and Buffalo Bill or Heart Mountain Powerplants. Project works presently serve about 93,000 acres in the four divisions.

Heart Mountain Powerplant, Shoshone Project, with a nameplate capability of 6,000 kilowatts (kW) and maximum discharge capacity of 360 cfs, is located at the end of the Shoshone Canyon Conduit, which obtains its water from a high-level outlet, elevation 5233.00 ft, at Buffalo Bill Dam. The powerplant is located 3.5 miles below the dam and discharges into the Shoshone River. During the summer months, the water released through the powerplant is used to satisfy a portion of the irrigation demand of lands diverting directly from the river.

Shoshone Powerplant, reconstructed as part of the Buffalo Bill Unit (P-S MBP), is located on the left bank of the Shoshone River at the toe of Buffalo Bill Dam and releases water directly into the Shoshone River. After 56 years of continuous use, the Shoshone Powerplant became obsolete because of safety problems beyond economical repair. On March 21, 1980, the original plant was taken out of service. In 1992, one of the three generating units was replaced with a new unit having a nameplate capability of 3,000 kW. In accordance with the Buffalo Bill Reservoir Enlargement Winter Release Operation Agreement, a flow of at least 100 cfs is released to the Shoshone River at the base of the dam at all times. This is normally achieved by the use of the Shoshone Powerplant. A maximum release of approximately 200 cfs can be made through the Shoshone Powerplant.

Buffalo Bill Powerplant, Buffalo Bill Unit (P-S MBP), with a nameplate capability of 18,000 kW, is located about one mile downstream of Buffalo Bill Dam on the right bank of the Shoshone River. Water for generation at this powerplant is supplied through a portion of the Shoshone Canyon Conduit, which was pressurized as part of the Buffalo Bill modification. The maximum discharge capacity of the three units at the Buffalo Bill Powerplant is 930 cfs. The powerplant first generated power on July 15, 1992.

Spirit Mountain Powerplant, Buffalo Bill Unit (P-S MBP), with a nameplate capability of 4,500 kW and discharge capacity of 560 cfs, is a newly constructed energy dissipator powerplant located about one mile downstream of Buffalo Bill Dam on the right side of the Shoshone River. Water released through the Shoshone Canyon Conduit for Heart Mountain Canal or Heart Mountain Powerplant must be routed through the Spirit Mountain Powerplant or through associated sleeve valves to dissipate energy in the transition from the pressurized portion of the Shoshone Canyon Conduit to the free flow portion of the conduit. The discharge from the powerplant must be carried away from the plant by use of the free-flow conduit and operation of the powerplant depends on the availability of the conduit to carry discharged water.

Buffalo Bill Dam and Reservoir, located on the Shoshone River above Cody, Wyoming, is a multipurpose facility that provides water for domestic, irrigation, municipal, fish and wildlife, power, and recreational use. It also provides a small amount of incidental flood control, although no storage space is specifically reserved for this purpose. The total storage capacity of the reservoir is 646,565 AF at elevation 5393.50 ft, the top of the active conservation pool.

Storage in Buffalo Bill Reservoir at the beginning of WY 2014 was 466,421 AF of water at elevation 5369.75 ft. Irrigation releases to the Heart Mountain Canal continued until October 13, 2013, while diversions from the Shoshone River for irrigation ended on October 10, 2013. Precipitation in the Buffalo Bill drainage was well above average during the last half of September, resulting in October inflows to Buffalo Bill that were 214 percent of average. Releases to the Shoshone River were maintained at 510 cfs through the month to limit the rise of the reservoir. Even with the higher release after irrigation ended, storage in Buffalo Bill increased to 482,182 AF on October 31, 2013. November inflow was 121 percent of average and the release from the dam was held at 510 cfs through the end of the month to try to lower the elevation of the reservoir to 5370.00 ft by November 30, 2013. By maintaining the reservoir elevation below 5370 ft during the winter months, problems associated with ice jams on the South Fork of the Shoshone River during the winter are reduced significantly. On November 30, the water surface elevation of Buffalo Bill was 5371.35 ft.

Because storage in Buffalo Bill was less than 475,000 AF on September 30, 2013, the criteria in the ***Buffalo Bill Reservoir Enlargement Winter Release Operation Agreement*** (Agreement) used to determine the release from Buffalo Bill Reservoir during the winter months required a release of 200 cfs below Buffalo Bill Powerplant. With storage in the reservoir increasing to over 475,000 AF shortly after the start of the new water year and well above average inflow during October and November, Reclamation made a request to the Wyoming Water Development Commission to allow a higher release of 350 cfs during the winter months. A variance to the

Agreement was allowed and the release from the dam was set at 350 cfs on December 1, 2013. December inflow was slightly below average and reservoir storage slowly fell to 470,942 AF at elevation 5370.41 ft on December 31, 2013. Precipitation was 110 percent of average during the October through December period and the snowpack in the Buffalo Bill watershed stood at 110 percent of average on January 1, 2014.

Forecasts of the April through July snowmelt runoff are made each month beginning in January and continuing through June for Buffalo Bill Reservoir. Conditions on January 1, 2014 indicated that 720,000 AF of runoff could be expected to flow into Buffalo Bill Reservoir during the April through July period, which was 108 percent of the 30 year average.

January inflow to Buffalo Bill was slightly above average, but less than the release from the dam and at the end of the month storage in the reservoir stood at 464,006 AF of water at elevation 5369.44 ft. Precipitation in the Buffalo Bill watershed was close to average during January and snowpack accumulation was slightly below average. The February 1, 2014 snowmelt runoff forecast was remained at 720,000 AF with snowpack in the basin at 105 percent of average on February 1, 2014.

Conditions improved during February as successive storms brought moisture to the Buffalo Bill watershed. Precipitation at lower elevation weather stations was more than double the normal for February with the mountains receiving 188 percent of average moisture for the month. Inflow during February fell to 92 percent of average, due in part to temperatures in the Shoshone basin that were about ten degrees colder than normal for the month. By March 1, 2014 snowpack in the mountains above Buffalo Bill was 131 percent of average and the forecast prepared on March 1, 2014 was increased to 900,000 AF, which was 135 percent of average.

Snow continued to fall in the Shoshone basin during March. The Absaroka Mountains received 175 percent of normal precipitation while weather stations in the valley reported 194 percent of average moisture. Reservoir inflow rebounded to 122 percent of average for March and in anticipation of what was to come, releases were stepped up to 940 cfs toward the end of the month. At the end of March 2014, storage in Buffalo Bill was 450,884 AF at elevation 5367.58 ft. By April 1, 2014 the snowpack increased to 138 percent of average and the April 1, 2014 forecast of April through July runoff was increased to 1,000,000 AF.

With the prospect of 1,000,000 AF flowing into Buffalo Bill over the next four months, releases were increased to 1,940 cfs by April 2, 2014. Inflows were less than 300 cfs during the first week of April so the reservoir level began declining at a faster pace. Precipitation in April was well above average in the Shoshone River valley, which delayed the need for irrigation water on the Shoshone Project. The inflow began to pick up around the middle of the month, prompting another increase to 2,440 cfs on April 18, 2014. Project irrigators diverting from the Shoshone River began taking water on April 21, 2014 and Heart Mountain Canal deliveries started on April 24, 2014. Total reservoir inflow during April was 170 percent of average and additional 500 cfs increases were made on April 28, 2014 and April 30, 2014 to keep the reservoir level heading down. At the end of April 2014, Buffalo Bill Reservoir held 391,720 AF at elevation 5358.73 ft and the release to the Shoshone River was 3,440 cfs. Precipitation in the mountains was slightly above average during April and the snowpack on May 1, 2014 was 137 percent of

average. All indications continued to point to a big runoff year and the May 1, 2014 forecast from April through July runoff was increased to 1,075,000 AF, which was 162 percent of average.

Mild temperatures during the first week of May began melting snow and inflows quickly rose to over 4,000 cfs before a storm on May 6 brought snow and colder temperatures to the Shoshone basin. Inflow responded to the colder temperatures and gradually fell to about 1,500 cfs by May 13, 2014. The release to the river was increased to 3,940 cfs on May 13, 2014 and the reservoir level continued to fall, reaching a low of 352,506 AF at elevation 5352.50 ft on May 17, 2014. As temperatures warmed over the last half of May, inflows began to steadily increase, peaking at 11,360 cfs on May 29, 2014. Provisional data from the U.S. Geological Survey shows that the inflow on the North Fork of the Shoshone River peaked at 6,800 cfs on May 29, 2014 and the peak on the South Fork of 3,540 cfs occurred on May 30, 2014. The release to the Shoshone River remained at 3,940 cfs through the end of May and by the end of the month an additional 850 cfs was being diverted into the Heart Mountain Canal. The average daily inflow during May was almost 5,200 cfs and by the end of the month storage in Buffalo Bill had risen to 452,946 AF at elevation 5367.87 ft. Runoff was in full swing with over 317,000 AF of water flowing into the reservoir during May. This was almost double the average May inflow to Buffalo Bill and the second highest May of record beginning in 1916, exceeded only in May of 1928. Precipitation was less than average during May, especially in the mountains, but the snowpack on June 1, 2014 was still 112 percent of average, indicating there was plenty of water yet to come.

The final forecast of April through July snowmelt runoff is prepared based on June 1, 2014 conditions and it indicated a decrease of 125,000 AF from the May 1, 2014 forecast to 950,000 AF. This was still 143 percent of average and meant that about 560,000 AF of water could be expected to flow into Buffalo Bill during June through July. In light of the lower forecast, releases to the river were reduced to 3,240 cfs on June 4, 2014. With the Heart Mountain Canal diverting about 850 cfs, the total release from the reservoir was about 4,100 cfs. Inflows gradually fell to about 5,000 cfs by the middle of June and all the low elevation snow was gone. The declining inflows prompted a further reduction in the release to the river to 2,440 cfs on June 20, 2014. Inflows continued to fall, down to 3,395 cfs on June 20, 2014 before warming temperatures sped up the melt of the remaining snowpack. The second surge of runoff peaked on June 27, 2014 at 7,800 cfs and releases were stepped back up to 3,940 cfs between June 26, 2014 and June 30, 2014 with a spillway release initiated on June 30, 2014 in preparation for further increases. June inflow was 130 percent of average and the end of June content of 606,035 AF was 106 percent of average. The reservoir elevation at the end of the month was 5388.43 ft, which was a little more than five feet below the top of the active conservation pool.

In the Shoshone drainage, the Blackwater and Evening Star SNOTEL sites are the highest sites in the basin at 9800 ft and 9200 ft, respectively. The Blackwater site melted out on June 30, 2014 and all snow was gone at Evening Star on July 2, 2014. In most years, once the snow is gone at these two sites, it's not too long before the inflow to Buffalo Bill begins to decrease fairly rapidly. In July of 2014, this was not the case, as inflows above 5,000 cfs continued through the first half of the month before slowly receding to about 1,500 cfs at the end of July. Releases were stepped up from 3,940 cfs to 5,440 cfs between July 3, 2014 and July 10, 2014 to control

the rate of fill as the reservoir approached the top of the conservation pool. On July 12, 2014 Buffalo Bill reached its maximum content for the year of 638,117 AF. This was 8,448 AF below the top of the active conservation pool and the maximum elevation of 5392.44 ft was 1.06 ft below the level of the full reservoir. As inflows receded, releases were also reduced and by the end of the month the release to the Shoshone River was down to 1,240 cfs. Approximately 285,000 AF of water flowed into Buffalo Bill Reservoir during July, which was 176 percent of average. At the end of the month, the reservoir held 625,562 AF of water at elevation 5390.89 ft, which was 109 percent of the end of July average.

On August 4, 2014 the control of the release from Buffalo Bill Dam was turned over to the Shoshone Irrigation District and releases were adjusted as necessary to meet irrigation demands. August precipitation in the Shoshone valley was over 250 percent of average and reservoir inflow was 162 percent of average for the month. With releases held at irrigation demand and well above average inflow, the reservoir level was not declining fast enough to meet the end of November elevation target of 5370 ft. On August 27, 2014 the control of the release from the dam was returned to Reclamation and releases were increased to 1,240 cfs, where they remained through the end of the water year. Reservoir storage at the end of August was 581,945 AF at elevation 5385.31 ft, which was 114 percent of average. Above average rainfall continued into September and inflow was 153 percent of average. On September 30, 2014 Buffalo Bill Reservoir held 510,193 AF of water at elevation 5375.79 feet. This was 114 percent of the 1993 through 2013 average for the enlarged reservoir. The total inflow to Buffalo Bill during the April through July runoff period was 1,062,431 AF, which was 160 percent of average. The total water year inflow of 1,312,801 AF was 156 percent of average.

Total energy generated at all powerplants that directly receive water out of Buffalo Bill Reservoir totaled 147,510,000 kWh in 2014. Of this total amount, Heart Mountain Powerplant generated 17,263,000 kWh, Buffalo Bill Powerplant generated 94,701,000 kWh, Shoshone Powerplant generated 20,221,000 kWh and Spirit Mountain Powerplant generated 15,325,000 kWh. The powerplants used 724,261 AF of water to generate this amount of energy and 57 percent of the total water released from Buffalo Bill Reservoir during WY 2014 was used for generation. About 17 percent, or 215,594 AF of the total water released from Buffalo Bill Reservoir, was released to the Heart Mountain Canal for irrigation purposes.

Important Events During 2014

October 13, 2013: Irrigation diversions to the Heart Mountain Canal were discontinued for the 2013 irrigation season.

December 1, 2013: Releases to the Shoshone River were reduced to the winter release of 350 cfs.

March 20, 2014: Buffalo Bill Reservoir Public Information meeting was held in Powell to discuss WY 2013 operation and expected 2014 operation.

March 25, 2014: Releases to the Shoshone River were increased above the winter release in anticipation of above average April through July snowmelt runoff.

April 21, 2014: Irrigation diversions from the Shoshone River by Shoshone Project irrigation districts were initiated for the 2014 irrigation season.

April 24, 2014: Irrigation releases to the Heart Mountain Canal were initiated for the 2014 irrigation season.

June 30, 2014: Releases through the spillway at Buffalo Bill Dam were initiated.

July 12, 2014: Buffalo Bill Reservoir reached a maximum elevation for the WY of 5392.44 ft.

July 17, 2014: Releases through the spillway at Buffalo Bill Dam were discontinued.

August 4, 2014: The control of the release from Buffalo Bill Dam was turned over to the Shoshone Irrigation District and releases were adjusted as necessary to meet irrigation demands.

August 27, 2014: The control of the release from Buffalo Bill Dam was returned to Reclamation.

Additional hydrologic and statistical information pertaining to the operations of Buffalo Bill Reservoir during WY 2014 can be found in Table WYT8 and Figure WYG5.

TABLE WYT8
HYDROLOGIC DATA FOR WY 2014
BUFFALO BILL RESERVOIR

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	5259.60	41,748	41,748
TOP OF ACTIVE CONSERVATION	5393.50	646,565	604,817

STORAGE-ELEVATION DATA	ELEVATION (FEET)	STORAGE (AF)	DATE
BEGINNING OF YEAR	5369.75	466,421	OCT 01,2013
END OF YEAR	5375.79	510,193	SEP 30, 2014
ANNUAL LOW	5352.50	352,506	MAY 17, 2014
HISTORIC LOW*		19,080	JAN 31, 1941
ANNUAL HIGH	5392.44	638,117	JUL 12, 2014
HISTORIC HIGH	5393.51	646,647	JUL 30, 1996

* Prior to 1952 daily records are not available. End of month data was used to determine the historic low.

INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW**	DATE
ANNUAL TOTAL (AF)	1,312,801	OCT 13-SEP 14	1,269,047	OCT 13-SEP 14
DAILY PEAK (cfs)	11,360	MAY 29, 2014	5,417	JUL 14, 2014
DAILY MINIMUM (cfs)	20	DEC 10, 2013	342	DEC 16, 2013
PEAK SPILLWAY FLOW (cfs)				
TOTAL SPILLWAY FLOW (AF)				

**Daily peak and minimum are releases to the river

	INFLOW		OUTFLOW		CONTENT	
MONTH	KAF	% of Avg***	KAF	% of Avg***	KAF	% of Avg***
OCTOBER	52.7	214	36.9	102	482.2	114
NOVEMBER	25.8	121	30.3	176	477.7	112
DECEMBER	14.8	96	21.6	128	470.9	111
JANUARY	14.6	101	21.5	135	464.0	110
FEBRUARY	11.8	92	19.6	125	456.2	109
MARCH	23.5	122	28.8	141	450.9	109
APRIL	71.6	170	130.8	235	391.7	99
MAY	317.4	196	256.2	218	452.9	102
JUNE	388.5	130	235.4	133	606.0	106
JULY	284.9	176	265.4	156	625.6	109
AUGUST	70.2	162	113.8	102	581.9	114
SEPTEMBER	37.1	153	108.8	132	510.2	114

*** Average for inflow and outflow is the 1984-2013 period. Because of the enlargement of Buffalo Bill Reservoir in 1992, the period of record on which average content is based is 1993-2013.

FIGURE WYG5

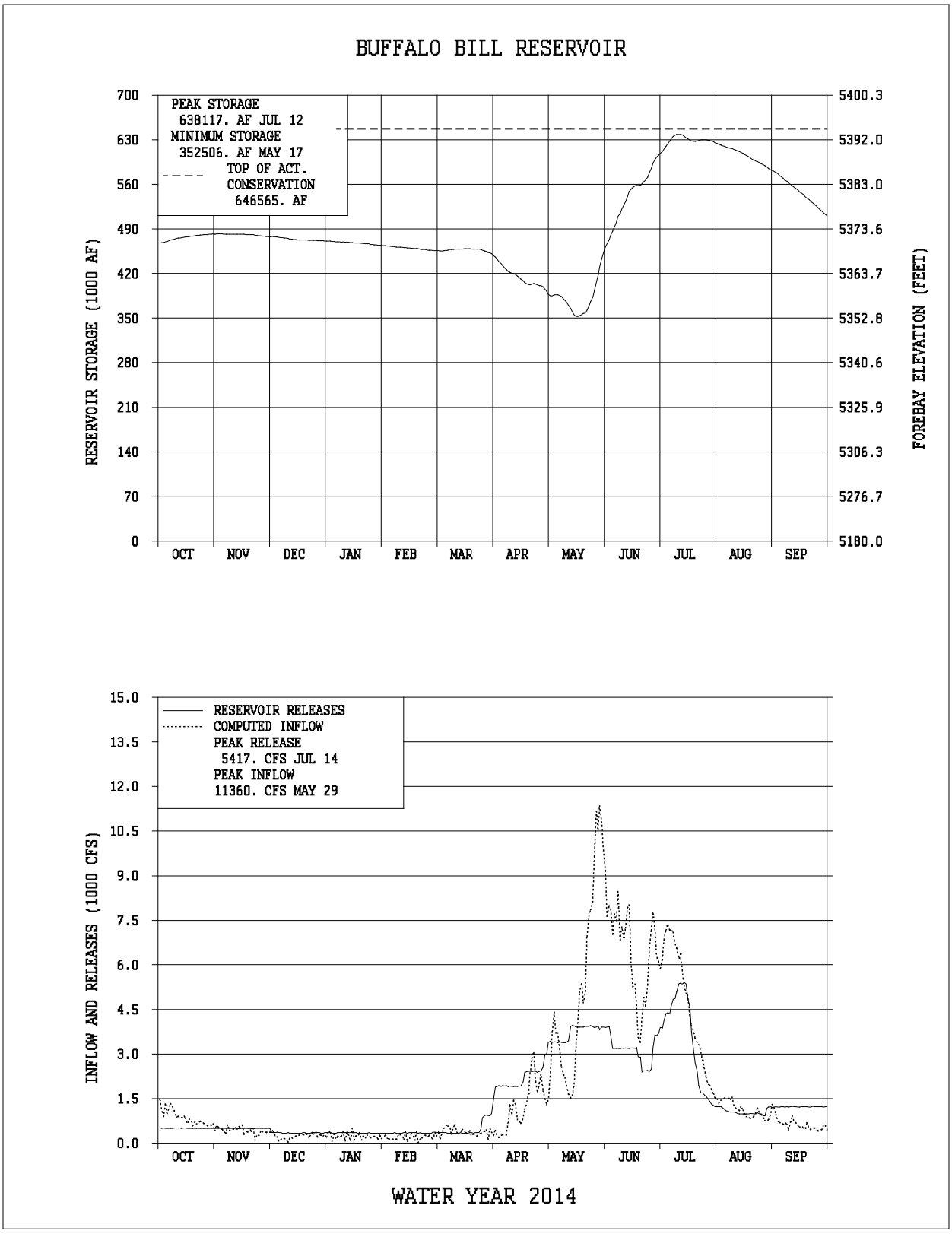

BUFFALO BILL RESERVOIR
PEAK STORAGE
638117. AF JUL 12
MINIMUM STORAGE
352506. AF MAY 17
TOP OF ACT.
CONSERVATION
646565. AF
RESERVOIR STORAGE (1000 AF)
FOREBAY ELEVATION (FEET)
700
630
560
490
420
350
280
210
140
70
0
5400.3
5392.0
5383.0
5373.6
5363.7
5352.8
5340.6
5325.9
5306.3
5276.7
5180.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
RESERVOIR RELEASES
COMPUTED INFLOW
PEAK RELEASE
5417. CFS JUL 14
PEAK INFLOW
11360. CFS MAY 29
INFLOW AND RELEASES (1000 CFS)
15.0
13.5
12.0
10.5
9.0
7.5
6.0
4.5
3.0
1.5
0.0
WATER YEAR 2014

Table WYT9

WY 2014 ACTUAL OUTAGES FOR WYOMING POWERPLANTS

Facilities	Description of Work	Outage Dates
BOYSEN		
Unit 1	Power Plant Flood Repair / Annual Maintenance	10/01/13- 03/27/14
Unit 1	Turbine Bearing Pressure	07/12/14- 07/16/14
Unit 2	Power Plant Flood Repair / Annual Maintenance	10/01/13- 03/06/14
PILOT BUTTE		
Unit 1	Unit in "Mothballed" status	06/01/09- 09/30/14
Unit 2	Unit in "Mothballed" status	06/01/09- 09/30/14
BUFFALO BILL		
Buffalo Bill Powerplant		
Unit 1	Annual Maintenance / KZ1A CT & PT Testing	11/18/13- 12/05/13
Unit 2	KZ1A CT & PT Testing for Relay Project	11/18/13- 11/21/13
Unit 2	Annual Maintenance	12/09/13- 01/09/14
Unit 3	Annual Maintenance	01/13/14- 02/13/14
Shoshone Powerplant		
Unit 3	Buffalo Bill Bus #2 CT Testing	01/13/14- 01/14/14
Unit 3	Annual Maintenance & 6.9kv Cable Testing	02/24/14- 03/06/14
Unit 3	Unit Lockout on 64G	03/30/14- 04/01/14
Heart Mountain Powerplant		
Unit 1	KZ1A PM & Cable Testing	10/21/13- 10/24/14
Unit 1	Annual Maintenance / KZ1A PM & Cable Testing	03/17/14- 03/28/14
Spirit Mountain Powerplant		
Unit 1	Annual Maintenance / Sleeve Valve Inspection / SEL installation	10/21/13- 12/02/13
Unit 1	SEL Relay Testing	04/24/14- 04/30/14

SUMMARY OF RESERVOIR OPERATIONS FOR BENEFIT OF FISH AND WILDLIFE, ENVIRONMENT, AND RECREATION

Bull Lake Reservoir

During the past several years, Midvale and Reclamation have entered into an annual agreement whereby Reclamation could store Boysen water in Bull Lake under any combination of four conditions set forth in the agreement. A similar agreement was approved for 2014. The Boysen water stored in Bull Lake allows Bull Lake to be maintained at a higher content and also provides a flow of 20 cfs to 25 cfs in Bull Lake Creek below the dam as the Boysen water is released from Bull Lake through the winter months. On October 1, 2013, Bull Lake Reservoir held 89,167 AF of water. Of the 89,167 AF held in Bull Lake, 9,257 AF was Boysen water in Bull Lake. Inflow to Bull Lake was well above average during October and storage increased to almost 100,000 AF by the end of the month. Releases were maintained at rates that were well above 25 cfs during October and November and then gradually reduced to the winter flow by the middle of January. Inflow from snowmelt runoff began in mid-May and during the April through July period the inflow to Bull Lake was 108 percent of average. The reservoir reached a maximum elevation for the year of 5804.23 ft on July 23, 2014 which was 21.18 ft higher than the minimum elevation for the year of 5783.05 ft that occurred on October 1, 2013. At the end of WY 2014, the content of Bull Lake was 104,768 AF. At the beginning of WY 2015, there was 3,264 AF of Boysen storage water in Bull Lake. This water will be transferred back to Boysen during the winter months of WY 2015 to provide a winter flow in Bull Lake Creek.

Boysen Reservoir

Boysen Reservoir storage at the beginning of WY 2014 was 82 percent of average and 65 percent of capacity. Following the 2013 irrigation season, the release from Boysen Dam was set at approximately 500 cfs. To guarantee a spring flushing flow, the Wyoming Game and Fish Department agreed to a reduced winter release of 475 cfs. The release from the dam was set at 475 cfs on November 1, 2013 where it remained through the winter months. At the request of the Wyoming Game and Fish Department, a flushing flow release was made beginning on March 25, 2014. Flushing flows are designed to simulate high runoff events that occurred in the river prior to flows being controlled by the dam. The rapidly increasing flows flush the fine sediment from the spawning gravels in the river, improving the spawning habitat for trout. Late on the evening of March 25, 2014 the release from Boysen Dam was increased from 475 cfs to 1,000 cfs. This was followed by an increase from 1,000 cfs to 2,300 cfs early on the morning of March 26, 2014 with an increase to 5,000 cfs five hours later. The 5,000 cfs release was maintained for ten hours and then gradually reduced to 1,000 cfs where it was held for the remainder of March. During the flushing flow, approximately 5,870 AF of water was released above the 475 cfs winter release.

The month of April is normally when many species of fish spawn in the upper few feet of the reservoir. To insure a successful spawn, it is important to limit the amount of drawdown on the reservoir during April. In April 2014, the reservoir level fell 2.97 ft during the month. The reservoir level was at 4712.74 ft going into the Memorial Day weekend, which was 0.49 ft lower than at the beginning of the holiday weekend in 2013.

Buffalo Bill Reservoir

Based on winter release criteria contained in the ***Buffalo Bill Reservoir Enlargement Winter Release Operation Agreement***, the release from Buffalo Bill Reservoir should have been set at approximately 200 cfs, since end of September storage in Buffalo Bill was less than 475,000 AF. A winter release of 100 cfs, 150 cfs, 200 cfs, or 350 cfs will be provided below Buffalo Bill Powerplant based on the total inflow to Buffalo Bill Reservoir during the previous water year and the amount of storage in the reservoir and in the State account on September 30, 2014. A release of 100 cfs will be maintained in the river below the dam at all times. However, October inflow was more than double the normal and the reservoir level rose through the month. Reclamation made a request to the Wyoming Water Development Commission to allow a higher release of 350 cfs during the winter months. A variance to the Agreement was allowed and the release from the dam was set at 350 cfs on December 1, 2013.

Reclamation continues to support the WGF Reservoir Research Branch in its efforts to assess fish population and species distribution in the enlarged reservoir through the use of hydro-acoustic technology and by providing WGF river access and an aluminum tube for planting fish in the Shoshone River off the deck of Buffalo Bill Powerplant.

At Buffalo Bill Reservoir, as the reservoir is drawn down, the lake bed is exposed to wind erosion which creates dust in the reservoir area and in the town of Cody, Wyoming. As a part of the enlargement of Buffalo Bill Reservoir, dust abatement dikes were built on the upper ends of the North and South Fork arms of the reservoir to hold water in areas that would become dry as the reservoir level decreased, thus reducing the area of dry lake bed. During the period from January 16, 2014 to June 2, 2014, the water surface elevation of Buffalo Bill Reservoir was below the top of the North Fork Dike (elevation 5370.00 ft). The minimum elevation of the pool behind the South Fork Dike of 5392.41 ft occurred on April 25, 2014, and the maximum elevation of 5394.14 ft occurred on July 12, 2014. At the maximum elevation, the pool behind the South Fork Dike covered 208 surface acres. On May 17, 2014, when the water surface elevation of Buffalo Bill Reservoir was at its low for the year of 5352.50 ft, the water surface elevation of the pool behind the North Fork Dike was approximately 5353.00 ft and the water surface elevation of the pool behind the South Fork Dike was 5392.77 ft. At the minimum reported elevation of Buffalo Bill Reservoir, 194 more acres of land would have been exposed without the ability to store water behind the South Fork Dike.

The number of stoplogs at the outlet control structure on the South Fork Dike has been set to maintain the static water level of the pond behind the dike at approximately 5393.23 ft at the end of the water year. The increased elevation provides a larger impoundment behind the dike, benefiting waterfowl as well as the fishery.

The Diamond Creek Dike was constructed to prevent Diamond Creek and the Irma Flats area from being inundated by the enlarged reservoir. Inflows from the Diamond Creek drainage enter Diamond Creek Reservoir which lies at the base of the dike. This water is then pumped into Buffalo Bill Reservoir to maintain the elevation of Diamond Creek Reservoir between a maximum of 5340.40 ft and a minimum of 5339.50 ft with the normal water surface elevation being 5340.00 ft. In WY 2014, 14,054 AF of water was pumped from Diamond Creek Reservoir into Buffalo Bill Reservoir.

Reservoir levels during all of WY2014 were adequate for recreational activities on Buffalo Bill Reservoir.

SUMMARY

OF OPERATIONS

FOR WY 2014

FOR RESERVOIRS

(ANGOSTURA, BELLE FOURCHE, DEERFIELD, E.A. PATTERSON, LAKE TSCHIDA, JAMESTOWN, KEYHOLE, PACTOLA AND SHADEHILL)

UNDER THE RESPONSIBILITY

OF THE

DAKOTAS AREA OFFICE

WEATHER SUMMARY FOR NORTH AND SOUTH DAKOTA WY 2014

October precipitation was very much above average at Angostura, Belle Fourche, Deerfield, Dickinson, Heart Butte, Jamestown, Keyhole, Pactola and Shadehill reservoirs.

November precipitation was average at Deerfield reservoir; below average at Angostura and Pactola reservoirs; much below average at Belle Fourche and Keyhole reservoirs; and very much below average at; Dickinson, Heart Butte, Jamestown, and Shadehill reservoirs.

December precipitation was very much above average at Angostura, Belle Fourche, Deerfield, and Heart Butte reservoirs; much above average at Dickinson and Shadehill reservoirs; above average at Keyhole reservoir; and below average at Jamestown and Pactola reservoirs.

January precipitation was much very much above average at Deerfield reservoir; above average at Keyhole and Pactola reservoirs; below average at Angostura, Belle Fourche reservoirs; much below average at Heart Butte and Jamestown reservoirs; and very much below average at Dickinson and Shadehill reservoirs.

February precipitation was average at Angostura, Deerfield, and Pactola reservoirs; below average at Belle Fourche reservoir; and much below average at Keyhole and Shadehill reservoirs; and very much below average at Dickinson, Heart Butte, and Jamestown reservoirs.

March precipitation was above average at Deerfield reservoir; average at Belle Fourche and Pactola reservoirs; below average at Angostura, Dickinson, and Shadehill reservoirs; much below average at Heart Butte reservoir; and very much below average at Jamestown and Keyhole reservoirs.

April precipitation was very much above average at Jamestown reservoir; above average at Angostura, Belle Fourche, Heart Butte, and Shadehill reservoirs; below average at Deerfield, Dickinson, and Keyhole reservoirs; and much below average at Pactola reservoir.

May precipitation was very much above average at Dickinson, and Jamestown reservoirs, average at Angostura reservoir; below average at Pactola and Heart Butte reservoirs; much below average at Deerfield, Keyhole and Shadehill reservoirs; and very much below average at Belle Fourche reservoir.

June precipitation was very much above average at Belle Fourche, Heart Butte, Jamestown, Pactola and Shadehill reservoirs; much above average at Angostura reservoir; above average at Deerfield and Dickinson reservoirs; and average at Keyhole reservoir.

July precipitation was average at Deerfield reservoir; below average at Pactola reservoir; much below average at Angostura, Dickinson, and Keyhole reservoirs; and very much below average at Belle Fourche, Heart Butte, Jamestown, and Shadehill reservoirs.

August precipitation was very much above average at Angostura, Belle Fourche, Deerfield, Dickinson, Heart Butte, Pactola, and Shadehill reservoirs; much above average at Jamestown reservoir; and very much below average at Keyhole reservoir.

September precipitation was very much above average at Angostura, Belle Fourche, Deerfield, and Pactola reservoirs; above average at Keyhole reservoir; average at Dickinson, and Heart Butte reservoirs; and was below average at Jamestown, and Shadehill reservoirs.

Total annual precipitation for Reclamation facilities in North Dakota, South Dakota, and northeastern Wyoming are shown on Table DKT1.

TABLE DKT1
Total Annual Precipitation for Reclamation Reservoirs in North Dakota, South Dakota, and Northeastern Wyoming in Inches

Reservoir	2014 Total	Average Total	Percent
Angostura 1/	26.69	17.67	151
Belle Fourche 2/	22.25	15.86	140
Deerfield 3/	18.14	13.99	130
Keyhole 4/	14.06	19.20	73
Pactola	28.83	20.58	140
Shadehill 5/	24.85	17.86	139
Dickinson	26.00	15.77	165
Heart Butte	23.33	16.27	143
Jamestown	25.03	18.77	133

1/ Angostura Reservoir's annual precipitation data is from the Hot Springs, SD, climate station.
2/ Belle Fourche Reservoir's annual precipitation data is from the Newell, SD climate station.
3/ Deerfield reservoir's annual and average precipitation data is from the Deerfield, Dam flip bucket rain gauge recorded by Hydromet.
4/ Keyhole Reservoir's annual precipitation data is from the Sundance, WY climate station.
5/ Shadehill Reservoir's annual precipitation data is from the Lemmon, SD climate station.

TABLE DKT2
Comparison of End-of-Water-Year Storage Content for Reservoirs in North Dakota, South Dakota, and Northeastern Wyoming in AF

Reservoir	Storage September 30, 2013	Storage September 30, 2014	Change in Storage
Angostura	73,411	97,807	24,396
Belle Fourche	96,548	116,661	20,113
Deerfield	15,243	15,235	-8
Keyhole	150,023	169,298	19,275
Pactola	51,048	46,537	-4,511
Shadehill	112,027	119,171	7,144
Dickinson	8,612	7,669	-943
Heart Butte	65,405	59,969	-5,436
Jamestown	27,787	26,563	-1,224

Table DKT2. Displays the changes in storage content between September 30, 2013, and September 30, 2014, at reservoirs in North and South Dakota and eastern Wyoming.

FLOOD BENEFITS

RESERVOIRS IN NORTH AND SOUTH DAKOTA AND NORTHEASTERN WYOMING

Several Bureau of Reclamation reservoirs in northeastern Wyoming, South Dakota, and North Dakota provided flood relief during WY 2014. They are: Heart Butte on the Heart River near Glen Ullin, North Dakota; Jamestown on the James River near Jamestown, North Dakota; Shadehill on the Grand River near Lemmon, South Dakota; Angostura on the Cheyenne River near Hot Springs, South Dakota; Pactola on Rapid Creek near Rapid City, South Dakota; Keyhole on the Belle Fourche River near Moorcroft, Wyoming.

The information on the distribution of flood damages prevented is provided by the Corps of Engineers. The distributions of flood damages prevented for each reservoir are as follows:

FLOOD DAMAGE PREVENTED IN 2014
ACCUMULATED TOTAL 1950-2014

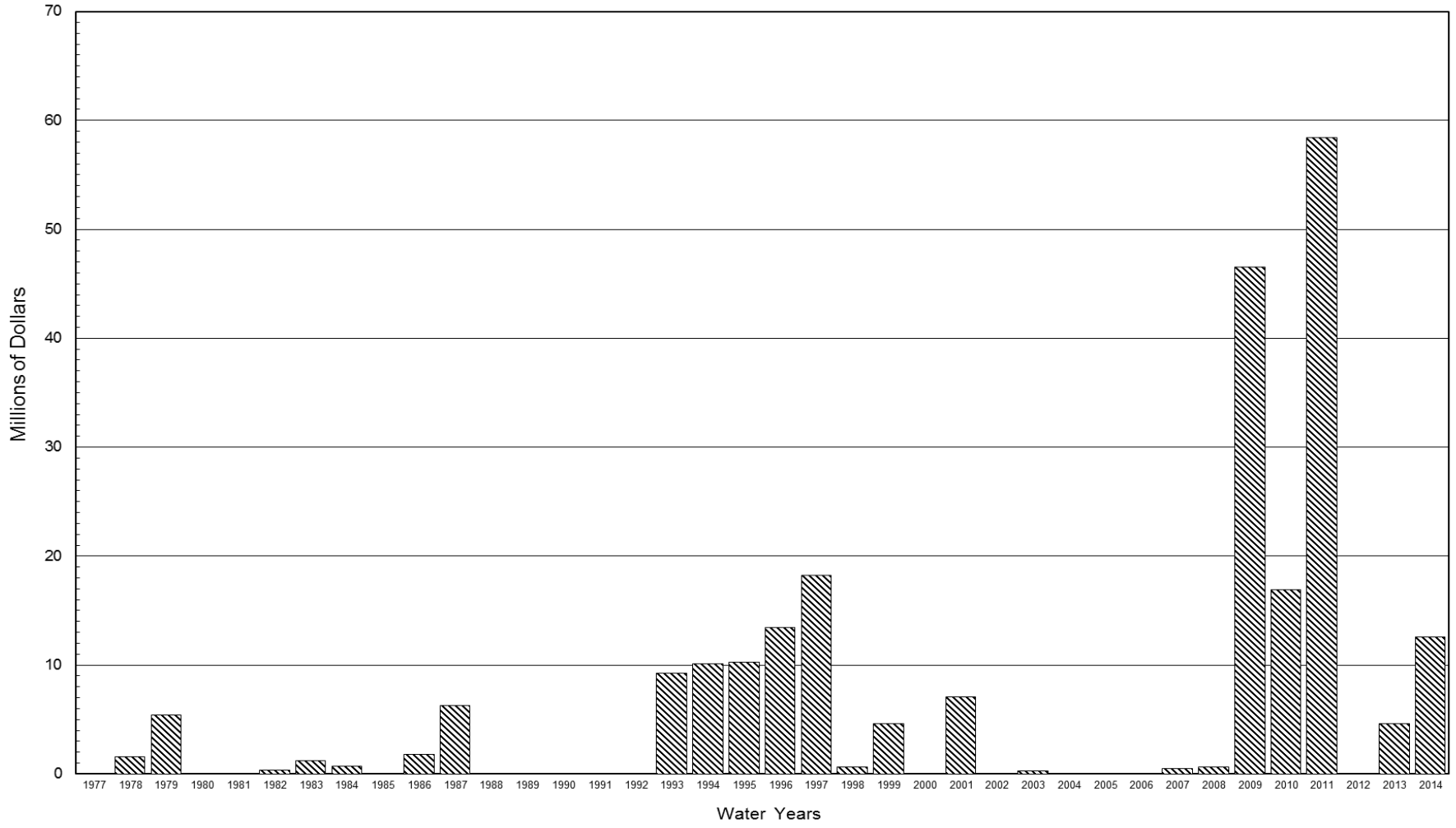
	Local	Main-Stem	2014 Total	Previous Accumulations	1950-2014 Accum Totals
Heart Butte	$508,000	$94,400	$602,400	$15,567,000	$16,169,400
Shadehill	$138,000	$391,700	$529,700	$12,160,700	$12,690,400
Angostura	$0	$0	$0	$22,800	$22,800
Pactola	$45,500	$3,700	$49,200	$3,551,100	$3,955,500
Keyhole	$17,400	$61,000	$78,400	$4,181,500	$4,259,000
Jamestown	$0	$0	$0	$208,052,100	$208,052,100
Total	$708,900	$550,800	$1,259,700	$243,710,800	$244,970,500

Flood damages prevented by Dakotas Area Office reservoirs between Garrison and Gavins Point Dams are shown on Figure DKG1

FIGURE DKG1

FLOOD DAMAGES PREVENTED

By Dakota Area Projects Between Garrison and Gavins Point Dams



UNIT OPERATIONAL SUMMARIES FOR WY 2014

Dickinson Reservoir

BACKGROUND

Dickinson Dam and Edward Arthur Patterson Lake (Dickinson Reservoir) is located on the Heart River one mile west of Dickinson, North Dakota. The reservoir has a dead capacity of 356 AF, an inactive capacity of 100 AF and an active conservation capacity of 8,156 AF (for a total storage capacity of 8,612 AF at the top of conservation elevation 2420.00ft). Reservoir water is used for irrigating approximately 230 acres along the Heart River downstream of the dam and for municipal use by the Dickinson Parks and Recreation District.

WY 2014 OPERATIONS SUMMARY

Dickinson Reservoir started WY 2014 at elevation 2420.00 ft and storage of 8,612 AF, which is at the top of the conservation pool. Dickinson Reservoir peaked at elevation 2420.87 ft on April 7, 2014 with 9,692 AF of storage. The minimum reservoir elevation for WY 2014 was 2419.18 ft and storage of 7,396 AF occurred on March 7, 2014. The reservoir elevation on September 30, 2014 was 2419.18 ft with storage of 7,669 AF, which is 0.82 ft, and 943 AF below the top of conservation pool.

Reservoir net inflows for WY 2014 were the highest in 63 years of records and totaled 70,469 AF (362 percent of average). Peak inflows occurred in October totaling 23,958 AF (9,660 percent of average) which were the highest October inflows on record. The maximum in stantaneous discharge of 2,534 cfs occurred on October 18, 2013. The reservoir peaked at elevation 2420.87 ft on April 7, 2014 making it the 4th highest elevation on record. The maximum 24 hour computed inflow occurred on October 18, 2013 with 2,509 cfs. Precipitation for the water year totaled 26.00 inches (165 percent of average).

No water was released specifically for downstream irrigation.

An Emergency Management/Security orientation was conducted on February 13, 2014.

A Periodic Review (PR) was conducted on May 21, 2014 by personnel from the Dakotas Area Office and Great Plains regional office. The Periodic Review report was signed on September 2, 2014.

Flood operations for Dickinson dam occurred in ten of the twelve months (November and December did not have flood operations).

Dickinson Dam entered the water year in Internal Alert with a reservoir elevation over 2420.00 ft and resumed normal operations on October 2, 2013. Response Level 1 was declared on October 12, 2013, and normal operations were resumed on October 26, 2013.

On January 27, 2014 a very brief warm up provided enough snow melt for a rare January spill and Response level 1 was declared. The warm up was immediately followed by a return to below zero temperatures. The reservoir was kept in Response Level 1 until the elevation dropped below 2420.00 ft, on February 7, 2014, due to ice buildup on the gate.

The spring thaw occurred in early March and on March 10, 2014, Response Level 1 was declared. Due to the continued threat of precipitation the Dam remained in Response Level 1 until April 14, 2014 when it returned to Internal Alert. Continued threat of precipitation kept the Dam in Internal Alert until April 30, 2014 when rainfall pushed the reservoir elevation above 2420.50 ft and the dam returned to Response Level 1. Numerous rainfall events kept the dam alternating between Response Level 1 and Internal Alert until July 20, 2014.

Rainfall returned in August and Internal Alert was declared on August 4, 2014. Dickinson Dam was elevated to Response Level 1 on August 16, 2014 through August 28, 2014. The dam remained in Internal Alert from August 28, 2014 through September 4, 2014, when normal operations resumed.

MONTHLY STATISTICS FOR WY 2014

Record and near record monthly inflows in 63 years of record keeping were recorded in the following months: October had its first highest inflow, November had its second highest inflow, December had its fourth highest inflow, January had its first highest inflow, April had its eighth highest inflow, May had its eighth highest inflow, August had its second highest inflow, and September had its sixth highest inflow.

Record or near record monthly end of month content in 63 years of record keeping were recorded in the following months: October had its sixth highest storage, November had its ninth highest storage, December had its seventh highest storage, January had its fourth highest storage, April had its tenth highest storage, May had its eleventh highest storage, June had its tenth highest storage, and August had its fifth highest storage.

Additional statistical information on Dickinson Reservoir and its operations during 2013 can be found on Table DKT3 and Figure DKG2.

TABLE DKT3
HYDROLOGIC DATA FOR 2014
DICKINSON RESERVOIR

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE	2,405.00	456	456
TOP OF ACTIVE CONSERVATION	2,420.00	8,612	8,156
TOP OF JOINT USE			
TOP OF EXCLUSIVE FLOOD CONTROL			

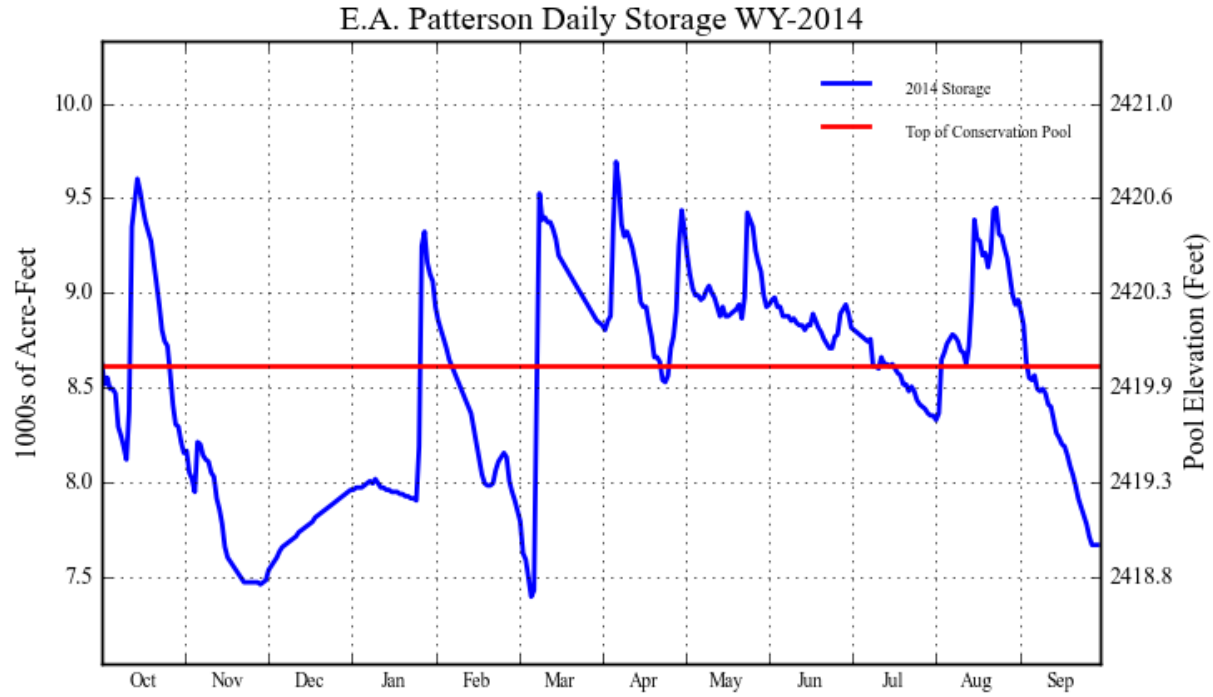
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	2,420.00	8,612	OCT 01, 2013
END OF YEAR	2,419.18	7,669	SEP 30, 2014
ANNUAL LOW	2,418.93	7,396	MAR 07, 2014
ANNUAL HIGH	2,420.87	9,692	APR 07, 2014
HISTORIC HIGH	2,422.19	***9,348	MAR 21, 1997

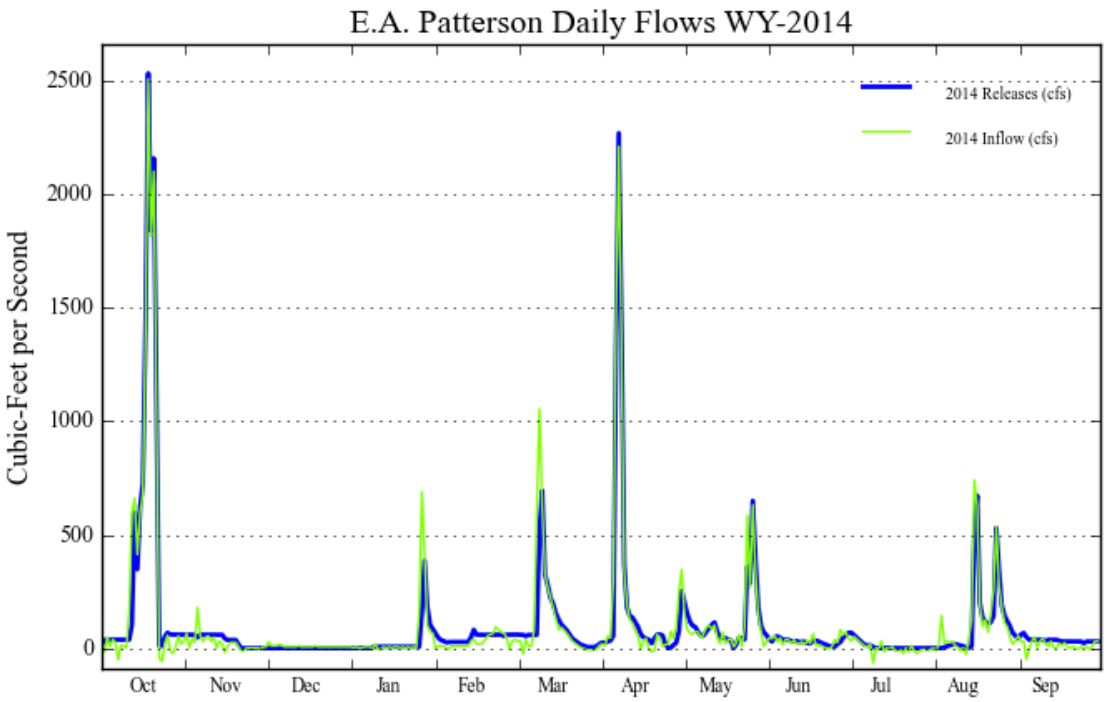
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	70,469	OCT 13-SEP 14	71,412	OCT 13-SEP 14
DAILY PEAK (CFS)*	2,509	OCT 18, 2013	2,534	OCT 18,2014
DAILY MINIMUM (CFS)**	0	**	0	**

MONTH	INFLOW		OUTFLOW		CONTENT	
	AF	% OF AVG	AF	% OF AVG	AF	% OF AVG
OCTOBER	23,958	9,660	24,415	6,744	8,155	149
NOVEMBER	1,350	951	2,022	991	7,483	138
DECEMBER	477	382	0	NA	7,960	147
JANUARY	3,123	1,774	2,157	1,552	8,926	164
FEBRUARY	1,619	161	2,596	398	7,949	137
MARCH	7,925	113	7,021	120	8,853	128
APRIL	13,880	306	13,485	309	9,248	130
MAY	7,551	303	7,812	302	8,987	127
JUNE	1,795	73	1,844	76	8,938	127
JULY	105	12	691	51	8,352	127
AUGUST	7,856	2,737	7,270	943	8,938	147
SEPTEMBER	831	769	2,100	519	7,669	133
ANNUAL	70,469	363	71,412	370		
APRIL-JULY	23,331	221				

* 24 hour daily inflow and 15 minute instantaneous discharge
** Frequently observed during fall and winter months
*** Due to new area-capacity table, the capacity that corresponds to the new historic high elevation is less than a previous historic high capacity amount (11,520 AF @ Elevation 2421.08 on June 9, 1982)

Figure DKG2
Dickinson Reservoir





Heart Butte Reservoir

BACKGROUND

Heart Butte Dam and Lake Tschida (Heart Butte Reservoir) is located on the Heart River 15 miles south of Glen Ullin, North Dakota. The reservoir has a dead storage capacity of 5,227 AF, an active conservation capacity of 61,915 AF (for a total storage capacity of 67,142 AF at the top of active conservation elevation 2064.50 ft), and an exclusive flood control space of 147,027 AF. Flood control storage is located above the crest of an ungated morning glory inlet spillway. Heart Butte Reservoir is primarily used for flood control and the authorized irrigation of up to 13,100 acres of which about 7,320 acres are now being irrigated.

WY 2014 OPERATIONS SUMMARY

Heart Butte Reservoir started WY 2014 at elevation 2063.97 ft and storage of 65,405 AF, which is 0.53 ft, and 1,737 AF below the top of conservation pool (elevation 2064.50 ft and storage 67,142AF). Heart Butte Reservoir peaked at elevation 2070.88 ft on April 10, 2014 with 89,960 AF of storage. The minimum reservoir elevation for WY 2014 was 2062.02 ft and storage of 59,227 AF occurred on May 8, 2014. The reservoir elevation on September 30, 2014 was 2062.26 ft with storage of 59,969 AF, which is 2.24 ft and 7,173 AF below the top of conservation pool.

Reservoir net inflows for WY 2014 were the fourth highest on record for 65 years of records and totaled 259,541 AF, 298 percent of average. Peak inflows occurred in April totaling 58,504 AF (236 percent of average) which were the tenth highest ever April inflows on record. The maximum instantaneous discharge of 3,165 cfs occurred on April 10, 2014. The reservoir peaked at elevation 2070.88 ft on April 10, 2014 making it the fifteenth highest elevation on record. The maximum 24 hour computed inflow occurred on April 9, 2014 with 8,352 cfs. Precipitation for the water year totaled 23.33 inches (143 percent of average).

No water was released specifically for downstream irrigation.

An Emergency Management/Security orientation was conducted on February 12, 2014.

A Periodic Review (PR) was conducted on May 20, 2014 by personnel from the Dakotas Area Office and Great Plains regional office. The Periodic Review report was signed on August 1, 2014.

Flood operations for Heart Butte Dam occurred in eight of the twelve months (October, March, April, May, June, July, August, and September).

Due to higher than normal fall rains occurring, on October 12, 2013 Heart Butte Reservoir went into Internal Alert with a reservoir elevation over 2064.50 ft and remained there until October 27, 2013 when the reservoir was put into normal operating conditions.

The spring thaw occurred in early March and the reservoir went into Internal Alert on March 12, 2014 and remained there until March 14, 2014 when the reservoir went into Response Level One with the reservoir elevation above 2067.00 ft and remained there until March 17, 2014 when the reservoir went back into Internal Alert and remained there until March 26, 2014 when the reservoir was put into normal operating conditions.

Due to spring rains occurring, on April 8, 2014 the reservoir went into Internal Alert and remained there until April 9, 2014 when the reservoir went into Response Level One with the reservoir elevation above 2067.00 ft and remained there until April 16, 2014 when the reservoir went back into Internal Alert and remained there until April 23, 2014 when the reservoir was put into normal operating conditions.

Due to higher than normal inflows coming into the reservoir, on May 28, 2014 the reservoir went into Internal Alert with a reservoir elevation over 2064.50 ft and remained there until June 6, 2014 when the reservoir was put into normal operating conditions.

Due to higher than normal rainfall occurring, on June 20, 2014 the reservoir went into Internal Alert with a reservoir elevation over 2064.50 ft and remained there until July 13, 2014 when the reservoir was put into normal operating conditions.

