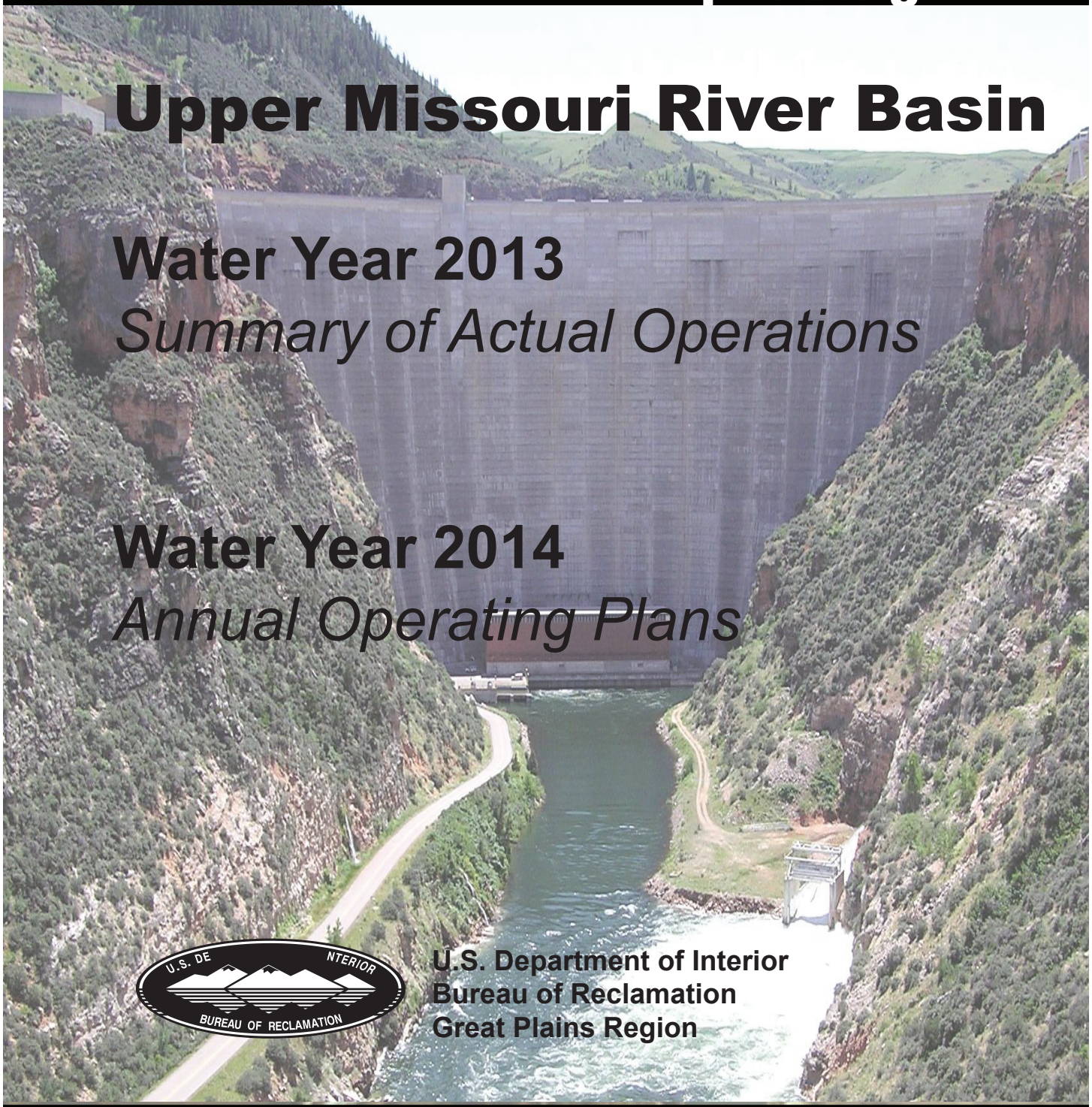
RECLAMATION

Managing Water in the West

Annual Operating Plans



Upper Missouri River Basin

Water Year 2013

Summary of Actual Operations

Water Year 2014

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) 2013, which are principal factors governing the pattern of reservoir operations. This report also describes operations during WY 2013 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 2014, 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 2013 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-September 30, unless specifically stated otherwise.

SUMMARY

OF OPERATIONS

FOR WATER YEAR 2013

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 2013

Water Year (WY) 2012 ended with very dry conditions, as precipitation across Montana during September was at or near record low amounts. By the end of September, the U.S. Drought Monitor revealed small areas of extreme drought conditions in south central and central Montana. WY 2012 ended with varying storage levels. Gibson Reservoir was at 22 percent of average while Lake Sherburne was 280 percent of average. Bureau of Reclamation's (Reclamation) reservoirs with the most amount of carryover storage were Lake Elwell and Bighorn Lake at 88 percent of full capacity.

October - December

WY 2013 began in October with below normal temperatures across Montana. However, many areas received measurable precipitation ending a period of 48 consecutive days with no precipitation. The Marias Basin recorded 264 percent of average valley precipitation, while Gibson, Lake Elwell, and Sherburne Reservoirs all had approximately 170 percent of average mountain precipitation.

November's temperatures varied from above normal in the western part of the state to below normal in the northeast. Precipitation was above normal across much of northern Montana, with very dry regions in the southeast. This precipitation allowed the soil moisture levels to recover to above normal levels across most of the state. On November 8 and 9, the city of Great Falls received
14 inches of snow, with more snow accumulation in mountainous areas in western and southwestern Montana.

The month of December yielded much above average amounts for valley precipitation, except for the Milk River, and near average to above average mountain precipitation. The last 10 days in December resulted in temperatures as much as 30 degrees below normal. The year to date mountain precipitation from October - December ranged from average to above average with the valley precipitation ranging from 75 percent of average in the Beaverhead Basin to 202 percent of average in the Marias Basin. Additional monthly data on valley and mountain precipitation per basin during WY 2013 can be found in Tables MTT1A and MTT1B.