Due to higher than normal summer rainfall occurring, on August 7, 2014 the reservoir went into Internal Alert and remained there until August 18, 2014 when the reservoir went into Response Level One with the reservoir elevation above 2067.00 ft and remained there until September 1, 2014 when the reservoir went back into Internal Alert and remained there until September 8, 2014 when the reservoir was put into normal operating conditions.

MONTHLY STATISTICS FOR WY 2014

Record and near record monthly inflows in 65 years of record keeping were recorded in the following months: October had its first highest inflow, November had its third highest inflow, December had its seventh highest inflow, January had its fourth highest inflows, February had its eleventh highest inflow, April had its tenth highest inflow, May had its seventh highest inflow, June had its eleventh highest inflow, July had its eleventh highest inflow, August had its first highest inflows, and September has its first highest inflow.

Record and near record monthly end of month content in 65 years of record keeping were recorded in the following months: January had its eleventh highest storage, and August had its third higest storage.

Additional statistical information on Heart Butte Reservoir and its operations during 2014 can be found on Table DKT4 and Figure DKG3.

TABLE DKT4
HYDROLOGIC DATA FOR 2014
HEART BUTTE RESERVOIR

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	2,030.00	5,227	5,227
TOP OF ACTIVE CONSERVATION	2,064.50	67,142	61,915
TOP OF JOINT USE			
TOP OF EXCLUSIVE FLOOD CONTROL	2,094.50	214,169	147,027

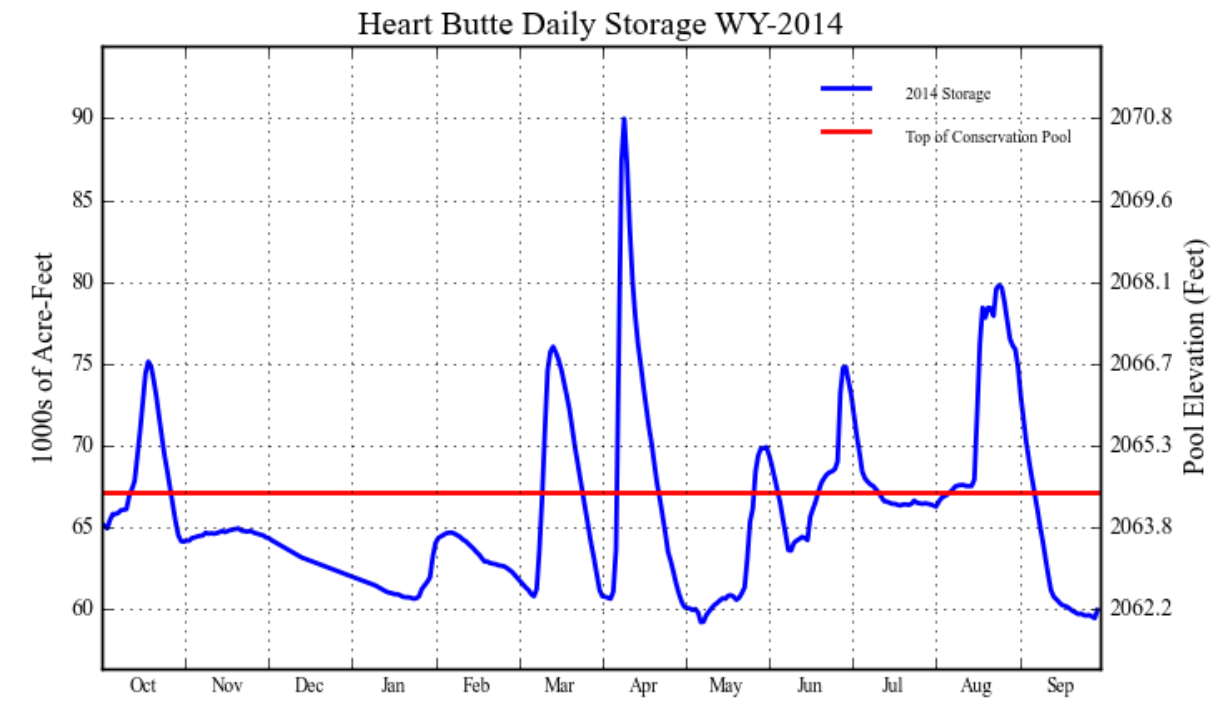
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	2,063.97	65,405	OCT 01, 2013
END OF YEAR	2,062.26	59,969	SEP 30, 2014
ANNUAL LOW	2,062.02	59,227	MAY 08, 2014
ANNUAL HIGH	2,070.88	89,960	APR 10, 2014
HISTORIC HIGH	2,086.23	173,203	APR 09, 1952

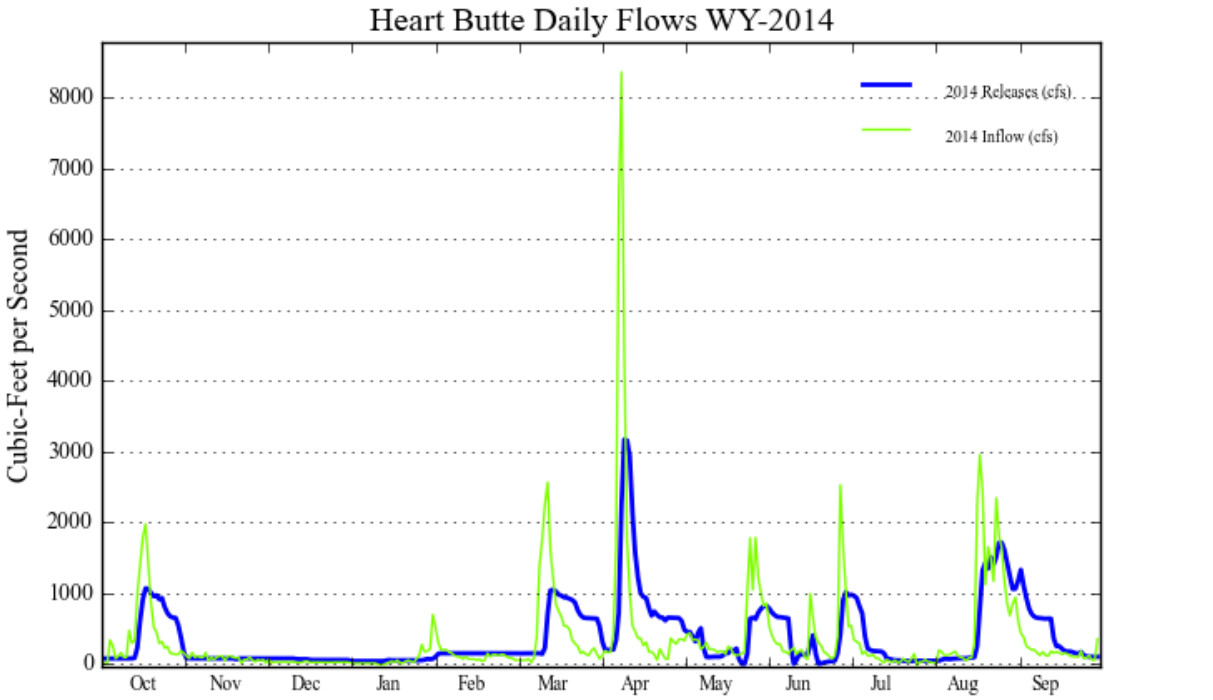
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	259,541	OCT 13-SEP 14	264,977	OCT 13-SEP 14
DAILY PEAK (CFS)	8,352	APR 09, 2014	3165	APR 10, 2014
DAILY MINIMUM (CFS)	0	*	0	*

MONTH	INFLOW		OUTFLOW		CONTENT	
	AF	% OF AVG	AF	% OF AVG	AF	% OF AVG
OCTOBER	26,823	2,745	28,084	1,573	64,144	110
NOVEMBER	4,709	401	4,452	331	64,401	111
DECEMBER	1,491	175	3,854	313	62,038	108
JANUARY	5,052	553	3,043	283	64,047	112
FEBRUARY	6,454	193	8,210	473	62,291	106
MARCH	34,421	120	34,611	195	62,101	89
APRIL	58,504	236	59,637	242	60,968	87
MAY	28,480	278	19,606	174	69,842	101
JUNE	25,838	245	20,862	215	74,818	107
JULY	7,117	171	15,517	199	66,418	100
AUGUST	50,016	4,502	40,564	789	75,870	122
SEPTEMBER	10,637	3,048	26,538	1,042	59,969	100
ANNUAL	259,542	298	264,977	308		
APRIL-JULY	119,939	236				

* Frequently observed during fall and winter months

Figure DKG3
Heart Butte Reservoir





Jamestown Reservoir

BACKGROUND

Jamestown Reservoir is located on the James River just above the city of Jamestown, North Dakota. The reservoir has a dead capacity of 292 AF, an active conservation capacity of 23,934 AF (for a total top of active conservation capacity of 24,226 AF at elevation 1428.00 ft), a joint-use capacity of 6,262 AF, and an exclusive flood control space of 190,502 AF. Exclusive flood control storage is located below the crest of an ungated morning glory inlet spillway and flood control releases are controlled by two gated outlets. The joint-use space is available for flood control at the beginning of spring runoff and is used for conservation purposes during the summer months.

WY 2014 OPERATIONS SUMMARY

Jamestown Reservoir started WY 2014 at elevation 1429.79 ft and storage of 27,787 AF, which is 1.79 ft, and 3,561 AF above the top of the conservation pool (elevation 1428.00 ft and storage 24,226 AF). Jamestown Reservoir peaked at elevation 1433.85 ft on May 11, 2014 with 37,901 AF of storage. The minimum reservoir elevation for WY 2014 was 1428.10 ft and storage of 24,414 AF occurred on March 8, 2014. The reservoir elevation on September 30, 2014 was 1429.20 ft with storage of 26,563 AF, which is 1.20 ft, and 2,337 AF above the top of active conservation pool.

Reservoir net inflows for WY 2014 were the eighteenth highest inflows in 61 years of records and totaled 81,160 AF (139 percent of average). Peak inflows occurred in May totaling 23,626 AF (250 percent of average) which were the ninth highest ever May inflows on record. The maximum instantaneous discharge of 502 cfs occurred on May 22, 2014. The reservoir peaked at elevation 1433.85 ft on May 11, 2014 making it the twenth-eighth highest elevation on record. The maximum 24 hour computed inflow occurred on April 29, 2014 with 739 cfs. Precipitation for the water year totaled 25.03 inches at 133 percent of average.

No water was released specifically for downstream irrigation.

An Emergency Management/Security orientation was conducted on February 11, 2014.

An Annual Site Inspection (ASI) was conducted on September 18, 2014 by personnel from the Dakotas Area Office. The Annual Site Inspection report was signed on December 12, 2014.

Flood operations for Jamestown Dam occurred in four of the 12 months (April, May, June, and July).

Due to spring runoff and higher than normal rainfall occurring, on April 8, 2014 the reservoir went into Internal Alert with a reservoir elevation over 1431.00 ft and remained there until June 6, 2014 when the reservoir was put into normal operating conditions.

Due to higher than normal summer rainfall occurring, on June 18, 2014 the reservoir went into Internal Alert and remained there until July 13, 2014 when the reservoir dropped below elevation 1431.00 ft and was put into normal operating conditions.

MONTHLY STATISTICS FOR WY 2014

Record and near record monthly inflows in 61 years of record keeping were recorded in the following months: October had its seventh highest inflow, August had its seventh highest inflow, December had its eighth highest inflow, May had its ninth highest inflow, June had its sixth highest inflows, and July had its tenth highest inflows.

Record and near record monthly end of month content in 61 years of record keeping were recorded in the following months: There were none in the top or bottom 15 storages.

Additional statistical information on Jamestown Reservoir and its operations during 2014 can be found on Table DKT5 and Figure DKG4.

TABLE DKT5
HYDROLOGIC DATA FOR 2014
JAMESTOWN RESERVOIR

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	1,400.00	292	292
TOP OF ACTIVE CONSERVATION	1,428.00	24,226	23,934
TOP OF JOINT USE	1,431.00	30,488	6,262
TOP OF EXCLUSIVE FLOOD CONTROL	1,454.00	220,990	190,502

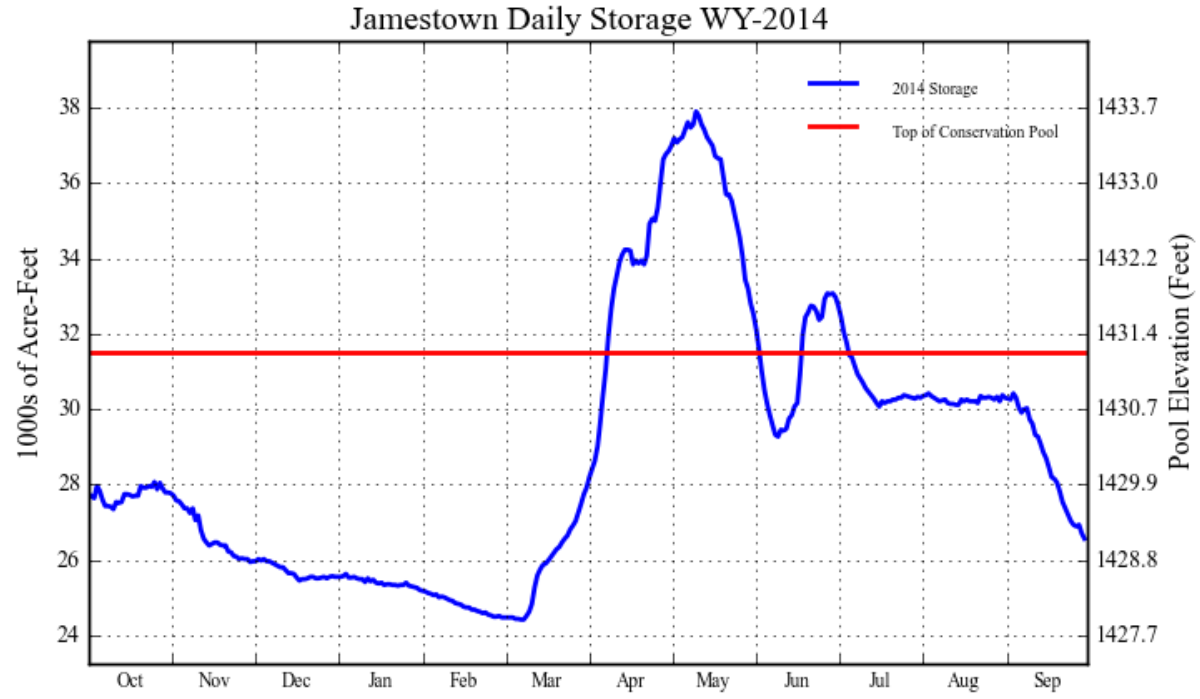
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	1,429.79	27,787	OCT 01, 2013
END OF YEAR	1,429.20	26,563	SEP 30, 2014
ANNUAL LOW	1,428.10	24,414	MAR 08, 2014
ANNUAL HIGH	1,433.85	37,901	MAY 11, 2014
HISTORIC HIGH	1,454.10	222,318	APR 26, 2009

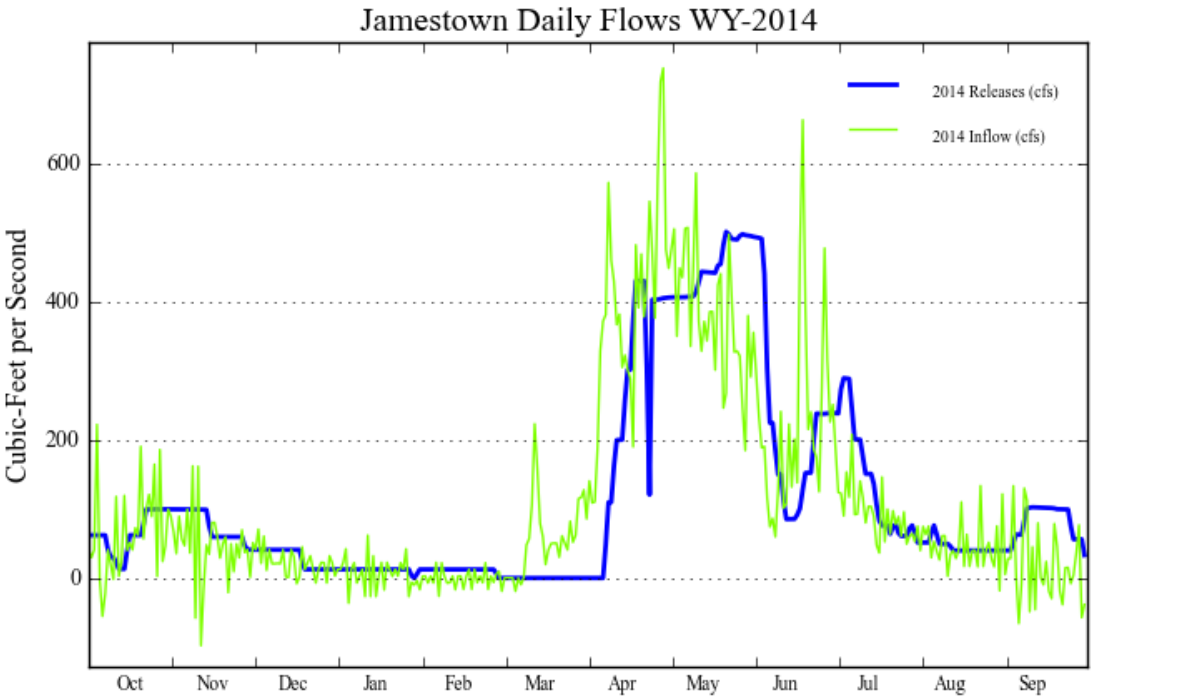
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	81,160	OCT 13-SEP 14	82,384	OCT 13-SEP 14
DAILY PEAK (CFS)	739	APR 29, 2014	502	MAY 22, 2014
DAILY MINIMUM (CFS)	0	*	0	*

MONTH	INFLOW		OUTFLOW		CONTENT	
	AF	% OF AVG	AF	% OF AVG	AF	% OF AVG
OCTOBER	3,988	355	4,009	120	27,766	110
NOVEMBER	2,664	277	4,468	337	25,962	104
DECEMBER	1,338	333	1,752	487	25,548	102
JANUARY	342	204	712	527	25,178	101
FEBRUARY	-17	NA	652	562	24,509	98
MARCH	3,236	48	0	NA	27,745	89
APRIL	22,590	89	13,564	143	36,771	78
MAY	23,626	250	27,602	188	32,795	79
JUNE	13,670	344	13,392	129	33,073	94
JULY	5,932	141	8,680	128	30,325	93
AUGUST	2,849	67	2,803	53	30,371	96
SEPTEMBER	942	70	4,750	94	26,563	95
ANNUAL	81,160	139	82,384	143		
APRIL-JULY	65,818	153				

* Frequently observed during fall and winter months

Figure DKG4
Jamestown Reservoir





Deerfield Reservoir

BACKGROUND

Deerfield Reservoir is located on Castle Creek, a tributary of Rapid Creek above Rapid City. Deerfield Reservoir (Rapid Valley Project) and Pactola Reservoir (Rapid Valley Unit, P-S MBP), furnish a supplemental irrigation supply to about 8,900 acres in the Rapid Valley Water Conservancy District (District) and furnish replacement water for a portion of the water used from Rapid Creek by Rapid City. A contract is in place between the United States, Rapid City, South Dakota and the District for the storage space at Deerfield Reservoir. The majority of prior rights to the flows of Rapid Creek during the irrigation season is held by individuals and ditch companies in the Rapid Valley Water Conservancy District.

In 1985, Deerfield Dam was modified to accommodate a larger flood as determined from the results of the Probable Maximum Flood analysis. These modifications consisted of raising the crest of the dam 38 ft, excavating an unlined auxiliary spillway, removing and filling in the old spillway, and extending the existing emergency gate passageway to the new control house at the higher crest elevation. The reservoir has a total capacity of 15,655 AF with an additional 26,655 AF of surcharge capacity.

During the winter of 1995 through 1996 the hollow jet valves were removed to allow the installation of the jet flow valves as part of the outlet works modification contract. The work was done to improve fish habitat in 1.5 miles of the creek immediately downstream of the dam. The stream improvement project was a cooperative effort accomplished by the City of Rapid City, Rapid Valley Water Conservancy District, Black Hills Fly Fishers, Bureau of Reclamation, US Forest Service, and South Dakota Game Fish and Parks. The project modified the outlet works of Deerfield Dam by installing Jet Flow Gates to allow greater minimum winter releases than the 6 inches bypass is capable of providing.

WY 2014 OPERATIONS SUMMARY

Deerfield Reservoir started WY 2014 at elevation 5906.99 ft and storage of 15,239 AF, which is 1.01 ft and 416 AF below the top of the conservation pool. Inflows for WY 2014 totaled 13,563 AF (138 percent of the average). The peak inflows occurred in May, totaling 1,976 AF for the month. The peak reservoir elevation for WY 2014 was 5,907.83 ft, storage of 15,592 AF, and occurred on July 11, 2014. The minimum elevation for WY 2014 was 5,905.90 ft, storage of 14,788 AF, and occurred on March 6, 2014. WY 2014 ended at elevation 5906.98 ft and storage of 15,235 AF, which is 1.02 ft and 420 AF below the top of the conservation pool. Precipitation for 2014 was 130 percent of average. Inflows for WY 2014 were much above average.

Rapid Valley Water Conservancy District did not order water from Deerfield for irrigation. Rapid City did not release water from Deerfield for the municipal water supply in 2014.

An Emergency Management/Security Orientation Exercise was held February 14, 2014.

The Annual Examination of Deerfield was conducted July 31, 2014. There are no incomplete SOD Recommendations.

Deerfield Reservoir went into Internal Alert on October 11, 2013 in anticipation of reaching elevation 5908.0 ft after Snow Storm Atlas. The reservoir was put back into normal operating conditions on October 18, 2013. Releases from Deerfield Dam increased from 12 cfs to 18 cfs during this time frame, and 18 cfs continued to be released from October thru November 2014. In the spring, Deerfield Reservoir went back into Internal Alert status on May 7, 2014 after exceeding reservoir elevation 5908.0 ft (Top of Conservation). The reservoir reached normal operating conditions on July 25, 2014 and was removed from Internal Alert status. Releases from Deerfield Dam peaked at 40 cfs on May 7, 2014.

MONTHLY STATISTICS FOR WY 2014

October End of Month (EOM) elevation at Deerfield Reservoir was second highest in 62 years of record. October inflow was fourth highest in 62 years of record. EOM release was 18 cfs. Deerfield ended the month 0.3 ft below full.

November EOM elevation at Deerfield Reservoir was third highest in 62 years of record. November inflow was much above average. EOM release was 18 cfs. Deerfield finished the month 0.8 ft from full.

December EOM elevation at Deerfield Reservoir was much above average. December inflow was above average. EOM release was 16 cfs. Deerfield ended the month 0.8 ft from full.

January EOM elevation at Deerfield Reservoir was above average. January inflow was above average. EOM release was 14 cfs. Deerfield finished the month 1.8 ft from full.

February EOM elevation at Deerfield Reservoir was above average. February inflow was above average. Emergency Management Functional Exercise was performed on February 14, 2014. EOM release was 14 cfs. Deerfield finished the month 2.1 ft from full.

March EOM elevation at Deerfield Reservoir was above average. March inflow was above average. EOM release was 14 cfs. Deerfield finished the month 1.7 ft from full.

April EOM elevation at Deerfield Reservoir was above average. April inflow was much above average. EOM release was 25 cfs. Deerfield finished the month 0.1 ft from full.

May EOM elevation at Deerfield Reservoir was above average. May inflow was above average. EOM release was 30 cfs. On May 7, 2014 Deerfield went into internal alert. Deerfield finished the month 0.3 ft from full.

June EOM elevation at Deerfield Reservoir was much above average. June inflow was above average. EOM release was 20 cfs. Deerfield ended the month 0.2 ft from full.

July EOM elevation at Deerfield Reservoir was above average. July inflow was above average. EOM release was 20 cfs. Deerfield ended the month 0.4 ft from full. Deerfield was taken out of internal alert July 25, 2014.

August EOM elevation at Deerfield Reservoir was fifth highest in 62 years of record. August inflow was much above average. EOM release was 20 cfs. Deerfield finished the month 1.0 ft from full.

September EOM elevation at Deerfield Reservoir was much above average. September inflow was much above average. EOM release was 20 cfs. Deerfield finished the month 1.3 ft from full.

Additional statistical information on Deerfield Reservoir and its operations during 2014 can be found on Table DKT6 and Figure DKG5.

TABLE DKT6
HYDROLOGIC DATA FOR WY 2014
DEERFIELD RESERVOIR

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	5,839.00	151	151
TOP OF ACTIVE CONSERVATION	5,908.00	15,655	15,504
TOP OF JOINT USE			
TOP OF EXCLUSIVE FLOOD CONTROL			

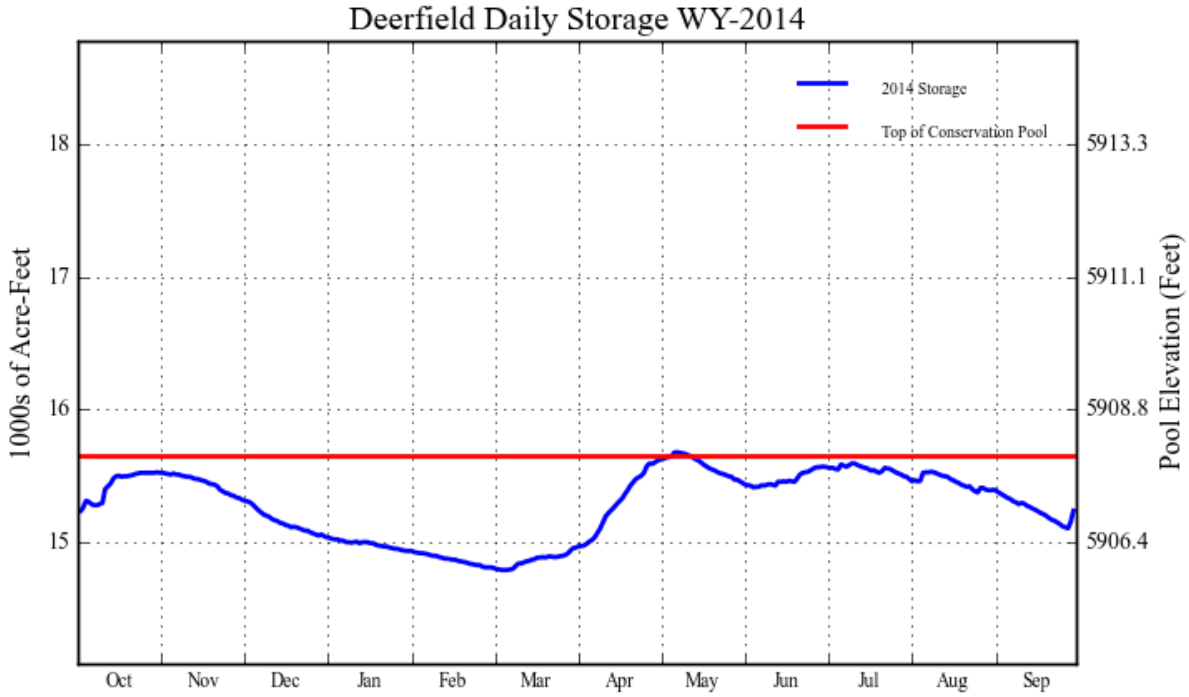
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE (end-of-day)
BEGINNING OF YEAR	5,907.00	15,243	SEP 30, 2013
END OF YEAR	5,906.98	15,235	SEP 30, 2014
ANNUAL LOW	5,905.90	14,788	MAR 5, 2014
ANNUAL HIGH	5,908.03	15,677	MAY 8, 2014
HISTORIC HIGH	5,909.05	16,157	FEB 25, 1985

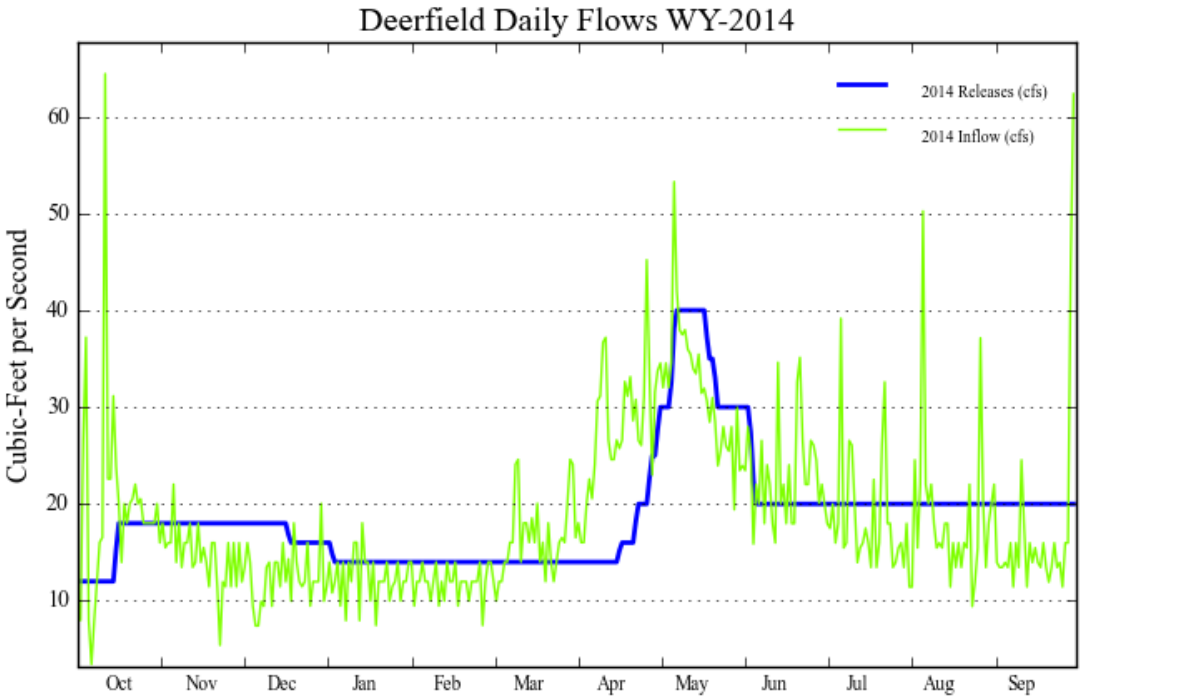
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	13,562	OCT 01-SEP 30	13,570	OCT 01-SEP 30
PEAK DAILY (CFS)	64.43	OCT 11, 2013	40.00	MAY 8, 2014
MINIMUM DAILY (CFS)	3.43	OCT 6, 2013	12.00	OCT 1, 2013

MONTH	INFLOW		OUTFLOW		EOM CONTENT**	
	AF	% OF AVG	AF	% OF AVG	AF	% OF AVG
OCTOBER	1,213	185	935	125	15,521	122
NOVEMBER	869	146	1,071	275	15,319	120
DECEMBER	765	122	1,049	300	15,035	117
JANUARY	763	123	866	251	14,932	114
FEBRUARY	654	114	778	224	14,808	112
MARCH	1,005	116	861	143	14,952	112
APRIL	1,621	136	972	95	15,601	111
MAY	1,976	143	2,120	161	15,457	110
JUNE	1,379	113	1,269	101	15,567	111
JULY	1,154	135	1,230	111	15,491	109
AUGUST	1,129	167	1,230	103	15,390	116
SEPTEMBER	1,035	172	1,190	103	15,235	121
ANNUAL	13,563	138	13,571	138	15,276	114
APRIL-JULY	6,130	132	5,591	119	15,529	111

* Frequently observed during fall and winter months
** EOM Content – End of Month Content

Figure DKG5
Deerfield Reservoir





Pactola Reservoir

BACKGROUND

Pactola Reservoir, Rapid Valley Unit (P-S MBP), located on Rapid Creek above Rapid City, South Dakota, acts in conjunction with Deerfield Reservoir, Rapid Valley Project, to furnish a supplemental irrigation supply to about 8,900 acres in the Rapid Valley Water Conservancy District, replacement water for Rapid City, and a supply of domestic water for private water systems both above and below the city. The reservoir is also operated to provide flood control. It has a conservation capacity of 55,972 AF (54,955 AF active) and 43,057 AF of exclusive flood control space. The flood control space is all below the ungated spillway crest, and releases in this pool are controlled by the river outlet works. Rapid City has contracts for Pactola and Deerfield Reservoir water. The Rapid Valley Sanitation District and Hisega Meadows Water Inc. also have contracts for water service from Pactola Reservoir. Operation of the two reservoirs is integrated to maintain as much water as possible in the upstream facility, Deerfield Reservoir, and at the same time maintain a uniform outflow from Deerfield to maximize fishery benefits in the stream between the reservoirs. Since no inflow forecasts are available, the reservoir is normally operated as full as possible. Two SNOTEL (North Rapid Creek and Blind Park) sites were installed in the Pactola and Deerfield drainage basin in May of 1990.

As part of the Safety Examination of Existing Structures (Safety of Dams) Program, a study was made in the early 1980s to determine the adequacy of Pactola Dam, Spillway, and Reservoir to safely pass the new Inflow Design Flood (IDF) determined on the basis of present day hydrologic technology. The studies showed that the facility was not able to safely handle the new IDF. Modification work was completed in 1987 and provided sufficient surcharge storage and spillway capacity to pass the IDF. Modification work consisted of raising the crest of the dam 15 ft, widening the existing rock-cut spillway chute and stilling basin from 240 ft to 425 ft, relocating Highway 385 to the new dam crest, extending the existing gate access shaft to the higher crest elevation, and reconstructing a new two-level gate control house at the higher crest elevation.

A new long term storage contract was signed on July 31, 2007 between Reclamation and the city of Rapid City. The contract provides storage space of 49,000 AF for the city and 6,000 AF was retained by Reclamation.

WY 2014 OPERATIONS SUMMARY

Pactola Reservoir started WY 2014 at elevation 4,574.27 ft and storage of 51,048 AF, which is 5.93 ft and 4,924 AF below the top of the conservation pool. Inflows for WY 2014 totaled 68,699 AF (192 percent of average). Peak inflows occurred in May, totaling 11,955 AF for the month. The peak reservoir elevation for WY 2014 was 4,580.66 ft, storage of 56,372 AF, and occurred on June 30, 2014. The minimum elevation for WY 2014 was 4,574.27 ft, storage of 51,048 AF, and occurred on October 1, 2013. WY 2014 ended at elevation 4,568.41 ft and storage of 46,537 AF, which is 11.79 ft and 9,435 AF below the top of the conservation pool. Precipitation for 2014 was 140 percent of average. Inflows for WY 2014 were much above average.

An Emergency Management/Security Orientation Exercise was held February 14, 2014.

Rapid Valley Water Conservancy District did not order water from Deerfield for irrigation. Rapid City did not release water from Deerfield for the municipal water supply in 2014. Instead, Rapid City made extra releases from Pactola to position the reservoir to facilitate construction upon Canyon Lake Dam downstream of Pactola. See description of releases below.

The Annual Examination Report for Pactola Dam was conducted on July 31, 2014. There are no incomplete SOD Recommendations.

Releases from Pactola Dam peaked at 260 cfs on October 18, 2013 from runoff due to Storm Atlas. The reservoir elevation peaked at 4576.73 ft on October 16, 2013 but did not reach Internal Alert status (Elevation 4580.2 ft, which is also Top of Conservation). The reservoir had been positioned 6 feet from full (Elevation 4574.2 ft) by the end of September 2013 in order to facilitate the City of Rapid City's project to reconstruct Canyon Lake Dam located on Rapid Creek at the west side of Rapid City. The plan was to have storage room in the reservoir for winter inflows so that a smaller winter release could be made during the Canyon Lake Dam construction. After Storm Atlas, the inflows increased from runoff which resulted in higher releases having to be made. The City of Rapid City decided to postpone their Canyon Lake project until Fall 2014 through Winter 2015.

In the spring, Pactola Reservoir went into Internal Alert status on May 7, 2014 after reaching reservoir elevation 4580.2 ft. The reservoir reached normal operating conditions on July 25, 2014 and was removed from Internal Alert status.

Releases from Pactola Dam peaked at 237 cfs on May 10, 2014.

The City of Rapid City decided to proceed with their project to reconstruct Canyon Lake Dam in the Fall 2014 through Winter 2015 time frame. Pactola Reservoir was lowered 12 ft below the top of conservation pool (Elevation 4574.2 ft) by the end of September 2014 in anticipation of the construction work downstream at Canyon Lake Dam. This has allowed for storage room in the reservoir for fall and winter inflows so that smaller fall and winter releases can be made during the Canyon Lake Dam construction. Fall releases from Pactola Dam peaked at 215 cfs on September 10, 2014 to achieve the drawdown.

MONTHLY STATISTICS FOR WY 2014

October EOM elevation at Pactola Reservoir was above average. October inflow was second highest in 57 years of record. EOM release was 114 cfs. Pactola ended the month 5.0 ft from full.

November EOM elevation at Pactola Reservoir was above average. November inflow was second highest in 57 years of record. EOM release was 65 cfs. Pactola ended the month 2.9 ft from full.

December EOM elevation at Pactola Reservoir was above average. December inflow was fifth highest in 59 years of record. EOM release was 63 cfs. Pactola ended the month 3.8 ft from full.

January EOM elevation at Pactola Reservoir was above average. January inflow was much above average. EOM release was 59 cfs. Pactola ended the month 5.0 ft from full.

February EOM elevation at Pactola Reservoir was above average. February inflow was much above average. An Emergency Management/Security Orientation Exercise was held February 14, 2014. EOM release was 50 cfs. Pactola ended the month 5.9 ft from full.

March EOM elevation at Pactola Reservoir was above average. March inflow was much above average. EOM release was 50 cfs. Pactola ended the month 4.9 ft from full.

April EOM elevation at Pactola Reservoir was above average. April inflow was much above average. EOM release was 128 cfs. Pactola ended the month 1.2 ft into the flood pool.

May EOM elevation at Pactola Reservoir was above average. May inflow was much above average. Pactola Reservoir went into Internal Alert status on May 7, 2014. EOM release was 165 cfs. Pactola ended the month 0.2 ft into the flood pool.

June EOM elevation at Pactola Reservoir was above average. June inflow was much below average. Pactola remained in internal alert for the month of June. EOM release was 148 cfs. Pactola ended the month 0.5 ft from full.

July EOM elevation at Pactola Reservoir was above average. July inflows were above average. Pactola was taken out of internal alert on July 25, 2014. EOM release was 97 cfs. Pactola ended the month 1.8 ft from full.

August EOM elevation at Pactola Reservoir was above average. August inflow was much above average. EOM release was 175 cfs. Pactola ended the month 3.6 ft from full.

September EOM elevation at Pactola Reservoir was above average. September inflow was much above average. EOM release was 50 cfs. Pactola ended the month 11.8 ft from full.

Additional statistical information on Pactola Reservoir and its operations during 2014 can be found on Table DKT7 and Figure DKG6

Table DKT7
Hydrologic Data for WY 2014
Pactola Reservoir

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	4,456.10	1,017	1,017
TOP OF ACTIVE CONSERVATION	4,580.20	55,972	54,955
TOP OF JOINT USE			
TOP OF EXCLUSIVE FLOOD CONTROL	4,621.50	99,029	43,057

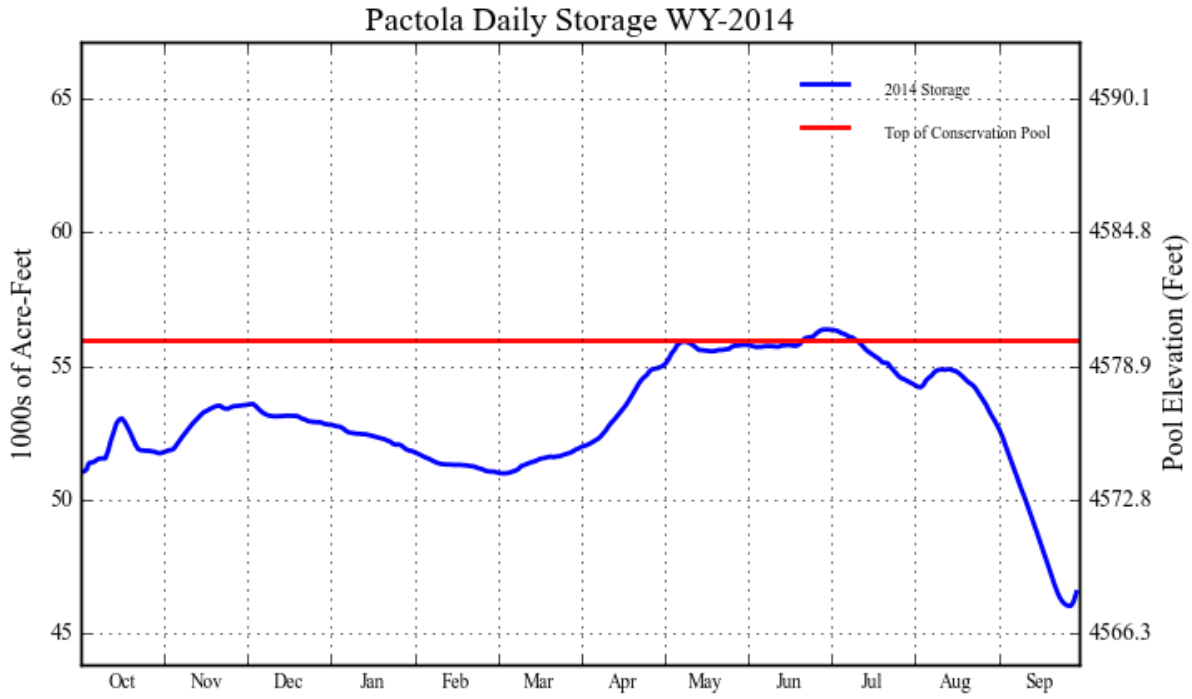
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE (end-of-day)
BEGINNING OF YEAR	4,574.27	51,048	SEP 30, 2013
END OF YEAR	4,568.41	46,537	SEP 30, 2014
ANNUAL LOW	4,567.73	46,033	SEP 27, 2014
ANNUAL HIGH	4,580.66	56,372	JUN 30, 2014
HISTORIC HIGH	4,585.87	61,105	MAY 19, 1965

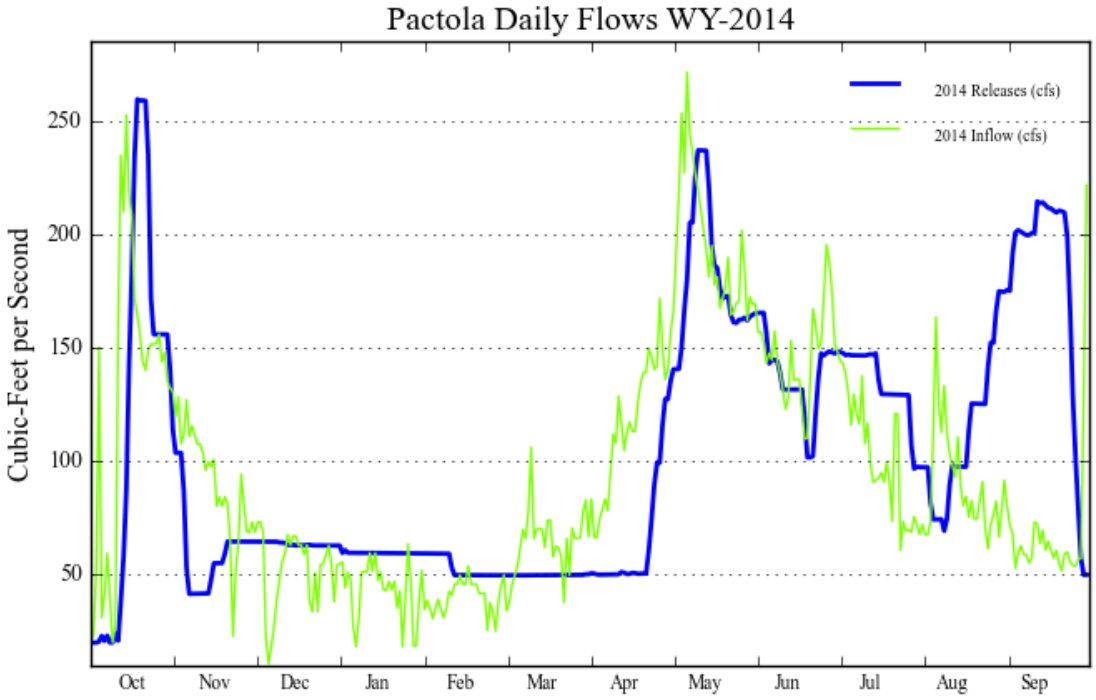
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	68,699	OCT 01-SEP 30	73,210	OCT 01-SEP 30
DAILY PEAK (CFS)	272	MAY 7, 2014	260	OCT 18, 2013
DAILY MINIMUM (CFS)	11	DEC 5, 2013	20	OCT 1, 2013

MONTH	INFLOW		OUTFLOW		EOM CONTENT*	
	AF	% OF AVG	AF	% OF AVG	AF	% OF AVG
OCTOBER	7,891	390	7,167	411	51,772	115
NOVEMBER	5,387	353	3,615	255	53,544	119
DECEMBER	3,168	242	3,904	266	52,808	118
JANUARY	2,635	193	3,663	264	51,780	115
FEBRUARY	2,216	161	2,941	234	51,055	113
MARCH	3,893	162	3,063	175	51,885	113
APRIL	6,819	164	3,773	133	54,931	117
MAY	11,955	183	11,091	204	55,795	116
JUNE	8,825	133	8,248	136	56,372	115
JULY	6,294	172	8,268	159	54,398	115
AUGUST	5,518	208	6,935	170	52,981	117
SEPTEMBER	4,098	188	10,542	379	46,537	105
ANNUAL	68,699	192	73,210	207	52,822	115
APRIL-JULY	33,893	162	31,380	161	55,374	116

* EOM Content – End of Month Content

Figure DKG6
Pactola Reservoir





Angostura Reservoir

BACKGROUND

Angostura Reservoir (P-S MBP), located on the Cheyenne River above Hot Springs, South Dakota, was built to service about 12,200 acres in the Angostura Unit (P-S MBP) and for power generation. It has a total capacity of 123,048 AF with an additional surcharge capacity of 57,308 AF. Its principle use is for irrigation of the Angostura Unit, which diverts its water from a high-level outlet at the dam. In the early years, water surplus to irrigation needs was released to the river through a small power plant with a nameplate capacity of 1,200 kilowatts. Because of the low runoff, and because actual irrigation diversions were higher than previously anticipated, it was concluded that continued operation of the power plant was economically infeasible. Except for a few operations of less than 24 hours each, the plant was last operated in February 1959. In 1966, the plant was officially closed and the equipment was declared surplus in March 1968. Disposal of this equipment was completed in 1971. Releases for irrigation are made through the canal outlet works into the Angostura Main Canal having a design capacity of 290 cfs. Releases to the Cheyenne River are only made when the reservoir is assured of filling.

Reclamation's Sedimentation and River Hydraulics Group of the Technical Service Center in Denver conducted a sedimentation survey of Angostura Reservoir in 2004 and provided a survey report and new Area and Capacity Tables in August of 2005. The previous survey was done in 1979. Angostura Reservoir accumulated 7,716 AF of sediment since the last survey. Since construction in 1949, Angostura has accumulated 36,867 AF of sediment. The sedimentation rate from 1949 through 2004 has averaged 670 AF per year. The new Area and Capacity Tables were first used in WY 2006.

WY 2014 OPERATIONS SUMMARY

Angostura Reservoir started WY 2014 at elevation 3,174.46 ft and storage of 73,379 AF, which is 12.74 ft and 49,669 AF below the top of the conservation pool. Inflows for WY 2014 totaled 108,858 AF (141 percent of the average). Peak inflows occurred in March, totaling 24,533 AF for the month. The peak reservoir elevation for WY 2014 was 3,186.84 ft and storage of 121,395 AF and occurred on May 27, 2014. The minimum elevation for WY 2014 was 3,174.46 ft and storage of 73,379 AF and occurred on October 1, 2013. WY 2014 ended at elevation 3,181.30 ft and storage of 97,807 AF, which is 5.9 ft and 25,241 AF below the top of the conservation pool. Precipitation for WY 2014 was 151 percent of average. Inflows for WY 2014 were much above average.

The Angostura Irrigation District had a full water allotment for its irrigators. Releases for irrigation began June 6, 2014 and reached a peak of 260 cfs on July 22, 2014. The irrigation release was terminated on September 19, 2014 with 95,383 AF in total storage and 53,178 AF in active storage. Total irrigation releases were 31,894 AF.

An Emergency Management/Security Orientation Exercise was held on February 21, 2014.

The Annual Examination (AE) report for Angostura Dam was completed on July 23, 2014. There are no incomplete SOD Recommendations.

Inflows into Angostura Dam peaked at 1,410 cfs on October 13, 2013 from runoff due to Storm Atlas, but no releases were made. The reservoir elevation did not reach Internal Alert status (Elevation 3186.0 ft), but continued to rise throughout the winter.

In the spring, Angostura Reservoir went into Internal Alert status on March 11, 2014 after reaching reservoir elevation 3186.0 ft. The reservoir reached normal operating conditions on July 16, 2014 and was removed from Internal Alert status.

Releases from Angostura Dam peaked at 1,685 cfs on May 14, 2014.

MONTHLY STATISTICS FOR WY 2014

October EOM elevation at Angostura Reservoir was above average. October inflow was second highest in 63 years of record. Angostura ended the month 6.8 ft from full.

November EOM elevation at Angostura Reservoir was above average. November inflow was second highest in 63 years of record. Angostura ended the month 6.0 ft from full.

December EOM elevation at Angostura Reservoir was above average. December inflow was third highest in 63 years of record. Angostura ended the month 5.4 ft from full.

January EOM elevation at Angostura Reservoir was above average. January inflow was fourth highest in 63 years of record. Angostura ended the month 4.2 ft from full.

February EOM elevation at Angostura Reservoir was above average. February inflow was above average. An Emergency Management/Security Orientation Exercise was held on February 21, 2014. Angostura ended the month 2.9 ft from full.

March EOM elevation at Angostura Reservoir was above average. March inflow was much above average. Angostura Reservoir went into Internal Alert status on March 11, 2014. EOM release was 185 cfs. Angostura ended the month 0.6 ft from full.

April EOM elevation at Angostura Reservoir was above average. April inflow was above average. Angostura remained in internal alert for the month of April. EOM release was 252 cfs. Angostura ended the month 1.3 ft from full.

May EOM elevation at Angostura Reservoir was above average. May inflow was above average. Angostura remained in internal alert for the month of May. EOM release was 492 cfs. Angostura ended the month 0.7 ft from full.

June EOM elevation at Angostura Reservoir was above average. June inflow was below average. Angostura remained in internal alert for the month of June. Irrigation of the District began June 6, 2014. EOM release was 102 cfs. Angostura ended the month 1.1 ft from full.

July EOM elevation at Angostura Reservoir was above average. July inflow was below average. EOM release was 219 cfs. Angostura was taken out of internal alert on July 16, 2014. Angostura ended the month 3.4 ft from full.

August EOM elevation at Angostura Reservoir was above average. August inflow was below average. EOM release was 107 cfs. Angostura ended the month 5.9 ft from full.

September EOM elevation at Angostura Reservoir was above average. September inflow was much above average. Irrigation shut off was on September 19. Angostura ended the month 5.9 ft from full.

Additional statistical information on Angostura Reservoir and its operations during 2014 can be found on Table DKT8 and Figure DKG7

Table DKT8
Hydrologic Data for 2014
Angostura Reservoir

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	3,163.00	42,205	42,205
TOP OF ACTIVE CONSERVATION	3,187.20	123,048	80,843
TOP OF JOINT USE			
TOP OF EXCLUSIVE FLOOD CONTROL			

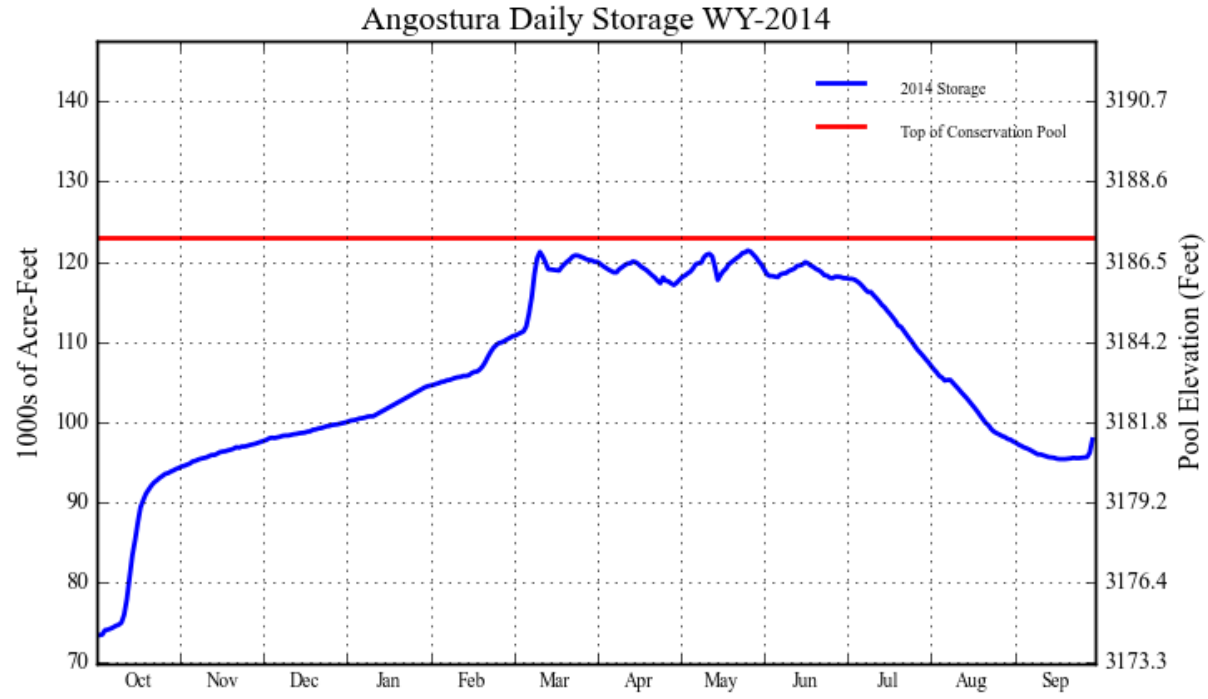
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE (end-of-day)
BEGINNING OF YEAR	3,174.47	73,411	SEP 30, 2013
END OF YEAR	3,181.30	97,807	SEP 30, 2014
ANNUAL LOW	3,174.46	73,379	OCT 1, 2013
ANNUAL HIGH	3,186.84	121,395	MAY 27, 2014
HISTORIC HIGH	3,189.37	**152,228	MAY 20, 1978

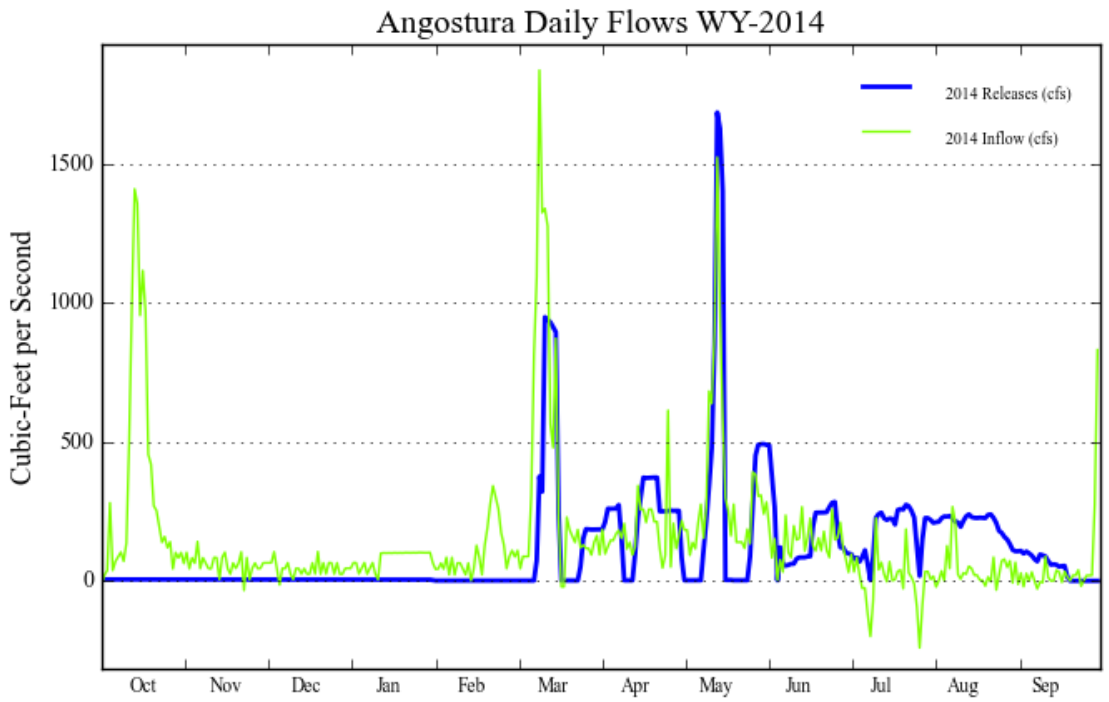
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	108,858	OCT 01-SEP 30	83,246	OCT 01-SEP 30
DAILY PEAK (CFS)	1837	MAR 10, 2014	1685	MAY 14, 2014
DAILY MINIMUM (CFS)	0	July 27, 2014	0	SEP 29, 2014

MONTH	INFLOW		OUTFLOW		EOM CONTENT***	
	AF	% OF AVG	AF	% OF AVG	AF	% OF AVG
OCTOBER	21,179	1345	326	36	94,264	97
NOVEMBER	3,582	163	315	23	97,531	99
DECEMBER	2,727	151	304	63	99,954	100
JANUARY	4,875	236	278	59	104,551	103
FEBRUARY	5,833	133	63	7	110,321	105
MARCH	24,533	216	13,472	320	120,165	107
APRIL	10,677	142	13,740	359	117,103	101
MAY	21,010	123	18,084	141	120,029	100
JUNE	8,613	46	10,554	56	118,088	98
JULY	342	5	10,578	68	107,852	97
AUGUST	2,597	86	12,642	99	97,807	96
SEPTEMBER	2,890	291	2,890	54	97,807	101
ANNUAL	108,858	141	31,136	107	79,501	100
APRIL-JULY	40,642	81	115,768	99	52,956	104

** Due to new area-capacity table, the capacity that corresponds to the new historic high elevation is less than a previous high capacity amount (169,020 AF @ Elevation 3189.0 on June 18, 1962)
*** EOM Content – End of Month Content

Figure DKG7
Angostura Reservoir





Keyhole Reservoir

BACKGROUND

Keyhole Reservoir (P-S MBP) located on the Belle Fourche River below Moorcroft, Wyoming, has a conservation capacity of 188,671 AF (182,079 AF active) and 140,463 AF of exclusive flood control space. It was constructed to furnish a supplemental irrigation supply to 57,000 acres in the Belle Fourche Project and for flood control. Keyhole Reservoir is subject to the Belle Fourche River Compact, and the inflows and storage in the reservoir are allocated 10 percent to Wyoming users and 90 percent to South Dakota users, subject to prior rights. On January 3, 1963, the Belle Fourche Irrigation District executed a long-term contract for the use of 7.7 percent of active storage space in the reservoir. This space will be used to store water belonging to the irrigation district under its prior water right along with the District's pro rata share of storable inflows to Keyhole Reservoir. On January 1, 1985, the Crook County Irrigation District's contract for 18,080 AF of space in Keyhole Reservoir became effective. The allocated space is used by each organization to store its pro rata share of inflows to Keyhole Reservoir. The flood control space at Keyhole Reservoir is all located above an ungated spillway. The spillway capacity is 11,000 cfs at maximum water surface elevation. The downstream safe channel capacity is 3,000 cfs. Formulas for forecasting inflows have not been developed. Research by the Soil Conservation Service during WYs 1992 through 1994 show that inflow forecasting to Keyhole Reservoir is not reliable since there is no consistent snow pack and precipitation is highly cyclical. No further efforts to develop forecast models are planned.

Reclamation's Sedimentation and River Hydraulics Group of the Technical Service Center in Denver conducted a sedimentation survey of Keyhole Reservoir in 2003 and provided a survey report and new area and capacity tables in July of 2005. The previous survey was done in 1978. Keyhole Reservoir accumulated 5,082 AF of sediment since the previous survey. Since construction in 1952, Keyhole has accumulated 12,495 AF of sediment. The sedimentation rate from 1952 through 2003 has averaged 240 AF per year. The new Area and Capacity Tables were first used in WY 2006.

WY 2014 OPERATIONS SUMMARY

Keyhole Reservoir started WY 2014 at elevation 4,094.84 ft and storage of 150,023 AF, which is 4.46 ft and 38,648 AF below the top of the conservation pool. Inflows for WY 2014 totaled 21,891 AF (134 percent of average). Peak inflows occurred in March, totaling 10,235 AF for the month. The peak reservoir elevation for WY 2014 was 4,097.96 ft, storage of 176,360 AF, and occurred on June 28, 2014. The minimum elevation for WY 2014 was 4,095.67 ft, storage of 156,710 AF, and occurred on November 30, 2013. WY 2014 ended at elevation 4,097.16 ft and storage of 169,298 AF, which is 2.14 ft and 19,373 AF below the top of the conservation pool. Precipitation for WY 2014 was 73 percent of average. Inflows for WY 2014 were above average.

There were no irrigation releases ordered by the Belle Fourche Irrigation District (BFID) or the Crook County Irrigation District (CCID) for WY 2014.

An Emergency Management/Security Orientation Exercise was held February 20, 2014.

The Annual Examination of Keyhole was conducted on September 4, 2014. There are no incomplete SOD recommendations.

Inflows into Keyhole Dam peaked at 616 cfs on October 14, 2013 from runoff due to Storm Atlas, but no releases were made. The reservoir elevation peaked at 4095.75 ft on October 20, 2013 but did not reach Internal Alert status (Elevation 4098.3 ft).

MONTHLY STATISTICS FOR WY 2014

October EOM elevation at Keyhole Reservoir was fifth highest in 63 years of record. October inflow was second highest in 63 years of record. Keyhole ended the month 3.6 ft from full.

November EOM elevation at Keyhole Reservoir was fourth highest in 63 years of record. November inflow was below average. Keyhole ended the month 3.6 ft from full.

December EOM elevation at Keyhole Reservoir was fifth highest in 63 years of record. December inflow was above average. Keyhole ended the month 3.6 ft from full.

January EOM elevation at Keyhole Reservoir was fifth highest in 63 years of record. January inflow was much above average. Keyhole ended the month 3.5 ft from full.

February EOM elevation at Keyhole Reservoir was much above average. February inflow was much below average. Keyhole ended the month 2.8 ft from full.

March EOM elevation at Keyhole Reservoir was fifth highest in 63 years of record. March inflow was above average. Keyhole ended the month 1.6 ft from full.

April EOM elevation at Keyhole Reservoir was fifth highest in 63 years of record. April inflow was very much below average. Keyhole ended the month 1.5 ft from full.

May EOM elevation at Keyhole Reservoir was fourth highest in 63 years of record. May inflow was very much below average. Keyhole ended the month 1.4 ft from full.

June EOM elevation at Keyhole Reservoir was third highest in 63 years of record. June inflow was very much below average. Keyhole ended the month 1.4 ft from full.

July EOM elevation at Keyhole Reservoir was fourth highest in 63 years of record. July inflow was very much below average. Keyhole ended the month 1.8 ft from full.

August EOM elevation at Keyhole Reservoir was fourth highest in 63 years of record. August inflow was very much above average. Keyhole ended the month 2.0 ft from full.

September EOM elevation at Keyhole Reservoir was fourth highest in 63 years of record. September inflow was above average. Keyhole ended the month 2.1 ft from full.

Additional statistical information on Keyhole Reservoir and its operations during 2014 can be found on Table DKT9 and Figure DKG8.

Table DKT9
Hydrologic Data for 2014
Keyhole Reservoir

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	4,051.00	6,592	6,592
TOP OF ACTIVE CONSERVATION	4,099.30	188,671	182,079
TOP OF JOINT USE			
TOP OF EXCLUSIVE FLOOD CONTROL	4,111.50	329,134	140,463

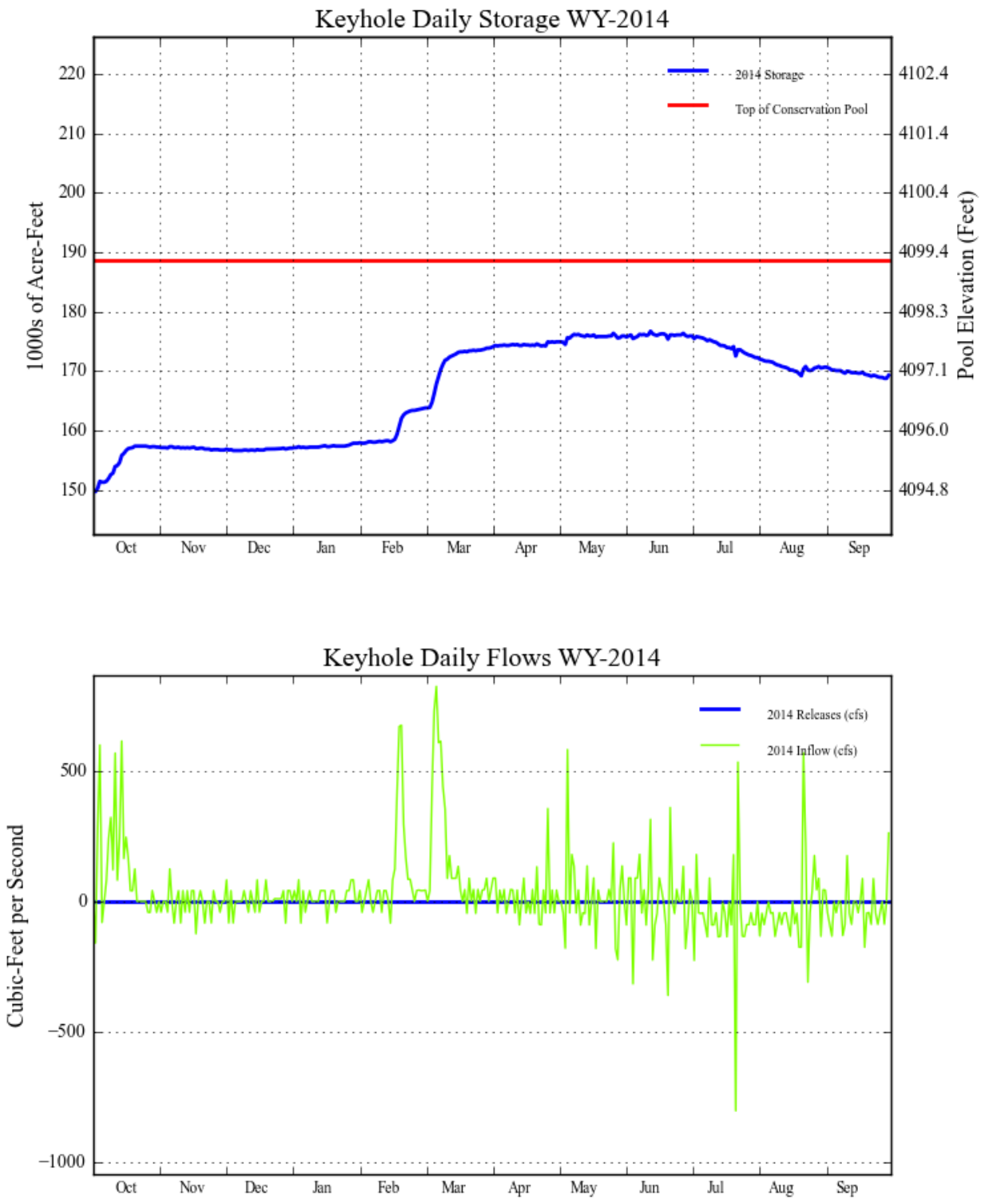
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE (end-of-day)
BEGINNING OF YEAR	4,094.84	150,023	SEP 30, 2013
END OF YEAR	4,097.16	169,298	SEP 30, 2014
ANNUAL LOW	4,094.80	149,706	OCT 02, 2013
ANNUAL HIGH	4,098.00	176,719	JUN 13, 2014
HISTORIC HIGH	4,100.38	210,222	MAY 21, 1978

INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	19,275	OCT 01-SEP 30	0	OCT 01-SEP 30
DAILY PEAK (CFS)	826	MAR 07, 2014	0	
DAILY MINIMUM (CFS)	0	*	0	

MONTH	INFLOW		OUTFLOW		EOM CONTENT**	
	AF	% OF AVG	AF	% OF AVG	AF	% OF AVG
OCTOBER	7,180	NA	0	0	157,203	172
NOVEMBER	-493	NA	0	0	156,710	173
DECEMBER	329	235	0	0	157,039	173
JANUARY	906	194	0	0	157,945	173
FEBRUARY	5,685	204	0	0	163,630	174
MARCH	10,235	148	0	0	173,865	173
APRIL	977	38	0	0	174,842	174
MAY	1,072	21	0	0	175,914	169
JUNE	-92	NA	0	0	175,822	167
JULY	-3,549	NA	0	0	172,273	171
AUGUST	-1,668	NA	0	0	170,605	179
SEPTEMBER	1,307	NA	0	0	169,298	182
ANNUAL	19,275	118	0	0	167,096	173
APRIL-JULY	0	0	0	0	174,713	170

* Frequently observed during fall and winter months
** EOM Content – End of Month Content

Figure DKG8
Keyhole Reservoir



Shadehill Reservoir

BACKGROUND

Shadehill Reservoir, a feature of the Shadehill Unit (P-S MBP), is located on the Grand River near Shadehill, South Dakota, and was constructed for irrigation of 9,700 acres, and for flood control, recreation, and fish and wildlife purposes. The reservoir has a dead and conservation capacity totaling 120,172 AF with an additional exclusive flood control capacity of 230,004 AF and a surcharge capacity of 119,560 AF. Flood control space is all located above the crest of an un-gated glory-hole spillway. Because of the questionable quality of water, it was decided to postpone construction of distribution works for irrigation.

After further study, it was concluded that water from Shadehill Reservoir can be used for sustained irrigation if certain limitations of soils, leaching water, soil amendments, and drainage are met. A definite plan report covering 6,700 acres which meets these limitations has been completed, approved by the Commissioner, and released for distribution. On December 17, 1963, landowners within the area voted 24 to 21 against formation of an irrigation district. Further action on development of the area was deferred until the attitude of the landowners was more favorable. Pending more extensive irrigation development, an additional 51,500 AF of space between elevations 2260 ft and 2272 ft was allocated to flood control. Allocations and evacuation of this space was made possible by modification of the outlet works in 1969 to permit a discharge of 600 cfs to the river. In June of 1975, the West River Conservancy Sub-District was formed combining all but one of the old individual contracts for water supply from the reservoir into one. Acreage contracted for by the District was 5,000 acres; however, only 3,064 acres were developed. On March 18, 1986, the contract between Reclamation and the West River Conservancy Sub-District was assigned to the Shadehill Water User District, an organization, which succeeded the Sub-District under South Dakota law. This contract has expired and presently conservation releases are meeting irrigation demands. Should irrigation releases be required a temporary water service contract will need to be executed with the Shadehill Water User District.

Because certain release criteria reduced the effectiveness of flood control operations in the zone between elevation 2260 ft and 2272 ft, and because the Corps of Engineers has constructed Bowman Haley Reservoir upstream from Shadehill Reservoir with 53,800 AF of flood control space, the Corps requested that the interim flood control agreement be terminated and that responsibility for the operations of Shadehill Reservoir when the pool is between elevations 2260 ft and 2272 ft revert to Reclamation. By a revised field working agreement dated May 15, 1972, it was agreed that the space between elevation 2260 ft and 2272 ft (51,500 AF) be reallocated to conservation use. However, space below elevation 2272 ft will continue to be evacuated before the start of the spring runoff, but to a lesser extent than in the past.

WY 2014 OPERATIONS SUMMARY

Shadehill Reservoir started WY 2014 at elevation 2,270.31 ft and storage of 111,883 AF, which is 1.69 ft and 8,289 AF below the top of the conservation pool. Inflows for WY 2014 totaled 268,919 AF (363 percent of the average). Peak inflows occurred in March, totaling 58,553 AF for the month. The peak reservoir elevation for WY 2014 was 2,274.57 ft, storage of 133,589 AF, and occurred on June 20, 2014. The minimum elevation for WY 2014 was 2,268.82 ft, storage of 104,893 AF, and occurred on January 24, 2014. WY 2014 ended at elevation 2,271.80 ft and storage of 119,171 AF, which is 0.20 ft and 1,001 AF below the top of the conservation pool. Precipitation for WY 2014 was 139 percent of average. Inflows for WY 2014 were very much above average.

All project irrigation demands were met from river maintenance releases. There were no storage releases for irrigation needed during WY 2014.

An Emergency Action Plan Functional Exercise was conducted on April 3, 2014.

The Annual Exam for Shadehill Dam was conducted on August 13, 2014. There are no incomplete SOD Recommendations.

Shadehill Reservoir went into Internal Alert on October 11, 2013 with a reservoir elevation of 2971.54 ft and large inflows predicted due to Storm Atlas. Releases from Shadehill Dam peaked at 1,035 cfs on October 18, 2013 with over 800 cfs being released through the spillway. The reservoir reached normal operating conditions on November 10, 2013 and was removed from Internal Alert status.

In the spring, Shadehill Reservoir went back into Internal Alert status on March 10, 2014 after reaching reservoir elevation 2272.0 ft (Top of Conservation). The reservoir reached normal operating conditions on August 18, 2014 and was removed from Internal Alert status. Spring releases from Shadehill Dam peaked at 1,840 cfs on March 15, 2014.

Due to summer rainstorms, Shadehill Reservoir went back into Internal Alert status on August 27, 2014 after exceeding reservoir elevation 2272.0 ft. Releases from Shadehill Dam peaked at 392 cfs on September 11, 2014. Due to continued summer rainstorms the reservoir remained in Internal Alert status until November 5, 2014.

MONTHLY STATISTICS FOR WY 2014

October EOM elevation at Shadehill Reservoir was the highest in 62 years of record. October inflow was the highest in 63 years of record. Shadehill October Inflows were over four times larger than any prior recorded October inflow. EOM release was 431 cfs. Shadehill finished the month 0.5 ft into the flood pool.

November EOM elevation at Shadehill Reservoir was much above average. November inflow was the highest in 63 years of record. EOM release was 394 cfs. Shadehill finished the month 1.7 ft from full.

December EOM elevation at Shadehill Reservoir was much above average. December inflow was the highest in 63 years of record. EOM release was 97 cfs. Shadehill finished the month 2.7 ft from full.

January EOM elevation at Shadehill Reservoir was much above average. January inflow was the third highest in 63 years of record. EOM release was 96 cfs. Shadehill finished the month 3.0 ft from full.

February EOM elevation at Shadehill Reservoir was much above average. February inflow was fifth highest in 63 years of record. EOM release was 100 cfs. Shadehill finished the month 1.5 ft from full.

March EOM elevation at Shadehill Reservoir was much above average. March inflow was much above average. Shadehill went intero interal alert on March 10, 2014. EOM release was 534 cfs. Shadehill ended the month 0.9 ft into the flood pool.

April EOM elevation at Shadehill Reservoir was below average. April inflow was very much below average. Shadehill remained in internal alert for the month of April. EOM release was 436 cfs. Shadehill ended the month 0.7 ft into the flood pool.

May EOM elevation at Shadehill Reservoir was above average. May inflow was above average. Shadehill remained in internal alert for the month of May. EOM release was 199 cfs. Shadehill ended the month 0.8 ft below full.

June EOM elevation at Shadehill Reservoir was the highest in 63 years of record. June inflow was above average. Shadehill remained in internal alert for the month of June. EOM release was 1,249 cfs. Shadehill ended the month 2.2 ft into the flood pool.

July EOM elevation at Shadehill Reservoir was above average. July inflow was the fifth highest in 63 years of record. Shadehill remained in internal alert for the month of July. EOM release was 101 cfs. Shadehill ended the month 0.1 ft below full.

August EOM elevation at Shadehill Reservoir was the third highest in 63 years of record. August inflow was second highest in 63 years of record. Shadehill remained in internal alert for the month of August. EOM release was 165 cfs. Shadehill ended the month 0.2 ft into the flood pool.

September EOM elevation at Shadehill Reservoir was the third highest in 63 years of record. September inflow was the second highest in 63 years of record. Shadehill remained in internal alert for the month of September. EOM release was 198 cfs. Shadehill ended the month 0.2 ft below full.

Shadehill left internal alert November 5, 2014.

Additional statistical information on Shadehill Reservoir and its operations during 2014 can be found on Table DKT10 and Figure DKG9.

TABLE DKT10
HYDROLOGIC DATA FOR 2014
SHADEHILL RESERVOIR

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	2,250.80	43,869	43,869
TOP OF ACTIVE CONSERVATION	2,272.00	120,172	76,303
TOP OF JOINT USE			
TOP OF EXCLUSIVE FLOOD CONTROL	2,302.00	350,176	230,004

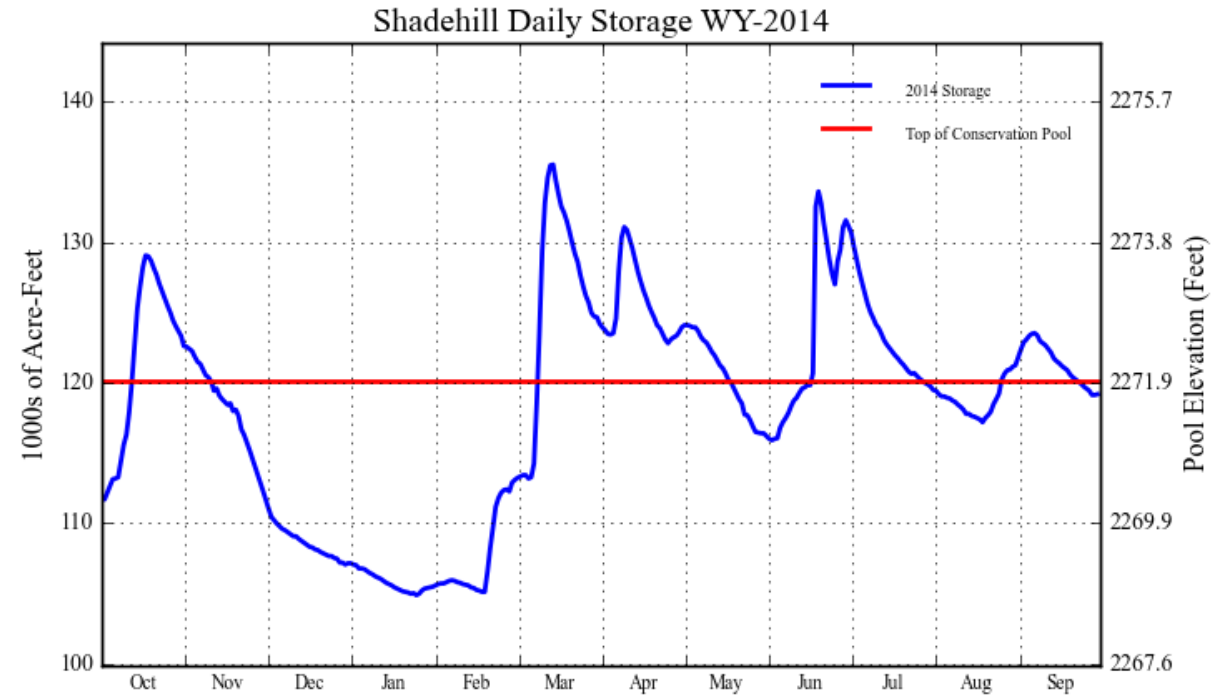
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE (end-of-day)
BEGINNING OF YEAR	2,270.34	112,027	SEP 30, 2013
END OF YEAR	2,271.80	119,171	SEP 30, 2014
ANNUAL LOW	2,268.82	104,893	JAN 24, 2014
ANNUAL HIGH	2,274.92	135,495	MAR 15, 2014
HISTORIC HIGH	2,297.90	318,438	APR 10, 1952

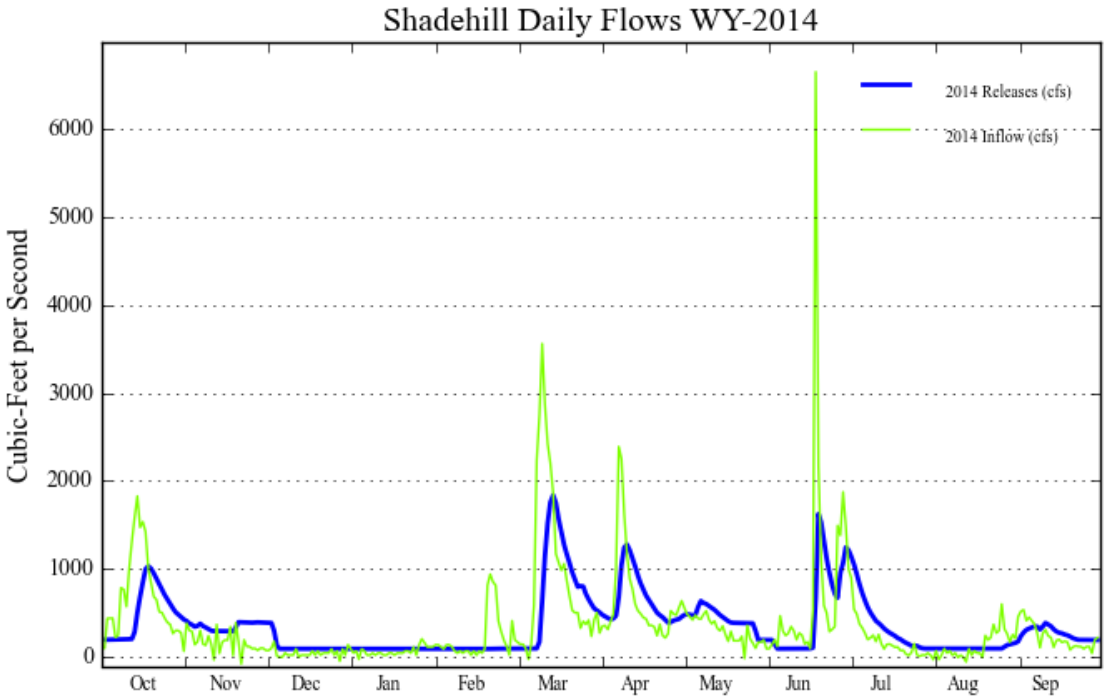
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	268,918	OCT 01-SEP 30	261,774	OCT 01-SEP 30
DAILY PEAK (CFS)	6,639	JUN 19, 2014	1,839	MAR 15, 2014
DAILY MINIMUM (CFS)	-74	NOV 21, 2014	96	JAN 24, 2014

MONTH	INFLOW		OUTFLOW		EOM CONTENT**	
	AF	% OF AVG	AF	% OF AVG	AF	% OF AVG
OCTOBER	41,695	8,562	31,123	821	122,599	112
NOVEMBER	10,207	1,377	21,163	660	111,643	104
DECEMBER	3,173	439	7,658	307	107,158	101
JANUARY	4,347	467	5,923	249	105,582	101
FEBRUARY	12,709	406	5,399	256	112,892	107
MARCH	58,553	253	46,796	431	124,649	105
APRIL	38,350	184	39,429	219	123,570	102
MAY	20,014	177	27,187	255	116,397	95
JUNE	44,678	499	29,536	337	131,539	107
JULY	13,041	363	24,859	438	119,721	99
AUGUST	8,133	2,905	6,625	150	121,229	103
SEPTEMBER	14,019	NA	16,077	431	119,171	105
ANNUAL	268,919	363	261,775	344	118,013	103
APRIL-JULY	116,083	260	121,011	281	122,807	101

* Frequently observed during fall and winter months
** EOM Content – End of Month Content

Figure DKG9
Shadehill Reservoir





Belle Fourche Reservoir

BACKGROUND

Belle Fourche Reservoir, located near Belle Fourche, South Dakota, is formed by Belle Fourche Dam on Owl Creek, a tributary of the Belle Fourche River. It has a total capacity of 172,873 AF (169,790 AF active). The reservoir is filled by diverting water from the Belle Fourche River through the Inlet Canal, which has a capacity of 1,300 cfs. The reservoir is used for irrigation of 57,000 acres in the Belle Fourche Project, which also receives a supplemental supply from Keyhole Reservoir. From November 1965 through May 1977, the active capacity of the reservoir was temporarily limited to 160,300 AF at elevation 2981.8 ft until the damaged spillway was replaced.

When the Belle Fourche Reservoir storage right is satisfied by the reservoir filling, the South Dakota Department of Environment and Natural Resources provide guidelines for complying with water rights on the Belle Fourche River. The District is required to continue to bypass 5 cfs for domestic use prior to diverting the Johnson Lateral water right for up to 40 cfs. If flows into the diversion dam are greater than 45 cfs, the District is required to bypass up to 60 cfs for downstream irrigation rights. Any flows in excess of these amounts can be diverted into the reservoir and stored. If all of these rights are not needed, the District can divert flows into the reservoir.

Reclamation's Sedimentation and River Hydraulics Group (of the Technical Service Center in Denver) conducted a sedimentation survey of Belle Fourche Reservoir in 2006 and provided a survey report and new area and capacity tables in April 2007. The previous survey was done in 1949. Belle Fourche Reservoir accumulated 19,204 AF of sediment since the 1949 survey and 36,364 AF since the original survey in 1910. The sedimentation rate from 1910 through 2006, average 375 AF per year. The new Area and Capacity Tables were first used in WY 2018.

WY 2014 OPERATIONS SUMMARY

Belle Fourche Reservoir started WY 2014 at elevation 2,964.02 ft and storage of 96,605 AF, which is 10.98 ft and 76,268 AF below the top of the conservation pool. Inflows for WY 2014 totaled 119,070 AF, which was 103 percent of average. Peak inflows occurred in October, totaling 38,796 AF for the month. The peak reservoir elevation for WY 2014 was 2,974.77 ft, storage of 171,029 AF, and occurred on June 10, 2014. The minimum elevation for WY 2014 was 2,963.89 ft, storage of 95,919 AF, and occurred on October 3, 2013. WY 2014 ended at elevation 2,967.32 ft and storage of 116,661 AF, which is 7.68 ft and 56,212 AF below the top of the conservation pool. Precipitation for WY 2014 was 140 percent of average. Inflows for WY 2014 were normal.

The Belle Fourche Irrigation District (BFID) had a water allotment of 18 inches for its irrigators. The North Canal and South Canals were turned on May 27, 2014. Releases reached a peak of 384 cfs on July 24, 2014 for North Canal. The South Canal was shut off September 15, 2014. The North Canal was shut off September 30, 2014. The Inlet Canal was shutoff November 25, 2014. Belle Fourche Reservoir ended the water year with 116,661 AF in total storage and 113,578 AF in active storage. Irrigation releases for the 2014 season were North Canal 57,051 AF, South Canal 40,714 AF, and Inlet Canal-Johnson Lateral 2,336 AF for a total of 100,101 AF.

An Emergency Management/Security Orientation Exercise was conducted February 28, 2014.

In the fall, inflows into Belle Fourche Dam peaked at 1,910 cfs on October 12, 2014 from runoff due to Snow Storm Atlas, but no releases were made. The reservoir elevation did not reach Internal Alert status (Elevation 2974.0 ft), but continued to rise throughout the winter. Inlet Canal was shut down from the middle of November to the end of April.

In the spring, Belle Fourche Reservoir went into Internal Alert status on June 2, 2014 after reaching reservoir elevation 2974.0 ft (Top of Conservation Elevation is 2975.0 ft). Releases were coordinated with releases required for irrigation. The reservoir reached normal operating conditions on July 16, 2014 and was removed from Internal Alert status.

Inclinometer readings were taken twice this year at high and low reservoir elevation as required by the periodic monitoring schedule.

The Annual Examination of Belle Fourche was conducted on July 17, 2014. There are no incomplete SOD recommendations.

The Belle Fourche Reservoir Road Maintenance Contract, No. R14PX00314, was awarded to Bachman Construction for $50,125.71. The contractor bladed the Belle Fourche Reservoir roads on three separate dates during the 2014 recreation season. The contract was completed on September 12, 2014.

MONTHLY STATISTICS FOR WY 2014

October EOM elevation at Belle Fourche Reservoir was second highest in 63 years of record. October inflow was highest in 63 years of record. Belle Fourche ended the month 4.9 ft from full.

November EOM elevation at Belle Fourche Reservoir was third highest in 63 years of record. November inflow was much below average. Inlet Canal was shut November 8, 2013. Belle Fourche ended the month 4.3 ft from full.

December EOM elevation at Belle Fourche Reservoir was fifth highest in 63 years of record. Belle Fourche ended the month 4.3 ft from full.

January EOM elevation at Belle Fourche Reservoir was much above average. Belle Fourche ended the month 4.1 ft from full.

February EOM elevation at Belle Fourche Reservoir was above average. Belle Fourche ended the month 4.0 ft from full.

March EOM elevation at Belle Fourche Reservoir was above average. Belle Fourche ended the month 3.3 ft from full.

April EOM elevation at Belle Fourche Reservoir was above average. April inflow was below average. Inlet Canal was turned on April 22, 2014 to April 29, 2014. Belle Fourche ended the month 2.2 ft from full.

May EOM elevation at Belle Fourche Reservoir was above average. May inflow was below average. Inlet Canal was opened May 21, 2014. North and South Canals began running water May 27, 2014. EOM release was 100 cfs. Belle Fourche ended the month 1.0 ft below full.

June EOM elevation at Belle Fourche Reservoir was above average. June inflow was above average. Belle Fourche Reservoir went into Internal Alert status on June 2, 2014. EOM release was 350 cfs. Belle Fourche ended the month 1.0 ft from full.

July EOM elevation at Belle Fourche Reservoir was above average. July inflow was above average. Belle Fourche was removed from Internal Alert status on July 16, 2014. EOM release was 624 cfs. Belle Fourche ended the month 3.8 ft from full.

August EOM elevation at Belle Fourche Reservoir was much above average. August inflow was much above average. EOM release was 385 cfs. Belle Fourche ended the month 7.2 ft from full.

September EOM elevation at Belle Fourche Reservoir was fourth highest in 63 years of record. Inflow was third highest in 63 years of record. South Canal outlet works was shutoff September 15, 2014 and north canal was shutoff September 30, 2014. EOM release was 140 cfs. Belle Fourche ended the month 7.7 ft from full.

Additional statistical information on Belle Fourche Reservoir and its operations during 2014 can be found on Table DKT11 and Figure DKG10.

TABLE DKT11
HYDROLOGIC DATA FOR WY 2014
BELLE FOURCHE RESERVOIR

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	2,927.00	3,083	3,083
TOP OF ACTIVE CONSERVATION	2,975.00	172,873	169,790
TOP OF JOINT USE			
TOP OF EXCLUSIVE FLOOD CONTROL			

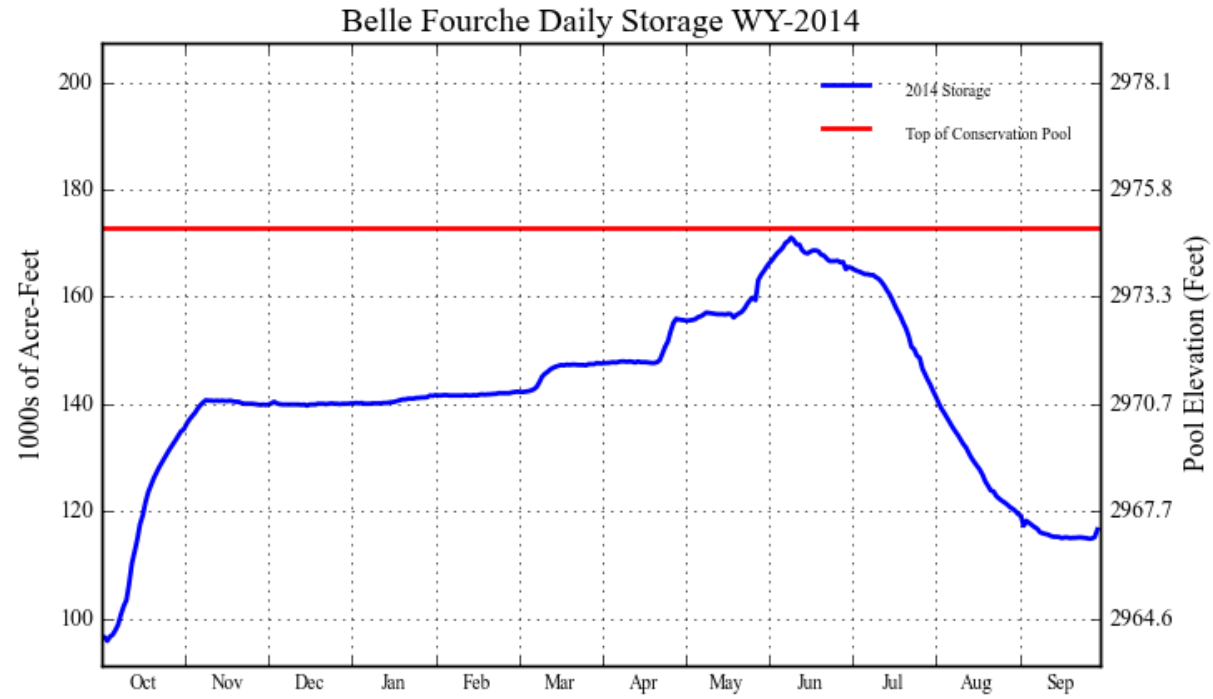
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE (end-of-day)
BEGINNING OF YEAR	2,964.00	96,548	SEP 30, 2013
END OF YEAR	2,967.32	116,661	SEP 30, 2014
ANNUAL LOW	2,963.89	95,919	OCT 3, 2014
ANNUAL HIGH	2,974.77	171,029	JUN 10, 2014
HISTORIC HIGH	2,975.92	196,792	MAY 30, 1996

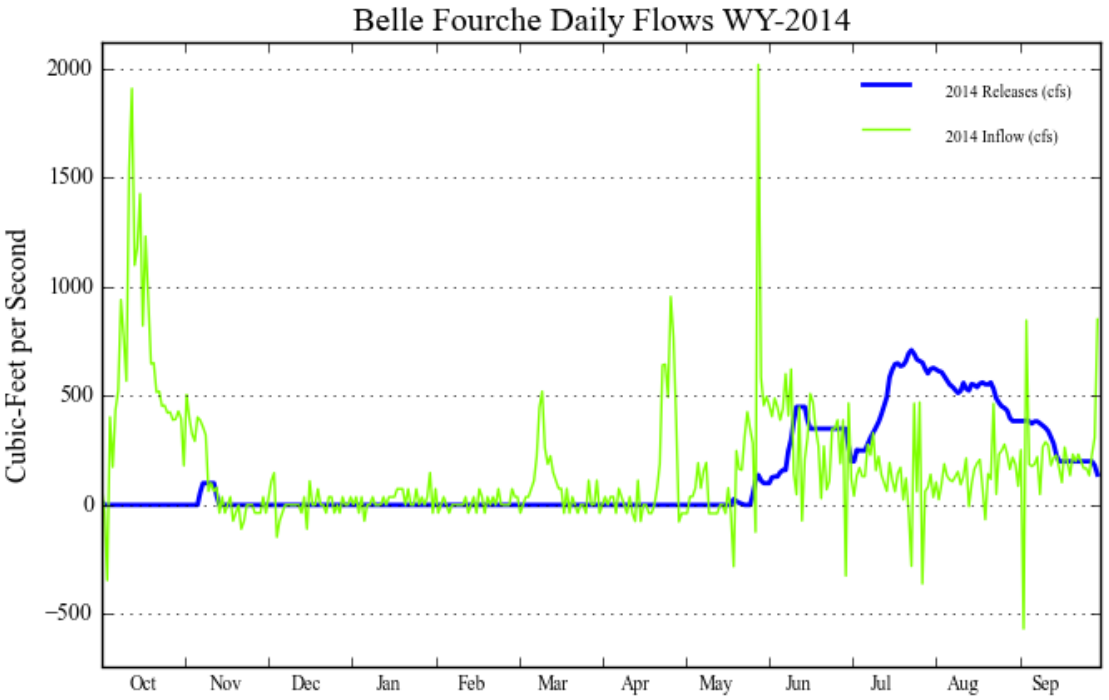
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	119,070	OCT 01-SEP 30	98,958	OCT 01-SEP 30
DAILY PEAK (CFS)	2,020	MAY 29, 2014	710	JUL 24, 2014
DAILY MINIMUM (CFS)	-568	SEP 03, 2014	0	*

MONTH	INFLOW		OUTFLOW		EOM CONTENT**	
	AF	% OF AVG	AF	% OF AVG	AF	% OF AVG
OCTOBER	38,796	383	26	5	135,318	185
NOVEMBER	5,740	59	1,192	408	139,866	170
DECEMBER	292	3	0	N/A	140,158	154
JANUARY	1,533	16	0	N/A	141,691	141
FEBRUARY	513	5	0	N/A	142,204	129
MARCH	5,475	34	0	N/A	147,679	117
APRIL	8,089	59	0	N/A	155,768	112
MAY	10,122	68	1,126	15	164,764	113
JUNE	18,403	156	18,009	110	165,158	116
JULY	8,242	220	29,873	81	143,527	132
AUGUST	8,984	280	32,395	92	120,116	158
SEPTEMBER	12,881	277	16,336	95	116,661	183
ANNUAL	119,070	103	104,158	86	113,035	108
APRIL-JULY	44,856	101	49,008	80	157,304	117

* Frequently observed during fall and winter months
** EOM Content – End of Month Content

Figure DKG10
Belle Fourche Reservoir





OUTLOOK

AND OPERATING PLANS

FOR

WY 2015

FOR RESERVOIRS

(CLARK CANYON, CANYON FERRY, GIBSON, LAKE ELWELL, MILK ELWELL, BIGHORN LAKE AND YELLOWTAIL POWERPLANT)

UNDER THE RESPONSIBILITY

OF THE

MONTANA AREA OFFICE

OPERATING PLANS FOR WY 2015

Clark Canyon Reservoir

Three operating plans were prepared for WY 2015 to show the operations of Clark Canyon Reservoir which could occur under various runoff conditions. These operations for the three runoff conditions are shown in Table MTT12A-C and Figure MTG13. These plans are presented only to show the probable limits of operations; therefore, unpredictable conditions may cause the actual operations to vary widely from the plans presented. Flood control operations will be coordinated with the U. S. Army Corps of Engineers (Corps) as specified by the Flood Control Regulations. The Corps will issue instructions on release rates when storage rises into or above the joint use space reserved for flood control.

The objectives of operations of Clark Canyon Reservoir are to meet all conservation commitments, to provide flood control in cooperation with the Corps, and meet fish, wildlife, and recreational needs. The reservoir is generally operated under the following criteria and limitations.

(1) During the fall and winter, releases are adjusted to allow storage to reach no higher than 154,195 AF at elevation 5542.10 ft by March 1, 2014.

(2) From inflow forecasts prepared during January through the end of the spring runoff season, based on existing snow water content, releases are adjusted to allow storage to fill to 174,367 AF at elevation 5546.10 ft during late May or early June.

(3) During May through September, reservoir releases are adjusted to meet downstream irrigation demands or to control storage in the flood pool if storage increases above the top of the joint use pool. If the Corps requests replacement storage, the reservoir is allowed to fill as high as 230,822 AF at elevation 5556.50 ft.

(4) Whenever an adequate water supply is available, releases from Clark Canyon Dam will be maintained at rates to sustain flows in the Beaverhead River below Clark Canyon Dam between 100-200 cfs. During below normal runoff years, it may be necessary to reduce the releases to as low as 25 cfs in the Beaverhead River below Clark Canyon Dam, the absolute minimum flow required to protect the river fishery.

(5) Whenever possible, stable flows are maintained during October through the spring to enhance the fish spawning conditions. Large fluctuations in winter release changes will be avoided whenever possible to prevent any flooding from occurring as a result of ice jams.

Storage in Lima Reservoir, a private facility located upstream of Clark Canyon Reservoir, ended WY 2014 at elevation 6565.4 ft or 19,600 AF, 65 percent of the 30-year average.

Depending on snowpack and storage conditions Lima Reservoir may store much of the early season runoff during 2015 from the Red Rock River Drainage.

On September 9, 2014, the East Bench Unit Joint Board held a meeting to discuss winter releases. Reclamation provided reservoir operation plans with a minimum, maximum, and most probable inflows with a 50 cfs winter release. During the discussion of the plans, Montana Fish Wildlife and Parks (MFWP) stated they would support a 35 cfs winter release, with the possibility of 5 cfs being stored for a 2015 spring sediment flushing flow if needed. Reclamation and the Joint Board verbally agreed to this proposal. A letter from the Joint Board was received on September 12, 2014 while the MFWP letter was received in October confirming the above verbal agreement.

In response, Reclamation's letter dated September 30, 2014 stated that under Article 6.g and Exhibit D of Reclamation's Contract Nos. 069F670010 and 069F6700009 with the East Bench Irrigation District and Clark Canyon Water Supply Company includes provisions which encourage working with third parties such as the state of Montana to enhance the environmental health of the Beaverhead River. Measures that could be considered appropriate include, among other considerations, storing water for enhancement purposes, provided the minimum release from Clark Canyon Reservoir is not less than 25 cfs. In accordance with these contracts, Reclamation concurred that a reduction in winter flows from 35 cfs to 30 cfs for the purpose of storing water for a spring 2015 flushing flow is acceptable, provided all parties are in mutual agreement. This reduction will result in approximately 2,100 AF of banked water for a spring flushing flow if needed. A memorandum of understanding will be created to identify and determine the specific requirements of the flushing flow. Therefore, the winter release from Clark Canyon Dam was set at 30 cfs on October 2, 2014.

The total annual inflow to Clark Canyon Reservoir during 2014 was approximately 132,600 AF, 60 percent of the 30 year average. Storage on September 30, 2014, was 59,215 AF at elevation 5517.47 ft, 75 percent of the 30 year average for the end of September.

Clark Canyon Reservoir is expected to fill during 2015 under the maximum probable runoff condition and is expected to fill by late April. The reservoir water level under the most probable runoff condition is expected to peak in early April, approximately 7.2 ft below the top of the joint-use pool. The reservoir water level under the minimum probable runoff condition is expected to peak in early April, approximately 12.7 ft below the top of the joint-use pool.

Under the most probable, minimum, and maximum plans, the fall/winter release was set at 30 cfs as determined collaboratively by the East Bench Unit Joint Board, Reclamation, and the Montana Fish Wildlife and Parks. Irrigation shortages are expected to occur only under the minimum plan.

The most probable October and November inflows were estimated near the 18 percentile inflows or inflows that are historically exceeded 82 percent of the time. December inflows were estimated near the 25 percentile or inflows that are historically exceeded 75 percent of the time. Inflows during January through September were estimated at the 30 percentile inflows or inflows that are historically exceeded 70 percent of the time.

The minimum probable October inflows were estimated by analyzing the seven lowest historical inflow years. The inflows are all lower than the 10 percentile inflow values.

Inflows during November through September were estimated at the 10 percentile inflows or inflows that are historically exceeded 90 percent of the time.

The maximum probable October through December inflows were estimated near the 40 to 45 percentile inflows or inflows that are historically exceeded 60 to 65 percent of the time. The maximum probable January through September inflows were estimated to equal 70 percentile inflows or inflows that are historically exceeded 30 percent of the time.

TABLE MTT12
CLARK CANYON RESERVOIR OPERATING PLAN
Based on October 1 2014 Inflow Estimates

2015 Minimum Probable Plan

Clark Canyon Reservoir		Initial Cont Elev	59.2 kaf 5517.46 ft			Maximum Cont Elev	310.1 kaf 5569.57 ft			Minimum Cont Elev	10.0 kaf 5489.22 ft		
2014		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	9.0	10.7	10.2	10.0	8.7	10.4	8.4	6.5	9.8	11.2	8.5	8.4	111.8
Evaporation Loss	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
River Release	kaf	1.8	1.8	1.8	1.8	1.7	1.8	1.8	22.0	32.5	41.1	28.0	5.4	141.5
River Release	cfs	30	30	30	30	31	30	30	358	546	668	455	91	
Min Release	cfs	30	30	30	30	30	30	30	350	540	660	450	90	
Excess Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gordon Spring Gain	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	17.9
End-Month Elevation	ft	5519.99	5522.87	5525.40	5527.71	5529.57	5531.76	5533.36	5529.50	5523.06	5512.20	5502.33	5504.08	
End-Month Content	kaf	66.4	75.3	83.7	91.9	98.9	107.5	114.1	98.6	75.9	46.0	26.5	29.5	
Net Change Content	kaf	7.2	8.9	8.4	8.2	7.0	8.6	6.6	-15.5	-22.7	-29.9	-19.5	3.0	-29.7

Diversions	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
East Bench Demand	kaf	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.04	8.89	12.03	5.05	0.67	33.68
East Bench Req Rels	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.8	16.2	21.9	9.2	1.2	61.3
CCWSCO Tot Demand	kaf	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.65	21.65	26.75	23.38	4.55	90.98
CCWSCO Deliv	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.2	13.6	16.9	14.7	2.9	57.3
Non-proj Demand	kaf	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.44	6.66	5.99	8.88	4.44	28.41

2015 Most Probable Plan

Clark Canyon Reservoir		Initial Cont Elev	59.2 kaf 5517.46 ft			Maximum Cont Elev	310.1 kaf 5569.57 ft			Minimum Cont Elev	10.0 kaf 5489.22 ft		
2014		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	11.9	12.8	13.5	13.0	11.9	14.4	14.5	13.9	22.3	17.9	13.4	13.7	173.2
Evaporation Loss	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
River Release	kaf	1.8	1.8	1.8	1.8	1.7	1.8	1.8	25.2	36.9	46.7	31.4	5.4	158.1
River Release	cfs	30	30	30	30	31	30	30	410	620	760	511	91	
Min Release	cfs	30	30	30	30	30	30	30	410	620	760	510	90	
Excess Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gordon Spring Gain	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	17.9
End-Month Elevation	ft	5520.96	5524.39	5527.74	5530.68	5533.19	5536.12	5538.89	5536.43	5533.05	5525.48	5519.86	5522.56	
End-Month Content	kaf	69.3	80.3	92.0	103.2	113.4	126.0	138.7	127.4	112.8	84.0	66.0	74.3	
Net Change Content	kaf	10.1	11.0	11.7	11.2	10.2	12.6	12.7	-11.3	-14.6	-28.8	-18.0	8.3	15.1

Diversions	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
East Bench Demand	kaf	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.09	10.21	13.81	5.80	0.67	38.58
East Bench Req Rels	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.7	18.6	25.1	10.5	1.2	70.1
CCWSCO Tot Demand	kaf	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.74	24.75	30.57	26.72	4.55	103.33
CCWSCO Deliv	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.5	15.6	19.3	16.8	2.9	65.1
Non-proj Demand	kaf	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.44	6.66	5.99	8.88	4.44	28.41

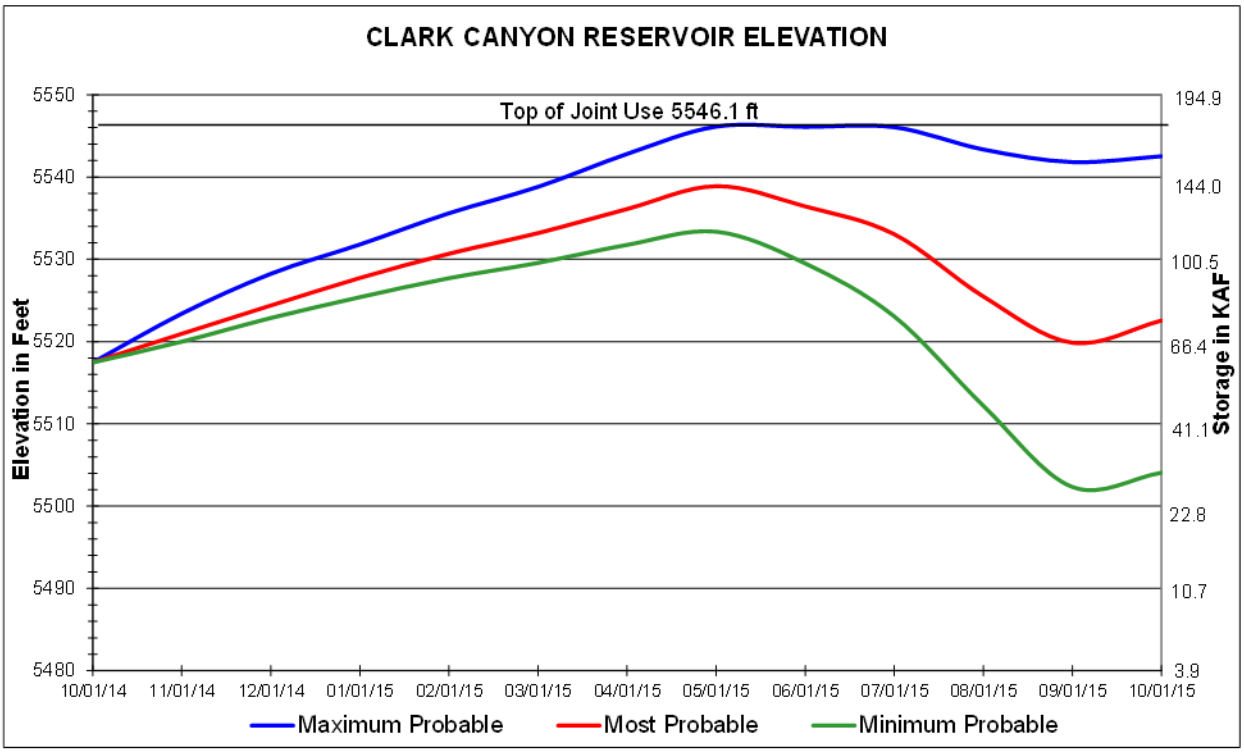
2015 Maximum Probable Plan

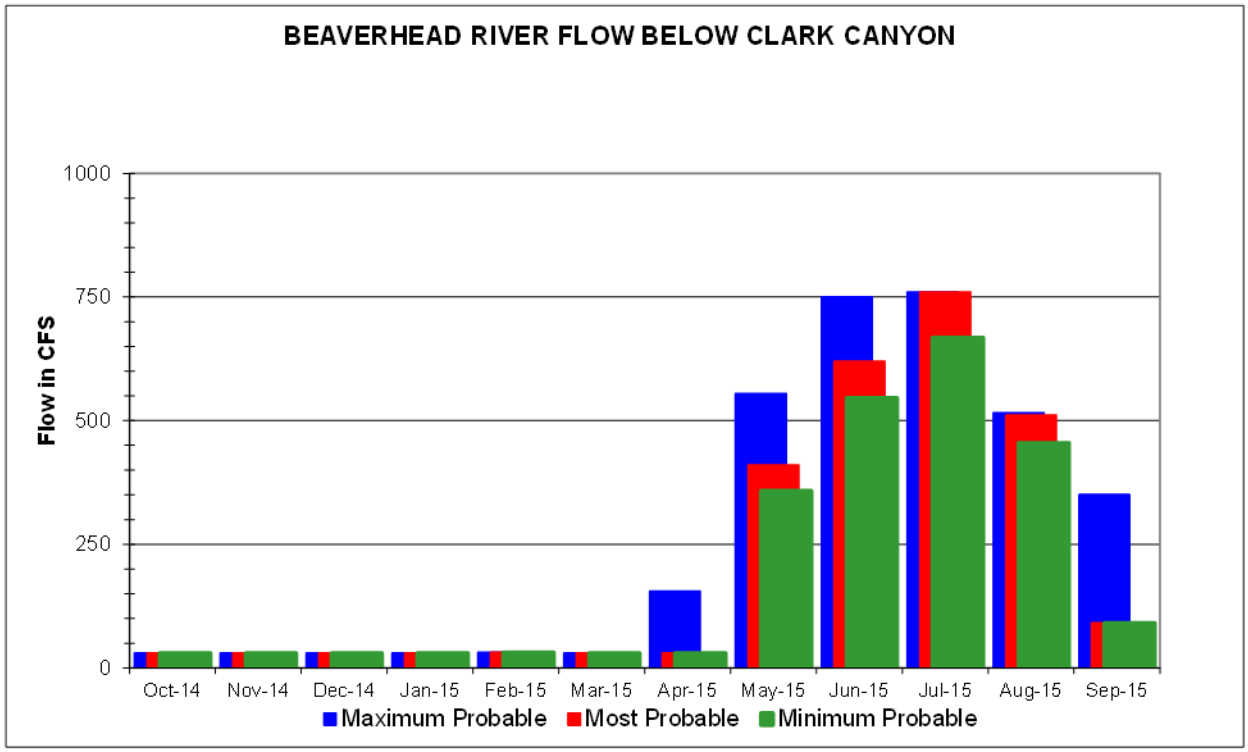
Clark Canyon Reservoir		Initial Cont Elev	59.2 kaf 5517.46 ft			Maximum Cont Elev	310.1 kaf 5569.57 ft			Minimum Cont Elev	10.0 kaf 5489.22 ft		
2014		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	19.6	18.7	15.6	17.8	16.3	21.2	26.0	33.9	44.4	33.0	23.1	24.3	293.9
Evaporation Loss	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
River Release	kaf	1.8	1.8	1.8	1.8	1.7	1.8	9.2	34.1	44.6	46.7	30.7	20.8	196.8
River Release	cfs	30	30	30	30	31	30	155	555	750	760	516	350	
Min Release	cfs	30	30	30	30	30	30	155	555	750	760	500	350	
Excess Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gordon Spring Gain	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	17.9
End-Month Elevation	ft	5523.40	5528.25	5531.81	5535.60	5538.81	5542.81	5546.13	5546.09	5546.05	5543.35	5541.82	5542.53	
End-Month Content	kaf	77.0	93.9	107.7	123.7	138.3	157.7	174.5	174.3	174.1	160.4	152.8	156.3	
Net Change Content	kaf	17.8	16.9	13.8	16.0	14.6	19.4	16.8	-0.2	-0.2	-13.7	-7.6	3.5	97.1

Diversions	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
East Bench Demand	kaf	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.09	10.21	13.81	5.05	0.67	37.83
East Bench Req Rels	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.7	18.6	25.1	9.2	1.2	68.8
CCWSCO Tot Demand	kaf	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.74	24.75	30.57	23.38	4.55	99.99
CCWSCO Deliv	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.5	15.6	19.3	14.7	2.9	63.0
Non-proj Demand	kaf	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.44	6.66	5.99	8.88	4.44	28.41

FIGURE MTG13

CLARK CANYON RESERVOIR





WATER YEAR 2015

Canyon Ferry Lake and Powerplant

Three operating plans were prepared for 2015 to show the operations of Canyon Ferry Lake which could occur under various runoff conditions. These operations for the three runoff conditions are shown in Tables MTT13A-C and Figure MTG14. These plans are presented only to show the probable limits of operations; therefore, actual conditions and operations could vary widely from the plans in order to comply with the authorized project purposes and the current general operating criteria established for Canyon Ferry Dam and Lake.