The precipitation that occurred during October - December caused many reservoirs to increase in storage content. By the end of December, the reservoir storages ranged from 45 percent of average at Gibson Reservoir to 206 percent of average at Sherburne Reservoir.

TABLE MTT1A
PRECIPITATION IN INCHES AND PERCENT OF AVERAGE
2013 VALLEY PRECIPITATION

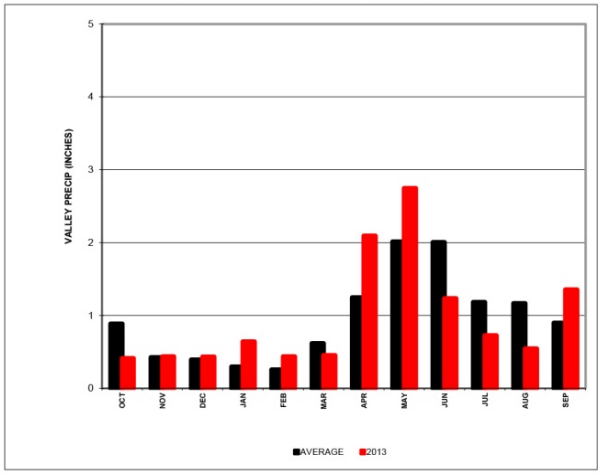
BASIN	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP	
	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%	IN.	%
Beaverhead																								
Monthly Precip Average	0.89		0.43		0.39		0.30		0.26		0.62		1.25		2.01		2.01		1.18		1.17		0.90	
Monthly Precip and % of Average	0.41	46	0.44	102	0.43	110	0.64	217	0.44	171	0.45	73	2.09	168	2.75	137	1.24	62	0.73	61	0.55	47	1.36	151
Year-to-Date Precip and % of Average	0.41	46	0.85	65	1.28	75	1.92	96	2.35	104	2.80	98	4.89	119	7.64	125	8.87	109	9.60	103	10.14	97	11.50	101
Jefferson																								
Monthly Precip Average	0.80		0.58		0.47		0.40		0.33		0.67		1.18		2.06		2.15		1.37		1.27		0.95	
Monthly Precip and % of Average	0.64	80	0.72	124	0.50	107	0.60	152	0.47	145	0.33	49	1.17	99	2.62	127	1.81	84	0.80	58	0.74	58	2.31	243
Year-to-Date Precip and % of Average	0.64	80	1.36	99	1.86	101	2.46	110	2.93	114	3.26	101	4.43	100	7.05	109	8.86	103	9.66	97	10.40	92	12.71	104
Madison																								
Monthly Precip Average	1.40		1.30		1.43		1.26		1.10		1.70		1.77		2.68		2.84		1.56		1.42		1.25	
Monthly Precip and % of Average	0.99	71	1.59	122	1.90	133	1.19	94	0.81	74	1.56	92	1.32	75	2.74	102	1.82	64	1.30	83	0.53	37	2.74	219
Year-to-Date Precip and % of Average	0.99	71	2.57	95	4.47	108	5.66	105	6.47	100	8.03	98	9.36	94	12.10	96	13.92	90	15.22	89	15.74	85	18.48	94
Gallatin																								
Monthly Precip Average	1.61		1.10		0.79		0.83		0.78		1.38		2.30		3.18		3.11		1.46		1.43		1.40	
Monthly Precip and % of Average	0.79	49	1.13	103	1.36	172	0.72	87	0.38	49	0.69	50	0.94	41	4.31	136	3.45	111	0.71	49	0.74	52	3.00	214
Year-to-Date Precip and % of Average	0.79	49	1.92	71	3.28	94	4.00	92	4.38	86	5.07	78	6.01	68	10.32	86	13.77	91	14.48	88	15.22	85	18.22	94
Missouri Above Toston																								
Monthly Precip Average	1.06		0.86		0.81		0.72		0.62		1.07		1.46		2.37		2.49		1.44		1.33		1.09	
Monthly Precip and % of Average	0.76	72	1.03	120	1.03	127	0.77	107	0.52	84	0.75	71	1.10	75	2.74	116	1.93	78	1.02	71	0.67	51	2.53	232
Year-to-Date Precip and % of Average	0.76	72	1.80	94	2.83	103	3.59	104	4.12	101	4.87	95	5.97	90	8.71	97	10.65	93	11.67	90	12.34	87	14.87	97
Sun-Teton																								
Monthly Precip Average	1.17		1.29		1.22		1.17		1.03		1.19		1.51		2.49		2.71		1.40		1.49		1.53	
Monthly Precip and % of Average	1.95	167	1.67	130	1.43	117	0.96	83	0.75	73	0.86	72	1.50	100	1.68	67	2.16	80	0.46	33	1.09	73	2.12	139
Year-to-Date Precip and % of Average	1.95	167	3.62	147	5.05	137	6.01	124	6.76	115	7.62	108	9.12	106	10.80	98	12.95	94	13.42	88	14.50	87	16.63	91
Marias																								
Monthly Precip Average	0.57		0.43		0.38		0.31		0.29		0.61		0.99		2.00		2.61		1.31		1.30		1.26	
Monthly Precip and % of Average	1.52	264	0.82	192	0.45	120	0.70	226	0.37	127	0.50	82	0.88	89	2.11	105	3.23	124	1.52	116	1.56	120	1.66	132
Year-to-Date Precip and % of Average	1.52	264	2.33	233	2.78	202	3.48	207	3.85	195	4.35	168	5.23	146	7.34	132	10.57	129	12.09	127	13.65	126	15.31	127
Milk																								
Monthly Precip Average	0.60		0.43		0.42		0.37		0.29		0.50		0.84		1.99		2.37		1.60		1.10		1.21	
Monthly Precip and % of Average	1.38	229	1.02	239	0.24	58	0.88	237	0.15	53	0.27	54	0.88	105	3.54	178	4.64	196	2.10	131	1.71	155	2.16	178
Year-to-Date Precip and % of Average	1.38	229	2.41	233	2.65	182	3.53	193	3.68	174	3.95	151	4.83	140	8.37	154	13.02	167	15.12	161	16.82	160	18.98	162
St. Mary																								
Monthly Precip Average	1.47		1.98		1.94		1.45		1.17		1.39		1.49		2.49		3.47		1.79		1.49		1.97	
Monthly Precip and % of Average	3.00	204	2.95	149	3.39	174	1.84	127	2.22	191	3.28	237	3.69	248	1.99	80	3.01	87	0.50	28	1.74	117	3.00	152
Year-to-Date Precip and % of Average	3.00	204	5.95	172	9.34	173	11.18	163	13.40	167	16.68	178	20.36	187	22.35	167	25.36	151	25.86	139	27.60	137	30.60	139
Bighorn Above Yellowtail																								
Monthly Precip Average	0.82		0.47		0.33		0.29		0.32		0.60		1.12		1.81		1.40		0.86		0.67		1.01	
Monthly Precip and % of Average	0.49	60	0.39	83	0.38	115	0.52	179	0.39	120	0.31	52	1.34	120	2.08	115	0.25	18	0.60	69	0.23	34	2.62	259
Year-to-Date Precip and % of Average	0.49	60	0.88	69	1.26	78	1.78	93	2.17	97	2.48	88	3.83	97	5.91	102	6.16	86	6.75	84	6.98	80	9.61	99