Power operations will be closely coordinated with Pennsylvania Power and Light, Montana (PPL-MT), which was recently sold to Northwestern Energy in September 2014. The prior owner was Montana Power Company (MPC). Coordination is specified in the formal Agreement to Coordinate Hydroelectric Power Operations dated March 1972. Flood control operations will be coordinated with the Corps of Engineers (Corps) as specified by the Flood Control Regulations Report dated March 1972. The Corps will issue instructions on release rates when storage rises into or above the joint use space reserved for flood control. Both of these documents are on file and available for review at the Bureau of Reclamation's Montana Area Office.

The objectives of operations at Canyon Ferry are to meet all conservation commitments, to provide flood control in cooperation with the Corps, and to coordinate all operations with PPL-MT to achieve optimum benefits from the water resource. Except for special operations, the reservoir is generally operated under the following criteria and limitations:

(1) The top 3 ft between elevations 3797 ft (1,891,888 AF) and 3800 (1,992,977 AF) are used exclusively for downstream flood control and when storage rises into this pool, operation of the reservoir is directed by the Corps. This storage is generally evacuated as fast as downstream conditions permit.

(2) As soon as storage has peaked, usually in June or July, power releases are adjusted so that the pool will be drawn to near elevation 3780 ft to 3782 ft (1,358,973AF to 1,416,767 AF) by the following April 1, 2014. Each month inflows are re-evaluated and releases are adjusted accordingly. Releases to meet this schedule are limited to power plant capacity. Water is generally not spilled to provide this drawdown.

(3) In accordance with operating procedures outlined in the license for the Madison-Missouri Hydro-electric Project, FERC Project No. 2188, most of the water stored in Hebgen Reservoir will be uniformly released from Hebgen during October through March. Releases during October and November may cause storage in Canyon Ferry Lake to rise slightly during these months. However, PPL-MT will try to limit the Hebgen drawdown during these months in an effort to maintain Canyon Ferry Lake below elevation 3794.0 ft (1,792,884 AF) after December 1, 2013. Storage below elevation 3794.0 ft (1,792,884 AF) prior to winter freeze-up is desired to reduce the potential for ice jam problems to occur at the head end of the lake.

(4) Beginning near the first of January and at least monthly thereafter through June, forecasts are made of the estimated spring runoff, based on snow cover and precipitation data.

When these forecasts become available, operational changes may be required. Releases are set based on the most probable spring inflow forecast to allow the reservoir to fill to the top of the joint-use pool at elevation 3797.0 ft (1,891,888 AF) near the end of June. On occasions, high spring runoff may result in the reservoir filling above the top of the joint-use pool to the top of the exclusive flood at elevation 3800.0 ft (1,992,997 AF).

(5) If spilling is required, it is made only to the extent current inflow and the reservoir content indicates additional spills are required. Attempts are made to limit river releases to 15,000 cfs or full downstream channel capacity immediately downstream of Canyon Ferry Dam, as long as space is available.

(6) Depending on when the spring runoff starts, the release of water, based on inflow forecasts, may draw the pool as low as elevation 3770 ft (1,097,599 AF). In a series of dry years, the pool may be drawn as low as elevation 3728 ft (396,031 AF) to meet firm power generation requirements and satisfy PPL-MT's prior water rights. If storage is drawn below elevation 3728 ft (396,031 AF), the power plant efficiency is affected. If emergency maintenance is required on the dam or power plant, the reservoir may be required to be drawn lower than elevation 3728 (396,031 AF), however, the power plant efficiency is affected.

(7) Whenever an adequate water supply is available, releases from Canyon Ferry Dam to the Missouri River will be maintained at rates required to sustain river flows equal to or greater than the minimum desired flow of 4,100 cfs below Holter Dam, to minimize impacts to downstream river fisheries and recreation activities. During below normal runoff years, it may be necessary to reduce the releases to less than 4,100 cfs but no lower than 2,800 cfs to fulfill contractual obligations with PPL-MT.

The first part of August continued to be warm and dry. Then about mid-month a strong weather system brought thunderstorms and heavy rain across Montana. Inflows into Canyon Ferry rose from 1,900 cfs to 4,200 cfs. By the end of the month, over 200 percent of average precipitation fell in the basin. September continued with average precipitation and slightly warmer than average temperatures. Inflows for the month were 111 percent of average.

The end of the WY 2014 resulted in a reservoir storage content of 1,699,195 AF at an elevation of 3791.1 ft, about 4.2 ft higher than the 30-year average. September inflows were 111 percent of the 30-year average, while the monthly average release to the river was near average at 3,800 cfs.

The most probable October through February inflows were estimated near the 57 percent of average or inflows that historically have been exceeded 43 percent of the time. The most probable March through September inflows were estimated to equal 50 percentile or inflows that historically have been exceeded 50 percent of the time.

Under the minimum probable October through December inflows were estimated at the 25 percent of average or inflows that historically have been exceeded 75 percent of the time. The minimum probable January through September inflows were estimated to equal 10 percentile or inflows that historically have been exceeded 90 percent of the time.

Under the maximum probable October through February inflows were estimated at the 75 percent of average or inflows that historically have been exceeded 25 percent of the time. The maximum probable March through September inflows were estimated to equal 90 percentile or inflows that historically have been exceeded 10 percent of the time.

Based on the storage level on October 1, 2014, Canyon Ferry Reservoir would be expected to fill to the top of the joint-use pool at elevation 3797 ft by the end of June under the most probable and maximum probable runoff scenarios. However, under the minimum probable runoff condition, releases from Canyon Ferry Reservoir to the Missouri River downstream of Holter Dam would have to be decreased and maintained between 3,900 cfs and 3,500 cfs beginning in January and continue through the remainder of the year to conserve storage and allow Canyon Ferry Reservoir to fill near elevation 3793.0 ft, about 7 ft below the top of the joint-use pool. Under the most and maximum probable runoff condition, releases to the Missouri River downstream of Holter Dam are started at 4,300 cfs in October and gradually increase to the power plants maximum capacity near 5,100 cfs by November due to the reservoir being approximately 4 ft higher than the 30-year average. The flow of 4,100 cfs or greater would then be maintained for the remainder of the year.

The average power generation produced at Canyon Ferry Power plant during 1967 through 2014 is 381.0 million kilowatt-hours. Under the most probable runoff conditions, power generation produced at Canyon Ferry Power plant during 2015 would be about 64.0 million kilowatt-hours more than average. Under the minimum probable runoff condition, power generation would be about 67.0 million kilowatt-hours less than average. Under the maximum probable runoff condition, power generation would be about 111 million kilowatt-hours more than average. The routine scheduled maintenance outages are shown on Table MTT19.

TABLE MTT13A

CANYON FERRY LAKE MONTHLY OPERATIONS
Based on October 1 2014 Probable Inflow Estimates

2015 Minimum Probable Plan

Canyon Ferry Reservoir		Initial Cont Elev 1699.2 kaf 3791.11 ft					Maximum Cont Elev 1993.0 kaf 3800.00 ft				Minimum Cont Elev 445.5 kaf 3732.31 ft			
2014		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Reservoir Inflow	kaf	220.9	238.0	200.7	179.3	169.0	203.2	233.7	295.6	348.3	139.7	91.0	125.3	2444.7
Evaporation Loss	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HV Canal Diversions	kaf	0.0	0.0	0.0	0.0	0.0	0.0	5.0	12.0	16.0	17.0	16.0	12.0	78.0
HV Pump Turbines	kaf	0.0	0.0	0.0	0.0	0.0	0.0	6.1	14.2	17.7	18.6	18.7	15.1	90.4
Turbine Release	kaf	246.6	237.9	244.4	235.2	208.3	204.7	193.3	199.4	180.9	190.0	192.5	189.0	2522.2
Turbine Release	cfs	4011	3998	3975	3825	3751	3329	3249	3243	3040	3090	3131	3176	
Spill/Waste	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
River Release	kaf	246.6	237.9	244.4	235.2	208.3	204.7	199.4	213.6	198.6	208.6	211.2	204.1	2612.6
River Release	cfs	4011	3998	3975	3825	3751	3329	3351	3474	3338	3393	3435	3430	
Min Release	cfs	4011	3998	3975	3825	3751	3329	3351	3474	3338	3393	3435	3430	
Total Dam Release	kaf	246.6	237.9	244.4	235.2	208.3	204.7	204.4	225.6	214.6	225.6	227.2	216.1	2690.6
Total Dam Release	cfs	4011	3998	3975	3825	3751	3329	3435	3669	3606	3669	3695	3632	
End-Month Content	kaf	1673.5	1673.6	1629.9	1574.0	1534.7	1533.2	1562.5	1632.5	1766.2	1680.3	1544.1	1453.3	
End-Month Elevation	ft	3790.3	3790.3	3788.9	3787.2	3785.9	3785.9	3786.8	3789.0	3793.2	3790.5	3786.2	3783.2	
Net Change	kaf	-25.7	0.1	-43.7	-55.9	-39.3	-1.5	29.3	70.0	133.7	-85.9	-136.2	-90.8	-245.9

Canyon Ferry Power	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	cfs	4011	3998	3975	3825	3751	3329	3249	3243	3040	3090	3131	3176	
Tailwater Elev	ft	3650.8	3650.8	3650.8	3650.8	3650.8	3650.8	3650.8	3650.8	3650.8	3650.8	3650.8	3650.8	
Average Head	ft	139.9	139.5	138.8	137.3	135.7	135.1	135.5	137.1	140.3	141.1	137.6	133.9	
Average Power	mw	42.9	42.6	42.2	40.0	38.7	33.4	32.5	32.7	30.8	31.5	31.4	31.3	
Average Kwh/Af		129	129	128	127	125	121	121	122	123	123	121	119	124
Generation	gwh	31.918	30.672	31.397	29.760	26.006	24.850	23.400	24.329	22.176	23.436	23.362	22.536	313.842
End-Month Power Cap	mw	57	57	57	57	57	57	57	57	57	57	57	57	

Hauser	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Missouri Gain	kaf	4.0	4.8	7.1	4.5	7.2	8.6	7.8	0.4	1.9	1.9	0.9	1.8	50.9
End-Month Content	kaf	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	
Release	kaf	250.6	242.7	251.5	239.7	215.5	213.3	207.2	214.0	200.5	210.5	212.1	205.9	2663.5
Release	cfs	4076	4079	4090	3898	3880	3469	3482	3480	3370	3423	3449	3460	
Turbine Release	cfs	4076	4079	4090	3898	3880	3469	3482	3480	3370	3423	3449	3460	
Turbine Bypass	cfs	0	0	0	0	0	0	0	0	0	0	0	0	
Generation	gwh	10.553	10.220	10.590	10.092	9.074	8.982	8.724	9.010	8.444	8.863	8.930	8.669	112.151

Holter	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Missouri Gain	kaf	1.5	1.3	0.6	0.1	1.1	1.9	1.1	1.2	7.8	4.7	3.1	2.4	26.8
End-Month Content	kaf	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	
Release	kaf	252.1	244.0	252.1	239.8	216.6	215.2	208.3	215.2	208.3	215.2	215.2	208.3	2690.3
Release	cfs	4100	4101	4100	3900	3900	3500	3501	3500	3501	3500	3500	3501	
Min Release	cfs	4100	4100	4100	3900	3900	3500	3500	3500	3500	3500	3500	3500	
Turbine Release	cfs	4100	4101	4100	3900	3900	3500	3501	3500	3501	3500	3500	3501	
Turbine Bypass	cfs	0	0	0	0	0	0	0	0	0	0	0	0	
Generation	gwh	21.475	20.787	21.475	20.427	18.450	18.332	17.746	18.332	17.746	18.332	18.332	17.746	229.180

TABLE MTT13B

CANYON FERRY LAKE MONTHLY OPERATIONS
Based on October 1 2014 Probable Inflow Estimates

2015 Most Probable Plan

Canyon Ferry Reservoir		Initial Cont Elev	1699.2 kaf 3791.11 ft			Maximum Cont Elev	1993.0 kaf 3800.00 ft			Minimum Cont Elev	445.5 kaf 3732.31 ft		
2014		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Reservoir Inflow	kaf	282.1	297.5	248.7	213.9	218.5	255.2	324.2	543.2	762.2	286.9	147.2	201.7	3781.3
Evaporation Loss	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HV Canal Diversions	kaf	0.0	0.0	0.0	0.0	0.0	0.0	11.0	18.4	17.0	18.4	18.4	12.0	95.2
HV Pump Turbines	kaf	0.0	0.0	0.0	0.0	0.0	0.0	14.7	23.0	18.3	18.4	19.0	13.1	106.5
Turbine Release	kaf	263.4	304.9	315.1	315.1	284.7	315.1	288.5	332.9	309.7	262.0	234.3	232.1	3457.8
Turbine Release	cfs	4284	5124	5125	5125	5126	5125	4848	5414	5205	4261	3811	3901	
Spill/Waste	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	121.0	0.0	0.0	0.0	121.0
River Release	kaf	263.4	304.9	315.1	315.1	284.7	315.1	303.2	355.9	449.0	280.4	253.3	245.2	3685.3
River Release	cfs	4284	5124	5125	5125	5126	5125	5095	5788	7546	4560	4120	4121	
Min Release	cfs	3918	3936	3939	3928	3893	3880	3911	3959	3707	3981	3975	3944	
Total Dam Release	kaf	263.4	304.9	315.1	315.1	284.7	315.1	314.2	374.3	466.0	298.8	271.7	257.2	3780.5
Total Dam Release	cfs	4284	5124	5125	5125	5126	5125	5280	6087	7831	4860	4419	4322	
End-Month Content	kaf	1717.9	1710.5	1644.1	1542.9	1476.7	1416.8	1426.8	1595.7	1891.9	1880.0	1755.5	1700.0	
End-Month Elevation	ft	3791.7	3791.5	3789.4	3786.2	3784.0	3782.0	3782.3	3787.9	3797.0	3796.6	3792.9	3791.1	
Net Change	kaf	18.7	-7.4	-66.4	-101.2	-66.2	-59.9	10.0	168.9	296.2	-11.9	-124.5	-55.5	0.8

Canyon Ferry Power	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	cfs	4284	5124	5125	5125	5126	5125	4848	5414	5205	4261	3811	3901	
Tailwater Elev	ft	3650.9	3651.0	3651.0	3651.0	3651.0	3651.0	3651.0	3651.0	3651.3	3650.9	3650.9	3650.9	
Average Head	ft	140.5	140.6	139.4	136.8	134.1	132.0	131.2	134.2	141.2	145.9	143.9	141.1	
Average Power	mw	46.3	55.7	55.2	54.2	53.2	52.4	49.4	55.7	56.7	47.6	41.3	41.8	
Average Kwh/Af		131	132	130	128	126	124	123	124	132	135	131	130	129
Generation	gwh	34.447	40.104	41.069	40.325	35.750	38.986	35.568	41.441	40.824	35.414	30.727	30.096	444.751
End-Month Power Cap	mw	57	57	57	57	57	56	56	57	57	57	57	57	

Hauser	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Missouri Gain	kaf	9.1	8.4	8.8	9.0	9.3	10.2	9.0	5.4	13.1	1.3	3.3	5.2	92.1
End-Month Content	kaf	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	
Release	kaf	272.5	313.3	323.9	324.1	294.0	325.3	312.2	361.3	462.1	281.7	256.6	250.4	3777.4
Release	cfs	4432	5265	5268	5271	5294	5290	5247	5876	7766	4581	4173	4208	
Turbine Release	cfs	4432	4740	4740	4740	4740	4740	4740	4740	4740	4581	4173	4208	
Turbine Bypass	cfs	0	525	528	531	554	550	507	1136	3026	0	0	0	
Generation	gwh	11.475	11.877	12.272	12.272	11.085	12.272	11.877	12.272	11.877	11.861	10.804	10.544	140.488

Holter	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Missouri Gain	kaf	2.1	1.4	1.1	1.6	2.2	3.3	2.3	3.3	10.3	6.0	4.4	4.1	42.1
End-Month Content	kaf	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	
Release	kaf	274.6	314.7	325.0	325.7	296.2	328.6	314.5	364.6	472.4	287.7	261.0	254.5	3819.5
Release	cfs	4466	5289	5286	5297	5333	5344	5285	5930	7939	4679	4245	4277	
Min Release	cfs	4100	4100	4100	4100	4100	4100	4100	4100	4100	4100	4100	4100	
Turbine Release	cfs	4466	5289	5286	5297	5333	5344	5285	5930	7100	4679	4245	4277	
Turbine Bypass	cfs	0	0	0	0	0	0	0	0	839	0	0	0	
Generation	gwh	23.392	26.809	27.687	27.744	25.230	27.991	26.789	31.060	35.988	24.507	22.234	21.679	321.110

TABLE MTT13C

CANYON FERRY LAKE MONTHLY OPERATIONS
Based on October 1 2014 Probable Inflow Estimates

2015 Maximum Probable Plan

Canyon Ferry Reservoir		Initial Cont Elev	1699.2 kaf 3791.11 ft			Maximum Cont Elev	1993.0 kaf 3800.00 ft			Minimum Cont Elev	445.5 kaf 3732.31 ft		
2014		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Reservoir Inflow	kaf	318.1	323.5	262.2	233.4	237.9	312.1	432.4	785.0	1077.3	521.3	241.9	272.2	5017.3
Evaporation Loss	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HV Canal Diversions	kaf	0.0	0.0	0.0	0.0	0.0	0.0	11.0	18.4	17.0	18.4	18.4	12.0	95.2
HV Pump Turbines	kaf	0.0	0.0	0.0	0.0	0.0	0.0	15.0	24.0	18.7	18.4	19.1	13.3	108.5
Turbine Release	kaf	300.2	308.8	319.0	326.5	302.0	346.2	336.5	347.7	313.8	311.0	314.7	312.2	3838.6
Turbine Release	cfs	4882	5190	5188	5310	5438	5630	5655	5655	5273	5058	5118	5246	
Spill/Waste	kaf	0.0	0.0	0.0	0.0	0.0	66.9	110.3	238.1	369.1	185.4	25.2	22.0	1017.0
River Release	kaf	300.2	308.8	319.0	326.5	302.0	413.1	461.8	609.8	701.6	514.8	359.0	347.5	4964.1
River Release	cfs	4882	5190	5188	5310	5438	6718	7761	9917	11791	8372	5839	5840	
Min Release	cfs	3828	3911	3915	3915	3833	3825	3850	3711	3284	3731	3807	3838	
Total Dam Release	kaf	300.2	308.8	319.0	326.5	302.0	413.1	472.8	628.2	718.6	533.2	377.4	359.5	5059.3
Total Dam Release	cfs	4882	5190	5188	5310	5438	6718	7946	10217	12076	8672	6138	6042	
End-Month Content	kaf	1717.1	1731.8	1675.0	1581.9	1517.8	1416.8	1376.4	1533.2	1891.9	1880.0	1744.5	1657.2	
End-Month Elevation	ft	3791.7	3792.1	3790.4	3787.4	3785.4	3782.0	3780.6	3785.9	3797.0	3796.6	3792.5	3789.8	
Net Change	kaf	17.9	14.7	-56.8	-93.1	-64.1	-101.0	-40.4	156.8	358.7	-11.9	-135.5	-87.3	-42.0

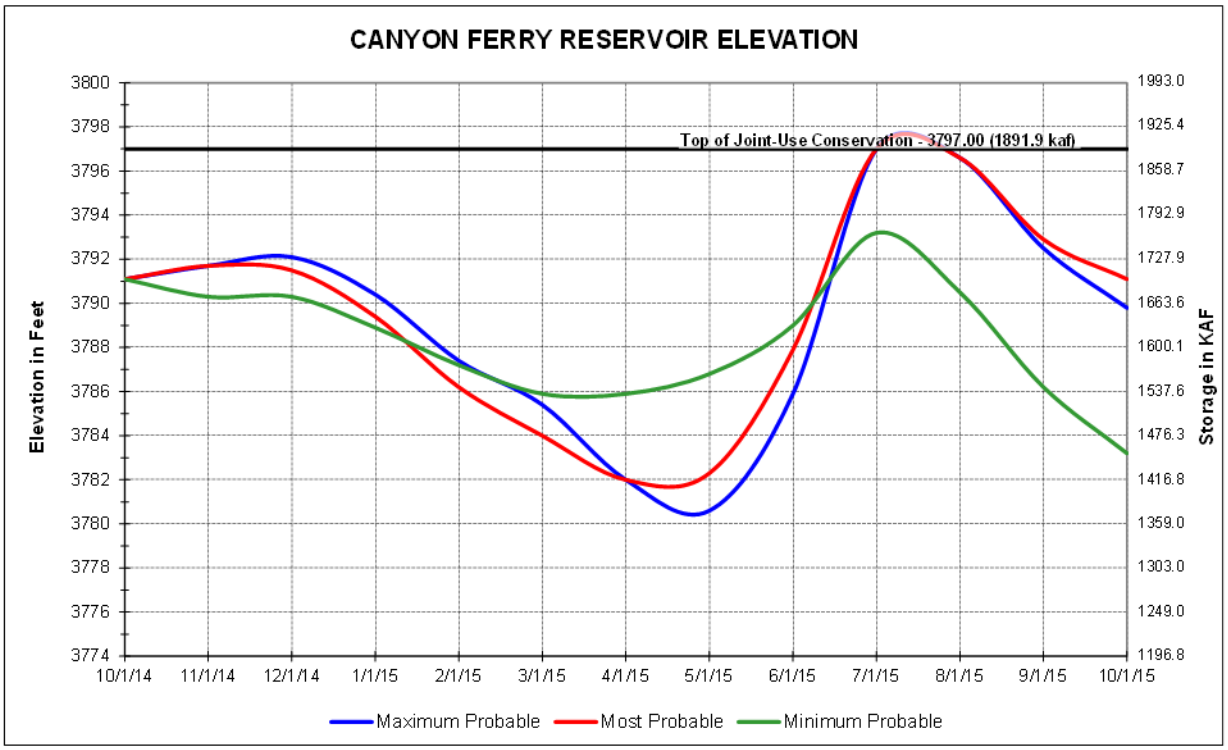
Canyon Ferry Power	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	cfs	4882	5190	5188	5310	5438	5630	5655	5655	5273	5058	5118	5246	
Tailwater Elev	ft	3650.9	3651.0	3651.0	3651.0	3651.0	3651.2	3651.3	3651.7	3652.0	3651.4	3651.0	3651.0	
Average Head	ft	140.5	140.9	140.2	137.9	135.4	132.5	130.0	131.6	139.5	145.4	143.6	140.2	
Average Power	mw	53.1	56.4	56.2	56.4	56.5	56.7	55.7	56.4	56.7	56.7	56.7	56.7	
Average Kwh/Af		132	132	131	129	126	122	119	121	130	136	134	131	128
Generation	gwh	39.506	40.608	41.813	41.962	37.968	42.185	40.104	41.962	40.824	42.185	42.185	40.824	492.126
End-Month Power Cap	mw	57	57	57	57	57	56	55	57	57	57	57	57	

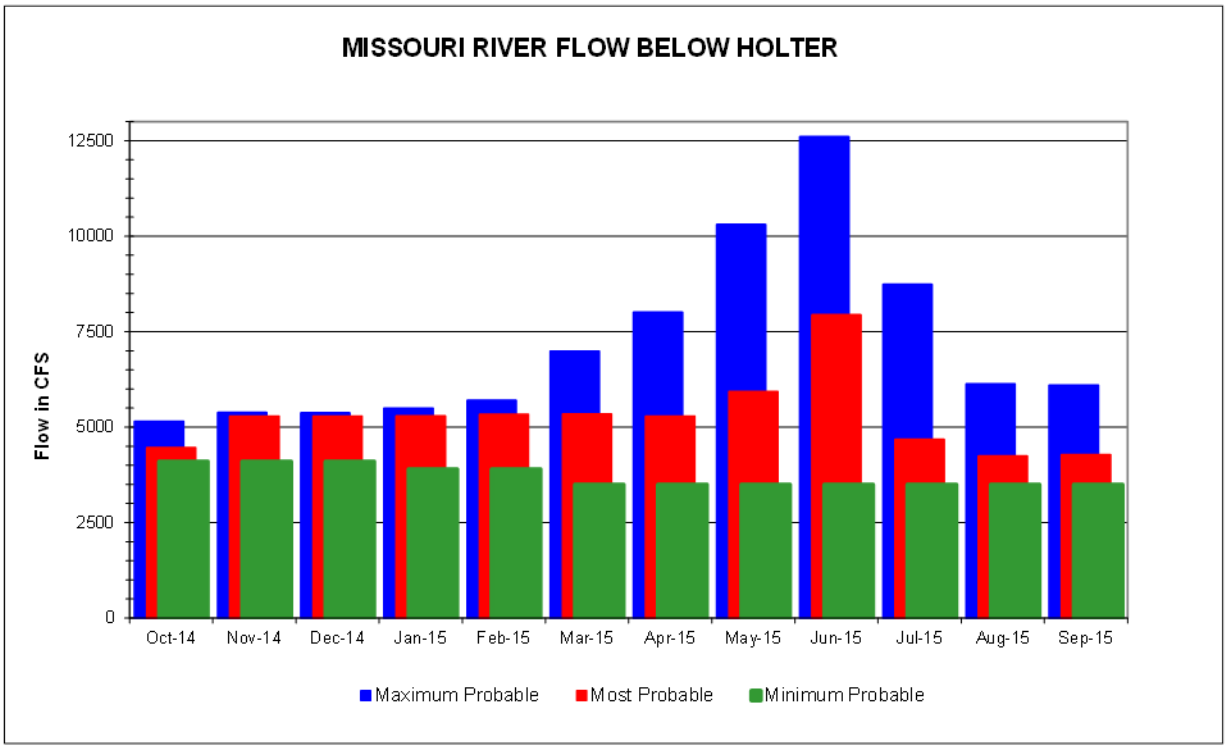
Hauser	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Missouri Gain	kaf	13.0	9.3	9.4	8.9	11.9	13.3	11.8	17.2	34.1	13.3	10.8	10.0	163.0
End-Month Content	kaf	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	
Release	kaf	313.2	318.1	328.4	335.4	313.9	426.4	473.6	627.0	735.7	528.1	369.8	357.5	5127.1
Release	cfs	5094	5346	5341	5455	5652	6935	7959	10197	12364	8589	6014	6008	
Turbine Release	cfs	4740	4740	4740	4740	4740	4740	4740	4740	4740	4740	4740	4740	
Turbine Bypass	cfs	354	606	601	715	912	2195	3219	5457	7624	3849	1274	1268	
Generation	gwh	12.272	11.877	12.272	12.272	11.085	12.272	11.877	12.272	11.877	12.272	12.272	11.877	144.497

Holter	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Missouri Gain	kaf	3.7	2.0	2.0	2.5	2.9	3.6	3.1	6.7	14.5	9.4	7.2	5.6	63.2
End-Month Content	kaf	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	
Release	kaf	316.9	320.1	330.4	337.9	316.8	430.0	476.7	633.7	750.2	537.5	377.0	363.1	5190.3
Release	cfs	5154	5379	5373	5495	5704	6993	8011	10306	12608	8742	6131	6102	
Min Release	cfs	4100	4100	4100	4100	4100	4100	4100	4100	4100	4100	4100	4100	
Turbine Release	cfs	5154	5379	5373	5495	5704	6993	7100	7100	7100	7100	6131	6102	
Turbine Bypass	cfs	0	0	0	0	0	0	911	3206	5508	1642	0	0	
Generation	gwh	26.995	27.265	28.142	28.781	26.985	36.628	35.988	37.188	35.988	37.188	32.113	30.930	384.19

FIGURE MTG14

CANYON FERRY RESERVOIR





WATER YEAR 2015

Gibson Reservoir

Three operating plans were prepared for 2015 to show the operations of Gibson Reservoir which could occur under various conditions. These plans are shown in Table MTT14A-C and Figure MTG15. The plans are presented only to show the probable limits of operations; therefore, actual operations may vary widely from these plans.

The primary objective of operations at Gibson Reservoir is to provide irrigation water to the Sun River Project. Gibson Reservoir is operated under the following criteria and limitations:

(1) Beginning near the first of January and at least monthly thereafter through June, forecasts are made of the estimated spring inflow from snow cover and precipitation data. When these forecasts become available, the Facility Operation and Maintenance Division provides assistance to Greenfields Irrigation District to provide incidental flood control and prevent storage content in Gibson Reservoir from exceeding elevation 4724.0 ft until the peak of the spring runoff has passed and has begun to recede.

(2) The spillway crest elevation is 4712.0 ft (83,248 AF). The spillway gates will remain open until after the peak inflow has occurred. The remaining 12 ft of storage shall be filled with recession inflows. This will normally occur during mid to late June or early July.

(3) Once Gibson Reservoir has filled or reached its maximum level during spring runoff (normally late June or early July), releases are set to maintain the reservoir at or below elevation 4724.0 ft.

(4) After the spring runoff is over, releases during the remainder of the irrigation season from July through mid-October are adjusted as necessary to meet the irrigation demands of the Sun River Project.

(5) When irrigation demands on the Sun River Project place heavy demands on storage in Gibson Reservoir, the reservoir should not be drafted lower than elevation 4609.0 ft (5,148 AF) to prevent sediment from being flushed through the reservoir in an effort to protect the water quality of the Sun River downstream of the dam.

(6) During the non-irrigation season, Gibson Reservoir should be maintained below elevation of 4712.0 ft (83,248 AF) to provide incidental flood control. During most years, Gibson Reservoir is generally maintained below elevation 4700.9 ft (70,000 AF). When normal or above normal inflow is forecasted, the end-of-April target storage content is 55,000 AF. When below normal inflow is forecasted, the end-of-April target storage content can be increased but set no higher than 70,000 AF.

(7) Whenever an adequate water supply is available, releases from Gibson Reservoir will be maintained at rates to sustain flows in the Sun River below Sun River Diversion Dam at 100 cfs or higher and in the river below the Fort Shaw Diversion Dam at 50 cfs or higher. This is normally required to achieve the desired end-of-April content and

minimize impacts to downstream river fisheries and recreation activities. During below normal runoff years, it may be necessary to reduce the releases to as low as 50 cfs in the Sun River below the Sun River Diversion Dam, the absolute minimum flow required to protect the river fishery.

(8) Releases during July through September are made as necessary to meet irrigation requirements.

Weather conditions turned warmer and dry in July, as precipitation in the valley and mountain areas were below average at 65 and 62 percent of average, respectively. The above average snowpack produced an actual April through July runoff total of 487,500 AF, 121 percent of average for the basin. The inflows during April, May, June, and July were 90, 137, 115, and 121 percent of average, respectively.

Temperatures during August varied throughout the month, while a heavy storm system over the state produced above average precipitation. The valley precipitation in August was 178 percent of average, while the mountain precipitation was 141 percent of average. These late rains assisted in higher than average reservoir elevations and ensured a full water supply for the irrigation district. September weather was warmer than normal with below average precipitation in the Sun River Basin. The August through September inflow to Gibson Reservoir totaled about 40,300 AF, 100 percent of average. During September the average inflow was approximately 260 cfs. Gibson Reservoir ended the water year with a content of 16,454 AF of storage at elevation 4634.69 ft on September 30, 2014. This was 86 percent of average and 17 percent of normal full. The total inflow for Gibson Reservoir during 2014 was approximately 587,400 AF, 112 percent of the 30-year average.

The most probable October inflows to Gibson Reservoir were estimated to equal the 30 percentile, or flows that would be exceeded 70 percent of the time. The November through December inflows were estimated to equal the 40 percentile, or flows that would be exceeded 60 percent of the time. January through September flows are estimated to be 50 percentile flows, or flows that would be exceeded 50 percent of the time.

The minimum probable October inflows to Gibson Reservoir were estimated to equal near the 20 percentile, or flows that would be exceeded 80 percent of the time. The January through September flows are estimated to be 10 percentile flows, or flows that would be exceeded 90 percent of the time.

The maximum probable October inflows to Gibson Reservoir were estimated to equal the 50 percentile, or flows that would be exceeded 50 percent of the time. The November and December inflows were estimated to equal the 75 percentile, or flows that would be exceeded 25 percent of the time. January through September flows are estimated to be 90 percentile flows, or flows that would be exceeded 10 percent of the time.

Gibson Reservoir is expected to fill to the top of the conservation pool at elevation 4724.0 ft (98,688 AF) under the most, minimum, and maximum probable runoff scenarios. Based upon the storage content of Gibson Reservoir on September 30, 2014, a winter release of

approximately 100 cfs - 250 cfs over the Sun River Diversion Dam can be maintained. These flow rates will vary as runoff and snowpack conditions change.

TABLE MTT14A

GIBSON RESERVOIR MONTHLY OPERATIONS
Based on October 2014 Inflow Estimates

2015 Minimum Probable Runoff

Gibson Reservoir		Initial Cont		Elev 4634.59 ft	16.4 kaf		Maximum Cont		Elev 4724.01 ft	98.7 kaf		Minimum Cont	Elev 4608.47 ft	5.0 kaf	
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	13.3	10.7	9.2	10.1	8.5	11.2	29.6	98.0	88.8	33.2	15.8	15.5	343.9
Spillway Rels	cfs	0	0	0	0	0	0	0	0	0	0	0	0	
Total Release	kaf	9.1	4.8	4.6	4.5	4.2	4.0	9.5	67.6	88.8	99.2	43.5	15.5	355.3
Total Release	cfs	148	81	75	73	76	65	160	1099	1492	1613	707	260	
End-Month Content	kaf	20.6	26.5	31.1	36.7	41.0	48.2	68.3	98.7	98.7	32.7	5.0	5.0	
End-Month Elevation	ft	4642.10	4651.75	4658.57	4666.23	4671.64	4679.80	4699.34	4724.01	4724.01	4660.83	4608.47	4608.47	
End-Month Area	acre	581.9	646.0	700.4	764.3	826.6	935.2	1118.1	1334.0	1334.0	719.5	271.7	271.7	
Net Change Content	kaf	4.2	5.9	4.6	5.6	4.3	7.2	20.1	30.4	0.0	-66.0	-27.7	0.0	-11.4

Sun River Div Dam	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Gain Below Gibson	cfs	20	20	24	26	25	34	57	184	215	78	29	22	
Rels to WFC	cfs	68	0	0	0	0	0	0	36	0	0	0	0	
Rels to PSC	cfs	0	0	0	0	0	0	116	1091	1333	1360	444	198	
Total Diversion	kaf	4.2	0.0	0.0	0.0	0.0	0.0	6.9	69.3	79.3	83.6	27.3	11.8	282.4
Total Diversion	cfs	68	0	0	0	0	0	116	1127	1333	1360	444	198	
Flow Over Div Dam	kaf	6.1	6.0	6.1	6.1	5.6	6.1	6.0	9.6	22.3	20.4	18.0	5.0	117.3
Flow Over Div Dam	cfs	99	101	99	99	101	99	101	156	375	332	293	84	
Min River Rels	kaf	6.1	6.0	6.1	6.1	5.6	6.1	6.0	6.1	6.0	3.1	3.1	3.0	63.3
Min River Rels	cfs	100	100	100	100	100	100	100	100	100	50	50	50	

Willow Crk Operations		Initial Cont		Elev 4136.69 ft	24.4 kaf		Maximum Cont		Elev 4142.04 ft	31.9 kaf		Minimum Cont	Elev 4093.42 ft	0.1 kaf	
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Native Inflow	kaf	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2
Total Inflow	kaf	3.6	0.0	0.0	0.0	0.0	0.1	0.1	1.9	0.0	0.0	0.0	0.0	5.7
WCR Dam Rels	kaf	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	5.6	2.6	8.3
End-Month Content	kaf	28.0	28.0	28.0	28.0	28.0	28.0	28.1	30.0	30.0	30.0	24.4	21.8	
End-Month Elevation	ft	4139.31	4139.31	4139.31	4139.31	4139.31	4139.31	4139.38	4140.72	4140.72	4140.72	4136.69	4134.72	
Net Change Content	kaf	3.6	0.0	0.0	0.0	0.0	0.0	0.1	1.9	0.0	0.0	-5.6	-2.6	-2.6

Pishkun Operations		Initial Cont		Elev 4362.39 ft	35.8 kaf		Maximum Cont		Elev 4370.00 ft	46.7 kaf		Minimum Cont	Elev 4341.99 ft	16.0 kaf	
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Rels to PSC	kaf	0.0	0.0	0.0	0.0	0.0	0.0	6.9	67.1	79.3	83.6	27.3	11.8	276.0
Total Inflow	kaf	0.0	0.0	0.0	0.0	0.0	0.0	5.9	53.7	65.0	71.1	23.2	10.0	228.9
PSH Dam Rels	kaf	0.5	0.0	0.0	0.0	0.0	0.0	0.0	47.0	65.0	85.0	40.0	10.0	247.5
End-Month Content	kaf	35.3	35.1	34.9	34.7	34.5	34.3	40.0	46.7	46.7	32.8	16.0	16.0	
End-Month Elevation	ft	4362.01	4361.86	4361.71	4361.55	4361.40	4361.24	4365.44	4370.00	4370.00	4360.05	4341.99	4341.99	
Net Change Content	kaf	-0.5	-0.2	-0.2	-0.2	-0.2	-0.2	5.7	6.7	0.0	-13.9	-16.8	0.0	-19.8

Greenfields Irrig	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
GID Demand	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.0	65.0	85.0	40.0	10.0	247.0
GID Delivery	kaf	0.5	0.0	0.0	0.0	0.0	0.0	0.0	47.0	65.0	85.0	40.0	10.0	247.5

River Blw Div Dam	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Flow Over Div Dam	cfs	99	101	99	99	101	99	101	156	375	332	293	84	
PSC Return Flow	cfs	0	0	0	0	0	0	13	174	192	203	67	30	
WCR Dam Rels	cfs	0	0	0	0	0	2	0	0	0	0	91	44	
Sr Demand Above	kaf	1.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	12.9	13.3	13.3	2.0	50.2
Sr Demand Below	kaf	1.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	5.4	5.5	5.5	2.0	24.9
Flow @ Ft.Shaw Div	cfs	81	109	112	114	117	125	163	228	366	236	164	101	
Ft Shaw Demand	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	8.5	11.4	7.0	3.0	34.9
Ft Shaw Tot Deliv	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	8.5	11.4	7.0	3.0	34.9
Flow blw Ft. Shaw	cfs	81	109	112	114	117	125	163	146	224	50	50	50	

TABLE MTT14B

GIBSON RESERVOIR MONTHLY OPERATIONS
Based on October 2014 Inflow Estimates

2015 Most Probable Runoff

Gibson Reservoir		Initial Cont Elev	16.4 kaf 4634.59 ft			Maximum Cont Elev	98.7 kaf 4724.01 ft			Minimum Cont Elev	5.0 kaf 4608.47 ft		
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	15.1	15.1	13.1	12.8	11.2	14.3	39.0	185.3	174.7	59.4	25.7	20.2	585.9
Spillway Rels	cfs	0	0	0	0	0	0	0	0	0	0	0	0	
Total Release	kaf	11.8	7.2	7.4	7.4	6.7	7.5	25.5	164.9	159.9	99.2	79.6	20.2	597.3
Total Release	cfs	192	121	120	120	121	122	429	2682	2687	1613	1295	339	
End-Month Content	kaf	19.7	27.6	33.3	38.7	43.2	50.0	63.5	83.9	98.7	58.9	5.0	5.0	
End-Month Elevation	ft	4640.54	4653.43	4661.66	4668.80	4674.25	4681.70	4694.96	4712.53	4724.01	4690.60	4608.47	4608.47	
End-Month Area	acre	572.7	659.6	726.0	791.5	863.0	958.1	1072.1	1242.4	1334.0	1038.5	271.7	271.7	
Net Change Content	kaf	3.3	7.9	5.7	5.4	4.5	6.8	13.5	20.4	14.8	-39.8	-53.9	0.0	-11.4

Sun River Div Dam	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Gain Below Gibson	cfs	20	20	24	26	25	34	57	184	215	78	29	22	
Rels to WFC	cfs	72	0	0	0	0	0	0	75	0	0	0	0	
Rels to PSC	cfs	0	0	0	0	0	0	116	1091	1333	1360	1023	99	
Total Diversion	kaf	4.4	0.0	0.0	0.0	0.0	0.0	6.9	71.7	79.3	83.6	62.9	5.9	314.7
Total Diversion	cfs	72	0	0	0	0	0	116	1166	1333	1360	1023	99	
Flow Over Div Dam	kaf	8.6	8.4	8.9	9.0	8.1	9.6	22.0	104.5	93.4	20.4	18.5	15.6	327.0
Flow Over Div Dam	cfs	140	141	145	146	146	156	370	1700	1570	332	301	262	
Min River Rels	kaf	8.6	8.3	8.6	8.6	7.8	8.6	8.3	104.5	89.3	3.1	3.1	3.0	261.8
Min River Rels	cfs	140	140	140	140	140	140	140	1700	1500	50	50	50	

Willow Crk Operations		Initial Cont Elev	24.3 kaf 4136.61 ft			Maximum Cont Elev	31.9 kaf 4142.04 ft			Minimum Cont Elev	0.1 kaf 4093.42 ft		
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Native Inflow	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Inflow	kaf	3.7	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.0	0.0	0.0	7.6
WCR Dam Rels	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	3.9
End-Month Content	kaf	28.0	28.0	28.0	28.0	28.0	28.0	28.0	31.9	31.9	31.9	28.0	28.0	
End-Month Elevation	ft	4139.31	4139.31	4139.31	4139.31	4139.31	4139.31	4139.31	4142.04	4142.04	4142.04	4139.31	4139.31	
Net Change Content	kaf	3.7	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.0	-3.9	0.0	3.7

Pishkun Operations		Initial Cont Elev	35.8 kaf 4362.39 ft			Maximum Cont Elev	46.8 kaf 4370.07 ft			Minimum Cont Elev	16.0 kaf 4341.99 ft		
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Rels to PSC	kaf	0.0	0.0	0.0	0.0	0.0	0.0	6.9	67.1	79.3	83.6	62.9	5.9	305.7
Total Inflow	kaf	0.0	0.0	0.0	0.0	0.0	0.0	5.9	53.7	65.0	71.1	53.5	5.0	254.2
PSH Dam Rels	kaf	0.5	0.0	0.0	0.0	0.0	0.0	0.0	47.0	65.0	85.0	48.0	18.0	263.5
End-Month Content	kaf	35.3	35.1	34.9	34.7	34.5	34.3	40.0	46.7	46.7	32.8	38.3	25.3	
End-Month Elevation	ft	4362.01	4361.86	4361.71	4361.55	4361.40	4361.24	4365.44	4370.00	4370.00	4360.05	4364.22	4353.16	
Net Change Content	kaf	-0.5	-0.2	-0.2	-0.2	-0.2	-0.2	5.7	6.7	0.0	-13.9	5.5	-13.0	-10.5

Greenfields Irrig	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
GID Demand	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.0	65.0	85.0	48.0	18.0	263.0
GID Delivery	kaf	0.5	0.0	0.0	0.0	0.0	0.0	0.0	47.0	65.0	85.0	48.0	18.0	263.5

River Blw Div Dam	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Flow Over Div Dam	cfs	140	141	145	146	146	156	370	1700	1570	332	301	262	
PSC Return Flow	cfs	0	0	0	0	0	0	13	174	217	203	153	13	
WCR Dam Rels	cfs	0	0	0	0	0	0	0	0	0	0	63	0	
Sr Demand Above	kaf	1.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	12.9	13.3	13.3	2.0	50.2
Sr Demand Below	kaf	1.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	5.4	5.5	5.5	2.0	24.9
Flow @ Ft.Shaw Div	cfs	122	150	158	161	162	181	432	1771	1586	236	223	218	
Ft Shaw Demand	kaf	1.0	0.0	0.0	0.0	0.0	0.0	0.0	7.9	8.0	11.4	10.6	10.0	48.9
Ft Shaw Tot Deliv	kaf	1.0	0.0	0.0	0.0	0.0	0.0	0.0	7.9	8.0	11.4	10.6	10.0	48.9
Flow blw Ft. Shaw	cfs	106	150	158	161	162	181	432	1643	1452	50	50	50	

TABLE MTT14C

GIBSON RESERVOIR MONTHLY OPERATIONS
Based on October 2014 Inflow Estimates

2015 Maximum Probable Runoff

Gibson Reservoir		Initial Cont	16.4 kaf	Maximum Cont	98.7 kaf	Minimum Cont	5.0 kaf					
		Elev	4634.59 ft	Elev	4724.01 ft	Elev	4608.47 ft					
2014		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	19.3	20.1	18.3	16.5	14.9	16.7	50.6	214.2	306.9	104.3	35.6	24.0	841.4
Spillway Rels	cfs	0	0	0	0	0	0	0	3	0	0	0	0	
Total Release	kaf	18.6	13.7	13.9	13.8	12.5	13.3	43.3	173.8	292.3	104.3	90.3	20.5	810.3
Total Release	cfs	303	230	226	224	225	216	728	2827	4912	1696	1469	345	
End-Month Content	kaf	17.1	23.5	27.9	30.6	33.0	36.4	43.7	84.1	98.7	98.7	44.0	47.5	
End-Month Elevation	ft	4635.89	4646.97	4653.88	4657.86	4661.25	4665.83	4674.83	4712.69	4724.01	4724.01	4675.17	4679.05	
End-Month Area	acre	543.9	610.9	663.3	695.0	722.9	760.6	871.2	1243.7	1334.0	1334.0	876.2	926.9	
Net Change Content	kaf	0.7	6.4	4.4	2.7	2.4	3.4	7.3	40.4	14.6	0.0	-54.7	3.5	31.1

Sun River Div Dam	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Gain Below Gibson	cfs	20	20	24	26	25	34	57	184	215	78	29	22	
Rels to WFC	cfs	72	0	0	0	0	0	0	0	76	0	0	0	
Rels to PSC	cfs	0	0	0	0	0	0	284	1111	1314	1400	1145	124	
Total Diversion	kaf	4.4	0.0	0.0	0.0	0.0	0.0	16.9	68.3	82.7	86.1	70.4	7.4	336.2
Total Diversion	cfs	72	0	0	0	0	0	284	1111	1390	1400	1145	124	
Flow Over Div Dam	kaf	15.4	14.9	15.4	15.4	13.9	15.4	29.8	116.8	222.4	23.0	21.7	14.4	518.5
Flow Over Div Dam	cfs	250	250	250	250	250	250	501	1900	3738	374	353	242	
Min River Rels	kaf	15.4	14.9	15.4	15.4	13.9	15.4	29.8	116.8	119.0	18.4	12.3	11.9	398.6
Min River Rels	cfs	250	250	250	250	250	250	500	1900	2000	300	200	200	

Willow Crk Operations		Initial Cont	24.3 kaf	Maximum Cont	31.9 kaf	Minimum Cont	0.1 kaf					
		Elev	4136.61 ft	Elev	4142.04 ft	Elev	4093.42 ft					
2014		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Native Inflow	kaf	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2
Total Inflow	kaf	3.7	0.0	0.0	0.0	0.0	0.1	0.1	0.0	3.8	0.0	0.0	0.0	7.7
WCR Dam Rels	kaf	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.9	1.0
End-Month Content	kaf	28.0	28.0	28.0	28.0	28.0	28.0	28.1	28.1	31.9	31.9	31.9	31.0	
End-Month Elevation	ft	4139.31	4139.31	4139.31	4139.31	4139.31	4139.31	4139.38	4139.38	4142.04	4142.04	4142.04	4141.42	
Net Change Content	kaf	3.7	0.0	0.0	0.0	0.0	0.0	0.1	0.0	3.8	0.0	0.0	-0.9	6.7

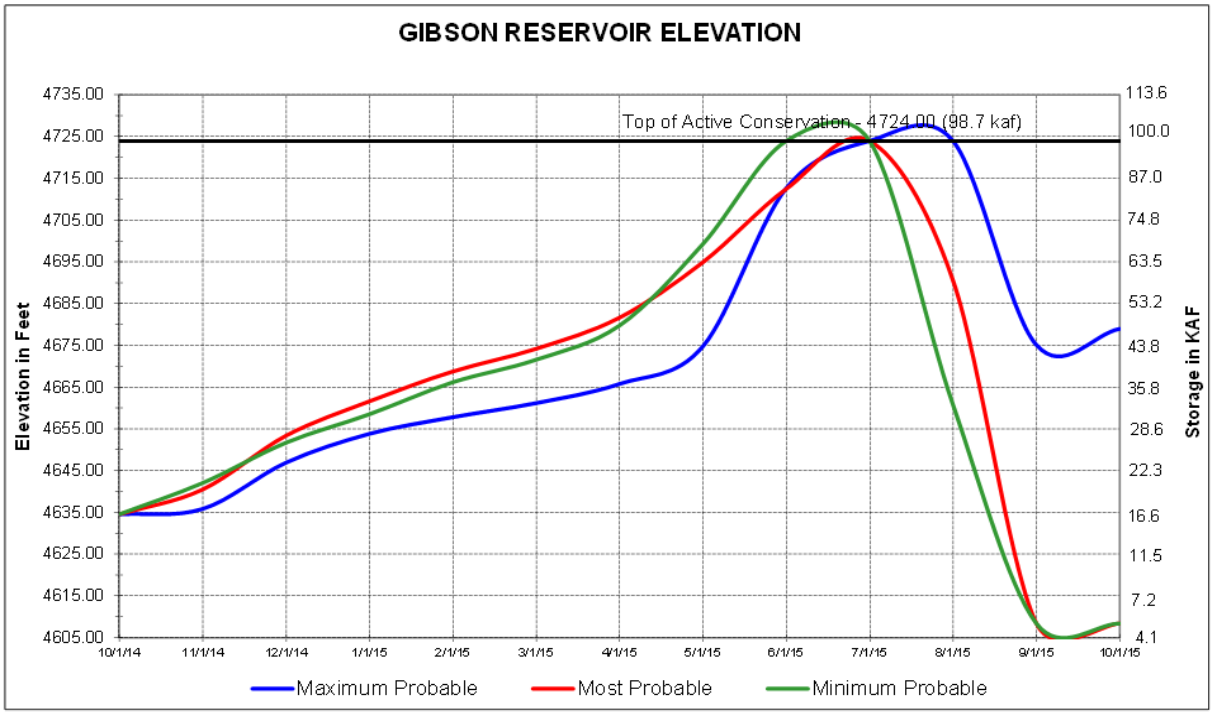
Pishkun Operations		Initial Cont	35.8 kaf	Maximum Cont	46.8 kaf	Minimum Cont	16.0 kaf					
		Elev	4362.39 ft	Elev	4370.07 ft	Elev	4341.99 ft					
2014		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Rels to PSC	kaf	0.0	0.0	0.0	0.0	0.0	0.0	16.9	68.3	78.2	86.1	70.4	7.4	327.3
Total Inflow	kaf	0.0	0.0	0.0	0.0	0.0	0.0	14.4	54.6	64.1	73.2	59.8	6.3	272.4
PSH Dam Rels	kaf	0.0	0.0	0.0	0.0	0.0	0.0	9.0	47.0	65.0	85.0	48.0	18.0	272.0
End-Month Content	kaf	35.8	35.6	35.4	35.2	35.0	34.8	40.0	47.6	46.7	34.9	46.7	35.0	
End-Month Elevation	ft	4362.39	4362.24	4362.09	4361.94	4361.78	4361.63	4365.44	4370.59	4370.00	4361.71	4370.00	4361.78	
Net Change Content	kaf	0.0	-0.2	-0.2	-0.2	-0.2	-0.2	5.2	7.6	-0.9	-11.8	11.8	-11.7	-0.8

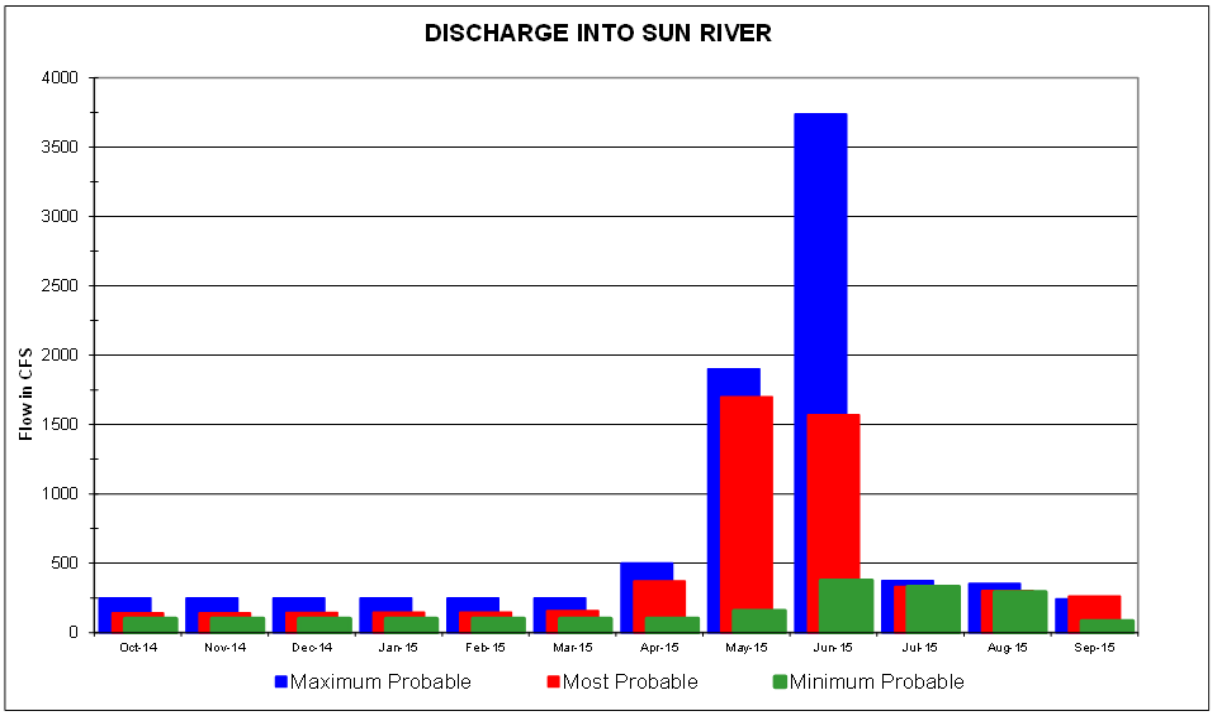
Greenfields Irrig	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
GID Demand	kaf	0.0	0.0	0.0	0.0	0.0	0.0	9.0	47.0	65.0	85.0	48.0	18.0	272.0
GID Delivery	kaf	0.0	0.0	0.0	0.0	0.0	0.0	9.0	47.0	65.0	85.0	48.0	18.0	272.0

River Blw Div Dam	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Flow Over Div Dam	cfs	250	250	250	250	250	250	501	1900	3738	374	353	242	
PSC Return Flow	cfs	0	0	0	0	0	0	34	179	190	179	155	18	
WCR Dam Rels	cfs	0	0	0	0	0	2	0	0	0	0	0	15	
Sr Demand Above	kaf	1.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	12.9	13.3	13.3	2.0	50.2
Sr Demand Below	kaf	1.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	5.4	5.5	5.5	2.0	24.9
Flow @ Ft.Shaw Div	cfs	233	259	263	265	266	276	583	1976	3727	254	213	218	
Ft Shaw Demand	kaf	0.0	0.0	0.0	0.0	0.0	0.0	1.0	8.5	8.5	11.4	10.0	10.0	49.4
Ft Shaw Tot Deliv	kaf	0.0	0.0	0.0	0.0	0.0	0.0	1.0	8.5	8.5	11.4	10.0	10.0	49.4
Flow blw Ft. Shaw	cfs	233	259	263	265	266	276	566	1838	3585	68	50	50	

FIGURE MTG15

GIBSON RESERVOIR





WATER YEAR 2015

Lake Elwell (Tiber Dam)

Three operating plans were prepared for 2015 to show the operations of Lake Elwell which could occur under various runoff conditions. These operations for the three runoff conditions are shown in Table MTT15 and Figure MTG16. These plans are presented only to show the probable limits of operations; therefore, actual conditions and operations could vary widely from the plans.