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

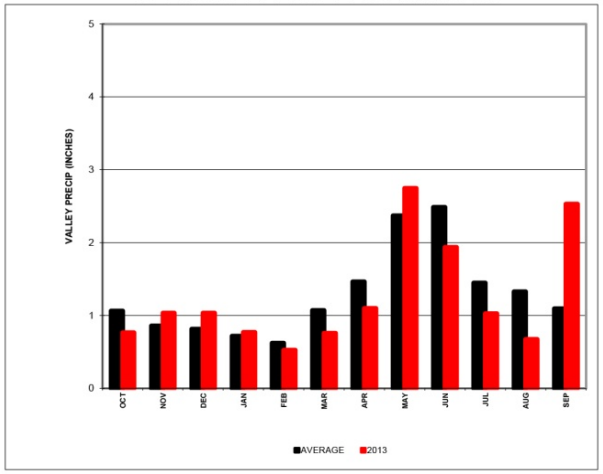
Beaverhead.....Lima and Dillon
Jefferson.....Lima, Dillon, Virginia City, and Boulder
Madison.....Hebgen, West Yellowstone, and Norris Madison
Gallatin.....Bozeman
Missouri Above Toston.....Townsend, Lima, Dillon, Virginia City, Boulder, Hebgen, West Yellowstone, Norris Madison, and Bozeman
Sun-Teton.....Summit, 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
2013 VALLEY PRECIPITATION

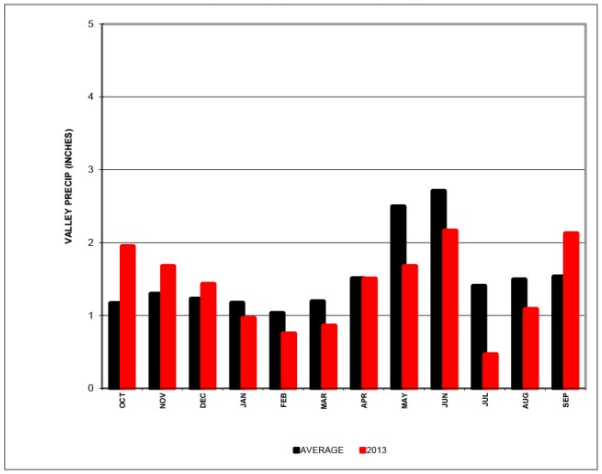
CLARK CANYON RESERVOIR



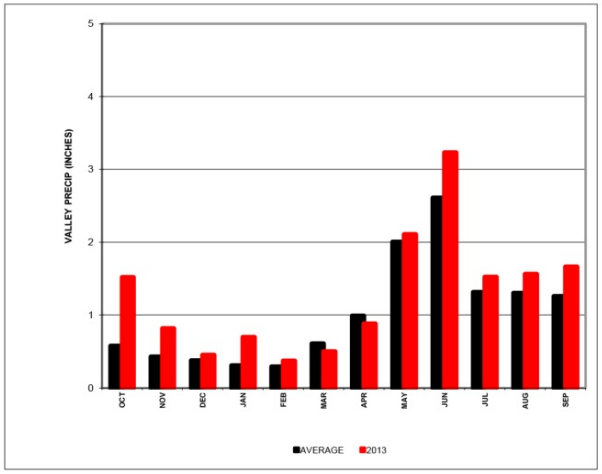
CANYON FERRY RESESRVOIR



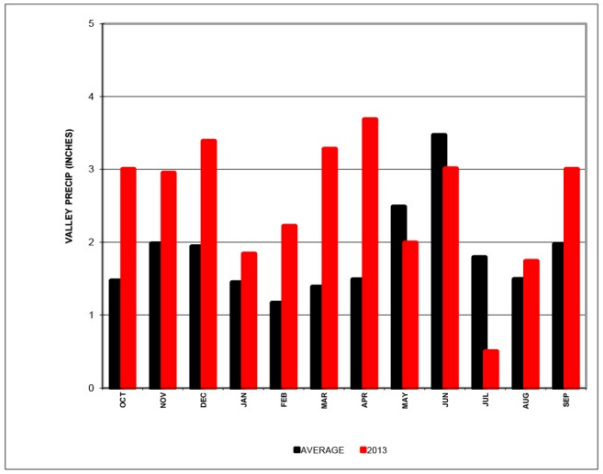
GIBSON RESERVOIR



LAKE ELWELL



LAKE SHERBURNE



BIGHORN LAKE

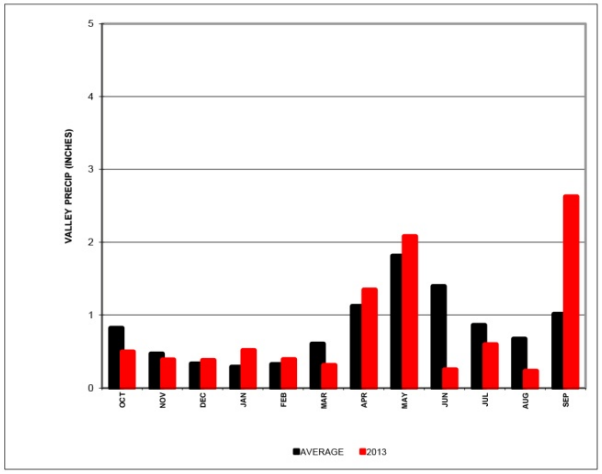


TABLE MTT1B
PRECIPITATION IN INCHES AND PERCENT OF AVERAGE
2013 MOUNTAIN PRECIPITATION

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	1.38	67	2.32	96	3.88	138	2.14	85	1.06	50	1.44	56	1.50	58	1.90	62	0.94	33	0.90	56	0.14	10	2.44	162
Year-to-Date Precip and % of Avera	1.38	67	3.70	83	7.58	104	9.72	99	10.78	90	10.78	84	13.72	80	15.62	78	16.56	72	17.46	71	17.60	68	20.04	73
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	1.70	78	2.33	89	3.14	123	1.91	79	1.07	53	1.47	56	1.96	66	3.19	93	2.17	72	1.34	89	0.61	42	2.84	173
Year-to-Date Precip and % of Avera	1.70	78	4.03	84	7.17	98	9.09	93	10.16	86	11.63	81	13.59	78	16.77	81	18.94	79	20.29	80	20.90	78	23.74	83
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	2.08	97	2.31	88	3.01	114	1.99	79	1.26	60	1.65	63	2.26	76	3.09	91	2.61	88	1.00	64	0.87	56	3.40	204
Year-to-Date Precip and % of Avera	2.08	97	4.39	92	7.41	100	9.40	96	10.66	89	12.31	84	14.56	82	17.65	84	20.26	84	21.26	83	22.13	82	25.53	89
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	2.68	93	3.18	83	5.63	134	5.63	76	1.51	46	2.50	67	3.18	83	2.75	68	2.16	67	1.44	80	0.46	28	3.94	215
Year-to-Date Precip and % of Avera	2.68	93	5.85	87	11.48	105	11.48	97	15.98	88	18.48	84	21.65	84	24.40	82	26.56	81	28.00	81	28.46	78	32.40	85
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	2.00	65	3.03	88	4.47	130	2.73	84	2.77	93	2.90	74	4.03	88	5.83	118	2.47	60	1.67	76	1.00	50	3.17	148
Year-to-Date Precip and % of Avera	2.00	65	5.03	77	9.50	96	12.23	93	15.00	93	17.90	89	21.93	89	27.77	94	30.23	90	31.90	89	32.90	87	36.07	90
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	2.24	93	2.62	86	3.90	123	2.33	77	1.44	58	2.02	66	2.63	79	3.26	89	2.43	78	1.22	74	0.77	48	3.51	203
Year-to-Date Precip and % of Avera	2.24	93	4.86	89	8.76	102	11.09	95	12.53	89	14.55	85	17.18	84	20.43	85	22.86	84	24.08	83	24.85	81	28.36	88
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	4.35	172	2.85	91	3.23	107	2.20	79	1.70	70	1.80	66	3.30	120	2.93	80	3.70	101	0.30	17	1.25	60	3.48	161
Year-to-Date Precip and % of Avera	4.35	172	7.20	120	10.43	120	12.63	110	14.33	103	16.13	97	19.43	100	22.35	97	26.05	98	26.35	93	27.60	90	31.08	95
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	5.22	166	3.92	93	4.94	121	3.54	87	2.96	90	2.90	80	4.70	138	2.84	68	3.92	97	0.08	4	1.24	59	4.34	170
Year-to-Date Precip and % of Avera	5.22	166	9.14	123	14.08	123	17.62	114	20.58	109	23.48	105	28.18	109	31.02	103	34.94	103	35.02	97	36.26	96	40.60	100
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	8.70	179	9.65	128	9.45	138	9.45	78	3.70	72	7.35	138	5.15	114	2.45	53	5.05	99	0.05	2	3.05	155	6.00	186
Year-to-Date Precip and % of Avera	8.70	179	18.35	148	27.80	145	33.60	126	37.30	117	44.65	120	49.80	120	52.25	113	57.30	112	57.35	107	60.40	108	66.40	112
Bighorn Lake																								
Monthly Precip Average	2.41		2.35		2.17		2.13		1.85		2.63		3.12		3.58		2.83		1.81		1.34		2.15	
Monthly Precip and % of Average	2.39	99	1.99	85	2.08	96	1.67	78	1.42	77	2.06	78	3.09	99	3.81	106	1.53	54	1.48	82	0.74	55	5.03	235
Year-to-Date Precip and % of Avera	2.39	99	4.38	92	6.46	93	8.13	90	9.54	88	11.61	86	14.70	88	18.51	91	20.03	87	21.52	86	22.26	85	27.29	96