In 2002, Reclamation surveyed Lake Elwell to develop a topographic map and compute a present storage elevation relationship (area-capacity tables). The data were used to calculate reservoir capacity lost due to sediment accumulation since dam closure in October of 1957. The 2002 survey determined that Lake Elwell has a storage capacity of 925,649 AF and a surface area of 18,275 acres at a reservoir elevation of 2993.00 ft. Since closure in 1957, the reservoir has accumulated a sediment volume of 42,179 AF below elevation 2993.00 ft. This volume represents a 4.4 percent change in total capacity at this elevation. The revised area-capacity table was put into effect on October 1, 2005, reflecting the new storage levels.

The objectives of operations at Lake Elwell are to provide flood control in cooperation with the Corps of Engineers, to provide fish and wildlife enhancement to the area, and supply water for irrigation and municipal uses. The reservoir is operated under the following criteria and limitations:

1. Whenever an adequate water supply is available, Tiber Dam and Reservoir is operated to maintain a minimum flow of 500 cfs or more in the Marias River immediately below Tiber Dam to provide a healthy river fishery. When an adequate water supply is not available to maintain a release of 500 cfs, releases will be reduced to 380 cfs during the irrigation season and to 320 cfs during the non-irrigation season. During periods of extreme extended drought it may be necessary to reduce releases to as low as 250 cfs during the non-irrigation season.

2. During unusually low runoff years, the reservoir may not fill in order to maintain the desired or minimum flow levels.

3. Based on monthly seasonal water supply forecasts prepared during January through June, releases are adjusted to allow storage to fill to elevation 2993 ft (925,649 AF) (top of joint-use pool) by the end of June.

4. To minimize lowland flooding, maximum releases are currently maintained below 5,500 cfs. The maximum safe channel capacity of the Marias River is currently established as 10,000 cfs.

5. After storage has peaked, usually in June, releases are adjusted to evacuate storage to an elevation between 2976 ft - 2980 ft (667,213 AF -719,885 AF) by March 1, 2014. This elevation is dependent upon the monthly water supply

forecasts in order to provide adequate space to control the next season's snowmelt runoff.

6. Maintain Tiber Reservoir at or above elevation 2982 ft (747,953 AF) during Memorial Day Weekend in late May through Labor Day Weekend in early September to protect flat water recreation interests.

7. During October to early November, set a release that can be reasonably maintained through the fall and winter. A stable flow or one that is gradually increased during the winter is needed to protect the spawning habitat for Brown Trout. This flow rate should be low enough to minimize the possibility that flows may need to be reduced as a result of below normal winter mountain snowpack and runoff projections.

8. If conditions allow, attempt to maintain stable releases to Marias River during April 1, 2014 through May 15, 2014 to protect goose nesting.

9. If conditions allow, avoid dropping the reservoir level during April and May, to protect fish spawning in the reservoir.

10. In close coordination with Montana Fish Wildlife and Parks (MFWP), whenever an adequate water supply is available and conditions allow, releases will be scheduled to assimilate a natural spring runoff hydrograph which normally occurs in late May or early June.

11. All flood control operations are closely coordinated with the Corps. If the Corps advises that replacement storage is desirable during the maximum probable runoff, releases during the spring runoff period from March through June will be maintained at about 500 cfs, allowing storage to exceed elevation 2993 ft (925,649 AF), the top of the joint use pool.

12. March through June releases are based on forecasted inflows with the objective of filling Lake Elwell to an elevation of 2993 ft (925,649 AF) by the end of June. However, in some years, March through June releases may be based on filling the reservoir to as high as an elevation of 3008 ft (1,227,174 AF) by the end of June; to provide replacement storage and assist the Corps with the operations of their mainstem reservoir system.

13. Whenever possible, attempts are made to maintain water temperatures in the Marias River between 55°F and 60°F during June 1, 2014 through September 15, 2014.

14. To prevent ice jam flooding from occurring, the maximum desired winter release is maintained no higher than 700 cfs.

15. Under normal operations, river releases of up to about 700 cfs will generally be released through the 7.5 megawatts (MW) FERC power plant. If releases greater than 700 cfs are required, flows in excess of the power plant capacity will be released through a combination of the river outlet works regulating gate, through the auxiliary outlet works or through the spillway gates.

By the end of WY 2014, the total annual valley and mountain precipitation was above average at 123 and 105 percent of average. The total annual runoff into Lake Elwell during 2014 was 652,721 AF, 125 percent of average and 187,000 AF more than experienced in 2013. At the beginning of WY 2014, the storage content in Lake Elwell was 830,583 AF at elevation 2987.50 ft, 106 percent of normal and 90 percent of full capacity. This was 0.17 ft and 2,738 AF lower than this same time a year ago.

The most probable October through December inflows to Lake Elwell were estimated to at 55 percentile inflows or inflows that are historically exceeded 45 percent of the time. The most probable inflows to Lake Elwell for January through September were estimated to equal 50 percentile inflows or inflows that are historically exceeded 50 percent of the time.

The minimum probable October through December inflows to Lake Elwell were estimated to equal 25 percentile inflows or inflows that are historically exceeded 75 percent of the time. The minimum probable inflows to Lake Elwell for January through September were estimated to equal lower decile inflows or inflows that are historically exceeded 90 percent of the time.

The maximum probable October through September inflows to Lake Elwell were estimated to equal 90 percentiles inflows or inflows that are historically exceeded 10 percent of the time.

Water levels are expected to peak in late June or early July at approximately 7.5 ft below the top of the joint use pool under the minimum probable runoff condition. Under the most and maximum probable runoff conditions, the water level in Lake Elwell is expected to peak in late June or early July at or near the top of the joint use pool. A minimum river release of 600 cfs would be maintained through the winter under all three runoff conditions.

TABLE MTT15

TIBER RESERVOIR OPERATING PLAN
Based on October 1 2014 Inflow Estimates

2015 MINIMUM Probable Inflow Forecast

Tiber Reservoir		Initial Cont Elev	830.6 kaf 2987.50 ft			Maximum Cont Elev	1356.5 kaf 3013.69 ft			Minimum Cont Elev	260.7 kaf 2932.27 ft		
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	13.0	14.2	11.1	11.1	13.4	21.5	34.8	78.3	68.6	18.6	4.9	4.9	294.4
Evaporation	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dam Release	kaf	36.9	35.7	36.9	36.9	30.5	30.7	29.8	30.7	29.8	30.7	30.7	29.8	389.1
Dam Release	cfs	600	600	600	600	549	499	501	499	501	499	499	501	
End-Month Content	kaf	806.7	785.2	759.4	733.6	716.5	707.3	712.3	759.9	798.7	786.6	760.8	735.9	
End-Month Elevation	ft	2985.98	2984.56	2982.80	2980.99	2979.75	2979.07	2979.44	2982.83	2985.46	2984.65	2982.89	2981.15	
Net Change Content	kaf	-23.9	-21.5	-25.8	-25.8	-17.1	-9.2	5.0	47.6	38.8	-12.1	-25.8	-24.9	-94.7

2015 MOST Probable Inflow Forecast

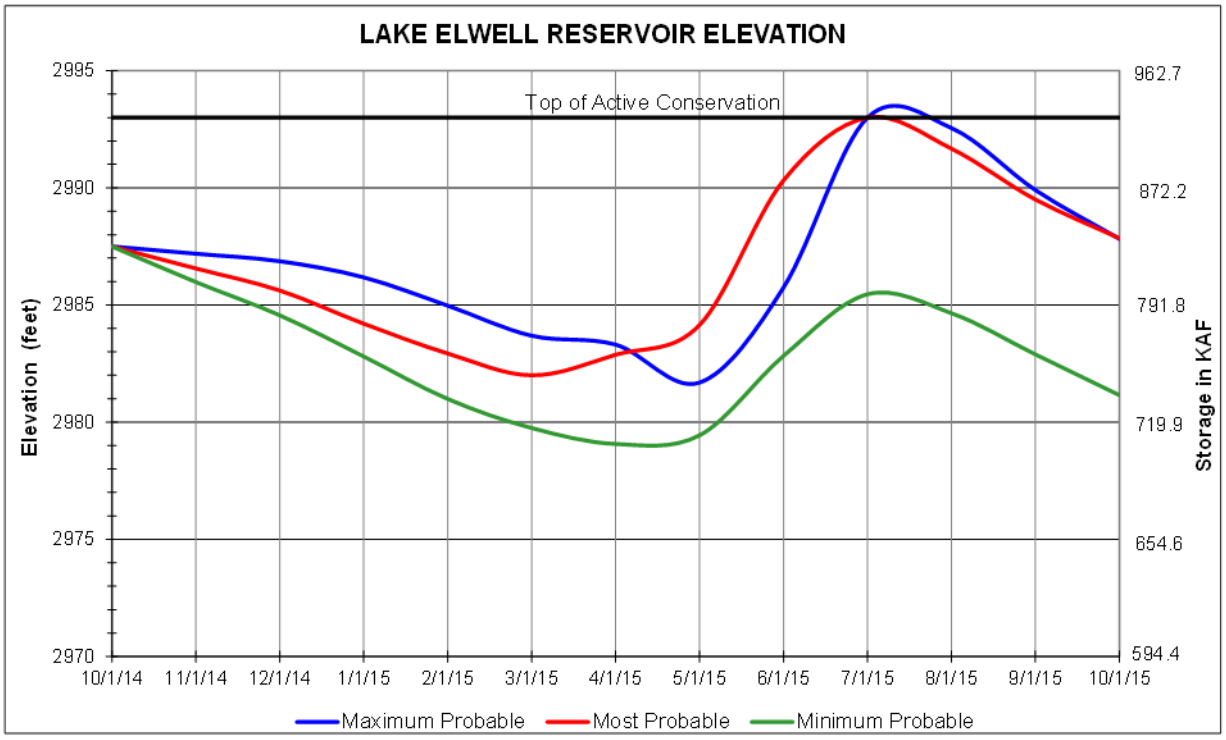
Tiber Reservoir		Initial Cont Elev	830.6 kaf 2987.50 ft			Maximum Cont Elev	1356.5 kaf 3013.69 ft			Minimum Cont Elev	260.7 kaf 2932.27 ft		
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	22.1	21.4	15.8	18.4	20.1	49.5	60.3	163.5	142.7	49.7	17.5	14.3	595.3
Evaporation	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dam Release	kaf	37.0	35.9	37.0	37.0	33.5	36.9	41.7	65.0	94.8	73.8	55.3	41.7	589.6
Dam Release	cfs	602	603	602	602	603	600	701	1057	1593	1200	899	701	
End-Month Content	kaf	815.7	801.2	780.0	761.4	748.0	760.6	779.2	877.7	925.6	901.5	863.7	836.3	
End-Month Elevation	ft	2986.56	2985.62	2984.20	2982.93	2982.00	2982.88	2984.15	2990.32	2993.00	2991.67	2989.50	2987.85	
Net Change Content	kaf	-14.9	-14.5	-21.2	-18.6	-13.4	12.6	18.6	98.5	47.9	-24.1	-37.8	-27.4	5.7

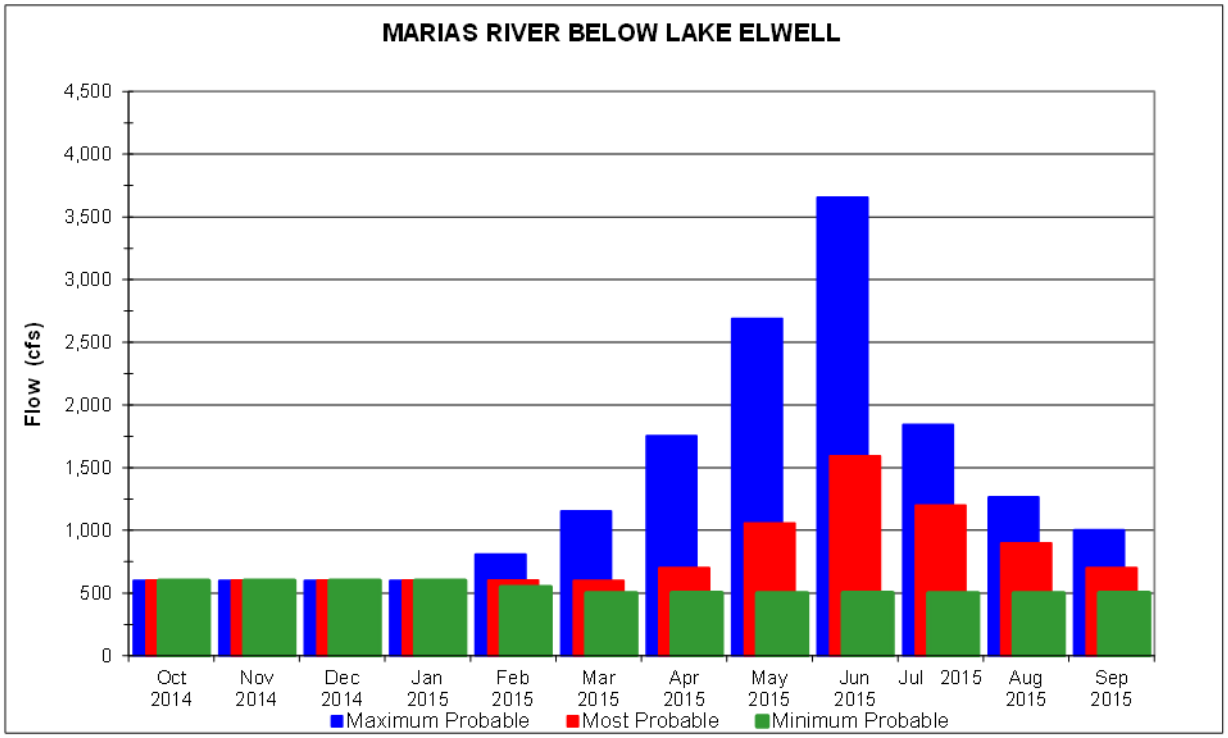
2015 MAXIMUM Probable Inflow Forecast

Tiber Reservoir		Initial Cont Elev	830.6 kaf 2987.50 ft			Maximum Cont Elev	1356.5 kaf 3013.69 ft			Minimum Cont Elev	260.7 kaf 2932.27 ft		
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	31.9	30.7	26.1	18.4	26.1	65.3	81.1	225.1	340.0	105.2	30.9	25.0	1005.8
Evaporation	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dam Release	kaf	36.9	35.7	36.9	36.9	45.0	70.9	104.4	165.4	217.6	113.4	77.8	59.7	1000.6
Dam Release	cfs	600	600	600	600	810	1153	1755	2690	3657	1844	1265	1003	
End-Month Content	kaf	825.6	820.6	809.8	791.3	772.4	766.8	743.5	803.2	925.6	917.4	870.5	835.8	
End-Month Elevation	ft	2987.19	2986.87	2986.18	2984.97	2983.69	2983.31	2981.69	2985.75	2993.00	2992.55	2989.90	2987.82	
Net Change Content	kaf	-5.0	-5.0	-10.8	-18.5	-18.9	-5.6	-23.3	59.7	122.4	-8.2	-46.9	-34.7	5.2

FIGURE MTG16

LAKE ELWELL





WATER YEAR 2015

Milk River Project

The 120,000-acre Milk River Project is served by three reservoirs: Sherburne, Fresno, and Nelson Reservoirs. All are single-purpose irrigation structures except Fresno, which has some joint-use flood control space and furnishes a small amount of municipal water to Havre, Chinook, and Harlem, Montana, and to the Hill County Water District.

Lake Sherburne

Storage on September 30, 2014 was 31,216 AF, 202 percent of average at elevation 4763.80 ft. The total inflow to Lake Sherburne during WY 2014 was 161,900 AF, 115 percent of average. The division of the waters of the St. Mary River, including Lake Sherburne inflow, is carried out in accordance with the Order of the International Joint Commission dated October 4, 1921. There are no agreements for reservoir releases specifically for fish, wildlife, or recreation purposes. There is no minimum release requirement. All stored water is required for irrigation use, and other uses are incidental. Lake Sherburne lands are administered for recreation and wildlife habitat by the National Park Service in accordance with the management plan for Glacier National Park. Lake Sherburne is operated under the following criteria:

1. Near the end of the spring runoff, the discharge should be regulated based on snow measurements and inflow forecasts to insure filling the reservoir to elevation 4788.00 ft. The final reservoir filling up to elevation 4788.00 ft should be delayed until near the end of the spring runoff. During this final phase, care should be taken to avoid use of the outlet works overflow crest because of less desirable hydraulic flow conditions which develop in the conduit. When the water surface reaches elevation 4788.00 ft, the outlet gates must be opened to the extent necessary to maintain this elevation. If reservoir inflows continue to increase, the outlet gates must be fully opened and maintained in the full open position until the water surface recedes to elevation 4788.00 ft.

2. Every effort must be made to prevent the reservoir from spilling while assuring a full reservoir. During all stages, except the final stage of the spring runoff, the outlet gates should be adjusted to maintain the water surface no higher than elevation 4788.00 ft. The outlet gates should be fully opened during the spring runoff when the water surface rises to or above elevation 4788.00 ft and fully open at any time the water surface is above elevation 4788.00 ft.

Three operating plans were prepared for 2015 to show the operations which could occur under various runoff conditions. These plans were prepared to show the probable limits of operations, therefore, actual conditions and operations could vary widely from the plans.

The most probable plan October through September inflows were estimated at 50 percentile inflows or inflows that are exceeded half of the time.

The minimum probable October through December inflows to Lake Sherburne were estimated to equal 20 percentile inflows or inflows that are exceeded 80 percent of the time. The minimum probable January through September inflows to Lake Sherburne were estimated to equal 10 percentile inflows or inflows that are exceeded 90 percent of the time.

The maximum probable October through September inflows to Lake Sherburne are estimated to equal 90 percentile flows or inflows that are exceeded only 10 percent of the time.

Fresno Reservoir

The cumulative valley precipitation through the end of September 2014 was 120 percent of average. Total inflow into Fresno Reservoir for the water year was 261,400 AF, 102 percent of average. Diversions from the St. Mary River Basin to the Milk River Basin accounted for about 45 percent of the inflow to Fresno Reservoir during 2014. Releases were reduced to 110 cfs on September 21, 2014 allowing storage to be slowly drafted to 63,495 AF at elevation 2567.94 ft on September 30, 2014, 161 percent of average and 69 percent of normal full capacity.

Fresno Reservoir storage is primarily for irrigation and municipal water supply. However, the operation of the joint use storage space does provide both conservation use and limited flood control benefits. There is no exclusive flood control space, but some flood benefits are obtained by maintaining the water level below elevation 2567.0 ft by March 1, 2014 prior to spring runoff. Maintaining the water level below elevation 2567.0 ft provides 33,841 AF of space for storage of spring runoff.

Winter releases will be the amount necessary to provide a minimum of 33,841 AF of space before spring runoff begins, however, no less than 25 cfs to the Milk River as measured at the highway bridge at Havre. An anticipated release of approximately 100 cfs will be made from Fresno Reservoir during October through February to meet contractual amounts required for the maintenance of suitable water quality for municipal use for the cities of Havre, Chinook, and Harlem, Montana. After spring runoff begins, releases will be made only to meet conservation requirements until it becomes obvious that the reservoir will fill and spill. At that time, releases will be gradually increased so the spill will be minimized when the pool rises above the spillway crest.

The only required summer releases will be those for irrigation and municipal uses. Municipal requirements are established by contract and scheduled in advance by the municipal water contractors.

Inflows into Fresno Reservoir included runoff above Fresno Reservoir and diversions through the St Mary Canal. The runoff portion of the inflow is called the natural inflow.

The most probable plan used 50 percentile natural inflows or natural inflows that have historically been exceeded half of the time for October through September.

The minimum probable natural inflows during October through January to Fresno Reservoir are estimated to equal 25 percentile inflows that are historically exceeded 75 percent of the time. The minimum probable plan used 10 percentile natural inflows or natural inflows that have historically been exceeded 90 percent of the time for February through September.

The maximum probable natural inflows during October through September to Fresno Reservoir are estimated to equal 90 percent exceedance levels or conditions that would typically only be exceeded only 10 percent of the time.

Nelson Reservoir

Storage in Nelson Reservoir on September 30, 2014, was 71,491 AF, 134 percent of average at elevation 2219.82 ft. Malta Irrigation District tries to fill Nelson Reservoir in the spring, prior to the irrigation season, utilizing Dodson South Canal to convey water from the Milk River to the reservoir. Under most circumstances, water is transferred from storage in Fresno Reservoir in the early spring instead of in the fall to minimize seepage losses from Nelson Reservoir during the winter. However, if water is available in Fresno Reservoir after the irrigation season, it may be transferred to Nelson Reservoir to ensure a full supply for the following irrigation season. Nelson Reservoir is operated to satisfy irrigation demands and all other uses are incidental to irrigation. In conjunction with delivering water to Nelson Reservoir, water is conveyed through the Dodson South Canal to provide the Bowdoin Wildlife Refuge adequate water for migratory birds. Bowdoin usually receives a proportional share of their full contract allotment, 3,500 AF, based on the irrigation supply. The operation of Nelson Reservoir and delivery to Bowdoin is integrated with the operation of Fresno Reservoir and Lake Sherburne to ensure maximum utilization of expected runoff.

Starting in August 2015, a construction project involving the modification of Nelson Dikes will start. For the construction project Nelson Reservoir needs to be an elevation 2205.0 ft by August 25. This need is reflected in the three 2015 operating plans for the Milk River Project.

Irrigation shortages are not expected to occur under the maximum or most probable expected runoff, but could possibly occur under the minimum probable expected runoff. Lake Sherburne is expected to fill under all most and maximum probable plans. Fresno Reservoir is expected to fill under all three plans. These operations for the three runoff conditions are shown in Table MTT16A-C and Figure MTG17-18. With the high carryover, no water will need to be transferred from Fresno Reservoir to Nelson Reservoir during late spring of 2015. Nelson Reservoir is expected to fill from natural runoff occurring between Fresno Reservoir and Dodson Diversion Dam.

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TABLE MTT16A

MILK RIVER BASIN OPERATING PLAN
Based on October 1 Inflow Estimates

2015 Minimum Probable Runoff

Sherburne Reservoir		Initial Cont		31.2 kaf		Maximum Cont		66.2 kaf		Minimum Cont		3.1 kaf		
				Elev	4763.76 ft			Elev	4788.03 ft			Elev	4731.73 ft	
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Sherburne Inflow	kaf	5.1	4.3	3.4	2.2	1.4	2.9	8.5	25.1	27.2	14.4	6.4	3.9	104.8
Sherburne Rels	kaf	0.0	0.0	0.0	0.0	0.0	0.0	28.3	25.6	18.5	33.3	23.3	3.9	132.9
Sherburne Rels	cfs	0	0	0	0	0	0	476	416	311	542	379	66	
Net Content Change	kaf	5.1	4.3	3.4	2.2	1.4	2.9	-19.8	-0.5	8.7	-18.9	-16.9	0.0	-28.1
End-Month Content	kaf	36.3	40.6	44.0	46.2	47.6	50.5	30.7	30.2	38.9	20.0	3.1	3.1	
End-Month Elevation	ft	4768.04	4771.44	4773.93	4775.47	4776.43	4778.36	4763.32	4762.89	4770.13	4753.30	4731.73	4731.73	
St. Mary River	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
St Mary Runoff	kaf	11.0	6.8	5.8	4.0	4.6	4.1	7.4	68.2	81.5	42.1	21.7	14.5	271.7
Nat Flow @ Boundary	kaf	16.1	11.1	9.2	6.2	6.0	7.0	15.9	93.3	108.7	56.5	28.1	18.4	376.5
St Mary canal rels	cfs	0	0	0	0	0	0	400	600	600	600	389	77	
St Mary canal rels	kaf	0.0	0.0	0.0	0.0	0.0	0.0	23.8	36.9	35.7	36.9	23.9	4.6	161.8

Fresno Reservoir		Initial Cont		71.9 kaf		Maximum Cont		91.7 kaf		Minimum Cont		0.5 kaf		
				Elev	2570.73 ft			Elev	2575.00 ft			Elev	2531.90 ft	
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Milk River runoff	kaf	3.0	1.6	0.9	0.9	0.7	2.5	3.2	2.2	2.8	0.8	0.8	1.9	21.3
From St Mary Canal	kaf	0.0	0.0	0.0	0.0	0.0	0.0	21.4	33.2	32.1	33.2	21.5	4.1	145.5
Fresno inflow	kaf	3.0	1.6	0.9	0.9	0.7	2.5	24.6	35.4	34.9	34.0	22.3	6.0	166.8
Fresno Release	kaf	2.8	2.7	2.8	2.9	5.3	6.3	7.9	19.8	38.3	44.9	49.9	13.3	196.9
Fresno Release	cfs	46	45	46	47	95	102	133	322	644	730	812	224	
Net Content Change	kaf	0.2	-1.1	-1.9	-2.0	-4.6	-3.8	16.7	15.6	-3.4	-10.9	-27.6	-7.3	-30.1
End-Month Content	kaf	72.1	71.0	69.1	67.1	62.5	58.7	75.4	91.0	87.6	76.7	49.1	41.8	
End-Month Elev	ft	2570.78	2570.50	2570.02	2569.50	2568.28	2567.20	2571.59	2574.86	2574.18	2571.91	2564.27	2561.48	
Project Allotment	f/ac	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.50	0.60	0.60	0.10	2.00
Project Delivery	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.6	36.5	43.9	43.9	7.3	146.2
FBIIP Demand	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	6.0	6.0	13.0
Fresno-Dodson Gain	kaf	0.0	0.0	0.0	0.0	0.0	8.7	9.1	6.3	8.2	3.4	1.0	2.7	39.4
Bowdoin Demand	kaf	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.5	0.0	0.0	0.0	0.0	3.5
Transfer to Nelson	kaf	0.0	0.0	0.0	0.0	0.0	15.0	15.0	10.0	10.0	0.0	0.0	0.0	50.0

Nelson Reservoir		Initial Cont		71.5 kaf		Maximum Cont		79.0 kaf		Minimum Cont		18.0 kaf		
				Elev	2219.82 ft			Elev	2221.61 ft			Elev	2199.91 ft	
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Deliv to Nelson	kaf	0.0	0.0	0.0	0.0	0.0	13.5	13.5	9.0	9.0	0.0	0.0	0.0	45.0
Net Content Change	kaf	-1.8	-1.8	-1.8	-1.8	-1.7	11.7	2.9	0.0	-6.7	-19.1	-24.5	-3.6	-48.2
End-Month Content	kaf	69.7	67.9	66.1	64.3	62.6	74.3	77.2	77.2	70.5	51.4	26.9	25.1	
End-Month Elev	ft	2219.38	2218.92	2218.47	2218.00	2217.56	2220.50	2221.19	2221.19	2219.58	2214.46	2204.88	2204.00	
Total Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	8.8	7.2	13.9	17.3	22.7	0.0	69.9
Malta Delivery	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	9.2	11.0	11.0	1.8	36.7
Glasgow Delivery	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	4.7	5.6	5.6	0.9	18.

TABLE MTT16B

MILK RIVER BASIN OPERATING PLAN
Based on October 1 Inflow Estimates

2015 Most Probable Runoff

Sherburne Reservoir		Initial Cont		31.2 kaf		Maximum Cont		66.2 kaf		Minimum Cont		3.1 kaf		
				Elev	4763.76 ft			Elev	4788.03 ft			Elev	4731.73 ft	
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Sherburne Inflow	kaf	6.8	5.3	3.7	2.9	2.8	3.2	9.5	32.9	39.3	17.5	8.6	7.2	139.7
Sherburne Rels	kaf	0.0	0.0	0.0	0.0	0.0	9.2	23.8	24.6	13.8	17.5	32.2	18.5	139.6
Sherburne Rels	cfs	0	0	0	0	0	150	400	400	232	285	524	311	
Net Content Change	kaf	6.8	5.3	3.7	2.9	2.8	-6.0	-14.3	8.3	25.5	0.0	-23.6	-11.3	0.1
End-Month Content	kaf	38.0	43.3	47.0	49.9	52.7	46.7	32.4	40.7	66.2	66.2	42.6	31.3	
End-Month Elevation	ft	4769.41	4773.43	4776.02	4777.97	4779.79	4775.81	4764.79	4771.52	4788.03	4788.03	4772.92	4763.84	

St. Mary River	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
St Mary Runoff	kaf	18.7	12.9	8.8	7.2	6.1	8.7	24.5	95.5	135.0	80.6	32.3	19.0	449.3
Nat Flow @ Boundary	kaf	25.5	18.2	12.5	10.1	8.9	11.9	34.0	128.4	174.3	98.1	40.9	26.2	589.0
St Mary canal rels	cfs	0	0	0	0	0	0	101	400	600	600	550	301	
St Mary canal rels	kaf	0.0	0.0	0.0	0.0	0.0	0.0	6.0	24.6	35.7	36.9	33.8	17.9	154.9

Fresno Reservoir		Initial Cont		71.9 kaf		Maximum Cont		91.7 kaf		Minimum Cont		0.5 kaf		
				Elev	2570.73 ft			Elev	2575.00 ft			Elev	2531.90 ft	
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Milk River runoff	kaf	6.3	3.4	2.2	1.9	4.9	19.6	22.6	23.8	19.4	6.8	3.5	7.7	122.1
From St Mary Canal	kaf	0.0	0.0	0.0	0.0	0.0	0.0	5.4	22.1	32.1	33.2	30.4	16.1	139.3
Fresno inflow	kaf	6.3	3.4	2.2	1.9	4.9	19.6	28.0	45.9	51.5	40.0	33.9	23.8	261.4
Fresno Release	kaf	6.1	6.0	6.1	6.1	5.6	6.1	10.5	45.9	51.5	52.2	57.2	13.3	266.6
Fresno Release	cfs	99	101	99	99	101	99	176	746	865	849	930	224	
Net Content Change	kaf	0.2	-2.6	-3.9	-4.2	-0.7	13.5	17.5	0.0	0.0	-12.2	-23.3	10.5	-5.2
End-Month Content	kaf	72.1	69.5	65.6	61.4	60.7	74.2	91.7	91.7	91.7	79.5	56.2	66.7	
End-Month Elev	ft	2570.78	2570.12	2569.11	2567.93	2567.74	2571.30	2575.00	2575.00	2575.00	2572.47	2566.50	2569.40	
Project Allotment	f/ac	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.50	0.70	0.70	0.10	2.30
Project Delivery	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.9	36.5	51.2	51.2	7.3	168.1
FBIIP Demand	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	6.0	6.0	13.0
Fresno-Dodson Gain	kaf	0.0	0.0	0.0	0.0	0.0	17.4	18.2	12.6	16.4	6.8	2.0	5.4	78.8
Bowdoin Demand	kaf	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.5	0.0	0.0	0.0	0.0	3.5
Transfer to Nelson	kaf	0.0	0.0	0.0	0.0	0.0	15.0	5.0	10.0	10.0	0.0	0.0	0.0	40.0

Nelson Reservoir		Initial Cont		71.5 kaf		Maximum Cont		79.0 kaf		Minimum Cont		18.0 kaf		
				Elev	2219.82 ft			Elev	2221.61 ft			Elev	2199.91 ft	
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Deliv to Nelson	kaf	0.0	0.0	0.0	0.0	0.0	13.5	4.5	9.0	9.0	0.0	0.0	0.0	36.0
Net Content Change	kaf	-1.8	-1.8	-1.8	-1.8	-1.7	11.7	2.7	0.2	-2.0	-22.8	-25.5	-3.6	-48.2
End-Month Content	kaf	69.7	67.9	66.1	64.3	62.6	74.3	77.0	77.2	75.2	52.4	26.9	25.1	
End-Month Elev	ft	2219.38	2218.92	2218.47	2218.00	2217.56	2220.50	2221.15	2221.19	2220.72	2214.75	2204.88	2204.00	
Total Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	9.2	21.0	23.7	0.0	60.9
Malta Delivery	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	9.2	12.9	12.9	1.8	42.3
Glasgow Delivery	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	4.7	6.5	6.5	0.9	21.4

TABLE MTT16C

MILK RIVER BASIN OPERATING PLAN
Based on October 1 Inflow Estimates

2015 Maximum Probable Runoff

Sherburne Reservoir		Initial Cont		31.2 kaf		Maximum Cont		66.2 kaf		Minimum Cont		3.1 kaf		
				Elev	4763.76 ft			Elev	4788.03 ft			Elev	4731.73 ft	
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Sherburne Inflow	kaf	6.8	8.0	3.8	3.4	2.8	3.2	9.5	36.1	54.5	27.9	12.3	7.8	176.1
Sherburne Rels	kaf	0.0	0.0	0.0	0.0	0.0	6.1	23.8	27.7	35.5	27.9	30.7	20.8	172.5
Sherburne Rels	cfs	0	0	0	0	0	99	400	450	597	454	499	350	
Net Content Change	kaf	6.8	8.0	3.8	3.4	2.8	-2.9	-14.3	8.4	19.0	0.0	-18.4	-13.0	3.6
End-Month Content	kaf	38.0	46.0	49.8	53.2	56.0	53.1	38.8	47.2	66.2	66.2	47.8	34.8	
End-Month Elevation	ft	4769.41	4775.33	4777.90	4780.12	4781.89	4780.05	4770.05	4776.15	4788.03	4788.03	4776.56	4766.81	

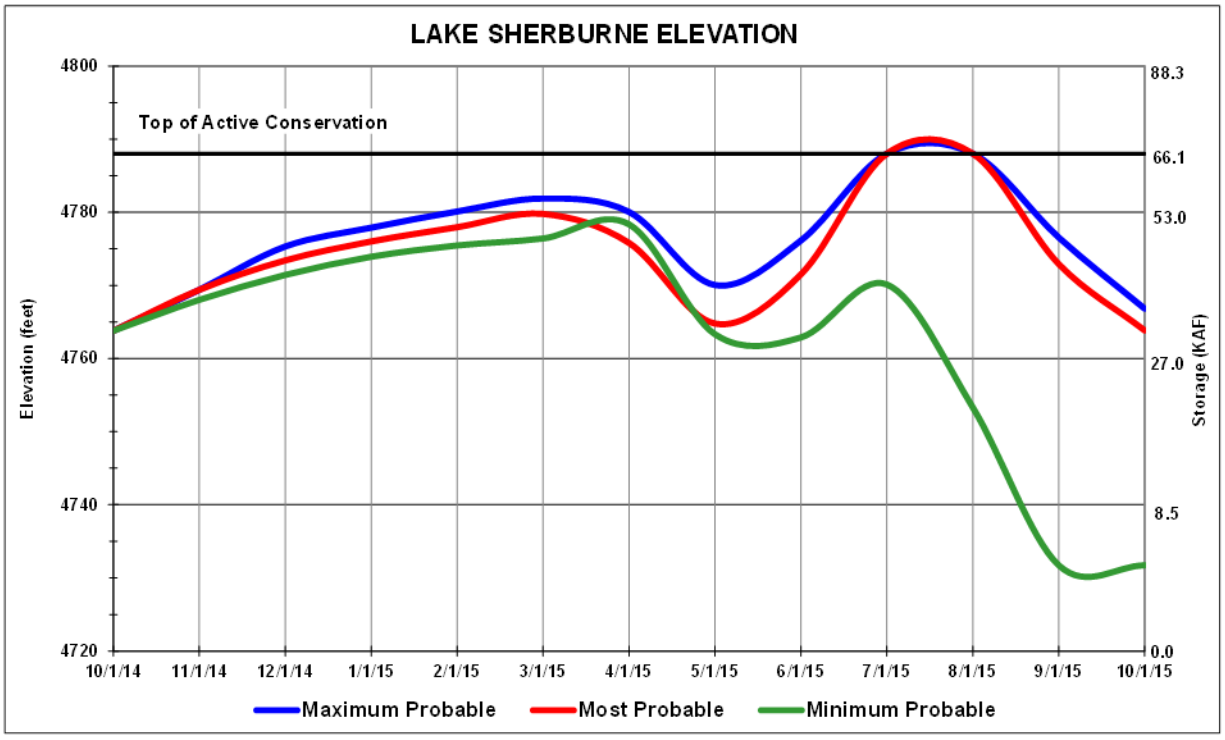
St. Mary River	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
St Mary Runoff	kaf	45.9	34.6	21.2	15.8	14.4	21.7	46.1	147.5	215.6	130.5	51.7	39.3	784.3
Nat Flow @ Boundary	kaf	52.7	42.6	25.0	19.2	17.2	24.9	55.6	183.6	270.1	158.4	64.0	47.1	960.4
St Mary canal rels	cfs	0	0	0	0	0	0	0	0	400	600	550	0	
St Mary canal rels	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.8	36.9	33.8	0.0	94.5

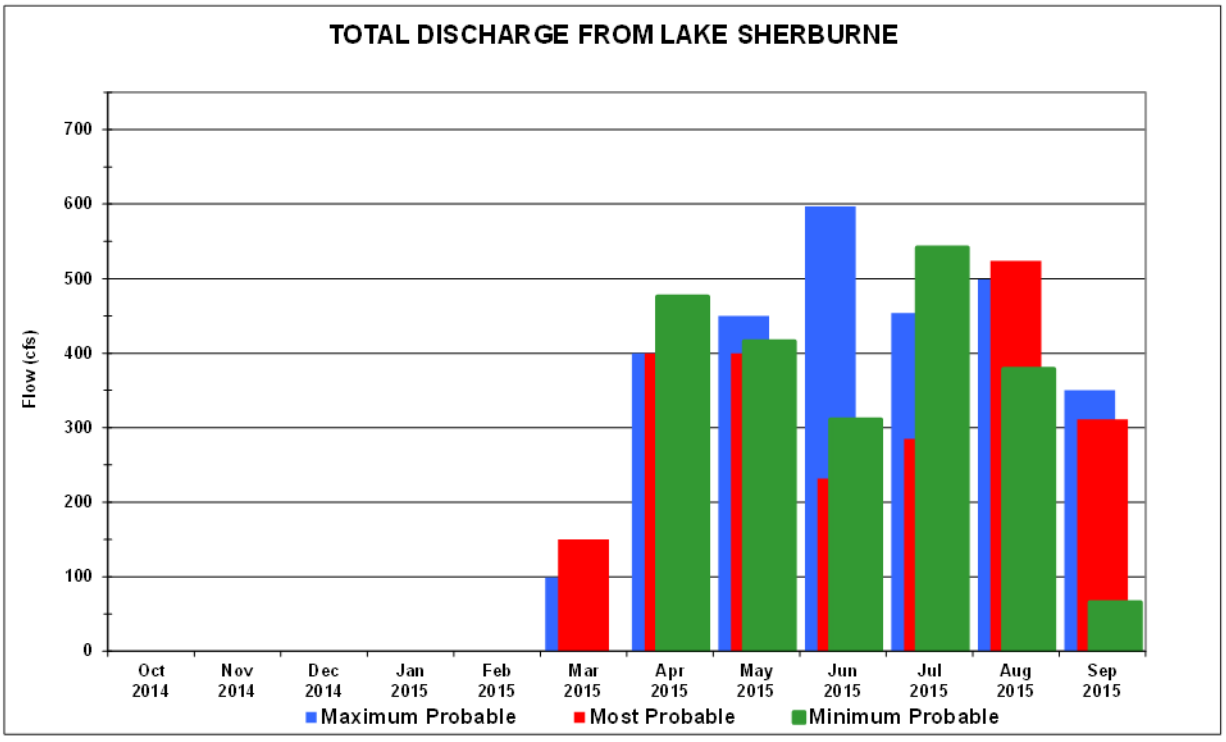
Fresno Reservoir		Initial Cont		71.9 kaf		Maximum Cont		91.7 kaf		Minimum Cont		0.5 kaf		
				Elev	2570.73 ft			Elev	2575.00 ft			Elev	2531.90 ft	
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Milk River runoff	kaf	10.3	4.4	3.4	1.9	4.9	41.3	41.1	40.7	42.9	18.2	7.7	11.2	228.0
From St Mary Canal	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.4	33.2	30.4	0.0	85.0
Fresno inflow	kaf	10.3	4.4	3.4	1.9	4.9	41.3	41.1	40.7	64.3	51.4	38.1	11.2	313.0
Fresno Release	kaf	9.2	6.0	6.1	6.1	5.6	21.1	33.4	40.7	64.3	52.2	57.2	13.3	315.2
Fresno Release	cfs	150	101	99	99	101	343	561	662	1081	849	930	224	
Net Content Change	kaf	1.1	-1.6	-2.7	-4.2	-0.7	20.2	7.7	0.0	0.0	-0.8	-19.1	-2.1	-2.2
End-Month Content	kaf	73.0	71.4	68.7	64.5	63.8	84.0	91.7	91.7	91.7	90.9	71.8	69.7	
End-Month Elev	ft	2571.00	2570.60	2569.92	2568.82	2568.63	2573.44	2575.00	2575.00	2575.00	2574.84	2570.70	2570.17	
Project Allotment	f/ac	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.50	0.70	0.70	0.10	2.30
Project Delivery	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.9	36.5	51.2	51.2	7.3	168.1
FBIIP Demand	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	6.0	6.0	13.0
Fresno-Dodson Gain	kaf	0.0	0.0	0.0	0.0	0.0	23.5	24.6	17.0	22.1	9.2	2.7	7.3	106.4
Bowdoin Demand	kaf	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.5	0.0	0.0	0.0	0.0	3.5
Transfer to Nelson	kaf	0.0	0.0	0.0	0.0	0.0	15.0	15.0	10.0	10.0	0.0	0.0	0.0	40.0

Nelson Reservoir		Initial Cont		71.5 kaf		Maximum Cont		79.0 kaf		Minimum Cont		18.0 kaf		
				Elev	2219.82 ft			Elev	2221.61 ft			Elev	2199.91 ft	
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Deliv to Nelson	kaf	0.0	0.0	0.0	0.0	0.0	13.5	13.5	9.0	9.0	0.0	0.0	0.0	45.0
Net Content Change	kaf	-1.8	-1.8	-1.8	-1.8	-1.7	11.7	2.9	0.0	-2.0	-22.8	-25.5	-3.6	-48.2
End-Month Content	kaf	69.7	67.9	66.1	64.3	62.6	74.3	77.2	77.2	75.2	52.4	26.9	25.1	
End-Month Elev	ft	2219.38	2218.92	2218.47	2218.00	2217.56	2220.50	2221.19	2221.19	2220.72	2214.75	2204.88	2204.00	
Total Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	8.8	7.2	9.2	21.0	23.7	0.0	61.1
Malta Delivery	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	9.2	12.9	12.9	1.8	42.3
Glasgow Delivery	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	4.7	6.5	6.5	0.9	21.4

FIGURE MTG17

LAKE SHERBURNE

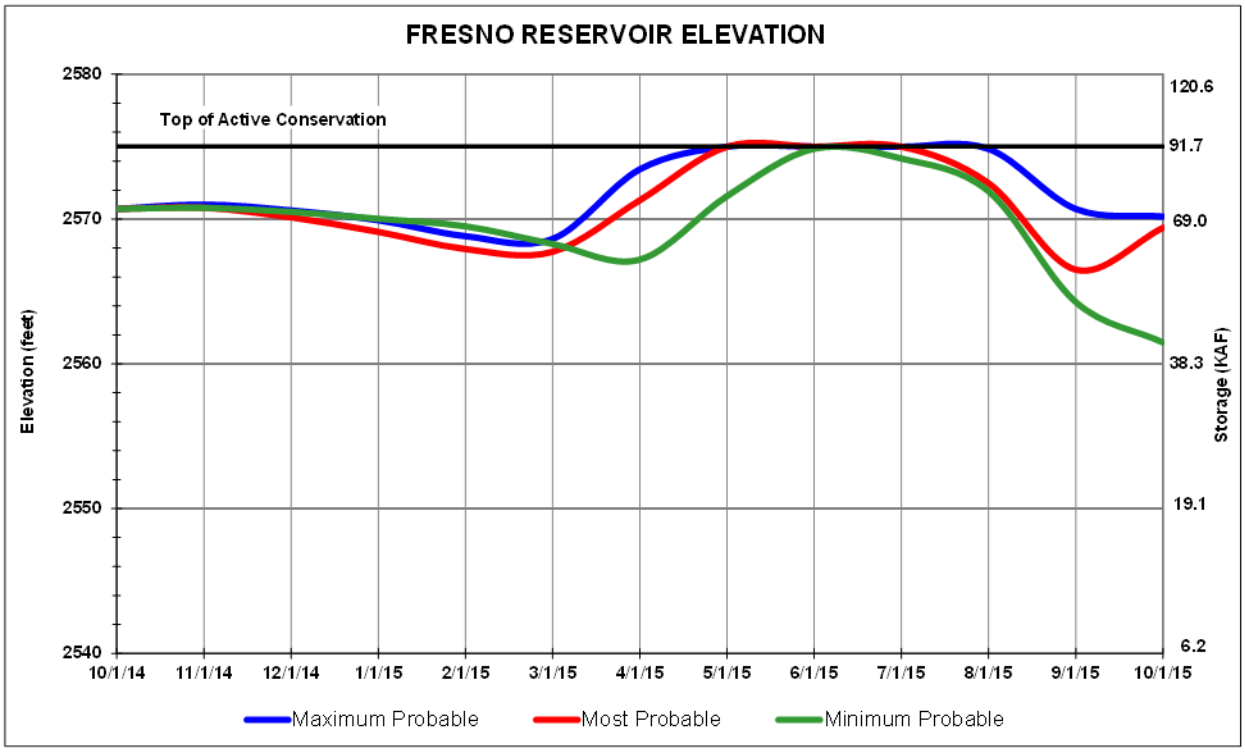


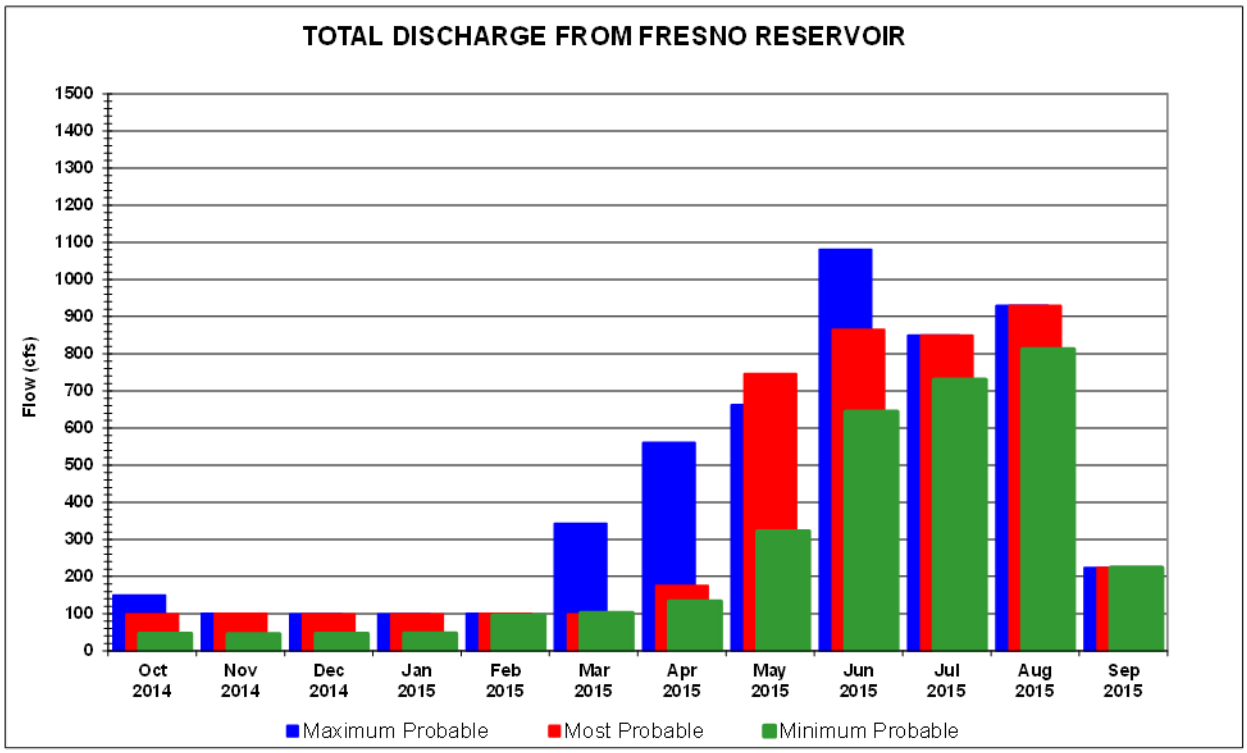


WATER YEAR 2015

FIGURE MTG18

FRESNO RESERVOIR





WATER YEAR 2015

Bighorn Lake and Yellowtail Powerplant

Three operating plans were prepared for 2015 to show the operations of Bighorn Lake which could occur under various runoff conditions. These operations for the three runoff conditions are shown in Tables MTT17A-C and Figure MTG19. These plans were prepared only to show the probable limits of operations and therefore, actual conditions and operations could vary widely from the plans in order to conform to the authorized project purposes and the current general operating criteria established for Yellowtail Dam and Bighorn Lake.