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

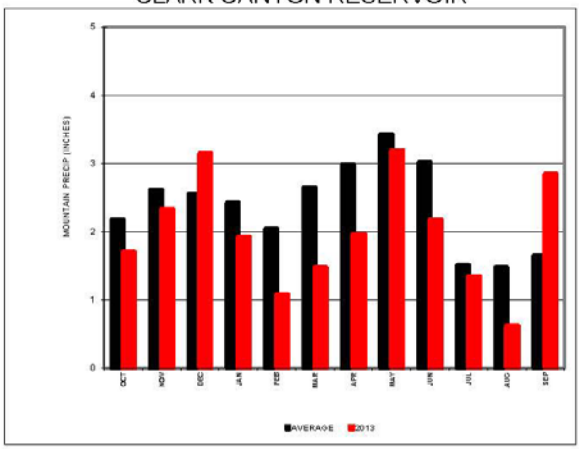
Lake Elwell Reservoir.....Mount Lockhart, Badger Pass, Pike Creek, Dupuyer Creek, and Waldron

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

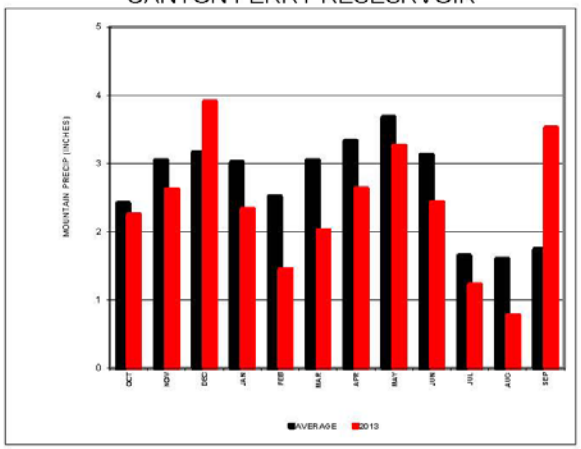
Bighorn Lake.....Kirwin, Blackwater, Evening Star, Shell Creek, Powder River, Bald Mountain, Bone Springs Divide, Owl Creek, Sucker Creek, Dome Lake, Hansen Sawmill, Timber Creek, Bear Trap Meadow, Burgess Junction, Middle Powder, Sylvan Lake, Younts Peak, and Sylvan Road

TABLE MTT1B-1
PRECIPITATION IN INCHES AND PERCENT OF AVERAGE
2013 MOUNTAIN PRECIPITATION

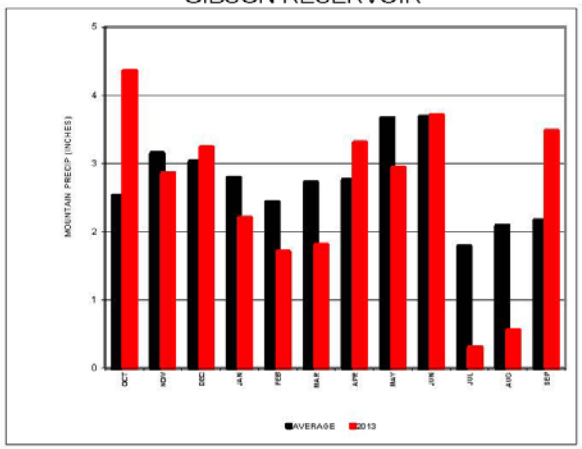
CLARK CANYON RESERVOIR



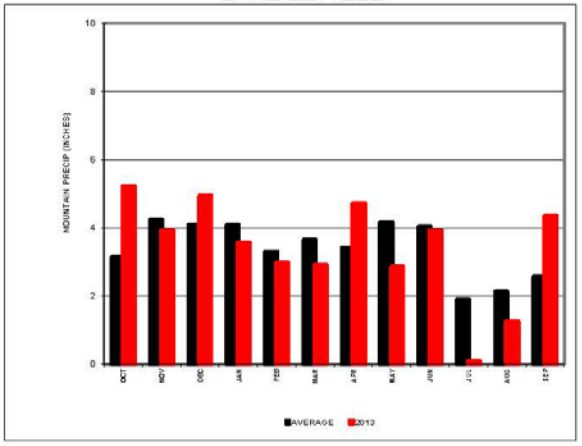
CANYON FERRY RESESRVOIR



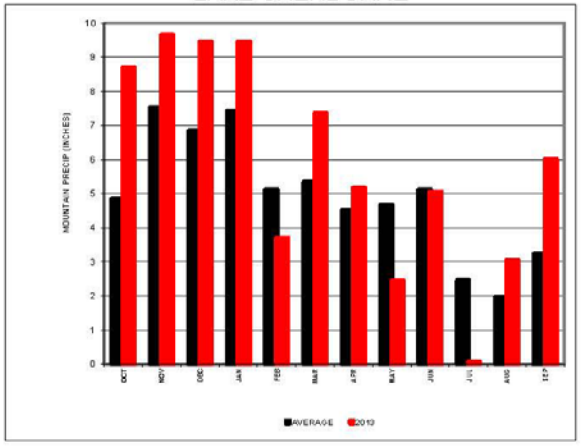
GIBSON RESERVOIR



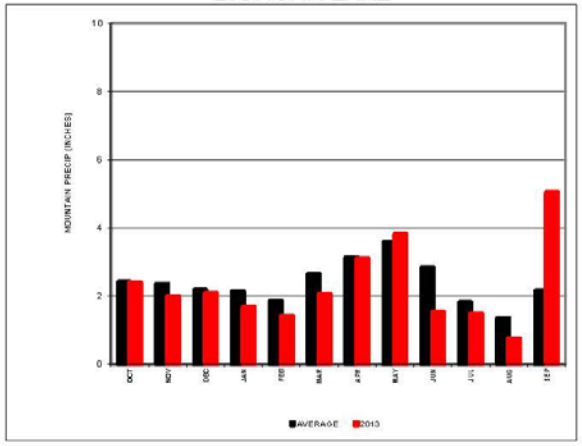
LAKE ELWELL



LAKE SHERBURNE



BIGHORN LAKE



January - March

On January 1, Reclamation began forecasting the April - July spring runoff volumes for Reclamation reservoirs east of the Continental Divide. The water supply forecasts prepared on January 1 indicated April-July runoff volumes varying from 74 percent at Yellowtail Dam to 124 percent of average at Fresno Reservoir as shown in Table MTT3. As January proceeded, temperatures were consistently above average while precipitation was below normal statewide. The Hi-Line reported up to a foot of snow while higher mountainous peaks in the southwest received 12 to 15 inches. Yellowtail Dam reported approximately 8 to 10 inches of snowfall in late January, with another 5 inches falling a few days later. By the end of January, snow depths at lower elevations were near normal, while at higher elevations, several stations recorded higher than normal depths.

Snowfall was on the light side for February. Outside of isolated areas recording slightly above normal snowfall, most areas across Montana were below to much below normal. The statewide average of 3.8 inches was 4.3 inches below average. This February recorded the lowest average snowfall since February 2005.

By March 1, the water supply forecasts decreased slightly and ranged from 63 percent of average at Yellowtail Dam to 111 percent of average at Fresno Reservoir. Overall, March's precipitation was below average, except for areas in the St. Mary Basin. The cumulative valley precipitation varied from 78 percent of average in the Gallatin River Basin to 178 percent of average in the St. Mary Basin. The snowpack above most of Reclamation's reservoirs were 20 percent below average, except for Sherburne Reservoir which was near average. By the end of March, storage levels on all reservoirs were above average, except for Gibson Reservoir, which was 54 percent of average. Canyon Ferry Reservoir was 102 percent of average and Nelson Reservoir was 132 percent of average.

April - June

The April 1, the Natural Resources Conservation Service (NRCS) mountain snow water content ranged from 148 percent of median in the Milk River Basin to 79 percent of median in the Marias Basin as shown in Table MTT2. The resulting April-July forecasted runoff volumes ranged from 56 percent of average into Yellowtail Dam to 102 percent of average into Sherburne Reservoir. By the beginning of April, it seemed as if the snowpack had peaked and the snowmelt runoff was starting to occur as temperatures were above normal. However, cooler than average temperatures soon arrived and produced varying amounts of snow across the state. By the end of April, the snowpack reached near average conditions above each of the reservoirs, except for Sherburne Reservoir which was above average. All reservoirs peaked in late April as shown in Table MTG1.

Because of lower inflows in the southwest and high inflows in the north, the May 1 spring water supply forecast dropped to 47 percent of average at Clark Canyon Reservoir and increased to 106 percent of average at Sherburne Reservoir. The NRCS snowpack ranged from the St. Mary Basin at 125 percent of average to the Beaverhead Basin at 89 percent of average. Overall, May brought average temperatures and above average precipitation throughout the state.

TABLE MTT2
2013 MOUNTAIN SNOW WATER CONTENT
AS A PERCENT OF NORMAL

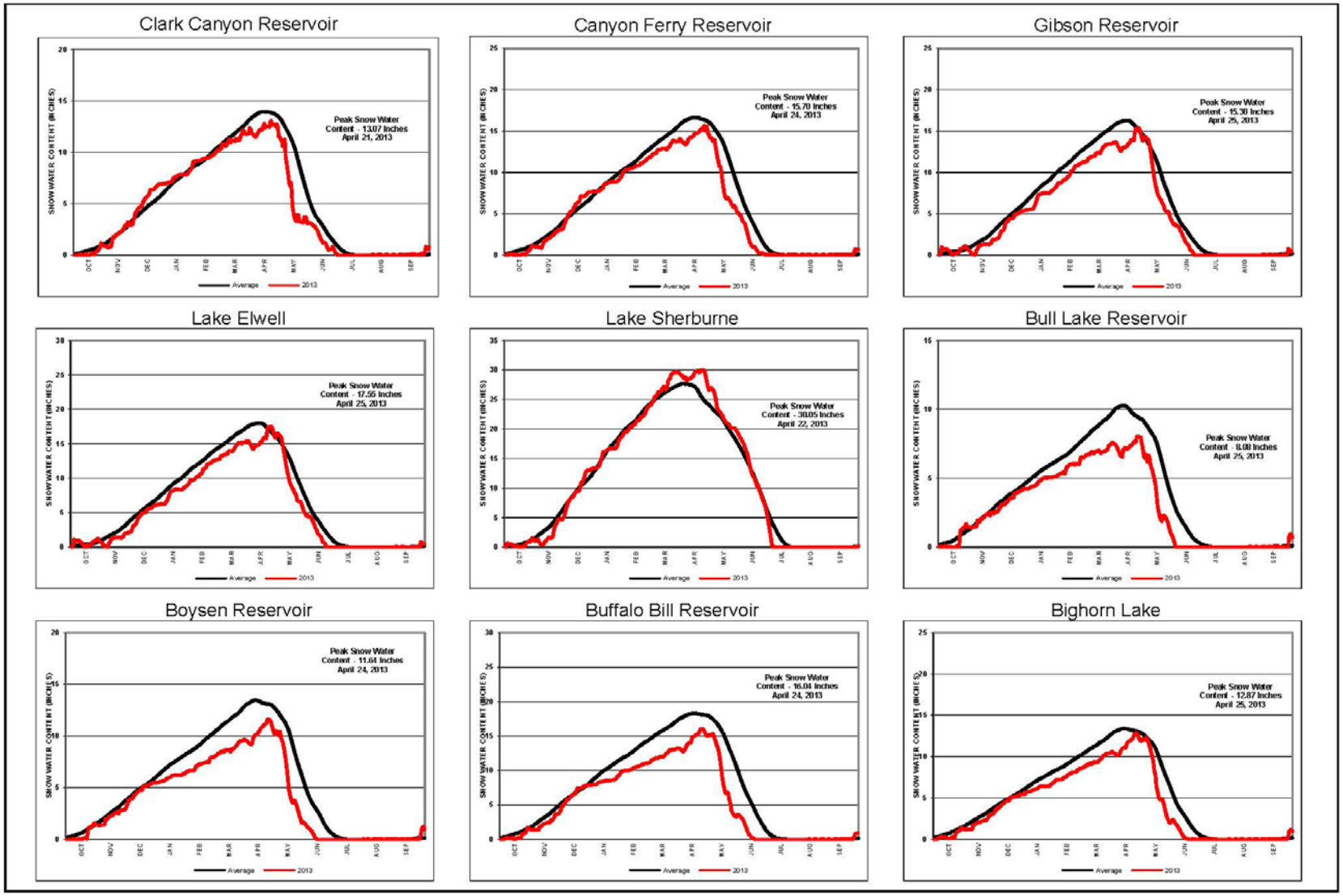
DRAINAGE BASIN	JAN 1	FEB 1	MAR 1	APR 1	MAY 1
Beaverhead	125	115	101	98	93
Jefferson	109	102	98	89	89
Madison	106	102	92	89	94
Gallatin	115	105	100	94	105
Missouri Headwaters above Toston	110	94	96	95	97
Sun	86	89	91	84	102
Marias	73	72	79	79	93
Milk River	60	106	126	148	125
St. Mary	113	102	104	99	118
Wind	97	84	83	77	101
Shoshone	110	96	92	87	93
Bighorn (Boysen-Bighorn)	98	93	95	94	120