There is a set process for setting the November through March release in the operating criteria for the Yellowtail Unit. The winter release is set in November and depends on end of October storage, total April through October natural accretions between Boysen and Buffalo Bill Reservoirs to Yellowtail Dam, and projected releases out of Boysen and Buffalo Bill Reservoirs. Since the November monthly operating plans provide the best projected operations, they are used in this report.

In July 2007, a hydrographic and a topographic survey were conducted and a new elevation area capacity table and curve was developed. The 2007 survey determined that Bighorn Lake has a storage capacity of 1,278,896 AF and a surface area of 17,279 acres at reservoir elevation 3657.0 ft (the top of the spillway gates). Since closure of the dam in November 1965, the reservoir has accumulated a sediment volume of 103,415 AF below reservoir elevation 3657 ft. This volume represents a 7.48 percent loss in capacity and an average annual loss of 2,480 AF from November 1965 through July 2007. Sediment was deposited at the annual rate of 0.242 AF per square mile during that period. The revised area-capacity table was put into effect on January 1, 2011, reflecting the new storage levels.

The objectives of operations at Yellowtail are to meet all contractual and agreement obligations, all conservation commitments, to optimize generation, provide flood control in cooperation with the Corps of Engineers, and meet fish, wildlife, and recreational needs. The reservoir is operated under the following criteria and limitations:

(1) Beginning near the first of January and at least monthly thereafter through June, forecasts are made of the estimated spring inflow from snow cover and precipitation data. When these forecasts become available, Yellowtail Dam and Bighorn Lake is managed and regulated to allow storage to fill to the top of the joint-use pool at elevation 3640 ft (1,020,573 AF) and prevent storage in Bighorn Lake from exceeding this level until the peak of the runoff has passed or has begun to recede. If releases in excess of full power plant capacity are required, they are made only to the extent that current inflow and reservoir content indicate that spills are required. Depending on when the spring runoff starts and the volume of water forecasted, the release of water may draw Bighorn Lake below elevation 3617.0 ft (807,921 AF).

(2) Once Bighorn Lake has filled or reached its maximum level during spring runoff (normally late June or early July), it is desirable to adjust the releases to maintain storage near the top of the joint-use pool at elevation 3640 ft (1,020,573 AF) through October.

Maintaining Bighorn Lake near this elevation provides suitable waterfowl habitat, enhances flat-water recreation, enhances habitat for the lake fisheries, and minimizes dust problems around the southern area of Bighorn Lake.

(3) In late fall, a uniform release from Bighorn Lake to the Bighorn River is scheduled during November through March with the objective of evacuating storage to an elevation between 3615 ft – 3619 ft (794,613 AF - 821,949 AF) by the end of March, depending on the forecasted snowmelt runoff into Bighorn Lake. This target attempts to provide the required storage space needed to safely store the spring runoff while protecting the desired reservoir levels for summer and fall lake recreation activities.

(4) Releases during October and early November are generally maintained at the lowest forecasted minimum release rate to protect the Brown Trout spawn, if dry winter conditions require reducing releases later during the winter months.

(5) Whenever an adequate water supply is available, releases from Bighorn Lake will be maintained at rates to sustain flows in the Bighorn River at 2,500 cfs or higher. When there is not an adequate water supply available, it may be necessary to reduce releases to the Bighorn River to 2,000 cfs or the absolute minimum flow of 1,500 cfs required to protect a lower quality river fishery. These flow levels affect the river fishery as follows:

> 2,500 cfs - provides good spawning, rearing, and cover conditions in all major side channels.
>
> 2,000 cfs - provides adequate spawning and rearing conditions in most side channels but cover for adult fish is limited.
>
> 1,500 cfs - protects main channel habitat but not important side channels.

(6) During years of below normal runoff, storage in Bighorn Lake may not reach the top of the joint-use pool in efforts to protect the desired minimum river fishery flow levels. During some critical dry years, it has been observed that river flows have even been reduced to less than 1,500 cfs to ensure the operation of the Yellowtail Power plant and also provide desirable lake levels for the recreation season.

(7) All water released from Bighorn Lake is generally released through the Yellowtail Power plant. Releasing any water in excess of the power plant capacity (normally 7,500 cfs -8,200 cfs) is avoided, except during times of unusually large inflow or scheduled power plant maintenance.

(8) For downstream flood control purposes, avoid making releases that would cause flows in the Bighorn River to exceed 20,000 cfs at St. Xavier and 25,000 cfs at Bighorn and 65,000 cfs in the Yellowstone River at Miles City.

(9) During April through October, water is diverted to the Bighorn Canal to meet downstream irrigation demands of the Crow Indian Irrigation Project. Maximum diversions to the Bighorn Canal are limited to a maximum of about 550 cfs.

(10) During low flow years when the Yellowstone River flow rate at Forsyth, Montana, drops below 6,000 cfs anytime between August 10, 2014 and September 15, 2014 river releases will be increased by 100 cfs to meet contractual commitments with Pennsylvania Power and Light, Montana (PPL-MT) concerning their operations of Castle Rock Reservoir at Colstrip Power plant. This release will continue for approximately 10-30 days.

(11) Release rates during the winter are generally not changed or fluctuated more than 100 cfs in 6 hours when the downstream river channel is ice covered.

(12) Because the inflow to Bighorn Lake is heavily dependent upon the releases from Boysen and Buffalo Bill Reservoirs, all reservoir and river operations are closely coordinated with the Wyoming Area Office (WYAO).

(13) In an Agreement with the Northern Cheyenne Indian Tribe and pursuant to the Northern Cheyenne Indian Reserved Water Rights Settlement Act of 1992, Reclamation recognizes 30,000 AF of stored water in Bighorn Reservoir for use or disposition by the Tribe. The United States shall furnish a maximum of 30,000 AF of water annually to the Tribe in accordance with the limitations set forth in the Compact and the Settlement Act.

Valley precipitation in the Bighorn River Basin during August through September of 2014 was 37 percent of average while the mountain precipitation during August and September was 177 percent of average. Inflows into Bighorn Lake during August through September were 134 percent of average. The hydrologic conditions going into October 2014 were good. Storage in Bighorn Lake on September 30, 2014, was 1,021,582 AF at elevation 3640.08 ft. This was 116 percent of average and 0.08 ft above the top of the joint-use pool and 4.55 ft and 54,093 AF higher than reported on September 30, 2013. By the end of October 2014, the reservoir was at elevation at 3637.5 ft or 979,737 AF, 2.5 ft below the top of the joint-use pool and 112 percent of average. Inflows into Bighorn Lake were averaging 2,200 cfs, while releases were being maintained at about 3,000 cfs.

The forecasted inflows to Bighorn Lake are based upon the natural accretions between Boysen and Buffalo Bill Reservoirs to Yellowtail Dam plus the projected releases out of Boysen and Buffalo Bill Dams. The projected releases from Boysen and Buffalo Bill Dams are provided by the Wyoming Area Office.

The most probable November-March accretions were estimated to equal 40 percentile of historic accretions or accretions that historically been exceeded 60 percent of the time. The April through October accretions were estimated to equal 50 percentile of historic accretions or accretions that have historically been exceeded half of the time.

The minimum probable November through March accretions were estimated to be about 40,000 AF less than the most probable November through March accretions. The April through June accretions were estimated to equal 25 percentile historic accretions or accretions that have historically been exceeded 75 percent of the time. The July through October accretions were estimated to equal 10 percentile historic accretions or accretions that have historically been exceeded 90 percent of the time.

The maximum probable November through March accretions were estimated to be about 40,000 AF greater than the most probable November through March accretions. The April through October accretions were estimated to equal 90 percentile historic accretions or accretions that have been exceeded only 10 percent of the time.

In all three runoff conditions, the release from November through March is 2,830 cfs. Under the most probable and maximum probable runoff conditions, storage in Bighorn Lake would be expected to fill to the top of the joint-use pool at elevation 3640 ft (1,020,573 AF) by the end of July and essentially remain full through October. However, under the minimum probable runoff scenario, Bighorn Lake would be expected to slowly fill to near elevation 3631.83 ft by the end of June. This would be about 8.2 ft below the top of the joint-use pool. Under the minimum probable runoff condition, releases would be reduced to 2,000 cfs in April to meet the operating objectives during WY 2014. Under the most and maximum probable runoff conditions, it is anticipated river releases would be increased and maintained above 3,000 cfs beginning in April and continuing through October.

The average power generation produced annually at Yellowtail Power plant during 1987 through 2014 is 749.5 million kilowatt-hours. Under the most probable runoff conditions, power generation produced at Yellowtail Power plant during WY 2015 is expected to be about 931.5 million kilowatt-hours or 182.0 million kilowatt-hours more than average. Under the minimum probable runoff conditions, power generation would be about 58.5 million kilowatt-hours less than average. Under the maximum probable runoff conditions, power generation would be about 474.1 million kilowatt-hours greater than average.

In all three plans, maintenance outages are scheduled as shown on Table MTT19. Only under maximum probable runoff conditions, would a spill in excess of full power plant capacity be expected during these 2014 power outages.

TABLE MTT17A

BIGHORN LAKE OPERATING PLAN
Based on November 1 2014 Inflow Estimates

2015 MINIMUM Probable Runoff

Bighorn Reservoir		Initial Cont Elev	989.8 kaf 3637.47 ft			Maximum Cont Elev	1278.9 kaf 3657.00 ft			Minimum Cont Elev	469.9 kaf 3547.00 ft		
	2014	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Boysen Release	kaf	55.1	56.9	56.9	51.3	61.2	41.7	63.0	71.4	70.7	63.0	44.6	36.9	672.7
Boysen Release	cfs	926	925	925	924	995	701	1025	1200	1150	1025	750	600	
Buffalo Bill Release	kaf	23.9	21.8	21.8	19.7	21.8	31.7	101.2	105.0	118.7	104.3	82.3	28.3	680.5
Buffalo Bill Release	cfs	402	355	355	355	355	533	1646	1765	1930	1696	1383	460	
Station Gain	kaf	51.5	33.5	37.9	43.9	62.2	27.7	29.6	45.4	-70.0	-52.3	-0.8	46.2	254.8
Monthly Inflow	kaf	130.5	112.2	116.6	114.9	145.2	101.1	193.8	221.8	119.4	115.0	126.1	111.4	1608.0
Monthly Inflow	cfs	2193	1825	1896	2069	2361	1699	3152	3727	1942	1870	2119	1812	
Turbine Release	kaf	164.2	169.7	169.7	153.3	149.4	117.8	129.7	143.4	149.4	146.1	137.0	118.7	1748.4
Bypass/Spill/Waste	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Release	kaf	164.2	169.7	169.7	153.3	149.4	117.8	129.7	143.4	149.4	146.1	137.0	118.7	1748.4
Total Release	cfs	2759	2760	2760	2760	2430	1980	2109	2410	2430	2376	2302	1930	
Spring Flow	kaf	4.2	4.3	4.3	3.9	4.3	4.2	4.3	4.2	4.3	4.3	4.2	4.3	50.8
Irrigation Reqmnt	kaf	0.0	0.0	0.0	0.0	0.0	3.0	11.0	28.6	30.7	27.4	22.2	0.0	122.9
Afterbay Rels	kaf	168.4	174.0	174.0	157.2	153.7	122.0	134.0	147.6	153.7	150.4	141.2	123.0	1799.2
Afterbay Rels	cfs	2830	2830	2830	2831	2500	2050	2179	2481	2500	2446	2373	2000	
River Release	kaf	168.4	174.0	174.0	157.2	153.7	119.0	123.0	119.0	123.0	123.0	119.0	123.0	1676.3
River Release	cfs	2830	2830	2830	2831	2500	2000	2000	2000	2000	2000	2000	2000	
Min Release	kaf	168.4	174.0	174.0	157.2	153.7	119.0	123.0	119.0	123.0	123.0	119.0	123.0	1676.3
End-Month Content	kaf	956.1	898.6	845.5	807.1	802.9	786.2	850.3	928.7	898.7	867.6	856.7	849.4	
End-Month Elevation	ft	3634.49	3628.58	3622.15	3616.88	3616.26	3613.68	3622.77	3631.83	3628.59	3624.94	3623.58	3622.66	
Net Change Content	kaf	-33.7	-57.5	-53.1	-38.4	-4.2	-16.7	64.1	78.4	-30.0	-31.1	-10.9	-7.3	-140.4

Yellowtail Power	2014	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Turbine Release	kaf	164.2	169.7	169.7	153.3	149.4	117.8	129.7	143.4	149.4	146.1	137.0	118.7	1748.4
Generation	gwh	63.658	65.277	64.335	56.448	54.681	40.926	46.909	53.962	56.236	54.322	50.172	42.163	649.089
End-Month Power Cap	mw	282.3	276.7	270.6	265.6	265.0	262.5	271.2	279.8	276.7	273.2	271.9	271.1	
% Max Gen		31	30	30	29	26	20	22	26	26	25	24	20	
Ave kwh/af		388	385	379	368	366	347	362	376	376	372	366	355	371
Upstream Generation	gwh	9.159	7.282	7.210	4.660	10.730	10.983	24.980	25.507	27.240	24.469	19.475	9.112	180.807
Total Generation	gwh	72.817	72.559	71.545	61.108	65.411	51.909	71.889	79.469	83.476	78.791	69.647	51.275	829.896

TABLE MTT17B

BIGHORN LAKE OPERATING PLAN
Based on November 1 2014 Inflow Estimates

2015 MOST Probable Runoff

Bighorn Reservoir		Initial Cont Elev	989.8 kaf 3637.47 ft			Maximum Cont Elev	1278.9 kaf 3657.00 ft			Minimum Cont Elev	469.9 kaf 3547.00 ft		
	2014	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Boysen Release	kaf	55.0	56.9	56.9	51.4	61.2	83.1	141.2	135.8	129.8	103.8	86.2	58.4	1019.7
Boysen Release	cfs	924	925	925	926	995	1397	2296	2282	2111	1688	1449	950	
Buffalo Bill Release	kaf	23.9	21.8	21.8	19.7	21.8	41.2	120.0	160.5	156.8	127.8	100.6	37.8	853.7
Buffalo Bill Release	cfs	402	355	355	355	355	692	1952	2697	2550	2078	1691	615	
Station Gain	kaf	59.3	40.2	45.4	53.2	70.8	39.9	62.2	119.0	-61.3	-45.3	16.4	65.2	465.0
Monthly Inflow	kaf	138.2	118.9	124.1	124.3	153.8	164.2	323.4	415.3	225.3	186.3	203.2	161.4	2338.4
Monthly Inflow	cfs	2323	1934	2018	2238	2501	2759	5260	6979	3664	3030	3415	2625	
Turbine Release	kaf	164.3	169.8	169.9	153.4	169.8	172.3	308.7	237.6	210.9	207.6	196.5	180.2	2341.0
Bypass/Spill/Waste	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Release	kaf	164.3	169.8	169.9	153.4	169.8	172.3	308.7	237.6	210.9	207.6	196.5	180.2	2341.0
Total Release	cfs	2761	2762	2763	2762	2762	2896	5021	3993	3430	3376	3302	2931	
Spring Flow	kaf	4.2	4.3	4.3	3.9	4.3	4.2	4.3	4.2	4.3	4.3	4.2	4.3	50.8
Irrigation Reqmnt	kaf	0.0	0.0	0.0	0.0	0.0	0.0	11.0	28.6	30.7	27.4	22.2	0.0	119.9
Afterbay Rels	kaf	168.5	174.1	174.2	157.3	174.1	176.5	313.0	241.8	215.2	211.9	200.7	184.5	2391.8
Afterbay Rels	cfs	2832	2831	2833	2832	2831	2966	5090	4064	3500	3446	3373	3001	
River Release	kaf	168.5	174.1	174.2	157.3	174.1	176.5	302.0	213.2	184.5	184.5	178.5	184.5	2271.9
River Release	cfs	2832	2831	2833	2832	2831	2966	4912	3583	3001	3001	3000	3001	
Min Release	kaf	148.8	153.7	153.7	138.8	153.7	170.5	153.7	178.5	153.7	184.5	178.5	184.5	1952.6
End-Month Content	kaf	963.7	912.8	867.0	837.9	821.9	813.8	828.5	1006.2	1020.6	999.3	1006.0	987.2	
End-Month Elevation	ft	3635.19	3630.16	3624.87	3621.16	3618.99	3617.85	3619.90	3638.84	3640.00	3638.27	3638.82	3637.25	
Net Change Content	kaf	-26.1	-50.9	-45.8	-29.1	-16.0	-8.1	14.7	177.7	14.4	-21.3	6.7	-18.8	-2.6

Yellowtail Power	2014	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Turbine Release	kaf	164.3	169.8	169.9	153.4	169.8	172.3	308.7	237.6	210.9	207.6	196.5	180.2	2341.0
Generation	gwh	63.801	65.553	64.822	57.048	63.916	64.836	121.753	97.241	85.651	83.851	78.954	71.313	918.739
End-Month Power Cap	mw	283.0	278.2	273.2	269.6	267.6	266.5	268.4	286.4	287.5	285.9	286.4	284.9	
% Max Gen		31	31	30	29	30	31	57	47	40	39	38	33	
Ave kwh/af		388	386	382	372	376	376	394	409	406	404	402	396	392
Upstream Generation	gwh	9.156	7.304	7.248	4.711	10.827	17.433	34.551	33.789	35.002	32.059	28.441	14.534	235.055
Total Generation	gwh	72.957	72.857	72.070	61.759	74.743	82.269	156.304	131.030	120.653	115.910	107.395	85.847	1153.794

TABLE MTT17C

BIGHORN LAKE OPERATING PLAN
Based on November 1 2014 Inflow Estimates

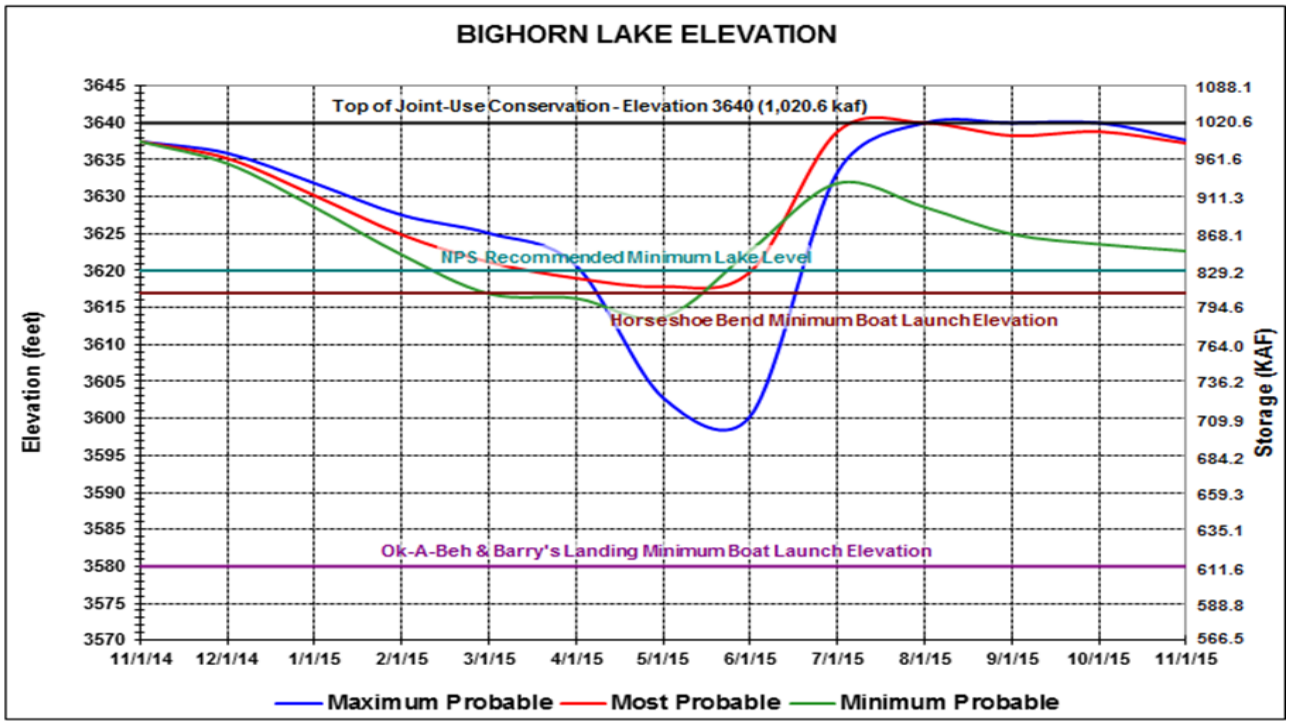
2015 MAXIMUM Probable runoff

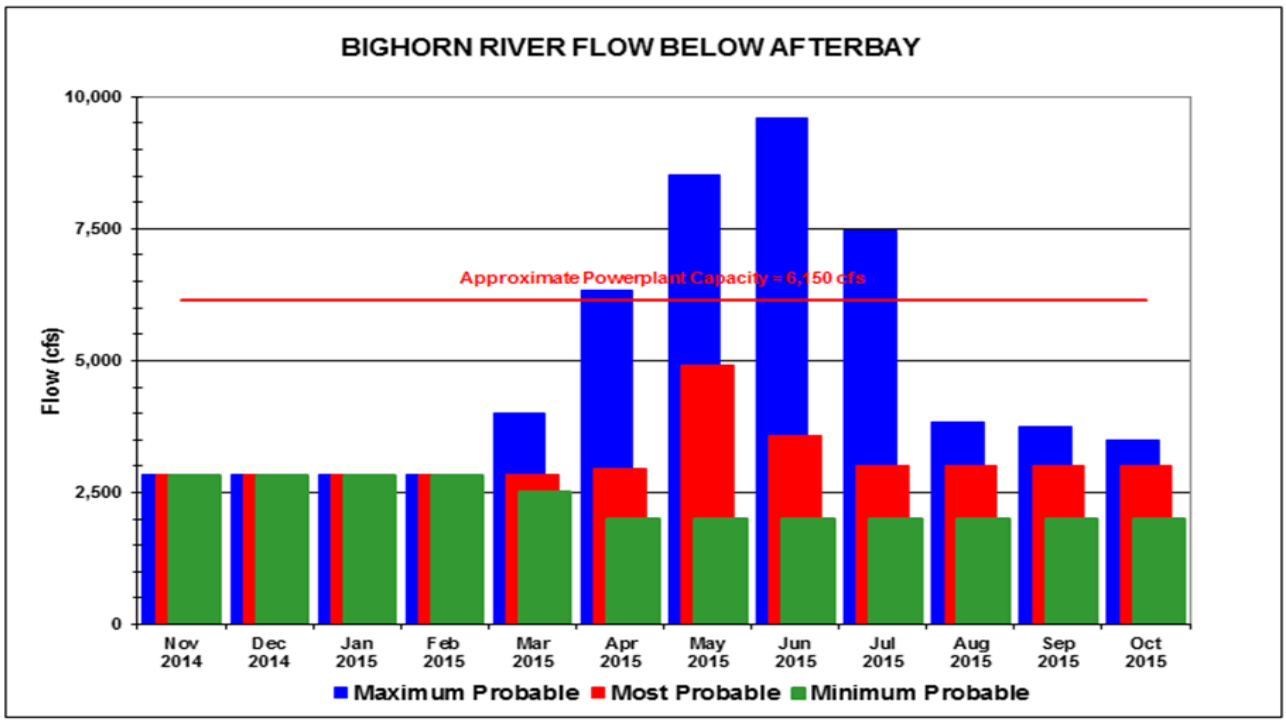
Bighorn Reservoir		Initial Cont Elev	989.8 kaf 3637.47 ft			Maximum Cont Elev	1278.9 kaf 3657.00 ft			Minimum Cont Elev	469.9 kaf 3547.00 ft		
	2014	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Boysen Release	kaf	55.1	56.9	56.9	51.4	104.9	138.0	202.9	270.4	279.4	133.5	98.2	58.4	1506.0
Boysen Release	cfs	926	925	925	926	1706	2319	3300	4544	4544	2171	1650	950	
Buffalo Bill Release	kaf	23.9	21.8	21.8	19.7	21.8	76.2	185.3	291.5	281.7	153.9	102.8	39.7	1240.1
Buffalo Bill Release	cfs	402	355	355	355	355	1281	3014	4899	4581	2503	1728	646	
Station Gain	kaf	67.0	48.1	51.6	61.6	80.6	51.0	128.9	266.4	0.1	-28.7	36.7	84.2	847.5
Monthly Inflow	kaf	146.0	126.8	130.3	132.7	207.3	265.2	517.1	828.3	561.2	258.7	237.7	182.3	3593.6
Monthly Inflow	cfs	2454	2062	2119	2389	3371	4457	8410	13920	9127	4207	3995	2965	
Turbine Release	kaf	164.2	169.7	169.7	153.3	241.7	375.0	368.9	357.0	368.9	258.7	237.7	210.9	3075.7
Bypass/Spill/Waste	kaf	0.0	0.0	0.0	0.0	0.0	0.0	160.9	238.9	115.9	0.0	0.0	0.0	515.7
Total Release	kaf	164.2	169.7	169.7	153.3	241.7	375.0	529.8	595.9	484.8	258.7	237.7	210.9	3591.4
Total Release	cfs	2759	2760	2760	2760	3931	6302	8616	10014	7885	4207	3995	3430	
Spring Flow	kaf	4.2	4.3	4.3	3.9	4.3	4.2	4.3	4.2	4.3	4.3	4.2	4.3	50.8
Irrigation Reqmnt	kaf	0.0	0.0	0.0	0.0	0.0	3.0	11.0	28.6	30.7	27.4	18.6	0.0	119.3
Afterbay Rels	kaf	168.4	174.0	174.0	157.2	246.0	379.2	534.1	600.1	489.1	263.0	241.9	215.2	3642.2
Afterbay Rels	cfs	2830	2830	2830	2831	4001	6373	8686	10085	7954	4277	4065	3500	
River Release	kaf	168.4	174.0	174.0	157.2	246.0	376.2	523.1	571.5	458.4	235.6	223.3	215.2	3522.9
River Release	cfs	2830	2830	2830	2831	4001	6322	8507	9604	7455	3832	3753	3500	
Min Release	kaf	168.4	174.0	174.0	157.2	246.0	148.8	153.7	148.8	153.7	178.3	190.4	215.2	2108.5
End-Month Content	kaf	971.6	928.7	889.3	868.7	834.3	724.5	711.8	944.2	1020.6	1020.6	1020.6	992.0	
End-Month Elevation	ft	3635.90	3631.83	3627.52	3625.07	3620.68	3602.79	3600.37	3633.37	3640.00	3640.00	3640.00	3637.66	
Net Change Content	kaf	-18.2	-42.9	-39.4	-20.6	-34.4	-109.8	-12.7	232.4	76.4	0.0	0.0	-28.6	2.2

Yellowtail Power	2014	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Turbine Release	kaf	164.2	169.7	169.7	153.3	241.7	375.0	368.9	357.0	368.9	258.7	237.7	210.9	3075.7
Generation	gwh	63.856	65.752	65.121	57.513	95.082	140.910	150.660	145.800	150.660	106.615	97.532	85.213	1224.714
End-Month Power Cap	mw	283.6	279.8	275.7	273.3	269.2	252.2	249.9	281.2	287.5	287.5	287.5	285.3	
% Max Gen		31	31	30	30	44	68	70	70	70	50	47	40	
Ave kwh/af		389	387	384	375	393	376	408	408	408	412	410	404	398
Upstream Generation	gwh	9.174	7.327	7.281	4.749	14.546	30.073	33.506	33.665	35.240	35.222	29.876	15.060	255.719
Total Generation	gwh	73.030	73.079	72.402	62.262	109.628	170.983	184.166	179.465	185.900	141.837	127.408	100.273	1480.433

FIGURE MTG19

BIGHORN LAKE





WAYER YEAR 2015

ENERGY GENERATION OPERATION PLANS

Energy generation at Canyon Ferry and Yellowtail Power plants for conditions of minimum probable, most probable, and maximum probable runoff is expected to vary between 1,004,000,000 and 1,715,000,000 kilowatt-hours as shown in Table MTT18.

Table MTT18

Estimated Energy Generation During WY 2015
(Million Kilowatt-Hours)

Plant	Minimum Probable Runoff	Most Probable Runoff	Maximum Probable Runoff
Canyon Ferry	313	444	492
Yellowtail	691	931	1,223
Total	1,004	1,375	1,715

Operation of power plants and transmission facilities in the Eastern and Western Divisions will be coordinated to bring about the most efficient utilization of power production to realize maximum project benefits. It is also anticipated that the marketing from all Federal power systems in the Missouri and Colorado River Basins will be closely coordinated to optimize the revenues to the Federal Government.

OUTLOOK

AND OPERATING PLANS

FOR

WY 2014

FOR BIGHORN BASIN RESERVOIRS

(BULL LAKE, BOYSEN BUFFALO BILL)

UNDER THE RESPONSIBILITY

OF THE

WYOMING AREA OFFICE

OPERATING PLANS FOR WY 2015

Bull Lake

Three operating plans were prepared for WY 2015 to show the operations which could occur under various runoff conditions. The operations for the three runoff conditions are shown in Table WYT10A, WYT10B, WYT10C and Figure WYG6. These plans were prepared only to show the probable limits of operations and therefore actual conditions and operations could vary widely from the most probable plan.

The primary objective of operations at Bull Lake is to provide irrigation water to the Midvale Irrigation District (Midvale). Under normal operation, the reservoir also provides small incidental flood control benefits and a water resource for fish, wildlife, and recreation. Bull Lake is operated under the following criteria and limitations:

(1) Based on forecasted inflows, March through June releases are scheduled with the objective of filling the lake to a content of 152,459 AF at elevation 5805.00 ft during July while eliminating or minimizing any spill.

(2) During April through October, releases must be adequate to meet the irrigation needs of Midvale and downstream irrigators with senior water rights on Bull Lake Creek.

(3) Based on the available water supply, non-irrigation season releases from Bull Lake to Bull Lake Creek are generally maintained between 20 cfs and 45 cfs.

(4) The reservoir water surface elevation will be kept below elevation 5794.00 ft during the winter to prevent ice damage to the spillway gates. The gates were not designed to withstand ice pressure. To prevent damage to the concrete in the spillway inlet from ice, the reservoir is operated to have a storage level of 100,000 AF or less by November 30. The objective at the onset of winter is to be as close as possible to the 100,000 AF level (5787.13 ft) to also provide winter fish habitat.

2015 Operating Plans

Storage in Bull Lake at the end of WY 2014 was 104,768 AF at elevation 5788.88 ft, which is 69 percent of capacity and 140 percent of the end of September average. Projected inflows for all months of WY 2015 under most probable inflow conditions are estimated to be median flows, or flows which have historically been exceeded 50 percent of the time. The reservoir is expected to fill during July under the most probable and reasonable maximum inflow scenarios. If reasonable minimum inflows should occur during each month of WY 2015 the reservoir would fill during June and then decline as demands exceed inflow.

Reasonable minimum condition inflows are estimated to be lower decile flows for all months in WY 2015. Lower decile flows are flows which have historically been exceeded 90 percent of the time.

Under reasonable maximum inflow conditions, upper decile flows are expected for all months in WY 2015. Upper decile flows are flows which have historically been exceeded 10 percent of the time.

Under all three inflow scenarios, releases in October following the end of irrigation season and continuing through the fall and winter would be held at 25 cfs with the objective of maintaining the reservoir level through the winter period.

Water diverted into the Wyoming Canal can be delivered to Midvale lands directly or routed through Pilot Butte Reservoir and delivered to district lands via the Pilot Canal. In June 2009, both units at Pilot Butte Powerplant were placed in "Mothballed" status and are not expected to generate electricity in WY 2015.

TABLE WYT10-A

RIVERTON PROJECT OPERATING PLAN
Based on October 1 Inflow Estimates

2015 Reasonable Minimum Inflow Estimates

Bull Lake Reservoir Operations — Initial Content 104.8 Kaf — Operating Limits: Max 151.9 Kaf, 5804.82 Ft. / Min 20.0 Kaf, 5750.93 Ft.

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Reservoir Inflow	kaf	4.5	2.1	1.7	1.7	1.3	1.6	3.2	26.4	41.1	28.3	15.3	8.4	135.6
Total Dam Release	kaf	6.3	1.5	1.5	1.5	1.4	1.5	1.5	1.5	19.7	39.1	57.2	50.5	183.2
Total Dam Release	cfs	102.	25.	25.	25.	25.	25.	25.	25.	331.	635.	930.	848.	
Excess Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.2	0.0	0.0	0.0	18.2
End-month Content	kaf	103.0	103.6	103.8	103.9	103.9	103.9	105.6	130.5	151.9	141.1	99.2	57.2	
End-month Elevation	ft	5788.2	5788.5	5788.5	5788.6	5788.5	5788.6	5789.2	5797.8	5804.8	5801.4	5786.9	5769.8	
BLR Net Change	kaf	-1.8	0.6	0.2	0.2	-0.1	0.1	1.7	24.9	21.4	-10.8	-41.9	-42.1	-47.6

Wind River		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Flow abv BL Creek	kaf	28.9	21.4	17.2	15.1	13.8	16.6	24.6	74.4	98.7	60.1	36.3	28.4	435.5
Crowheart Gage Flow	kaf	35.2	22.9	18.7	16.6	15.2	18.1	26.1	75.9	118.4	99.2	93.5	78.9	618.7
Flow Below Div Dam	kaf	26.2	22.9	18.7	16.6	15.2	18.1	4.9	21.9	53.1	30.3	24.8	18.3	270.9
Gain/Return Flow	kaf	0.0	0.0	0.0	0.0	0.0	0.0	4.8	7.4	7.1	7.4	6.1	5.4	38.2
Indian Irrigation	kaf	1.2	0.0	0.0	0.0	0.0	0.0	1.8	6.1	6.0	6.1	5.5	4.5	31.3
LeClair/Riverton	kaf	0.0	0.0	0.0	0.0	0.0	0.0	3.5	18.8	24.2	27.2	21.1	15.0	109.8
LeC/Riv Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Riverton Gage Flow	cfs	406.0	384.6	304.7	270.6	273.5	295.0	73.3	70.0	505.0	70.0	70.0	70.0	

Wyoming Canal		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Total Diversion	kaf	9.0	0.0	0.0	0.0	0.0	0.0	21.2	54.1	65.3	68.9	68.7	60.6	347.8
North Canal Flow	kaf	3.4	0.0	0.0	0.0	0.0	0.0	9.8	26.4	31.2	36.5	30.9	27.0	165.2
North Canal Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Pilot Butte Reservoir Operations — Initial Content 21.2 Kaf — Operating Limits: Max 29.9 Kaf, 5459.98 Ft. / Min 10.0 Kaf, 5433.49 Ft.

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Reservoir Inflow	kaf	5.6	0.0	0.0	0.0	0.0	0.0	11.4	27.7	34.1	32.4	37.8	33.6	182.6
Power Generated	mwh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pilot Canal Release	kaf	3.4	0.0	0.0	0.0	0.0	0.0	6.7	28.0	33.1	43.9	37.4	33.3	185.8
Pilot Canal Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
End-month Content	kaf	23.2	23.0	22.9	22.8	22.7	22.5	27.0	26.4	27.0	15.0	15.0	15.0	
PBR Net Change	kaf	2.0	-0.2	-0.1	-0.1	-0.1	-0.2	4.5	-0.6	0.6	-12.0	0.0	0.0	-6.2
End-month Elevation	ft	5452.2	5451.9	5451.8	5451.7	5451.6	5451.3	5456.7	5456.0	5456.7	5441.3	5441.3	5441.3	

TABLE WYT10-B

RIVERTON PROJECT OPERATING PLAN
Based on October 1 Inflow Estimates

2015 Most Probable Inflow Estimates

Bull Lake Reservoir Operations		Initial Content 104.8 Kaf						Operating Limits: Max 151.9 Kaf, 5804.82 Ft. Min 20.0 Kaf, 5750.93 Ft.						
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Reservoir Inflow	kaf	6.7	3.5	2.5	2.6	1.6	1.9	2.8	29.8	62.3	49.4	20.6	10.4	194.1
Total Dam Release	kaf	8.5	1.5	1.5	1.5	1.4	1.5	1.5	19.9	42.5	36.1	31.1	52.5	199.6
Total Dam Release	cfs	139.	25.	25.	25.	25.	25.	25.	324.	714.	587.	506.	882.	
Excess Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.4	42.5	36.1	0.0	0.0	97.0
End-month Content	kaf	103.0	105.0	105.9	107.0	107.2	107.6	108.9	118.8	138.6	151.9	141.4	99.3	
End-month Elevation	ft	5788.2	5789.0	5789.3	5789.7	5789.8	5789.9	5790.4	5793.9	5800.5	5804.8	5801.5	5786.9	
BLR Net Change	kaf	-1.8	2.0	1.0	1.1	0.2	0.4	1.3	9.9	19.8	13.3	-10.5	-42.1	-5.5

Wind River		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Flow abv BL Creek	kaf	33.8	24.3	18.3	16.1	14.8	17.3	28.5	106.1	168.9	114.7	53.4	34.0	630.2
Crowheart Gage Flow	kaf	42.3	25.8	19.8	17.6	16.2	18.8	30.0	126.0	211.4	150.8	84.5	86.5	829.8
Flow Below Div Dam	kaf	33.3	25.8	19.8	17.6	16.2	18.8	8.8	71.3	146.7	69.9	24.8	18.9	472.0
Gain/Return Flow	kaf	0.0	0.0	0.0	0.0	0.0	0.0	4.8	7.4	7.1	7.4	6.1	5.4	38.2
Indian Irrigation	kaf	1.2	0.0	0.0	0.0	0.0	0.0	1.8	6.1	6.0	6.1	5.5	4.5	31.3
LeClair/Riverton	kaf	0.0	0.0	0.0	0.0	0.0	0.0	3.5	18.8	24.2	27.2	21.1	15.0	109.8
LeC/Riv Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Riverton Gage Flow	cfs	522.0	433.4	322.6	286.8	291.5	306.4	138.9	874.1	2078.9	714.0	70.0	80.0	

Wyoming Canal		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Total Diversion	kaf	9.0	0.0	0.0	0.0	0.0	0.0	21.2	54.7	64.7	80.9	59.7	67.6	357.8
North Canal Flow	kaf	3.4	0.0	0.0	0.0	0.0	0.0	9.8	26.4	31.2	36.5	30.9	27.0	165.2
North Canal Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Pilot Butte Reservoir Operations		Initial Content 21.2 Kaf						Operating Limits: Max 29.9 Kaf, 5459.98 Ft. Min 10.0 Kaf, 5433.49 Ft.						
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Reservoir Inflow	kaf	5.6	0.0	0.0	0.0	0.0	0.0	11.4	28.3	33.5	44.4	28.8	40.6	192.6
Power Generated	mwh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pilot Canal Release	kaf	3.4	0.0	0.0	0.0	0.0	0.0	6.7	28.0	33.1	43.9	37.4	33.3	185.8
Pilot Canal Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
End-month Content	kaf	23.2	23.0	22.9	22.8	22.7	22.5	27.0	27.0	27.0	27.0	18.0	25.0	
PBR Net Change	kaf	2.0	-0.2	-0.1	-0.1	-0.1	-0.2	4.5	0.0	0.0	0.0	-9.0	7.0	3.8
End-month Elevation	ft	5452.2	5451.9	5451.8	5451.7	5451.6	5451.3	5456.7	5456.7	5456.7	5456.7	5445.5	5454.3	

TABLE WYT10C

RIVERTON PROJECT OPERATING PLAN
Based on October 1 Inflow Estimates

2015 Reasonable Maximum Inflow Estimates

Bull Lake Reservoir Operations		Initial Content 104.8 Kaf						Operating Limits: Max 151.9 Kaf, 5804.82 Ft. Min 20.0 Kaf, 5750.93 Ft.						
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Reservoir Inflow	kaf	7.0	4.0	2.7	2.8	1.8	2.2	4.6	28.4	87.3	76.5	32.6	12.2	262.1
Total Dam Release	kaf	8.8	1.5	1.5	1.5	1.4	1.5	1.5	25.6	65.2	61.6	38.8	51.2	260.2
Total Dam Release	cfs	143.	25.	25.	25.	25.	25.	25.	416.	1095.	1003.	631.	860.	
Excess Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.0	65.2	61.6	38.8	0.0	189.7
End-month Content	kaf	103.0	105.5	106.7	107.9	108.3	109.0	112.1	114.9	137.0	151.9	145.7	106.7	
End-month Elevation	ft	5788.2	5789.1	5789.6	5790.0	5790.2	5790.4	5791.5	5792.5	5800.0	5804.8	5802.8	5789.6	
BLR Net Change	kaf	-1.8	2.5	1.2	1.3	0.4	0.7	3.1	2.8	22.1	14.9	-6.2	-39.0	1.9

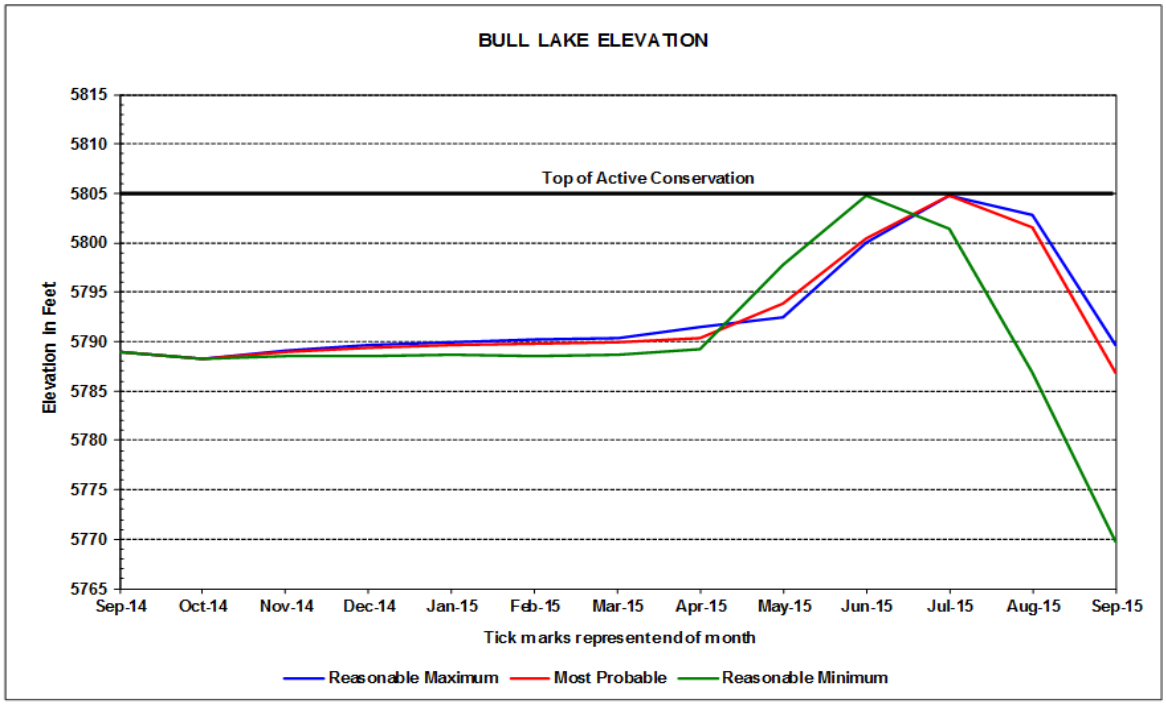
Wind River		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Flow abv BL Creek	kaf	34.0	24.6	20.3	18.4	16.0	19.6	24.5	113.7	304.6	196.4	82.1	45.2	899.4
Crowheart Gage Flow	kaf	42.8	26.1	21.8	19.9	17.4	21.1	26.0	139.3	369.8	258.0	120.9	96.4	1159.6
Flow Below Div Dam	kaf	33.8	26.1	21.8	19.9	17.4	21.1	4.8	84.6	305.1	177.1	61.2	28.8	801.8
Gain/Return Flow	kaf	0.0	0.0	0.0	0.0	0.0	0.0	4.8	7.4	7.1	7.4	6.1	5.4	38.2
Indian Irrigation	kaf	1.2	0.0	0.0	0.0	0.0	0.0	1.8	6.1	6.0	6.1	5.5	4.5	31.3
LeClair/Riverton	kaf	0.0	0.0	0.0	0.0	0.0	0.0	3.2	16.9	21.8	24.5	19.0	13.5	98.9
LeC/Riv Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Riverton Gage Flow	cfs	530.0	438.4	355.1	324.2	313.1	343.8	76.7	1120.6	4780.8	2502.5	696.1	272.0	

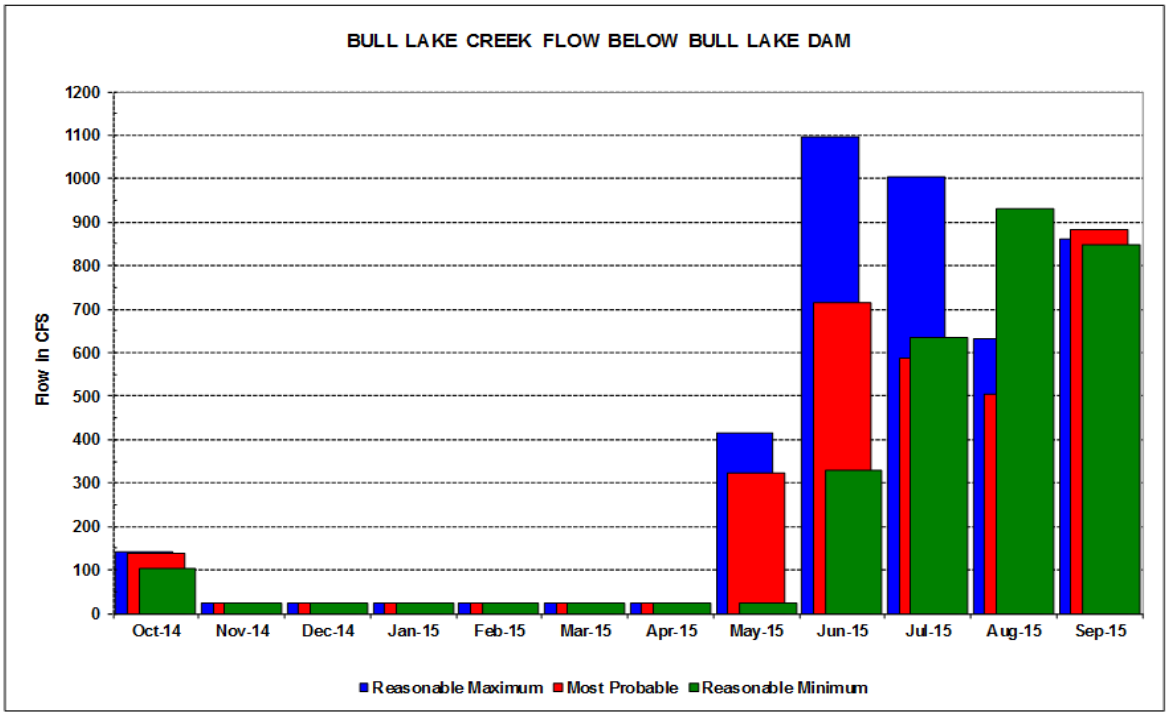
Wyoming Canal		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Total Diversion	kaf	9.0	0.0	0.0	0.0	0.0	0.0	21.2	54.7	64.7	80.9	59.7	67.6	357.8
North Canal Flow	kaf	3.4	0.0	0.0	0.0	0.0	0.0	9.8	26.4	31.2	36.5	30.9	27.0	165.2
North Canal Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Pilot Butte Reservoir Operations		Initial Content 21.2 Kaf						Operating Limits: Max 29.9 Kaf, 5459.98 Ft. Min 10.0 Kaf, 5433.49 Ft.						
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Reservoir Inflow	kaf	5.6	0.0	0.0	0.0	0.0	0.0	11.4	28.3	33.5	44.4	28.8	40.6	192.6
Power Generated	mwh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pilot Canal Release	kaf	3.4	0.0	0.0	0.0	0.0	0.0	6.7	28.0	33.1	43.9	37.4	33.3	185.8
Pilot Canal Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
End-month Content	kaf	23.2	23.0	22.9	22.8	22.7	22.5	27.0	27.0	27.0	27.0	18.0	25.0	
PBR Net Change	kaf	2.0	-0.2	-0.1	-0.1	-0.1	-0.2	4.5	0.0	0.0	0.0	-9.0	7.0	3.8
End-month Elevation	ft	5452.2	5451.9	5451.8	5451.7	5451.6	5451.3	5456.7	5456.7	5456.7	5456.7	5445.5	5454.3	

FIGURE WYG6

BULL LAKE RESERVOIR





Boysen Reservoir and Powerplant

Three operating plans were prepared for WY 2015 to show the operations of Boysen Reservoir which could occur under various runoff conditions. The operations for the three runoff conditions are shown in Table WYT11 and Figure WYG7. These plans are presented only to show the probable limits of operations and therefore, actual conditions and operations could vary widely from the most probable plan.

The operating objectives at Boysen Dam and Reservoir are to provide water for irrigation, municipal and industrial use, and power generation; provide flood control in cooperation with the Corps of Engineers; and enhance fish, wildlife, and recreation opportunities in both the reservoir and the Wind/Bighorn River.

Irrigation Season Release

During the irrigation season, water releases from Boysen Reservoir are made to satisfy all downstream senior water rights and storage contract commitments. Generally, demands for downstream senior water rights are met with a reservoir release between 900 and 1,200 cfs. Releases above what is required to meet irrigation demands may be made to manage reservoir levels and generate power.

Non-irrigation Season Release

During the non-irrigation season, releases are made to produce power, enhance the river and reservoir fishery, and provide storage space for the expected spring runoff or conserve storage if the reservoir is not expected to fill. Winter releases are generally in the range between 400 cfs and 1,150 cfs, depending on reservoir conditions going into the winter. The Wyoming Game and Fish Department considers 800 cfs to be the preferred fishery flow from October through February and flows below 600 cfs to be detrimental to the river fishery. A release of approximately 1,150 cfs can be made through one unit at Boysen Powerplant. By releasing less than the capacity of one powerplant unit, annual maintenance can be performed on the other unit during the winter months.

General Operating Procedures

(1) October through February - Releases of water for power generation are scheduled to evacuate storage while assuring an adequate water supply for the upcoming irrigation season. It is desirable to maintain a uniform release during November through February to reduce the risk of ice jams, which may cause flooding or damage to bridges and other structures.

(2) March through July - Based upon monthly water supply forecasts and as soon as river ice conditions allow, releases are scheduled to meet the irrigation demand as a minimum. Greater releases may be made if necessary to eliminate or minimize a spill, with the objective of filling the reservoir to elevation 4724.50 ft (731,841 AF) by the end of July. Depending on inflows, attempts will be made to provide a reservoir level of at least elevation 4707.00 ft from the end of May through the end of August for recreational boating access. For the spawning of rainbow trout it is desirable to have stable or slightly rising river flows from mid-March through early June. When conditions are suitable and without affecting power operations, attempts will be made to limit the drop in reservoir level to 2 ft or less during the reservoir fish spawn and hatch

period (which begins in March and ends in May). A rising pool is desirable during this period.

(3) August through September - As soon as storage has peaked, water releases are scheduled to meet the irrigation demand and generate power. Releases above what is needed to meet irrigation demand may be made in order to generate power and prevent the need to release water through the spillway gates if inflow conditions warrant.

2015 Operating Plans

At the beginning of WY 2015, storage was 666,779 AF at elevation 4721.03 ft. This was 115 percent of average and about 185,315 AF more than the reservoir held at the beginning of WY 2014. Projected inflows for all months of WY 2015 under most probable inflow conditions are estimated to be median flows, or flows which have historically been exceeded 50 percent of the time. A release of 900 cfs is scheduled for the months of October through March. Under most probable inflow conditions, end of month reservoir content is expected to peak in July with 732,000 AF at reservoir elevation 4724.50 ft. The reservoir is expected to fill if most probable or greater inflows are realized. If reasonable minimum condition inflows occurred during each month of WY 2015 the reservoir level would fall through the year.

Reasonable minimum condition inflows are estimated to be lower decile flows for all months in WY 2015. Lower decile flows are flows which have historically been exceeded 90 percent of the time.

Under reasonable maximum inflow conditions, upper decile flows are expected for all months in WY 2015. Upper decile flows are flows which have historically been exceeded 10 percent of the time.

Winter releases under minimum and maximum inflow scenarios are the same as under the most probable condition. This is due to the fact that a release which meets the operating objectives under the range of inflows which could be expected to occur needs to be set prior to the time when the river might freeze. At the time the winter release is set, very limited information is available on snowpack and what inflows might be during the snowmelt runoff period. It must be assumed that releases cannot be changed significantly from mid-December through mid-March as the changes could cause flooding downstream of the reservoir if ice conditions are present on the river.

Power unit maintenance outages for the Boysen Powerplant are scheduled as shown in Table WYT13.

TABLE WYT11

BOYSEN RESERVOIR OPERATING PLAN - Based on October 1 Inflow Estimates
2015 Reasonable Minimum Inflow Estimates

Boysen Reservoir		Initial Cont	666.8 kaf	Maximum Cont	892.2 kaf	Minimum Cont	219.2 kaf						
			Elev 4721.03 ft		Elev 4732.20 ft		Elev 4685.00 ft						
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	40.0	41.2	34.7	32.4	30.9	45.8	41.8	63.8	74.0	37.8	25.3	31.8	499.5
Monthly Inflow	cfs	651	692	564	527	556	745	702	1038	1244	615	411	534	
Turbine Release	kaf	51.3	53.6	55.4	55.4	50.0	55.3	41.7	63.0	71.4	70.7	63.0	44.6	675.4
Bypass/Spill	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Release	kaf	51.3	53.6	55.4	55.4	50.0	55.3	41.7	63.0	71.4	70.7	63.0	44.6	675.4
Total Release	cfs	834	901	901	901	900	899	701	1025	1200	1150	1025	750	
End-Month Content	kaf	655.5	643.1	622.4	599.4	580.3	570.8	570.9	571.7	574.3	541.4	503.7	490.9	
End-Month Elevation	ft	4720.40	4719.70	4718.50	4717.12	4715.94	4715.33	4715.33	4715.39	4715.55	4713.39	4710.79	4709.87	
Net Change Content	kaf	-11.3	-12.4	-20.7	-23.0	-19.1	-9.5	0.1	0.8	2.6	-32.9	-37.7	-12.8	-175.9

Boysen Power Plant	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	kaf	51.3	53.6	55.4	55.4	50.0	55.3	41.7	63.0	71.4	70.7	63.0	44.6	675.4
Turbine Release	cfs	834	901	901	901	900	899	701	1025	1200	1150	1025	750	
Generation	gwh	4.539	4.707	4.822	4.764	4.247	4.656	3.515	5.278	5.971	5.860	5.110	3.573	57.042
Max Generation	gwh	11.904	11.520	11.904	11.904	10.752	11.904	11.520	11.904	11.520	11.904	11.904	11.520	140.160
% Max Generation	%	38	41	41	40	39	39	31	44	52	49	43	31	
Ave kwh/af		88	88	87	86	85	84	84	84	84	83	81	80	84
End-Month Power Cap	mw	16	16	16	16	16	16	16	16	16	16	15	15	

BOYSEN RESERVOIR OPERATING PLAN - Based on October 1 Inflow Estimates
2015 Most Probable Inflow Estimates

Boysen Reservoir		Initial Cont	666.8 kaf	Maximum Cont	892.2 kaf	Minimum Cont	219.2 kaf						
			Elev 4721.03 ft		Elev 4732.20 ft		Elev 4685.00 ft						
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	45.0	47.0	39.1	36.1	37.6	51.2	50.3	152.9	260.4	133.4	68.3	55.4	976.7
Monthly Inflow	cfs	732	790	636	587	677	833	845	2487	4376	2170	1111	931	
Turbine Release	kaf	51.3	53.6	55.3	55.4	50.0	55.3	73.5	132.6	132.3	128.7	109.9	77.3	975.2
Bypass/Spill	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Release	kaf	51.3	53.6	55.3	55.4	50.0	55.3	73.5	132.6	132.3	128.7	109.9	77.3	975.2
Total Release	cfs	834	901	899	901	900	899	1235	2157	2223	2093	1787	1299	
End-Month Content	kaf	660.5	653.9	637.7	618.4	606.0	601.9	578.7	599.0	727.1	731.8	690.2	668.3	
End-Month Elevation	ft	4720.68	4720.31	4719.39	4718.26	4717.52	4717.27	4715.83	4717.10	4724.25	4724.50	4722.31	4721.11	
Net Change Content	kaf	-6.3	-6.6	-16.2	-19.3	-12.4	-4.1	-23.2	20.3	128.1	4.7	-41.6	-21.9	1.5

Boysen Power Plant	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	kaf	51.3	53.6	55.3	55.4	50.0	55.3	73.5	132.6	132.3	128.7	109.9	77.3	975.2
Turbine Release	cfs	834	901	899	901	900	899	1235	2157	2223	2093	1787	1299	
Generation	gwh	4.544	4.727	4.848	4.810	4.303	4.736	6.209	11.057	11.496	11.574	9.830	6.850	84.984
Max Generation	gwh	11.904	11.520	11.904	11.904	10.752	11.904	11.520	11.904	11.520	11.904	11.904	11.520	140.160
% Max Generation	%	38	41	41	40	40	40	54	93	100	97	83	59	
Ave kwh/af		89	88	88	87	86	86	84	83	87	90	89	89	87
End-Month Power Cap	mw	16	16	16	16	16	16	16	16	16	16	16	16	

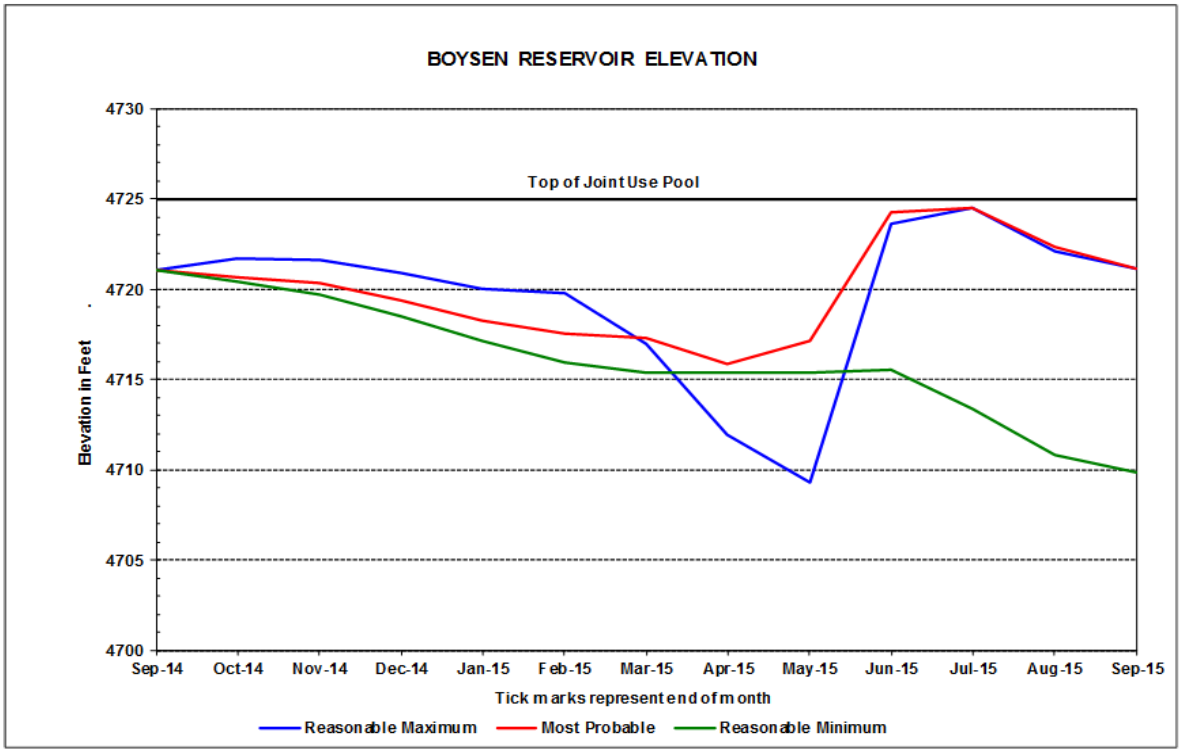
BOYSEN RESERVOIR OPERATING PLAN - Based on October 1 Inflow Estimates
2015 Reasonable Maximum Inflow Estimates

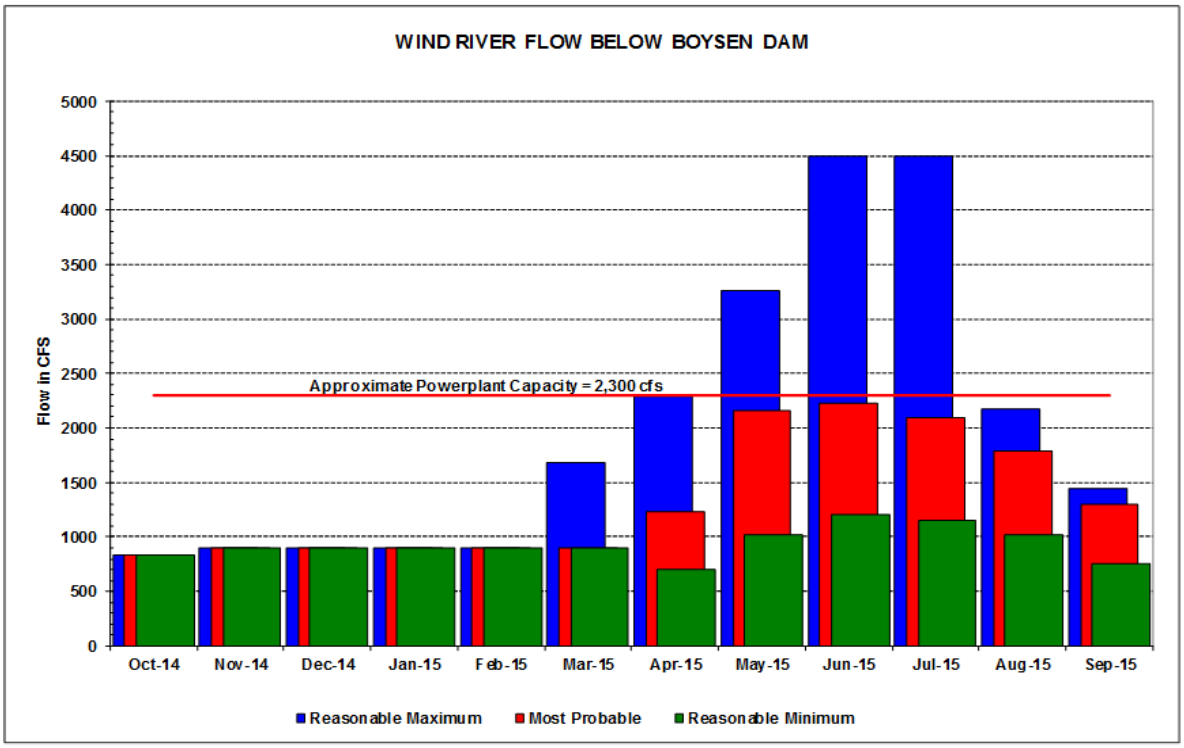
Boysen Reservoir		Initial Cont	666.8 kaf	Maximum Cont	892.2 kaf	Minimum Cont	219.2 kaf						
			Elev 4721.03 ft		Elev 4732.20 ft		Elev 4685.00 ft						
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	63.3	52.6	41.5	40.3	45.0	56.4	60.3	163.3	500.2	293.1	88.2	67.7	1471.9
Monthly Inflow	cfs	1029	884	675	655	810	917	1013	2656	8406	4767	1434	1138	
Turbine Release	kaf	51.3	53.6	55.4	55.4	50.0	103.8	136.5	138.8	138.2	135.5	133.5	86.0	1138.0
Bypass/Spill	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.0	129.4	141.0	0.0	0.0	332.4
Total Release	kaf	51.3	53.6	55.4	55.4	50.0	103.8	136.5	200.8	267.6	276.5	133.5	86.0	1470.4
Total Release	cfs	834	901	901	901	900	1688	2294	3266	4497	4497	2171	1445	
End-Month Content	kaf	678.8	677.8	663.9	648.8	643.8	596.4	520.2	482.7	715.3	731.9	686.6	668.3	
End-Month Elevation	ft	4721.69	4721.63	4720.87	4720.02	4719.74	4716.94	4711.95	4709.27	4723.64	4724.50	4722.11	4721.11	
Net Change Content	kaf	12.0	-1.0	-13.9	-15.1	-5.0	-47.4	-76.2	-37.5	232.6	16.6	-45.3	-18.3	1.5

Boysen Power Plant	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	kaf	51.3	53.6	55.4	55.4	50.0	103.8	136.5	138.8	138.2	135.5	133.5	86.0	1138.0
Turbine Release	cfs	834	901	901	901	900	1688	2294	2257	2323	2204	2171	1445	
Generation	gwh	4.566	4.778	4.920	4.883	4.384	8.866	11.146	10.668	11.355	11.908	11.880	7.598	96.952
Max Generation	gwh	11.904	11.520	11.904	11.904	10.752	11.904	11.520	11.904	11.520	11.904	11.904	11.520	140.160
% Max Generation	%	38	41	41	41	41	74	97	90	99	100	100	66	
Ave kwh/af		89	89	89	88	88	85	82	77	82	88	89	88	85
End-Month Power Cap	mw	16	16	16	16	16	16	15	14	16	16	16	16	

FIGURE WYG7

BOYSEN RESERVOIR





Buffalo Bill Reservoir and Powerplants

Three operating plans were prepared for WY 2015 to show the operations of Buffalo Bill Reservoir which could occur under various runoff conditions. The operations for the three runoff conditions are shown in Table WYT12A, WYT12B, WYT12C, and Figure WYG8. These plans were prepared only to show the probable limits of operations, therefore, actual conditions and operations could vary widely from the most probable plan.

Normal Operating Procedures

At the end of the irrigation season, releases will be adjusted with the objective of filling the reservoir to elevation 5393.50 ft (646,565 AF) while meeting the release criteria of the ***Buffalo Bill Reservoir Enlargement Winter Release Operation Agreement***. Under the Agreement, Buffalo Bill Reservoir will be operated to insure that a minimum flow of 100 cfs is provided in the river below the dam at all times. Additional winter releases beyond the 100 cfs minimum release up to a combined total of 350 cfs in the river below Buffalo Bill Powerplant will be provided based on the criteria set forth in the Agreement.

Reservoir releases to meet downstream irrigation requirements will, to the extent possible, be made through the most efficient power turbines available, after meeting winter flow requirements. A release of at least 100 cfs will be made through the Shoshone Powerplant, whenever the powerplant is available, to provide the required river flow directly below the dam. If the Shoshone Powerplant is not available, the release will be made through the jetflow valve at the Dam.

During irrigation season, releases are determined by the requirements for irrigation, and municipal and industrial demand. If snow conditions, inflow, and reservoir content indicate an assured fill of the reservoir, additional releases may be required after the start of the spring runoff to provide flood control and make optimum use of the water for power generation. An attempt is made to maintain a release of 7,000 cfs or less during the runoff season and also assure that outflow is less than inflow at all times of flood rate inflow.

2015 Operating Plans

Under most probable inflow conditions, projected flows for all months of WY 2015 are estimated to be median flows, or flows which have historically been exceeded 50 percent of the time.

The reasonable minimum inflows are estimated to equal lower decile flows for all months of WY 2015. A lower decile flow is a flow which has historically been exceeded 90 percent of the time.

Upper decile flows, flows which have historically been exceeded 10 percent of the time are projected for all months of WY 2015 under reasonable maximum conditions.

At the beginning of WY 2015, storage in Buffalo Bill Reservoir was 510,193 AF at elevation 5375.79 ft. This was about 43,772 AF more water than the reservoir held at the beginning of

WY 2014. Winter releases under minimum and maximum inflow scenarios are the same as under most probable conditions. Based on the criteria set forth in the ***Buffalo Bill Reservoir Enlargement Winter Release Operation Agreement***, the release from Buffalo Bill Dam through the winter will be 350 cfs. Ice in the Shoshone River can limit Reclamation's ability to change releases during the winter because of possible flooding due to ice jams, particularly near Lovell, Wyoming.

The Shoshone, Buffalo Bill, Heart Mountain, and Spirit Mountain Powerplants will all be available for power generation in WY 2015. Releases from Buffalo Bill Reservoir will be dependent upon the most efficient operation of all the powerplants while providing the required flow in the Shoshone River.

Under the most probable runoff plan, total generation from all the plants is expected to be 150,846,000 kilowatt hours (kWh). Total generation with reasonable minimum inflows is expected to be 128,075,000 kWh while generation is expected to total 161,341,000 kWh under the plan with reasonable maximum inflows.

Power unit maintenance outages for the Shoshone, Buffalo Bill. Heart Mountain, and Spirit Mountain Powerplants are scheduled as shown in Table WYT13
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TABLE WYT12-A

BUFFALO BILL RESERVOIR OPERATING PLAN
Based on October 1 Inflow Estimates
2015 Reasonable Minimum Inflow Estimates

Buffalo Bill Reservoir		Initial Cont Elev 5375.91 ft 506.8 kaf					Maximum Cont Elev 5393.50 ft 643.1 kaf				Minimum Cont Elev 5259.64 ft 41.8 kaf			
2014		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	25.3	22.2	14.4	12.8	11.7	15.9	38.8	145.7	199.7	71.6	25.4	20.6	604.1
Shoshone Release	kaf	8.4	11.8	12.2	12.3	1.2	6.1	6.0	6.1	6.0	6.2	6.2	6.0	88.5
Non-Power Release	kaf	0.0	8.1	9.3	9.2	18.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.8
Total Flow Below Dam	kaf	8.4	19.9	21.5	21.5	19.4	6.1	6.0	6.1	6.0	6.2	6.2	6.0	133.3
Buffalo Bill Release	kaf	50.3	0.9	0.0	0.0	0.0	15.4	14.8	52.6	49.7	51.2	46.5	42.7	324.1
Municipal Delivery	kaf	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	3.6
Heart Mtn Release	kaf	3.7	0.0	0.0	0.0	0.0	0.0	3.6	6.2	7.0	13.0	10.3	1.3	45.1
Heart Mtn Delivery	kaf	8.0	0.0	0.0	0.0	0.0	0.0	7.0	36.0	42.0	48.0	41.0	32.0	214.0
Total Outflow	kaf	70.7	21.1	21.8	21.8	19.7	21.8	31.7	101.2	105.0	118.7	104.3	82.3	720.1
Bypass/Spill	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
End-Month Targets	kaf		463.9								628.0		481.6	
End-Month Content	kaf	461.4	462.5	455.1	446.1	438.1	432.2	439.3	483.8	578.5	531.4	452.5	390.8	
Est Total Storage	kaf	464.8	465.9	458.5	449.5	441.5	435.6	442.7	487.2	581.9	534.8	455.9	394.2	
End-Month Elevation	ft	5369.65	5369.80	5368.76	5367.48	5366.34	5365.48	5366.51	5372.77	5385.42	5379.22	5368.39	5359.21	
Net Change Content	kaf	-45.4	1.1	-7.4	-9.0	-8.0	-5.9	7.1	44.5	94.7	-47.1	-78.9	-61.7	-116.0
Flow Below BB Pwr	kaf	58.7	20.8	21.5	21.5	19.4	21.5	20.8	58.7	55.7	57.4	52.7	48.7	457.4
Flow Below BB Pwr	cfs	955	350	350	350	349	350	350	955	936	934	857	818	
Spring Inflow	kaf	3.7	3.6	3.7	3.7	3.3	3.7	3.6	3.7	3.6	3.7	3.7	3.6	43.6
Passing Cody Gage	kaf	66.1	24.4	25.2	25.2	22.7	25.2	28.0	68.6	66.3	74.1	66.7	53.6	546.1
Passing Cody Gage	cfs	1075	410	410	410	409	410	471	1116	1114	1205	1085	901	

Shoshone Power	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Shoshone Release	kaf	8.4	11.8	12.2	12.3	1.2	6.1	6.0	6.1	6.0	6.2	6.2	6.0	88.5
Generation	gwh	1.565	2.162	2.231	2.238	0.217	1.105	1.087	1.122	1.148	1.201	1.161	1.078	16.315
Max Generation	gwh	2.232	2.160	2.232	2.232	0.222	2.232	2.160	2.232	2.160	2.232	2.232	2.160	24.486
% Max Generation		70	100	100	100	98	50	50	50	53	54	52	50	
Ave kwh/af		186	183	183	182	181	181	181	184	191	194	187	180	184
End-Month Power Cap	mw	3	3	3	3	0	3	3	3	3	3	3	3	

Buffalo Bill Power	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Buffalo Bill Release	kaf	50.3	0.9	0.0	0.0	0.0	15.4	14.8	52.6	49.7	51.2	46.5	42.7	324.1
Generation	gwh	13.395	0.247	0.000	0.000	0.000	4.167	3.992	13.278	12.818	13.110	11.879	10.850	83.736
Max Generation	gwh	13.392	0.259	0.000	0.000	0.000	13.392	12.960	13.392	12.960	13.392	12.053	12.960	104.760
% Max Generation		100	95	0	0	0	31	31	99	99	98	99	84	
Ave kwh/af		266	274				271	270	252	258	256	255	254	258
End-Month Power Cap	mw	18	0	0	0	0	18	18	18	18	18	16	18	

Spirit Mtn Power	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Spirit Mtn Release	kaf	11.7	0.0	0.0	0.0	0.0	0.0	10.6	34.4	33.3	34.4	34.4	33.3	192.1
Generation	gwh	1.171	0.000	0.000	0.000	0.000	0.000	1.069	2.948	3.041	3.074	3.038	2.886	17.227
Max Generation	gwh	1.674	0.000	0.000	0.000	0.000	0.000	1.620	3.348	3.240	3.348	3.348	3.240	19.818
% Max Generation		70	0	0	0	0	0	66	88	94	92	91	89	
Ave kwh/af		100						101	86	91	89	88	87	90
End-Month Power Cap	mw	2	0	0	0	0	0	2	4	5	4	4	4	

Heart Mtn Power	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Heart Mtn Release	kaf	3.7	0.0	0.0	0.0	0.0	0.0	3.6	6.2	7.0	13.0	10.3	1.3	45.1
Generation	gwh	0.886	0.000	0.000	0.000	0.000	0.000	0.862	1.484	1.676	3.112	2.466	0.311	10.797
Max Generation	gwh	0.893	0.000	0.000	0.000	0.000	0.000	2.160	4.464	4.320	4.464	4.464	4.320	25.085
% Max Generation		99	0	0	0	0	0	40	33	39	70	55	7	
Ave kwh/af		239						239	239	239	239	239	239	239
End-Month Power Cap	mw	1	0	0	0	0	0	3	6	6	6	6	6	

Total Generation	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Total Generation	gwh	17.017	2.409	2.231	2.238	0.217	5.272	7.010	18.832	18.683	20.497	18.544	15.125	128.075
End-month Power Cap	mw	24	3	3	3	0	21	26	31	32	31	29	31	

TABLE WYT12-B

BUFFALO BILL RESERVOIR OPERATING PLAN
Based on October 1 Inflow Estimates
2015 Most Probable Inflow Estimates

Buffalo Bill Reservoir		Initial Cont Elev	506.8 kaf 5375.91 ft			Maximum Cont Elev	643.1 kaf 5393.50 ft			Minimum Cont Elev	41.8 kaf 5259.64 ft		
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	27.1	22.1	17.5	15.5	13.5	16.2	35.9	141.8	307.9	184.5	51.7	30.3	864.0
Shoshone Release	kaf	6.1	11.8	12.2	12.2	1.2	6.1	6.0	11.4	11.4	11.3	11.4	6.0	107.1
Non-Power Release	kaf	0.0	8.1	9.3	9.3	18.2	0.0	0.0	0.0	38.8	28.6	7.9	0.0	120.2
Total Flow Below Dam	kaf	6.1	19.9	21.5	21.5	19.4	6.1	6.0	11.4	50.2	39.9	19.3	6.0	227.3
Buffalo Bill Release	kaf	48.8	0.9	0.0	0.0	0.0	15.4	19.4	54.9	51.7	51.6	48.6	49.3	340.6
Municipal Delivery	kaf	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	3.6
Heart Mtn Release	kaf	7.9	0.0	0.0	0.0	0.0	0.0	9.0	18.6	18.0	18.6	18.6	13.0	103.7
Heart Mtn Delivery	kaf	8.0	0.0	0.0	0.0	0.0	0.0	7.0	36.0	42.0	48.0	41.0	32.0	214.0
Total Outflow	kaf	71.1	21.1	21.8	21.8	19.7	21.8	41.7	121.2	162.2	158.4	127.8	100.6	889.2
Bypass/Spill	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38.8	28.6	7.9	0.0	75.3
End-Month Targets	kaf		463.9								628.0		481.6	
End-Month Content	kaf	462.8	463.8	459.5	453.2	447.0	441.4	435.6	456.2	601.9	628.0	551.9	481.6	
Est Total Storage	kaf	466.2	467.2	462.9	456.6	450.4	444.8	439.0	459.6	605.3	631.4	555.3	485.0	
End-Month Elevation	ft	5369.85	5369.99	5369.38	5368.49	5367.61	5366.81	5365.98	5368.92	5388.43	5391.72	5381.94	5372.46	
Net Change Content	kaf	-44.0	1.0	-4.3	-6.3	-6.2	-5.6	-5.8	20.6	145.7	26.1	-76.1	-70.3	-25.2
Flow Below BB Pwr	kaf	54.9	20.8	21.5	21.5	19.4	21.5	25.4	66.3	101.9	91.5	67.9	55.3	567.9
Flow Below BB Pwr	cfs	893	350	350	350	349	350	427	1078	1712	1488	1104	929	
Spring Inflow	kaf	3.7	3.6	3.7	3.7	3.3	3.7	3.6	3.7	3.6	3.7	3.7	3.6	43.6
Passing Cody Gage	kaf	66.5	24.4	25.2	25.2	22.7	25.2	38.0	88.6	123.5	113.8	90.2	71.9	715.2
Passing Cody Gage	cfs	1082	410	410	410	409	410	639	1441	2075	1851	1467	1208	

Shoshone Power	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Shoshone Release	kaf	6.1	11.8	12.2	12.2	1.2	6.1	6.0	11.4	11.4	11.3	11.4	6.0	107.1
Generation	gwh	1.138	2.164	2.235	2.228	0.218	1.111	1.089	2.074	2.160	2.242	2.240	1.139	20.038
Max Generation	gwh	2.232	2.160	2.232	2.232	0.222	2.232	2.160	2.232	2.160	2.232	2.232	2.160	24.486
% Max Generation		51	100	100	100	98	50	50	93	100	100	100	53	
Ave kwh/af		187	183	183	183	182	182	182	182	189	198	196	190	187
End-Month Power Cap	mw	3	3	3	3	0	3	3	3	3	3	3	3	

Buffalo Bill Power	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Buffalo Bill Release	kaf	48.8	0.9	0.0	0.0	0.0	15.4	19.4	54.9	51.7	51.6	48.6	49.3	340.6
Generation	gwh	12.971	0.247	0.000	0.000	0.000	4.185	5.207	13.384	12.956	13.384	12.731	12.728	87.793
Max Generation	gwh	13.392	0.259	0.000	0.000	0.000	13.392	12.960	13.392	12.960	13.392	12.722	12.960	105.429
% Max Generation		97	95	0	0	0	31	40	100	100	100	100	98	
Ave kwh/af		266	274				272	268	244	251	259	262	258	258
End-Month Power Cap	mw	18	0	0	0	0	18	18	18	18	18	17	18	

Spirit Mtn Power	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Spirit Mtn Release	kaf	15.9	0.0	0.0	0.0	0.0	0.0	16.0	34.4	33.3	34.4	34.4	33.3	201.7
Generation	gwh	1.580	0.000	0.000	0.000	0.000	0.000	1.596	2.648	2.816	3.214	3.287	3.049	18.190
Max Generation	gwh	1.674	0.000	0.000	0.000	0.000	0.000	1.620	3.348	3.240	3.348	3.348	3.240	19.818
% Max Generation		94	0	0	0	0	0	99	79	87	96	98	94	
Ave kwh/af		99						100	77	85	93	96	92	90
End-Month Power Cap	mw	2	0	0	0	0	0	2	4	5	5	5	4	

Heart Mtn Power	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Heart Mtn Release	kaf	7.9	0.0	0.0	0.0	0.0	0.0	9.0	18.6	18.0	18.6	18.6	13.0	103.7
Generation	gwh	1.891	0.000	0.000	0.000	0.000	0.000	2.154	4.453	4.309	4.453	4.453	3.112	24.825
Max Generation	gwh	2.232	0.000	0.000	0.000	0.000	0.000	2.160	4.464	4.320	4.464	4.464	4.320	26.424
% Max Generation		85	0	0	0	0	0	100	100	100	100	100	72	
Ave kwh/af		239						239	239	239	239	239	239	239
End-Month Power Cap	mw	3	0	0	0	0	0	3	6	6	6	6	6	

Total Generation	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Total Generation	gwh	17.580	2.411	2.235	2.228	0.218	5.296	10.046	22.559	22.241	23.293	22.711	20.028	150.846
End-month Power Cap	mw	26	3	3	3	0	21	26	31	32	32	31	31	

TABLE WYT12-C

BUFFALO BILL RESERVOIR OPERATING PLAN
Based on October 1 Inflow Estimates
2015 Reasonable Maximum Inflow Estimates

Buffalo Bill Reservoir		Initial Cont Elev	506.8 kaf 5375.91 ft			Maximum Cont Elev	643.1 kaf 5393.50 ft			Minimum Cont Elev	41.8 kaf 5259.64 ft		
	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	28.4	24.5	19.7	16.7	14.7	21.4	52.9	209.8	446.3	305.1	75.9	34.4	1249.8
Shoshone Release	kaf	6.6	11.8	12.2	12.2	1.2	6.1	10.1	12.4	11.5	11.3	11.4	6.0	112.8
Non-Power Release	kaf	0.0	8.1	9.3	9.3	18.2	0.0	0.0	63.1	168.6	152.5	31.1	0.0	460.2
Total Flow Below Dam	kaf	6.6	19.9	21.5	21.5	19.4	6.1	10.1	75.5	180.1	163.8	42.5	6.0	573.0
Buffalo Bill Release	kaf	50.6	0.9	0.0	0.0	0.0	15.4	50.1	55.4	52.0	51.9	51.5	49.4	377.2
Municipal Delivery	kaf	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	3.6
Heart Mtn Release	kaf	9.3	0.0	0.0	0.0	0.0	0.0	9.0	18.6	18.0	18.6	18.6	15.1	107.2
Heart Mtn Delivery	kaf	8.0	0.0	0.0	0.0	0.0	0.0	7.0	36.0	42.0	48.0	41.0	32.0	214.0
Total Outflow	kaf	74.8	21.1	21.8	21.8	19.7	21.8	76.5	185.8	292.4	282.6	153.9	102.8	1275.0
Bypass/Spill	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	63.1	168.6	152.5	31.1	0.0	415.3
End-Month Targets	kaf		463.9								628.0		481.6	
End-Month Content	kaf	460.4	463.8	461.7	456.6	451.6	451.2	427.6	451.6	605.5	628.0	550.0	481.6	
Est Total Storage	kaf	463.8	467.2	465.1	460.0	455.0	454.6	431.0	455.0	608.9	631.4	553.4	485.0	
End-Month Elevation	ft	5369.51	5369.99	5369.69	5368.97	5368.27	5368.21	5364.81	5368.27	5388.89	5391.72	5381.69	5372.46	
Net Change Content	kaf	-46.4	3.4	-2.1	-5.1	-5.0	-0.4	-23.6	24.0	153.9	22.5	-78.0	-68.4	-25.2
Flow Below BB Pwr	kaf	57.2	20.8	21.5	21.5	19.4	21.5	60.2	130.9	232.1	215.7	94.0	55.4	950.2
Flow Below BB Pwr	cfs	930	350	350	350	349	350	1012	2129	3901	3508	1529	931	
Spring Inflow	kaf	3.7	3.6	3.7	3.7	3.3	3.7	3.6	3.7	3.6	3.7	3.7	3.6	43.6
Passing Cody Gage	kaf	70.2	24.4	25.2	25.2	22.7	25.2	72.8	153.2	253.7	238.0	116.3	74.1	1101.0
Passing Cody Gage	cfs	1142	410	410	410	409	410	1223	2492	4264	3871	1891	1245	

Shoshone Power	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Shoshone Release	kaf	6.6	11.8	12.2	12.2	1.2	6.1	10.1	12.4	11.5	11.3	11.4	6.0	112.8
Generation	gwh	1.230	2.163	2.236	2.231	0.219	1.116	1.831	2.228	2.162	2.226	2.232	1.138	21.012
Max Generation	gwh	2.232	2.160	2.232	2.232	0.222	2.232	2.160	2.232	2.160	2.232	2.232	2.160	24.486
% Max Generation		55	100	100	100	99	50	85	100	100	100	100	53	
Ave kwh/af		186	183	183	183	183	183	181	180	188	197	196	190	186
End-Month Power Cap	mw	3	3	3	3	0	3	3	3	3	3	3	3	

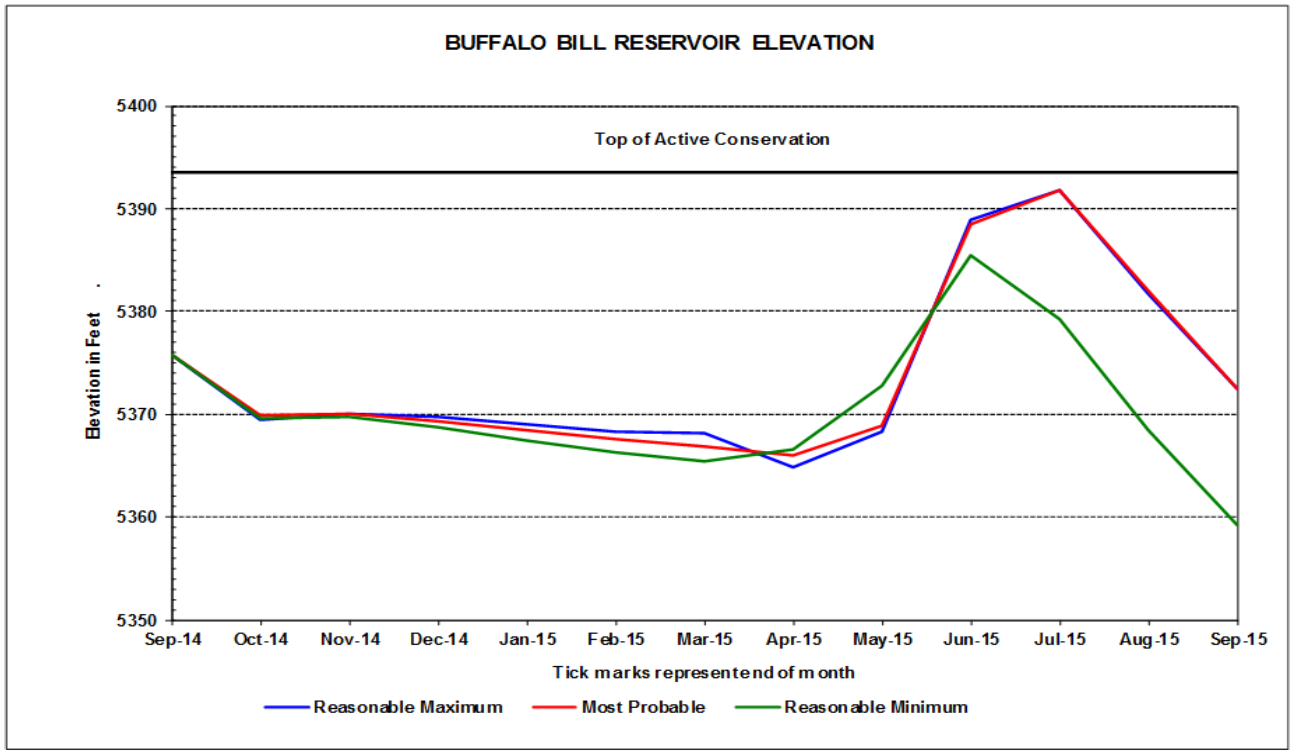
Buffalo Bill Power	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Buffalo Bill Release	kaf	50.6	0.9	0.0	0.0	0.0	15.4	50.1	55.4	52.0	51.9	51.5	49.4	377.2
Generation	gwh	13.389	0.247	0.000	0.000	0.000	4.199	12.968	13.399	12.950	13.396	13.385	12.701	96.634
Max Generation	gwh	13.392	0.259	0.000	0.000	0.000	13.392	12.960	13.392	12.960	13.392	13.392	12.960	106.099
% Max Generation		100	95	0	0	0	31	100	100	100	100	100	98	
Ave kwh/af		265	274				273	259	242	249	258	260	257	256
End-Month Power Cap	mw	18	0	0	0	0	18	18	18	18	18	18	18	

Spirit Mtn Power	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Spirit Mtn Release	kaf	17.0	0.0	0.0	0.0	0.0	0.0	16.0	34.4	33.3	34.4	34.4	33.3	202.8
Generation	gwh	1.671	0.000	0.000	0.000	0.000	0.000	1.479	2.611	2.809	3.216	3.234	3.012	18.032
Max Generation	gwh	1.674	0.000	0.000	0.000	0.000	0.000	1.620	3.348	3.240	3.348	3.348	3.240	19.818
% Max Generation		100	0	0	0	0	0	91	78	87	96	97	93	
Ave kwh/af		98						92	76	84	93	94	90	89
End-Month Power Cap	mw	2	0	0	0	0	0	2	4	5	5	4	4	

Heart Mtn Power	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Heart Mtn Release	kaf	9.3	0.0	0.0	0.0	0.0	0.0	9.0	18.6	18.0	18.6	18.6	15.1	107.2
Generation	gwh	2.226	0.000	0.000	0.000	0.000	0.000	2.154	4.453	4.309	4.453	4.453	3.615	25.663
Max Generation	gwh	2.232	0.000	0.000	0.000	0.000	0.000	2.160	4.464	4.320	4.464	4.464	4.320	26.424
% Max Generation		100	0	0	0	0	0	100	100	100	100	100	84	
Ave kwh/af		239						239	239	239	239	239	239	239
End-Month Power Cap	mw	3	0	0	0	0	0	3	6	6	6	6	6	

Total Generation	2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Total Generation	gwh	18.516	2.410	2.236	2.231	0.219	5.315	18.432	22.691	22.230	23.291	23.304	20.466	161.341
End-month Power Cap	mw	26	3	3	3	0	21	26	31	32	32	31	31	

FIGURE WYG8
BUFFALO BILL RESERVOIR



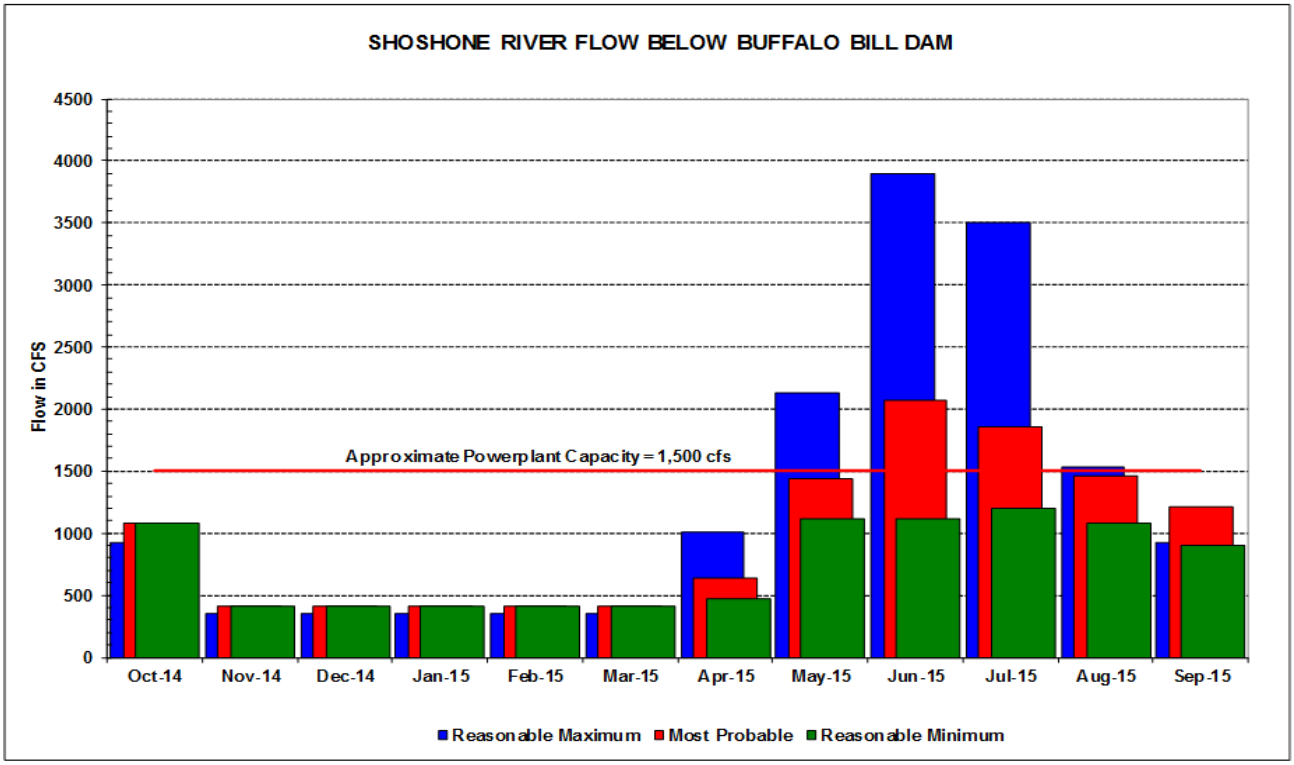


Table WYT13

SCHEDULED OUTAGES FOR WYOMING POWERPLANTS

Facilities	Description of Work	Scheduled Dates
BOYSEN		
Unit 1	Annual Maintenance	10/20/14 – 11/21/14
Unit 2	Annual Maintenance	01/06/15 – 02/13/15
BUFFALO BILL		
Buffalo Bill Powerplant		
Unit 1	Annual Maintenance	11/10/14 - 11/26/14
Unit 1	Tailrace Repair	11/10/14 - 02/02/15
Unit 2	Annual Maintenance	12/01/14 - 12/31/14
Unit 2	Tailrace Repair	11/10/14 - 02/02/15
Unit 3	Annual Maintenance	01/12/15 - 01/29/15
Unit 3	Tailrace Repair	11/10/14 - 02/02/15
Shoshone Powerplant		
Unit 3	Annual Maintenance	02/02/15 - 02/26/15
Heart Mountain Powerplant		
Unit 1	Annual Maintenance	03/09/15 – 03/26/14
Spirit Mountain Powerplant		
Unit 1	Annual Maintenance	10/20/14 - 10/30/14

OUTLOOK

AND OPERATING PLANS

FOR WY 2015

FOR RESERVOIRS

(E.A. PATTERSON, HEART BUTTE, JAMESTOWN, DEERFIELD, PACTOLA, ANGOSTURA, KEYHOLE, SHADEHILL, AND BELLE FOURCHE)

UNDER THE RESPONSIBILITY

OF THE

DAKOTAS AREA OFFICE

OPERATING PLANS FOR WY 2015

Dickinson Reservoir

At the beginning of WY 2014, Dickinson Dam and E. A. Patterson Lake (Dickinson Reservoir) had storage of 8,612 AF at elevation 2420.00 ft, which is at the top of the active conservation pool (elevation 2,420.00 ft at 8,612 AF). The reservoir is normally operated as full as possible at all times. Excess water will be released by spilling over the Bascule gate after the reservoir has filled, and by gated releases through the 24 inch river outlet valve. No releases are planned until irrigation water is required or if the spring runoff deems it necessary for flood protection.

Heart Butte Reservoir

At the beginning of WY 2014, Heart Butte Dam and Lake Tschida (Heart Butte Reservoir) had storage of 65,405 AF at elevation 2063.97 ft, which is 1,737 AF and 0.53 ft below the top of the active conservation pool (elevation 2,064.50 ft at 67,142 AF). Since there are no accurate inflow forecasts available, plans are to operate the reservoir as close to the top of the conservation pool as possible while regulating releases required, maintaining downstream conservation commitments, and preserving flood control space. During winter months, and when the reservoir level is below the spillway crest at elevation 2064.50 ft, the river releases will be maintained at about 10 cfs to ensure a live stream flows below Heart Butte Dam. This will continue through the winter until the spring runoff requires higher releases sometime in late March or early April. Excess water is released only when the reservoir is full or ensured of filling.

Jamestown Reservoir

At the beginning of WY 2014, Jamestown Reservoir had storage of 27,787 AF at elevation 1429.79 ft, which are 3,561 AF and 1.79 ft above the top of the active conservation pool (elevation 1,428.00 ft at 24,226 AF). Water releases were shut off in mid-December 2014 and will continue throughout the winter until spring runoff requires releases to be made for flood protection. The reservoir is normally operated under the following criteria and limitations set forth in the Field Working Agreement between the Corps and Reclamation that reads:

Flood Control Regulation of Joint-Use Pool - Jamestown Reservoir

The joint space between elevations 1428 ft and 1431ft will be used for seasonal multipurpose regulation. For purposes of flood control storage, the reservoir water elevation will be no higher than 1429.8 ft at the beginning of spring runoff period. That portion of the joint-use pool between elevations 1429.8 ft and 1431.0 ft will be used for storage and regulation of the spring runoff and summer rainstorms. In addition, water stored in this zone may be used during the summer months for conservation purposes. Storage remaining in the joint-use pool above elevation 1429.8 ft. msl after September 1 will be evacuated as directed by the Corps of Engineers.

The Bureau has the option of lowering the reservoir below elevation 1429.8 ft msl should it be desirable based on water supply needs. There are no requirements for maintaining a specified minimum reservoir release.

SEASON: BEGINNING OF SPRING RUNOFF TO SEPTEMBER 1

El. 1429.80 (Base of flood control zone) to El. 1431.00 (Top of Joint Use Pool)

Release greater of:

a. Conservation releases

b. Based on inflows occurring at the time and the existing potential for further inflows, releases will be maintained as necessary to result in a pool elevation of 1431 ft at the time inflows cease.

SEASON: SEPTEMBER 1 TO NOVEMBER 1

Make releases necessary to evacuate reservoir to elevation 1429.80 ft prior to November 1.

SEASON: NOVEMBER 1 TO BEGINNING OF SPRING RUNOFF

Make releases necessary to maintain elevation 1429.80 ft.

Deerfield Reservoir

Deerfield Reservoir started WY2015 at elevation 5,906.98 ft and storage of 15,235 AF, which is 1.0 foot and 419 AF below the top of conservation (elevation 5908 ft at 15,654 AF). The reservoir winter draw down was at 15,319 AF at December 1, 2014. This is well above our target of 15,000 AF by December 1, 2014 however releases during the winter should draw the reservoir down. A target of 15,000 AF of storage by March 1, will usually dictate the winter release, which is set near December 1, 2014. The winter release for WY 2015 is set based on water usage from Deerfield by the Rapid Valley Water Conservancy District (District) and the storage target of 15,000 AF by March 1. The goal is to be near full by May 1 which is the start of the irrigation season. The Rapid Valley Water Conservancy District ordered 0 AF from Deerfield during the 2014 irrigation season. This water is replaced to Pactola during the winter months being part of the water released from Deerfield.

A release of around 15 cfs will be maintained until the spring runoff requires higher releases in late March or early April. Excess water is normally released only when the reservoir is full or assured of filling. Since no inflow forecasts are available, the reservoir is normally operated as full as possible. Two SnoTel sites (North Rapid Creek and Blind Park) are operated in the Pactola and Deerfield drainage basin. Deerfield storage may be required to meet District irrigation needs in WY 2015.

The jet flow gates will be used for winter releases and provide minimum stream flows of 6 cfs or more which will enhance winter fishery conditions in Castle Creek and improve fishery production conditions in the stream.

Storage at the end of water year will depend on the amount of inflow to the Pactola-Deerfield system and the need for project water deliveries from Deerfield Reservoir. During average and above average inflow years, summer releases will be made to bring the reservoir storage to about 14,900 AF by September 30. This is to accommodate minimum releases of 6 cfs into Castle Creek during the winter. The actual release will depend on runoff conditions and will take into account downstream ice conditions in Castle Creek.

Pactola Reservoir

Pactola Reservoir started WY 2015 at elevation 4,568.41 ft and storage of 46,537 AF, which is 11.8 ft and 9,435 AF below the top of conservation (elevation 4580.2 ft at 55,972 ft). Pactola was positioned to accommodate construction work on Canyon Lake Dam. Operating criteria established for the reservoir in the Definite Plan Report called for minimum winter conservation releases to be 7 cfs from October 1 to April 15 and 20 cfs from April 15 to April 30 when the reservoir content is below 29,000 AF. Releases of 15 cfs from October 1 through March 1 and 20 cfs from March 1 through April 30 are established for reservoir content above 29,000 AF. Minimum summer conservation releases are 20 cfs at all reservoir contents.

Pactola Reservoir is operated as close to the top of the conservation pool as possible, while regulating releases required to maintain a downstream fishery and to preserve flood control space. The new long term storage contract for Pactola, between Reclamation and the City of Rapid City, was signed on July 31, 2007. New operating criteria for releases to Rapid Creek were established in the Standard Operating Plans. The following minimum releases will be made as long as water is available in the Fisheries, Wildlife, and Recreation Pool.

1. Reservoir content greater than 29,000 AF
   Year round 20 cfs

2. Reservoir content less than 29,000 AF
   October 1 – April 15 cfs
   April 15 - October 1 20 cfs

The winter release for WY 2015 is approximately 50 cfs and has been coordinated with the City of Rapid City, South Dakota Department of Game, Fish, and Parks, local water users, Forest Service, and Corps of Engineers. With a reservoir content of 29,000 AF and above, a release of 20 cfs has been specified in the Finding of No Significant Impact for the Environmental Assessment for the Pactola Reservoir Water Service Contact Renewal (FONSI No. DK600-00-03). Pactola winter releases can be increased by 2 or 3 cfs during extremely cold weather to replace water that is lost in the formation of ice in the creek channel. Once the channel is covered with ice and snow, which provides insulation for the stream, the releases can be reduced if below average snow pack and inflow conditions indicate a need to conserve storage. During the flood control season, total releases will be controlled between 20 cfs and 1000 cfs. Releases in excess of 200 cfs when storage is below the top of the conservation pool at elevation 4580.20 ft will be cleared with the Corps of Engineers. The Corps will issue release orders on a current basis when storage is in the exclusive flood control pool. Contract negotiations with water users at Pactola Reservoir will provide the basis for future reservoir operations.

During the irrigation season of May 1 through October 30, sufficient natural flows to meet prior rights of the irrigators will be bypassed through the reservoir. Orders by water users will be released under the provisions of contracts with the water users. Drought conditions that have existed in past years have resulted in conservation measures being initiated by water users. Continuation of water conservation measures will assist in conserving reservoir storage and refilling of the reservoir.

The City of Rapid City will replace the spillway section of Canyon Lake Dam (under contract) in the fall and winter of WY 2015. This required positioning Pactola Reservoir 12 ft down to limit impacts to the contract work.

Angostura Reservoir

Angostura Reservoir started WY 2015 at elevation 3,181.30 ft and storage of 97,807 AF, which is 5.9 ft and 25,241 AF below the top of active conservation (elevation 3187.2 ft at 123,048 AF). Since Angostura Reservoir is the principle source of water for the Angostura Irrigation District and no accurate inflow forecasts are available for this reservoir, it is operated as full as possible at all times. Water may be released from the facility if the reservoir is expected to fill to meet irrigation demands; ergo, excess water is released through the spillway when the reservoir is nearly full and assured of filling.

Keyhole Reservoir

Keyhole Reservoir started WY 2015 at elevation 4,097.16 ft and storage of 169,298 AF, which is 2.1 ft and 19,373 AF below the top of conservation (elevation 4,099.3 ft at 188,671 AF). At the beginning of WY 2015, South Dakota storage for the Belle Fourche Irrigation District is 5,304 AF and Wyoming storage for the Crook County Irrigation District is 16,380 AF.

Releases from Keyhole Reservoir are made for either irrigation requirements or flood control. Releases are not anticipated from the reservoir from October through May. Flood control releases are not expected unless extreme precipitation events occur to fill the reservoir.

Discharges from toe drains of the dam and downstream inflows normally satisfy downstream requirements for stock water and other minor uses during this period. Releases from storage accounts will be made during the summer in response to irrigation demand from the Belle Fourche Irrigation District in South Dakota and the Crook County Irrigation District in Wyoming. Each organization maintains a storage account in Keyhole Reservoir and the contract with the Belle Fourche Irrigation District also includes provisions for the annual purchase of additional unsold South Dakota storage. Peak irrigation demand releases are normally between 125 cfs and 175 cfs.

The Belle Fourche Irrigation District has lands along the inlet canal that during drought conditions can depend entirely on Keyhole Reservoir for storage. These lands are served with flows from the Belle Fourche River and storage from Keyhole. Additionally, water contracted by Belle Fourche Irrigation District may be released from Keyhole Reservoir to supplement storage in Belle Fourche Reservoir if necessary. Finally, Crook Country Irrigation District also contracts irrigation water from Keyhole Reservoir.

Shadehill Reservoir

Shadehill Reservoir started WY 2015 at elevation 2,271.80 ft and storage of 119,171 AF, which is 0.2 ft and 1,001 AF below the top of conservation (elevation 2272.0 ft at 120,172 AF). The winter release will be maintained at approximately 75 cfs to prepare the reservoir elevation for spring inflows. This release rate will be maintained constant until ice comes out of the channel in the spring to prevent ice jams at crossings. In the spring, after ice comes out of the channel, the release will be adjusted based on inflows and storage in the reservoir. Operation is to fill the reservoir in the spring, maintain a near full reservoir during the summer and position the

reservoir in the fall as discussed in the SOP. Releases for irrigation demands will be met by conservation releases.

Belle Forche Reservoir

Belle Fourche Reservoir started WY 2015 at elevation 2967.32 ft and storage of 116,661AF, which are 7.7 ft and 56,212 AF below the top of conservation (elevation 2975.0 ft at 172,873 AF). Normal operation at the Diversion Dam during the winter is to maintain flows in the Inlet Canal to store water in Belle Fourche Reservoir. A bypass of 5 cfs is made at the Belle Fourche Diversion Dam to provide flows for domestic use between the diversion dam and the Belle Fourche River confluence with Owl Creek. No releases from the reservoir are planned until irrigation begins in the spring. The intake to the South Canal shall be flushed every two weeks to prevent the buildup of silt against the gate.

When the volume of water supply available from the reservoir can be estimated in May or June, the Belle Fourche Irrigation District will establish allotments of water to each irrigator and the storage will be used accordingly. The Standing Operating Procedures for Belle Fourche Dam limit the maximum drawdown of the reservoir to 0.3 ft per day as established in the 1984 Safety Evaluation of Existing Dams report. Higher rates of drawdown are acceptable if the total drawdown is limited to 20 ft. This restriction will affect delivery rates to water users in the late summer if the reservoir does not fill. At low reservoir levels, the draw down rate becomes the governing factor for releases.

MAINSTEM RESERVOIRS

AND

ENERGY GENERATION

DATA

CORPS OF ENGINEERS MAIN STEM RESERVOIRS

The Missouri River main stem reservoir system, consisting of six reservoirs located in Montana, North Dakota, South Dakota, and Nebraska, provides for the following beneficial uses: flood control, irrigation, navigation, power, municipal and industrial water supply, water quality control, fish and wildlife, and recreation. Based on information from the Corps' 2014-2015 AOP, the capacity and storage allocations of the main stem system were updated to current values and are shown in upstream to downstream order as follows:

Reservoir Storage Allocation (1,000 AF)

Dam	Permanent	Carryover Multiple Use	Flood Control and Multiple	Exclusive Flood Control	Storage
Fort Peck, MT	4,088	10,700	2,704	971	18,463
Garrison, ND	4,794	12,951	4,211	1,495	23,451
Oahe, SD	5,315	13,353	3,208	1,107	22,983
Big Bend, SD	1,631	0	118	61	1,810
Fort Randall, SD	1,469	1,532	1,306	986	5,293
Gavins Point, NE	295	0	79	54	428
Total	17,592	38,536	11,626	4,674	72,428

Each main stem facility serves a powerplant. The number of generating units and total nameplate capabilities are shown below:

Powerplant	Units	Capacity (Kilowatts)
Fort Peck, MT	5	185,250
Garrison, ND	5	583,300
Oahe, SD	7	786,030
Big Bend, SD	8	494,320
Fort Randall, SD	8	320,000
Gavins Point, NE	3	132,300
Total	36	2,501,200

Main stem system releases are regulated to support the multiple use purposes of the reservoirs. The navigation season on the Missouri River below the dams normally is from late March to late November. Generally, releases from the system for navigation are higher during late summer and fall lowering the system storage. During that time, much of the system's hydropower is generated from the lower most projects. During closure of the navigation season, higher releases are made and more power is generated from the upstream Fort Peck and Garrison Reservoirs. This offsets the reduced release and generation from the downstream projects during winter closure of the river for navigation. The desired annual target system storage level is 56.1 million acre-feet on the first of March.

Operation of the Missouri River main stem reservoir system provides the following nine beneficial uses: flood control, irrigation, navigation, power, municipal and industrial water supply, water quality control, fish and wildlife, and recreation. Table CET1 presents the regulation benefit for most of those uses as recorded in 2013-2014, and the average. Benefits are defined as the tons of produce shipped, dollars of damages prevented, kilowatt hours of electricity produced, and reservoir elevation and river stages maintained. For the shipping information, estimates also were provided this year which included the sand, gravel, and waterway material shipped. Table CET1 shows damages prevented at September 2014 price levels.