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/]		ACTUALAPRIL-JULY[5/]		% OF APRIL FORE-CAST REC'D
	1,000 AC-FT	% OF AVG	1,000AC-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	86.0	92	80.5	86	77.0	83	56.0	60	36.0	47	21.0	37	38.1	41	68
Canyon Ferry	1,810.0	102	1,691.0	95	1,579.0	89	1,362.4	77	1,152.0	79	512.0	52	1,003.0	57	74
Gibson	386.0	96	354.0	88	372.0	93	362.4	90	339.0	95	171.0	80	354.3	88	98
Tiber	353.0	98	321.0	89	327.0	91	322.1	90	303.0	99	143.0	78	317.0	88	98
Sherburne	99.5	101	99.7	101	100.2	101	101.1	102	93.0	106	58.0	101	104.5	106	103
Fresno	69.7	124	60.0	107	62.0	111	43.0	96	43.0	123	18.8	98	34.3	61	55
Yellowtail	812.0	74	788.0	72	688.0	63	610.1	56	579.0	61	350.0	51	627.9	57	103

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

Figure MTG1
WATER YEAR 2013
SNOW WATER CONTENT



By mid June, most of the mountain snowpack runoff above Reclamation's reservoirs was finished for the year, which was several weeks earlier than average. June temperatures were below normal in the north and above normal in the southwest, while precipitation was much above average to the north and very dry in central and southwest Montana. The Bighorn Basin produced only 18 percent of average valley precipitation, while the Milk River Basin produced 131 percent of average.

July - September

July continued to bring near-normal temperatures in the north and much above normal temperatures in central and southwest Montana as seen below in Figure 1. July's precipitation continued the same pattern from June as the north received above normal amounts, while central and the southwest continued to produce little rainfall, Figure 2.

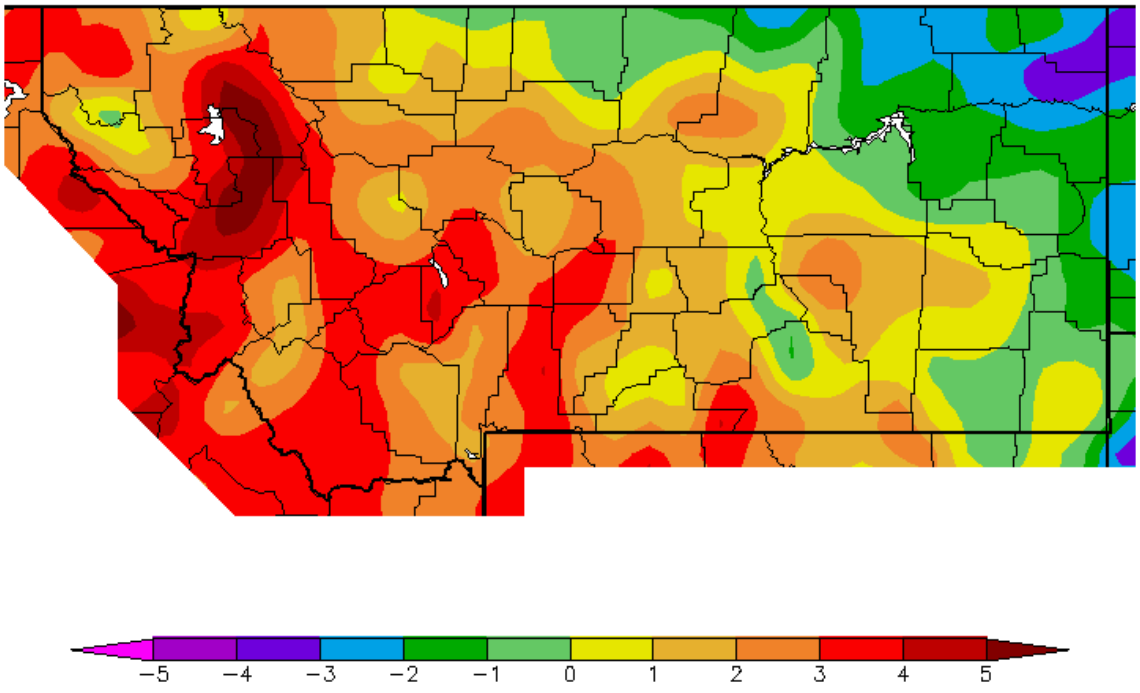


Figure 1. July 2013 -Temperature departures from normal (°F) (Western Region Climate Center).