Table CET1:
Main Stem Reservoir System
Comparison of Present and Past Benefits

Use of Regulated Water	Period of Use or Season	Totals	Totals	Long-Term
Navigation[1]	Apr. - Dec.[2]	0.255 million tons (2014)	0.245 million tons (2013)	1.72 million Tons[3]
Flood Damages Prevented	Oct. – Sept.	$966.0 million (2014)	$ 233.0 million (2013)	$ 55.8 billion[4]
Energy	Aug. - Jul.	8.3 billion KWH (Aug. 13-July 14)	8.7 billion KWH (Aug. 12-July 13)	9.4 billion KWH[5]

[1]If sand, gravel, and waterway material are included:
4.569 million tons (2014)
4.105 million tons (2013)
6.73 million tons (1967-2014 average)
[2]End of navigation season extended 0 days in 2013 and 10 days in 2014
[3]1967-2014 average. Peak tonnage shipped in 1977 (3.336 million tons)
[4]Total damages prevented (1938-2014)
[5]1968-2014 Average

A detailed description of the main stem system operations is presented in annual operating reports prepared by and available for distribution from the U.S. Missouri River Basin Water Management Division, U.S. Army Corps of Engineers, Northwestern Division, Omaha, Nebraska.

ENERGY GENERATION

There are 14 Federal powerplants located in the Upper Missouri River Basin that are currently operating. Eight of the power plants are owned and operated by Reclamation and have a total capacity of 348,100 kilowatts. The other six are owned and operated by the Corps and have a total capacity of 2,501,200. Energy generated by the 14 power plants is marketed by the Department of Energy.

Total generation in the combined system in WY 2014 was 10289.011 million kilowatt hours, 1264.835 million kilowatt hours more than in WY 2013. A summary of the past 10 years of energy generation within the Upper Missouri River Basin is shown below.

USBR and COE Energy Generation
(Million Kilowatt Hours)

Year	USBR	USACE	TOTAL
2014	1559.297	8729.714	10289.011
2013	840.209	8183.967	9024.176
2012	1141.904	10779.032	11920.936
2011	1674.806	11267.588	12942.390
2010	1430.618	7422.355	8852.974
2009	1481.641	6273.697	7755.338
2008	1182.399	4775.900	5958.299
2007	794.348	5061.000	5855.348
2006	1088.603	6199.964	7288.567
2005	953.992	5553.800	6507.792

A comparison of 2013 and 2014 generation and other data from Missouri Basin Region powerplants is shown on Table CET2. Tables CET3, CET4, and CET5 show the monthly generation, power releases, and total downstream releases, respectively, for all Federal plants in the Missouri Basin Region. The annual energy generation for each of the last several years for all Reclamation, Corps, and combined plants is shown graphically on Figures CEG1, CEG3, and CEG5, respectively, Monthly generation for each month during the past several years is shown graphically on Figures CEG2, CEG4, and CEG6.

For a more detailed account of powerplants operation at Reclamation facilities during the year, refer to the 2014 operation summaries. Information on the Corps' powerplants operations can be obtained from the annual operating reports prepared by and available for distribution from the Reservoir Control Center, U.S. Army Corps of Engineers, Omaha, Nebraska.

TABLE CET2
ANNUAL ENERGY PRODUCTION DATA
Water Year 2014

BUREAU PLANTS	INSTALLED CAPACITY (KW)	MILLION KILOWATT-HOURS GENERATED 2013	MILLION KILOWATT-HOURS GENERATED 2014	WATER USED FOR GENERATION IN 2014 1,000 AF	WATER USED FOR GENERATION IN 2014 PERCENT OF TOTAL RELEASE	WATER USED FOR GENERATION IN 2014 KW-HOURS PER AF	RIVER RELEASE 1,000 AF	TOTAL RELEASE 1,000 AF
Canyon Ferry	50,000	273.374	333.233	2,800.935	0.08	118.97	2,470,957.0	3,365,144.0
Pilot Butte[1]	1,600	0.000	0.000	0.000	0.00	N/A	158,940.0	158,940.0
Boysen	15,000	38.639	58.693	697.993	0.07	84.09	943,852.0	943,852.0
Buffalo Bill Reservoir Units								
Shoshone	3,000	17.581	20.221	104.892	0.01	192.78	See below for	total.
Buffalo Bill	18,000	51.444	94.701	389.583	0.03	243.08	See below for	total.
Heart Mountain	6,000	18.304	17.263	81.568	0.01	211.64	See below for	total.
Spirit Mountain [2]	4,500	17.745	15.325	148.217	0.01	103.40	See below for	total.
Total for Buffalo Bill Reservoir[3]	31,500	105.074	147.510	724.260	0.06	203.67	461,447.0	1,269,048.0
Yellowtail	250,000	423.122	1,019.861	2,754.942	0.09	370.19	1,352,758.0	2,916,672.0
Subtotal	**348,100**	**840.209**	**1,559.297**	**6,978.130**	**0.08**	**223.45**	**5,387,954.0**	**8,653,656.0**
CORPS PLANTS								
Fort Peck	185,250	1,024.772	772.940	4,971.00	100.00	155.49	4,971.0	4,971.0
Garrison	583,300	2,063.814	2,377.353	15,439.00	100.00	153.98	15,439.0	15,439.0
Oahe	786,030	2,075.638	2,383.928	15,725.00	99.58	151.60	15,792.0	15,792.0
Big Bend	494,320	821.328	896.749	14,780.00	100.00	60.67	14,780.0	14,780.0
Fort Randall	320,000	1,625.166	1,654.914	16,075.00	96.53	102.95	16,652.0	16,652.0
Gavins Point	132,300	694.005	644.042	14,134.00	79.20	45.57	17,845.0	17,845.0
Subtotal	**2,501,200**	**8,304.723**	**8,729.926**	**81,124.00**	**94.91**	**107.61**	**85,479.0**	**85,479.0**
TOTAL MISSOURI BASIN	**2,849,300**	**9,144.932**	**10,289.223**	**88,102.13**	**1.01**	**116.79**	**5,473,433.0**	**8,739,135.0**

[1] River Release and Total Release at Pilot Butte Reservoir is Computed Inflow to Pilot Butte due to the location of the powerplant at inlet of supply canal. Pilot Butte Powerplant was placed in "Mothballed" status in June of 2009 and does not generate electricity.

[2] Spirit Mountain Powerplant is used to dissipate energy in the transition from the pressurized portion of the Shoshone Canyon Conduit to the free flow section of the conduit. Water used for generation at Spirit Mountain Powerplant is then routed to Heart Mountain Canal or used for generation at Heart Mountain Powerplant.

[3] This represents the total for the four separate powerplants at Buffalo Bill Dam.

TABLE CET3
MONTHLY ENERGY GENERATION (MILLION KILOWATT-HOURS)
WATER YEAR 2014

	BUREAU OF RECLAMATION PLANTS								
				BUFFALO BILL PLANTS					
MONTH	CANYON FERRY	PILOT BUTTE	BOYSEN	HEART MOUNTAIN	SPIRIT MOUNTAIN	BUFFALO BILL	SHOSHONE	YELLOWTAIL	TOTAL
October	21.642	0.000	0.000	0.874	0.743	3.260	1.706	35.601	**63.826**
November	20.870	0.000	0.000	0.000	0.000	4.871	1.683	41.617	**69.041**
December	23.171	0.000	0.000	0.000	0.000	1.976	1.761	53.984	**80.892**
January	21.477	0.000	0.000	0.000	0.000	2.687	1.718	55.794	**81.676**
February	21.484	0.000	0.000	0.000	0.000	2.921	1.334	47.600	**73.339**
March	33.250	0.000	2.437	0.000	0.000	4.586	1.416	107.466	**149.155**
April	38.698	0.000	8.765	0.178	0.026	13.110	1.653	151.723	**214.153**
May	37.001	0.000	10.598	3.447	2.107	13.009	1.604	158.071	**225.837**
June	29.481	0.000	11.161	3.053	2.777	13.404	1.732	102.999	**164.607**
July	33.118	0.000	9.902	3.124	3.351	12.877	1.916	108.149	**172.437**
August	26.643	0.000	8.591	3.305	3.372	9.227	1.961	63.595	**116.694**
September	26.398	0.000	7.239	3.282	2.949	12.773	1.737	93.262	**147.640**
TOTAL	**333.233**	**0.000**	**58.693**	**17.263**	**15.325**	**94.701**	**20.221**	**1,019.861**	**1,559.297**

	CORPS OF ENGINEERS PLANTS							MISSOURI BASIN
MONTH	FORT PECK	GARRISON	OAHE	BIG BEND	FORT RANDALL	GAVINS POINT	TOTAL	TOTAL
October	48.075	119.587	134.377	57.589	161.300	76.840	**597.768**	**661.594**
November	46.851	117.859	157.863	61.380	135.166	71.016	**590.135**	**659.176**
December	61.252	144.883	114.660	46.147	80.731	43.774	**491.447**	**572.339**
January	65.227	161.806	154.889	62.905	75.992	43.556	**564.375**	**646.051**
February	58.657	146.259	132.675	51.772	69.595	40.310	**499.268**	**572.607**
March	66.328	150.901	173.038	66.757	110.933	50.590	**618.547**	**767.702**
April	68.605	200.103	253.407	96.112	159.623	49.923	**827.773**	**1,041.926**
May	83.362	266.128	234.872	89.272	175.709	30.372	**879.715**	**1,105.552**
June	82.963	278.205	175.667	65.080	120.934	29.153	**752.002**	**916.609**
July	71.421	282.115	237.472	83.457	171.404	57.747	**903.616**	**1,076.053**
August	69.736	274.574	269.799	92.330	183.882	71.943	**962.264**	**1,078.958**
September	50.463	234.933	345.209	123.948	209.645	78.818	**1,043.016**	**1,190.656**
TOTAL	**772.940**	**2,377.353**	**2,383.928**	**896.749**	**1,654.914**	**644.042**	**8,729.926**	**10,289.223**

TABLE CET4
WATER USED FOR POWER GENERATOR (AF)
WATER YEAR 2014

MONTH	CANYON FERRY	BOYSEN	PILOT BUTTE	BUFFALO BILL RESERVOIR UNITS				YELLOWTAIL	FORT PECK	GARRISON	OAHE	BIG BEND	FORT RANDALL	GAVINS POINT
				SHOSHONE	BUFF. BILL	HEART MTN.	SPIRIT MTN.[1]							
October	180.715	0.000	0.000	9.186	17.761	4.469	7.306	127.384	307.000	801.000	934.000	938.000	1,587.000	1,672.000
November	172.779	0.000	0.000	9.062	20.539	0.000	0.000	134.906	295.000	784.000	1,088.000	988.000	1,433.000	1,570.000
December	194.101	0.000	0.000	9.482	11.928	0.000	0.000	148.570	390.000	974.000	803.000	742.000	853.000	925.000
January	178.942	0.000	0.000	7.789	13.604	0.000	0.000	148.626	423.000	1,097.000	1,058.000	1,021.000	782.000	909.000
February	183.417	0.000	0.000	5.292	12.843	0.000	0.000	135.506	383.000	994.000	902.000	839.000	688.000	840.000
March	289.023	30.853	0.000	7.516	17.878	0.000	0.000	273.670	428.000	1,017.000	1,145.000	1,085.000	1,061.000	1,101.000
April	351.592	102.235	0.000	8.774	51.093	0.871	0.401	406.867	450.000	1,315.000	1,656.000	1,575.000	1,525.000	1,118.000
May	332.708	139.392	0.000	8.514	53.757	16.404	21.989	424.607	534.000	1,742.000	1,539.000	1,481.000	1,642.000	674.000
June	235.221	128.749	0.000	9.193	52.649	14.362	26.915	283.430	527.000	1,766.000	1,149.000	1,085.000	1,130.000	625.000
July	254.761	121.726	0.000	10.205	49.156	14.843	31.469	262.783	462.000	1,753.000	1,523.000	1,403.000	1,587.000	1,260.000
August	214.757	92.441	0.000	10.536	39.561	15.479	31.851	180.803	449.000	1,719.000	1,723.000	1,554.000	1,714.000	1,583.000
September	212.919	82.597	0.000	9.343	48.814	15.140	28.286	227.790	323.000	1,477.000	2,205.000	2,069.000	2,073.000	1,857.000
TOTAL	**2,800.935**	**697.993**	**0.000**	**104.892**	**389.583**	**81.568**	**148.217**	**2,754.942**	**4,971.000**	**15,439.000**	**15,725.000**	**14,780.000**	**16,075.000**	**14,134.000**

TABLE CET5
TOTAL RELEASE (1,000 AF)
WATER YEAR 2014

MONTH	CANYON FERRY	BOYSEN	PILOT BUTTE	BUFFALO BILL	BULL LAKE	ANCHOR	YELLOWTAIL	FORT PECK	GARRISON	OAHE	BIG BEND	FORT RANDALL	GAVINS POINT
October	180.715	31.131	0.000	36.906	3.988	1.256	127.384	307.000	801.000	934.000	938.000	1,587.000	1,672.000
November	172.779	28.735	0.000	30.266	3.561	0.571	134.906	295.000	784.000	1,088.000	988.000	1,433.000	1,570.000
December	194.101	29.614	0.000	21.571	2.103	0.430	148.570	390.000	974.000	803.000	742.000	853.000	928.000
January	179.049	29.067	0.000	21.546	1.510	0.014	148.626	423.000	1,097.000	1,058.000	1,021.000	782.000	909.000
February	183.417	26.442	0.000	19.556	1.200	0.000	135.506	383.000	994.000	902.000	839.000	688.000	840.000
March	339.941	40.329	0.000	28.812	1.330	0.000	273.670	428.000	1,017.000	1,145.000	1,085.000	1,061.000	1,197.000
April	461.286	102.235	3.832	130.761	2.081	0.596	406.867	450.000	1,315.000	1,656.000	1,575.000	1,525.000	1,628.000
May	537.064	155.473	23.640	256.153	16.248	2.759	495.326	534.000	1,742.000	1,539.000	1,481.000	1,642.000	1,789.000
June	296.592	141.651	32.864	235.444	31.223	5.657	309.365	527.000	1,766.000	1,149.000	1,085.000	1,130.000	1,355.000
July	328.551	184.137	36.113	265.413	48.367	4.723	318.700	462.000	1,753.000	1,523.000	1,403.000	1,587.000	1,605.000
August	256.666	92.441	31.488	113.778	38.397	2.809	180.803	449.000	1,719.000	1,723.000	1,554.000	1,714.000	1,754.000
September	234.983	82.597	31.003	108.842	38.671	0.553	236.949	323.000	1,477.000	2,272.000	2,069.000	2,650.000	2,598.000
TOTAL	**3,365.144**	**943.852**	**158.940**	**1,269.048**	**188.679**	**19.368**	**2,916.672**	**4,971.000**	**15,439.000**	**15,792.000**	**14,780.000**	**16,652.000**	**17,845.000**

TABLE CET6
TOTAL RESERVOIR STORAGE CONTENTS (1,000 AF)
WATER YEARS 2013 AND 2014

BUREAU RESERVOIRS	TOP OF CONSERVATION CAPACITY [3]	DEAD AND INACTIVE CAPACITY	TOTAL STORAGE SEPTEMBER 30		END OF SEPTEMBER PERCENT OF AVERAGE	
			2013	2014	2013	2014
Clark Canyon	174.4	1.1	48.0	59.2	51%	63%
Canyon Ferry	1,891.9	396.0	1,446.3	1,699.2	89%	105%
Helena Valley	10.5	4.6	8.7	8.2	116%	110%
Gibson	96.5	0.0	7.3	16.5	31%	69%
Willow Creek	31.8	1.0	21.4	24.3	106%	121%
Pishkun	46.7	16.0	22.1	35.8	68%	111%
Lake Elwell	925.6	554.3	833.3	830.6	105%	105%
Sherburne	66.1	1.9	17.7	31.3	104%	184%
Fresno	92.9	0.4	63.5	71.9	137%	155%
Nelson	79.0	18.1	75.2	71.5	132%	126%
Bull Lake	152.5	0.7	89.2	104.8	118%	138%
Pilot Butte	33.7	3.8	19.8	25.0	110%	139%
Boysen	741.6	219.2	481.5	666.8	80%	111%
Anchor[1]	17.2	0.1	0.4	0.6	108%	172%
Buffalo Bill[2]	646.6	41.7	466.4	510.2	105%	115%
Bighorn Lake	1,020.6	469.9	967.5	1,021.6	102%	108%
E. A. Patterson	8.6	0.5	8.6	7.7	138%	123%
Lake Tschida	67.1	5.2	65.4	60.0	115%	106%
Jamestown Reservoir	31.5	0.8	27.8	26.6	97%	92%
Shadehill Reservoir	120.2	43.9	112.0	119.2	106%	113%
Angostura Reservoir	123.0	42.2	73.4	97.8	86%	115%
Deerfield Reservoir	15.7	0.2	15.2	15.2	114%	114%
Pactola Reservoir	56.0	1.0	51.0	46.5	110%	100%
Keyhole Reservoir	188.7	6.6	150.0	169.3	169%	191%
Belle Fourche Reservoir	172.9	3.1	96.5	116.7	130%	158%
Subtotal	**6,811.2**	**1,832.3**	**5,168.3**	**5,836.2**		
CORPS RESERVOIRS						
Fort Peck	17,578.0	4,073.0		12,846.0		
Garrison	22,332.0	4,980.0		16,678.0		
Oahe	22,035.0	5,373.0		16,157.0		
Big Bend	1,738.0	1,621.0		1,670.0		
Fort Randall	4,433.0	1,517.0		3,256.0		
Gavins Point	393.0	307.0		367.0		
Subtotal	**68,509.0**	**17,871.0**	**0.0**	**50,974.0**		
TOTAL UPPER MISSOURI BASIN	**75,320.2**	**19,703.3**	**5,168.3**	**56,810.2**		

[1] 2014 Percent of average content is based on the 30 year period from 1984-2013 for all reservoirs except Anchor Reservoir, which is based on the 23 year period from 1991-2013 and Buffalo Bill Reservoir, which is based on the 21 year period from 1993-2013.

[2] 2013 Percent of average content is based on the 30 year period from 1983-2012 for all reservoirs except Anchor Reservoir, which is based on the 22 year period from 1991-2012 and Buffalo Bill Reservoir, which is based on the 20 year period from 1993-2012.

[3] In 1992 work was completed that raised Buffalo Bill Dam by 25 feet and increased the capacity of the reservoir to 646,565 acre-feet.

TABLE CET7
END OF MONTH CONTENTS (1,000 AF)
WATER YEAR 2014

RECLAMATION RESERVOIRS	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
CLARK CANYON RESERVOIR	57.8	68.3	77.2	86.0	93.4	102.8	107.8	105.7	96.7	74.0	62.3	59.2
% of Average	55.9%	61.0%	65.5%	69.9%	73.2%	75.8%	75.5%	76.5%	73.6%	66.9%	66.4%	62.8%
CANYON FERRY RESERVOIR	1,475.1	1,502.8	1,471.2	1,484.8	1,454.1	1,408.0	1,323.8	1,520.6	1,901.9	1,841.1	1,743.4	1,699.2
% of Average	90.2%	90.8%	91.8%	96.7%	97.8%	96.3%	89.1%	92.5%	102.7%	103.1%	104.1%	104.9%
HELENA VALLEY RESERVOIR	8.3	8.0	7.7	7.4	7.2	7.1	10.4	8.9	10.2	7.5	9.3	8.2
% of Average	118.8%	119.1%	118.9%	121.5%	125.4%	124.2%	112.5%	97.7%	113.7%	100.6%	114.4%	109.6%
GIBSON RESERVOIR	10.3	10.3	13.6	16.5	18.0	24.1	22.9	83.2	98.2	62.7	29.5	16.5
% of Average	35.1%	30.9%	37.3%	41.3%	41.8%	50.4%	36.5%	92.6%	108.9%	121.9%	109.9%	69.3%
WILLOW CREEK	24.3	27.8	27.9	28.0	28.4	29.0	29.4	30.1	31.5	29.2	24.4	24.3
% of Average	0.1%	129.0%	127.1%	125.8%	125.2%	123.4%	115.9%	105.6%	108.2%	120.5%	119.4%	120.6%
PISHKUN RESERVOIR	22.1	22.1	22.1	22.1	22.1	22.1	46.2	46.0	46.1	42.3	45.8	35.8
% of Average	0.1%	64.5%	64.9%	65.7%	65.6%	64.8%	116.0%	100.2%	110.0%	114.2%	127.8%	110.5%
LAKE ELWELL (TIBER DAM)	812.9	790.2	765.4	745.7	725.7	752.7	760.6	844.6	924.4	904.8	866.5	830.6
% of Average	106.8%	105.2%	103.8%	103.2%	101.4%	104.6%	103.1%	103.3%	105.3%	105.6%	105.4%	104.7%
SHERBURNE LAKE	24.8	28.6	30.5	32.5	33.9	38.0	39.2	50.2	64.2	62.9	39.7	31.3
% of Average	124.4%	114.0%	109.5%	105.3%	102.4%	132.1%	192.6%	146.1%	114.0%	128.6%	141.2%	184.2%
FRESNO RESERVOIR	61.8	60.8	58.2	56.1	54.2	75.6	90.3	78.2	97.0	80.0	74.8	71.9
% of Average	136.4%	134.4%	133.4%	133.0%	124.2%	127.8%	119.3%	107.9%	128.0%	137.6%	164.0%	155.3%
NELSON RESERVOIR	75.7	73.2	71.3	70.1	67.8	70.1	76.3	74.3	75.0	69.8	71.3	71.5
% of Average	128.6%	126.9%	127.5%	129.0%	127.7%	128.6%	124.3%	122.3%	123.5%	126.6%	131.1%	125.6%
BULL LAKE	99.8	100.1	100.1	99.8	99.7	100.2	101.9	120.1	145.6	149.8	132.6	104.8
% of Average	133.5%	132.6%	131.9%	131.2%	131.1%	131.6%	134.4%	135.0%	115.5%	116.2%	128.6%	138.2%
PILOT BUTTE RESERVOIR	28.3	28.0	27.8	27.8	27.7	27.6	29.2	23.7	29.9	29.3	28.5	25.0
% of Average	106.4%	101.0%	100.4%	99.8%	99.0%	93.6%	95.2%	88.0%	100.3%	115.2%	133.6%	139.0%
BOYSEN RESERVOIR	541.6	570.0	581.1	591.2	597.0	607.2	560.0	594.6	726.4	718.2	699.2	666.8
% of Average	90.9%	96.6%	101.5%	106.2%	109.3%	112.5%	106.5%	108.3%	110.7%	110.6%	113.2%	111.3%
ANCHOR RESERVOIR	0.24	0.26	0.29	0.32	0.35	0.38	0.37	2.67	3.10	1.52	0.28	0.56
% of Average[1]	83.5%	104.9%	121.1%	137.1%	132.6%	104.4%	74.9%	174.6%	91.2%	69.3%	46.6%	172.0%
BUFFALO BILL RESERVOIR	482.2	477.7	470.9	464.0	456.2	450.9	391.7	452.9	606.0	625.6	581.9	510.2
% of Average[2]	114.0%	112.1%	110.9%	109.8%	109.0%	108.9%	99.3%	103.4%	106.8%	108.8%	114.5%	114.6%
BIGHORN LAKE	1,025.8	1,021.2	968.7	917.4	884.1	819.9	729.3	768.2	981.6	1,014.6	1,038.6	1,021.6
% of Average	106.7%	109.1%	109.1%	109.0%	108.7%	102.1%	92.4%	88.9%	98.3%	103.3%	110.0%	107.6%
E. A. PATTERSON LAKE	8.2	7.5	8.0	8.9	7.9	8.9	9.2	9.0	8.9	8.4	8.9	7.7
% of Average	136.6%	126.7%	135.5%	150.6%	123.1%	113.0%	116.9%	115.6%	116.7%	117.1%	135.2%	123.1%
LAKE TSCHIDA	64.1	64.4	62.0	64.0	62.3	62.1	61.0	69.8	74.8	66.4	75.9	60.0
% of Average	112.2%	112.0%	108.0%	111.5%	104.3%	91.5%	92.6%	106.7%	114.5%	107.2%	130.3%	105.6%
JAMESTOWN RESERVOIR	27.8	26.0	25.5	25.2	24.5	27.7	36.8	32.8	33.1	30.3	30.4	26.6
% of Average	103.2%	98.2%	96.1%	94.3%	90.8%	76.2%	64.8%	72.2%	88.8%	89.2%	93.0%	92.5%
SHADEHILL RESERVOIR	122.6	111.6	107.2	105.6	112.9	124.6	123.6	116.4	131.5	119.7	121.2	119.2
% of Average	119.6%	110.2%	107.2%	107.0%	111.8%	108.2%	105.6%	99.4%	113.5%	105.0%	110.6%	112.9%
ANGOSTURA RESERVOIR	94.3	97.5	100.0	104.6	110.3	120.2	117.1	120.0	118.1	107.9	97.8	97.8
% of Average	109.0%	111.6%	112.1%	114.5%	115.3%	117.3%	110.7%	109.7%	108.7%	109.0%	110.1%	115.2%
DEERFIELD RESERVOIR	15.5	15.3	15.0	14.9	14.8	15.0	15.6	15.5	15.6	15.5	15.4	15.2
% of Average	115.9%	113.3%	109.4%	107.0%	104.9%	104.4%	108.5%	106.8%	108.0%	109.7%	112.8%	114.1%
PACTOLA RESERVOIR	51.8	53.5	52.8	51.8	51.1	51.9	54.9	55.8	56.4	54.4	53.0	46.5
% of Average	111.1%	114.4%	113.4%	111.3%	109.5%	109.5%	112.9%	111.8%	111.8%	111.8%	112.6%	100.3%
KEYHOLE RESERVOIR	157.2	156.7	157.0	157.9	163.6	173.9	174.8	175.9	175.8	172.3	170.6	169.3
% of Average	177.9%	178.1%	178.0%	178.1%	179.2%	178.2%	176.8%	173.0%	173.2%	179.5%	188.1%	191.0%
BELLE FOURCHE RESERVOIR	135.3	139.9	140.2	141.7	142.2	147.7	155.8	164.8	165.2	143.5	120.1	116.7
% of Average	164.3%	151.6%	138.5%	128.3%	119.1%	110.6%	107.8%	106.1%	110.6%	121.5%	139.9%	157.6%
CORPS RESERVOIRS	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
FORT PECK RESERVOIR	12,793.0	12,734.0	12,624.0	12,564.0	12,520.0	12,913.0	13,151.0	13,634.0	13,966.0	13,978.0	14,417.0	14,502.0
GARRISON RESERVOIR	16,827.0	16,702.0	16,391.0	16,204.0	15,201.0	15,157.0	15,422.0	15,810.0	17,593.0	17,647.0	16,875.0	16,678.0
OAHE RESERVOIR	17,030.0	16,744.0	16,829.0	16,990.0	17,222.0	17,961.0	18,143.0	18,777.0	20,257.0	20,697.0	21,222.0	20,478.0
BIG BEND RESERVOIR	1,653.0	1,652.0	1,652.0	1,633.0	1,645.0	1,661.0	1,669.0	1,674.0	1,681.0	1,635.0	1,656.0	1,664.0
FORT RANDALL RESERVOIR	2,746.0	2,307.0	2,208.0	2,625.0	2,926.0	3,115.0	3,337.0	3,432.0	3,574.0	3,501.0	3,527.0	3,108.0
GAVINS POINT RESERVOIR	368.0	365.0	361.0	365.0	332.0	332.0	337.0	336.0	345.0	336.0	348.0	334.0

[1] Percent of average content of Buffalo Bill Reservoir is based on a 21 year average, 1993-2013; to reflect the operation of the reservoir since 1992 when the dam was raised and the capacity of the reservoir was increased to 646,565 acre-feet.

[2] Percent of average content of Anchor Reservoir is based on a 23 year average, 1991-2013; this is due to the availability of data for Anchor Reservoir.

TABLE CET8
MONTHLY INFLOW AMOUNTS (1,000 AF)
WATER YEAR 2014

RECLAMATION RESERVOIRS	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
CLARK CANYON RESERVOIR	11.6	12.1	10.4	10.4	8.9	11.1	6.7	10.9	18.3	12.7	9.4	10.0	132.6
% of Average	55.6%	60.4%	62.5%	73.2%	70.3%	67.7%	39.2%	51.4%	57.9%	49.2%	50.0%	55.7%	56.8%
CANYON FERRY RESERVOIR	209.5	200.4	162.5	192.7	152.7	293.8	377.1	733.9	677.9	267.8	158.9	190.4	3,617.7
% of Average	82.3%	75.6%	74.8%	90.2%	73.9%	116.1%	123.2%	147.3%	98.8%	91.1%	103.5%	104.2%	102.5%
HELENA VALLEY RESERVOIR	-0.3	-0.3	-0.3	-0.3	-0.2	-0.1	5.3	13.6	18.1	17.4	20.1	9.4	82.3
% of Average	N/A	N/A	N/A	N/A	N/A	N/A	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
GIBSON RESERVOIR	13.6	10.7	8.8	8.2	6.5	11.8	40.1	201.1	177.8	68.6	24.7	15.6	587.4
% of Average	84.5%	64.5%	64.7%	68.2%	60.3%	80.8%	95.5%	136.8%	117.5%	122.2%	103.1%	90.2%	112.7%
WILLOW CREEK	2.9	3.4	0.1	0.1	0.4	0.6	0.4	0.6	1.5	-0.3	-0.5	-0.1	9.2
% of Average	0.4%	0.5%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	N/A	N/A	N/A	0.1%
PISHKUN RESERVOIR	0.0	0.0	0.0	0.0	0.0	0.0	24.1	22.4	70.5	82.4	53.2	26.7	279.3
% of Average	N/A	N/A	N/A	N/A	N/A	N/A	0.4%	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%
LAKE ELWELL (TIBER DAM)	18.2	13.2	10.7	15.7	11.9	63.7	48.5	153.4	210.8	67.9	23.1	15.6	652.7
% of Average	108.6%	62.0%	63.2%	98.6%	54.8%	165.0%	92.0%	123.7%	156.9%	162.2%	186.9%	135.1%	128.5%
SHERBURNE LAKE	7.2	3.8	1.9	2.0	1.4	4.1	6.3	38.7	55.2	27.0	9.9	4.5	161.9
% of Average	109.6%	55.3%	55.4%	66.7%	59.2%	116.2%	57.7%	125.7%	149.2%	144.9%	112.4%	74.1%	117.4%
FRESNO RESERVOIR	4.4	1.9	0.3	1.0	0.6	42.8	27.6	21.3	71.7	36.1	34.8	19.0	261.4
% of Average	61.2%	86.8%	36.2%	108.8%	16.1%	179.7%	92.8%	49.4%	146.7%	106.5%	115.7%	92.1%	106.7%
NELSON RESERVOIR	4.5	-2.5	-1.9	-1.3	-2.2	2.2	6.3	9.9	15.1	5.7	16.0	0.2	51.9
% of Average	0.1%	N/A	N/A	N/A	N/A	0.2%	0.1%	0.1%	0.2%	0.1%	0.2%	0.0%	0.1%
BULL LAKE	14.6	3.9	2.1	1.2	1.1	1.7	3.8	34.5	56.7	52.5	21.2	10.9	204.3
% of Average	260.4%	122.9%	86.4%	57.7%	69.9%	95.8%	101.3%	123.3%	92.1%	113.6%	101.4%	114.7%	109.4%
PILOT BUTTE RESERVOIR[1]	8.4	-0.3	-0.1	0.0	-0.1	-0.1	5.5	18.1	39.0	35.5	30.7	27.5	164.1
% of Average	75.6%	N/A	N/A	N/A	N/A	N/A	77.6%	77.0%	104.9%	86.2%	94.7%	117.6%	91.7%
BOYSEN RESERVOIR	91.3	57.1	40.7	39.1	32.3	50.5	55.0	190.1	273.5	175.9	73.5	50.2	1,129.2
% of Average	154.8%	116.4%	108.3%	106.7%	86.4%	97.1%	112.5%	158.5%	106.8%	134.3%	128.6%	96.0%	120.5%
ANCHOR RESERVOIR	1.14	0.59	0.46	0.05	0.03	0.03	0.59	5.06	6.08	3.14	1.57	0.84	19.58
% of Average[2]	0.2%	0.2%	0.3%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.7%	0.2%	0.1%
BUFFALO BILL RESERVOIR	52.7	25.8	14.8	14.6	11.8	23.5	71.6	317.4	388.5	284.9	70.2	37.1	1,312.8
% of Average	204.6%	120.4%	94.8%	99.7%	90.3%	124.0%	174.9%	200.0%	129.1%	177.7%	156.4%	149.5%	156.3%
BIGHORN LAKE	185.7	130.3	96.1	97.3	102.2	209.5	316.2	534.3	522.7	351.7	199.9	220.0	2,965.9
% of Average	110.6%	101.0%	87.8%	88.2%	91.4%	141.9%	222.5%	209.6%	128.0%	138.4%	132.2%	132.7%	137.8%
E. A. PATTERSON LAKE	24.0	1.4	0.5	3.1	1.6	7.9	13.9	7.6	1.8	0.1	7.9	0.8	70.5
% of Average	5915.6%	592.1%	315.9%	1388.0%	97.2%	120.2%	417.2%	670.0%	98.9%	10.2%	1667.9%	509.8%	409.8%
LAKE TSCHIDA	26.8	4.7	1.5	5.1	6.5	34.4	58.5	28.5	25.8	7.1	50.0	10.6	259.5
% of Average	1796.6%	313.7%	155.3%	598.6%	133.7%	117.3%	347.6%	520.7%	355.4%	193.3%	3721.4%	4014.0%	351.5%
JAMESTOWN RESERVOIR	4.0	2.7	1.3	0.3	0.0	3.2	22.6	23.6	13.7	5.9	2.8	0.9	81.2
% of Average	247.1%	205.2%	216.2%	121.7%	N/A	29.8%	62.2%	255.8%	304.9%	107.0%	58.1%	46.7%	104.6%
SHADEHILL RESERVOIR	41.7	10.2	3.2	4.3	12.7	58.6	38.4	20.0	44.7	13.0	8.1	14.0	268.9
% of Average	3971.0%	879.2%	345.6%	474.6%	291.2%	230.2%	206.0%	158.3%	753.0%	296.0%	988.2%	N/A	353.8%
ANGOSTURA RESERVOIR	21.2	3.6	2.7	4.9	5.8	24.5	10.7	21.0	8.6	0.3	2.6	2.9	108.9
% of Average	879.2%	113.0%	137.2%	214.0%	115.1%	215.6%	126.6%	157.7%	55.5%	10.4%	155.0%	271.4%	156.4%
DEERFIELD RESERVOIR	1.2	0.9	0.8	0.8	0.7	1.0	1.6	2.0	1.4	1.2	1.1	1.0	13.6
% of Average	158.8%	127.0%	109.8%	111.9%	105.5%	101.0%	122.2%	127.9%	98.8%	115.9%	139.6%	145.6%	120.8%
PACTOLA RESERVOIR	7.9	5.4	3.2	2.6	2.2	3.9	6.8	12.0	8.8	6.3	5.5	4.1	68.7
% of Average	365.5%	289.5%	210.4%	167.5%	142.3%	139.2%	149.8%	173.3%	130.9%	166.4%	189.6%	191.6%	178.5%
KEYHOLE RESERVOIR	7.2	-0.5	0.3	0.9	5.7	10.2	1.0	1.1	-0.1	-3.5	-1.7	-1.3	19.3
% of Average	28720.0%	N/A	173.2%	183.8%	219.1%	163.6%	45.5%	26.3%	N/A	N/A	N/A	N/A	144.4%
BELLE FOURCHE RESERVOIR	38.8	5.7	0.3	1.5	0.5	5.5	8.1	10.1	18.4	8.2	9.0	12.9	119.1
% of Average	337.0%	58.1%	3.3%	16.6%	5.7%	38.6%	69.1%	59.9%	178.8%	168.7%	414.8%	270.2%	104.9%

[1] Negative values are the result of calculated inflow based on reservoir release and change in reservoir content.

[2] Percent of average inflow for Anchor Reservoir is based on a 23 year average, 1991-2013; this is due to the availability of data for Anchor Reservoir.

FIGURE CEG1

ANNUAL GENERATION AT USBR PLANTS

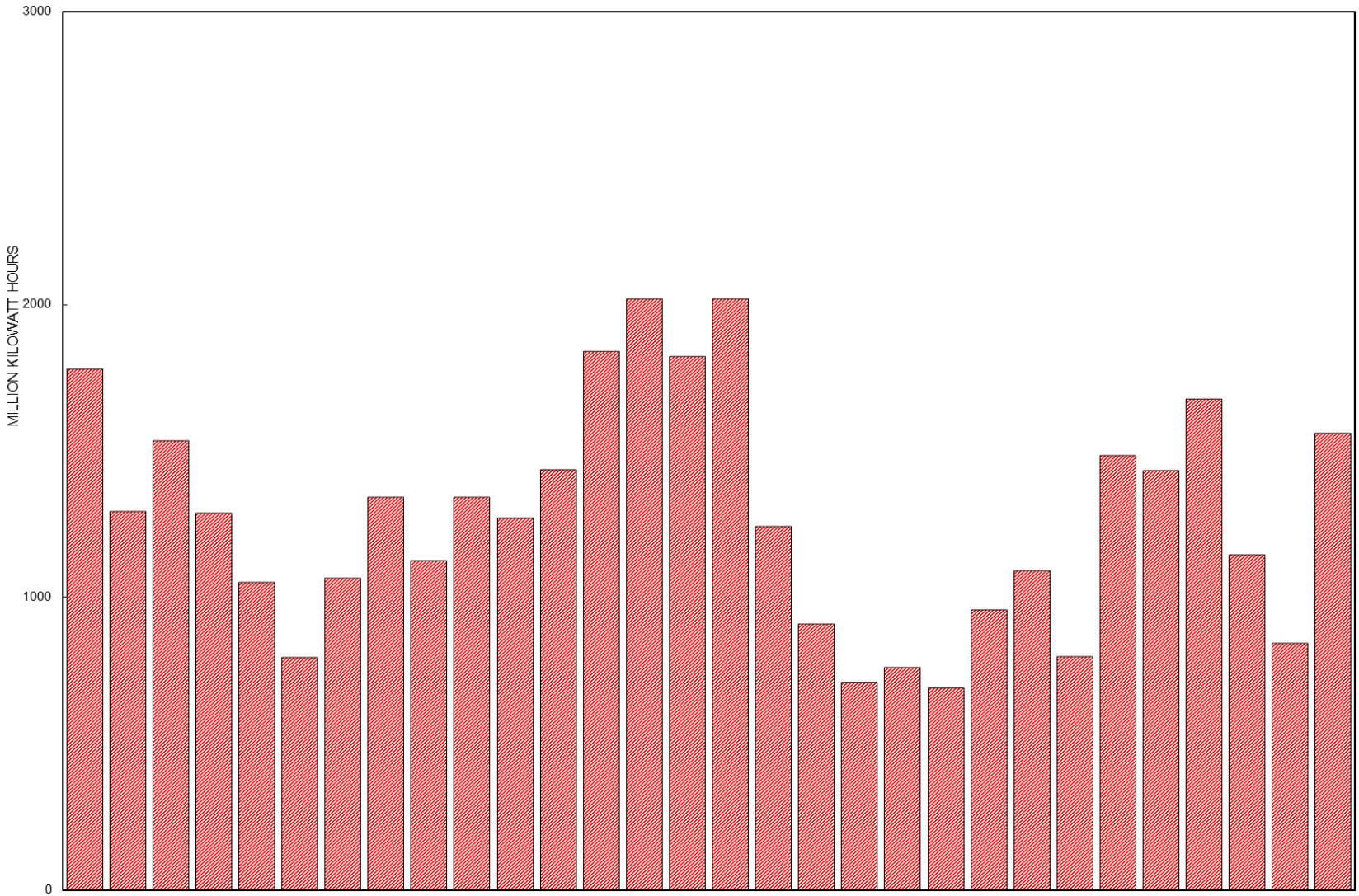


FIGURE CEG2

MONTHLY GENERATION AT USBR PLANTS

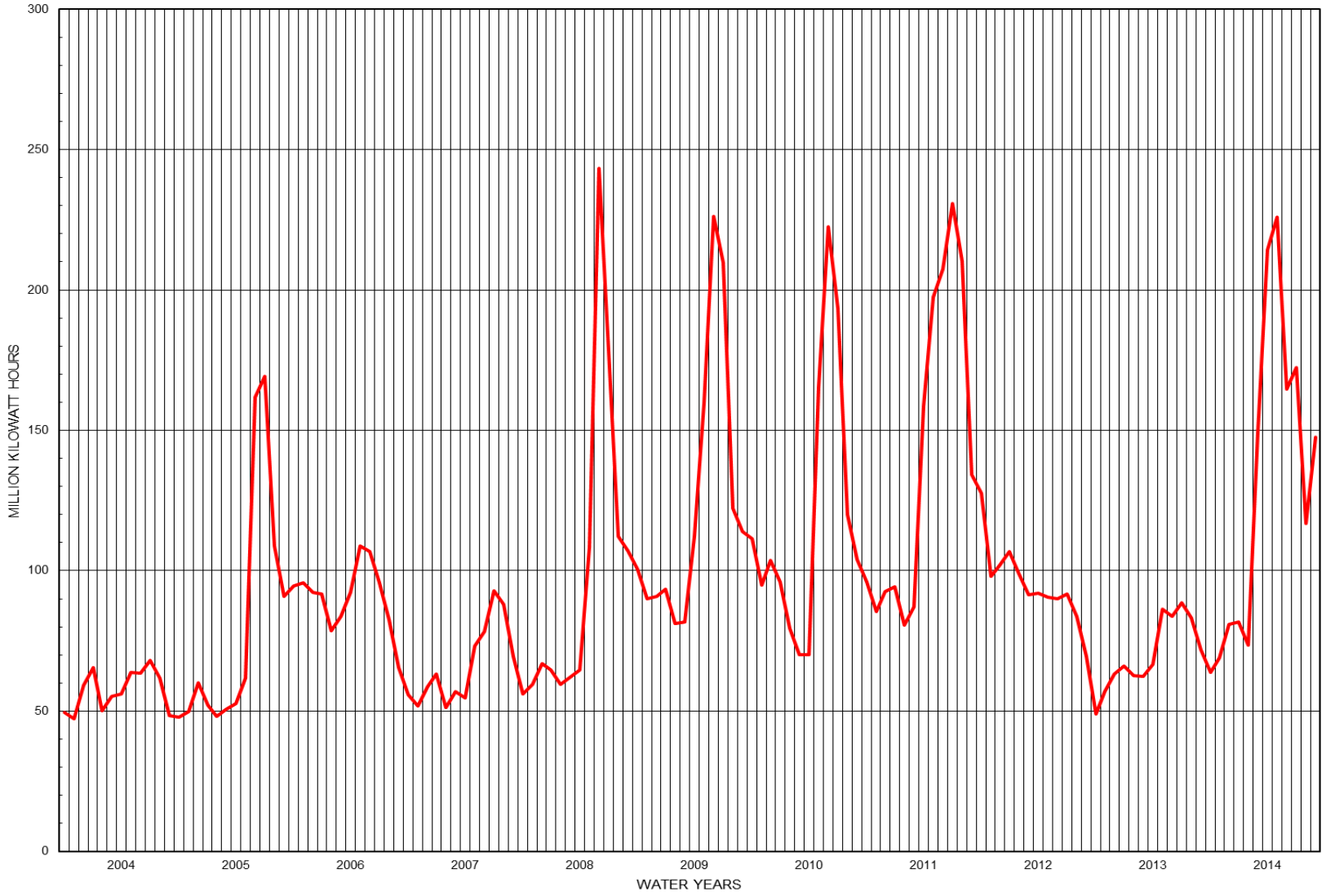


FIGURE CEG3

ANNUAL GENERATION AT COE PLANTS

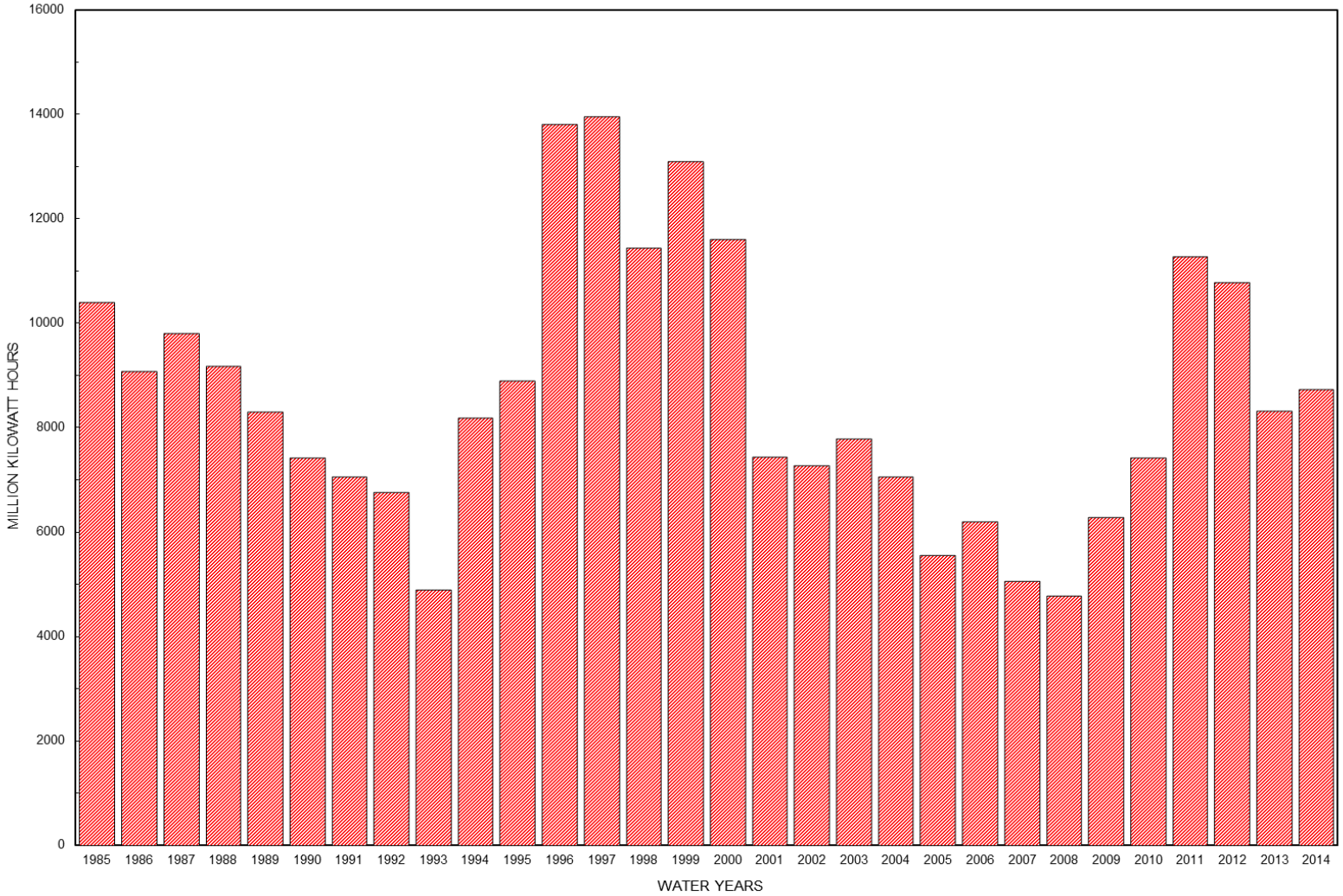


FIGURE CEG4

MONTHLY GENERATION AT COE PLANTS

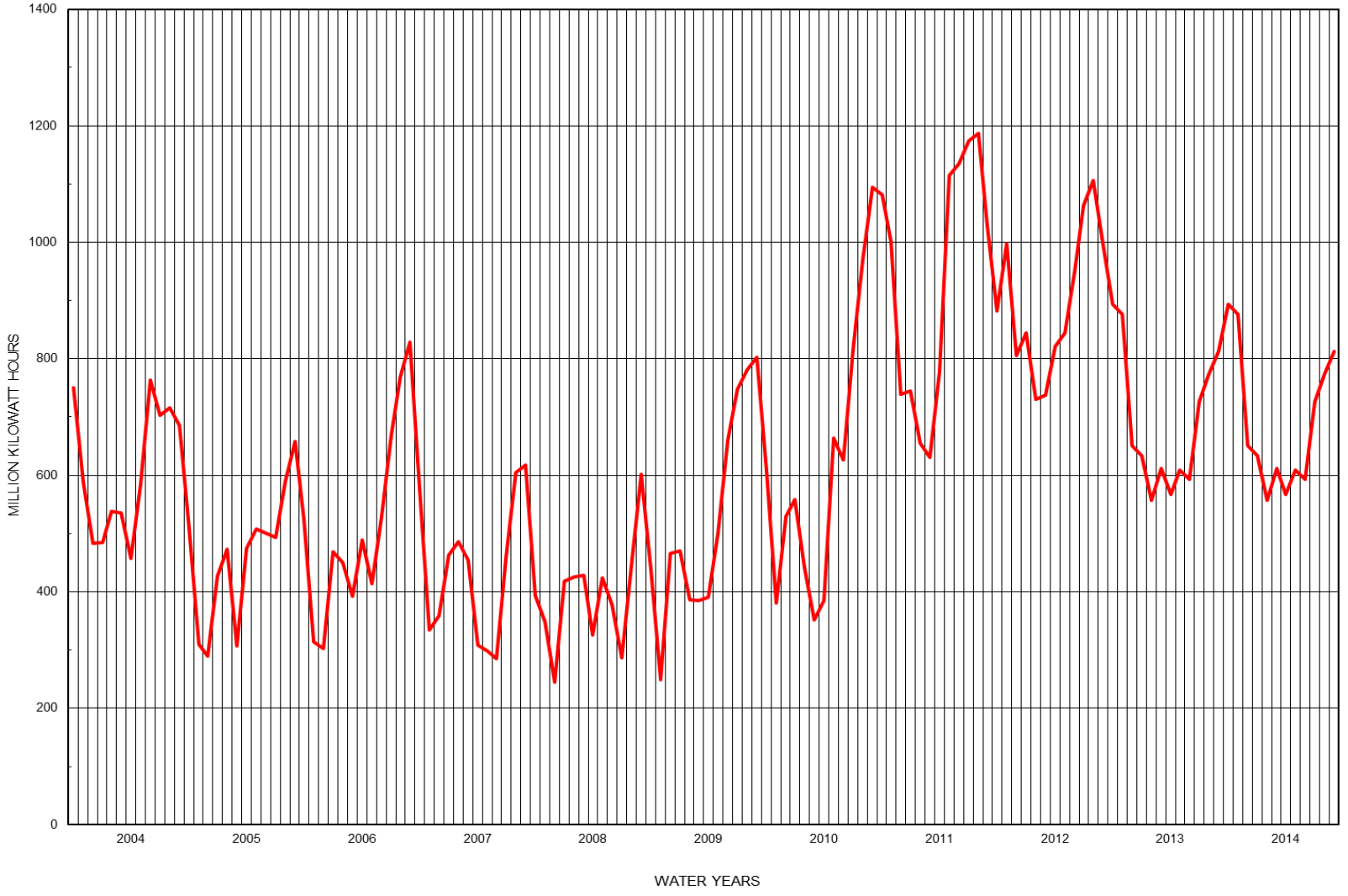


FIGURE CEG5

ANNUAL GENERATION - USBR & COE PLANTS

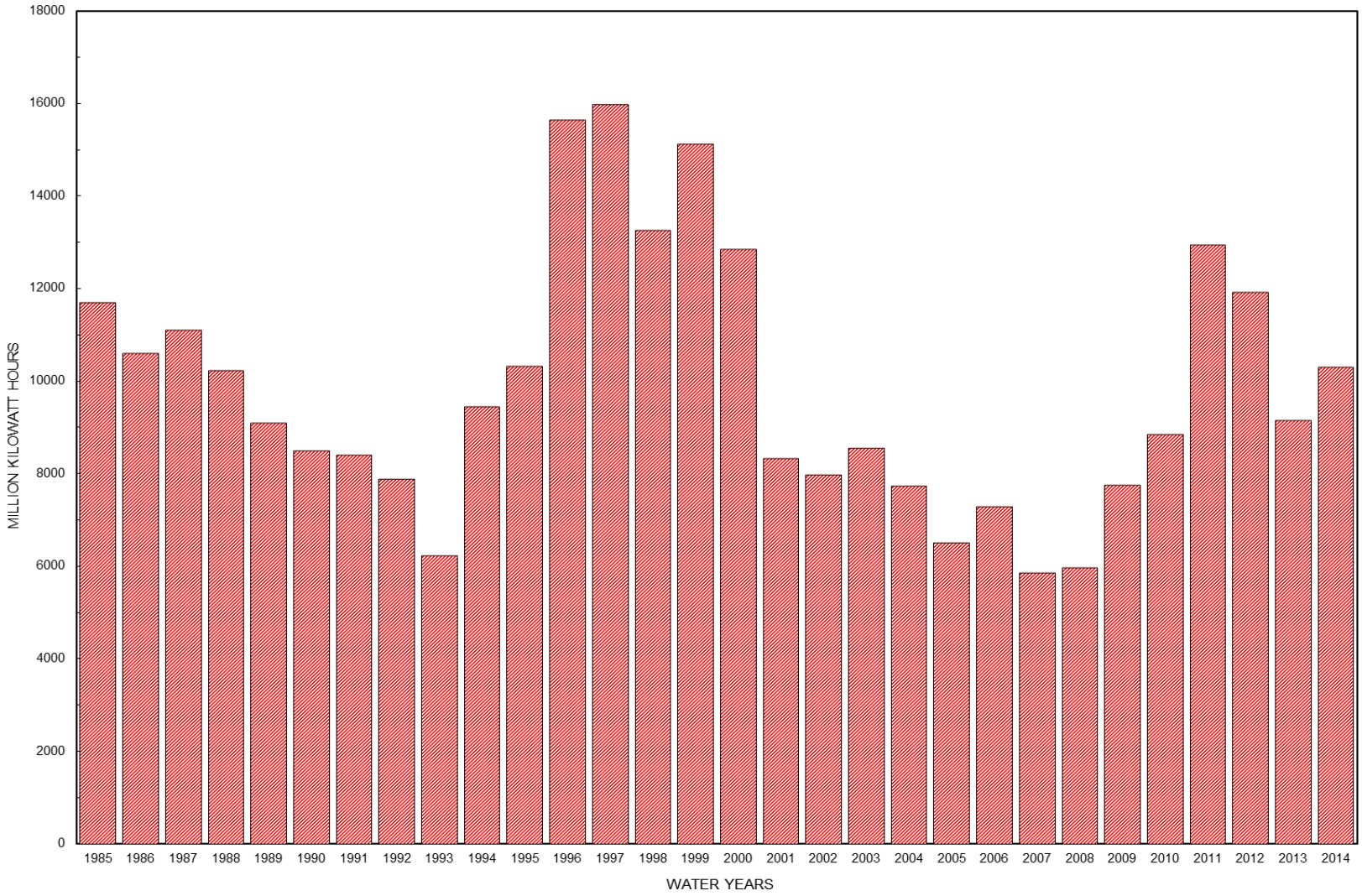


FIGURE CEG6

MONTHLY GENERATION - USBR & COE PLANTS