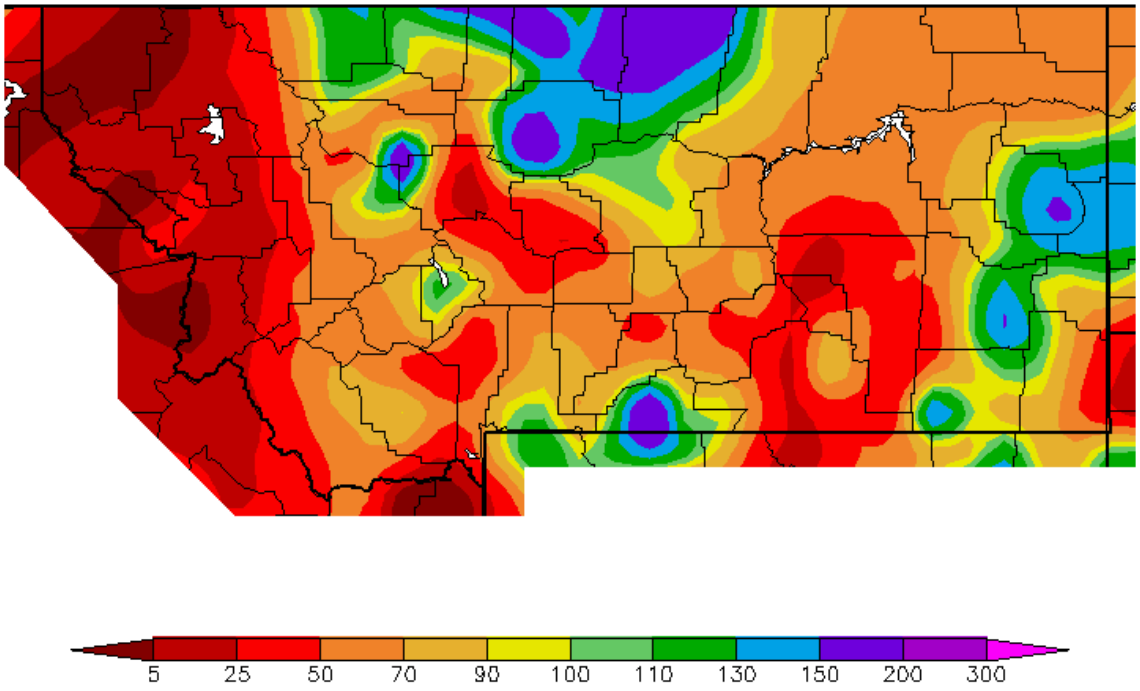


Figure 2. July 2013 – Precipitation departures from normal (percent) (Western Region Climate Center)

By the end of July, the actual April-July runoff volumes for WY 2013 ranged from 41 percent of average into Clark Canyon Reservoir to 106 percent of average into Sherburne Reservoir as shown in Table MTT3.

August brought more of the same conditions – cool and wet in the north and hot and dry in central and southwest Montana. The dry conditions continued to significantly affect inflows into Clark Canyon and Canyon Ferry Reservoirs. Each reservoir was approximately 7 feet from filling to the top of conservation, while the Bighorn Reservoir was able to fill as a result of higher than anticipated fall and winter inflows.

However, by September the precipitation in central and southwest Montana had drastically improved because of several rainfall events across the state. The valley precipitation produced a low of 151 percent of average in the Beaverhead Basin and a high of 259 percent of average in the Bighorn Basin. This 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 at 37 percent of average while Fresno Reservoir was 154 percent of average. The Reclamation reservoirs with the most carryover storage were Nelson Reservoir and Bighorn Lake at 95 percent of full capacity.

WY 2013 inflows to Reclamation facilities in Montana East of the Continental Divide ranged from 58 percent of average at Clark Canyon Reservoir to 114 percent of average at Lake Sherburne. Even though WY 2013 inflow were below average, Reclamation was able to maintain flows at or above the minimum fishery flows and provide the water users a full water supply.

The U.S. Army Corps of Engineers (Corps) reported the operations of Reclamation projects under the jurisdiction of the Montana Area Office (MTAO), east of the Continental Divide prevented approximately $5,903,900 in total flood damages during WY 2013. The damages prevented in WY 2013 were credited to the operations of Canyon Ferry, Tiber, Sherburne, Fresno and Yellowtail Dams. The total flood damages prevented by MTAO's facilities since 1950 are approximately $508,467,900.

FLOOD BENEFITS

The Corps evaluated the reservoir regulation data pertaining to Reclamation reservoirs within the jurisdiction of the MTAO, and indicated that five reservoirs provided flood relief during WY 2013. They were: 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; 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 2013 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
Canyon Ferry	8,806	3,516	05/21/13
Lake Elwell	4,377	509	05/15/13
Fresno Reservoir	1,953	795	06/04/13
Lake Sherburne	1,620	416	05/14/13
Bighorn Lake	5,277	1,839	05/19/13
Bighorn Lake	5,739	1,892	06/12/13
Bighorn Lake	6,109	1,925	09/28/13

The Corps estimated the operations of Reclamation reservoirs in Montana during 2013 reduced flood damages by $5,903,900. 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 2013" for each reservoir in this report. Figure MTG2 shows the annual flood damages prevented by MTAO reservoirs since 1950.

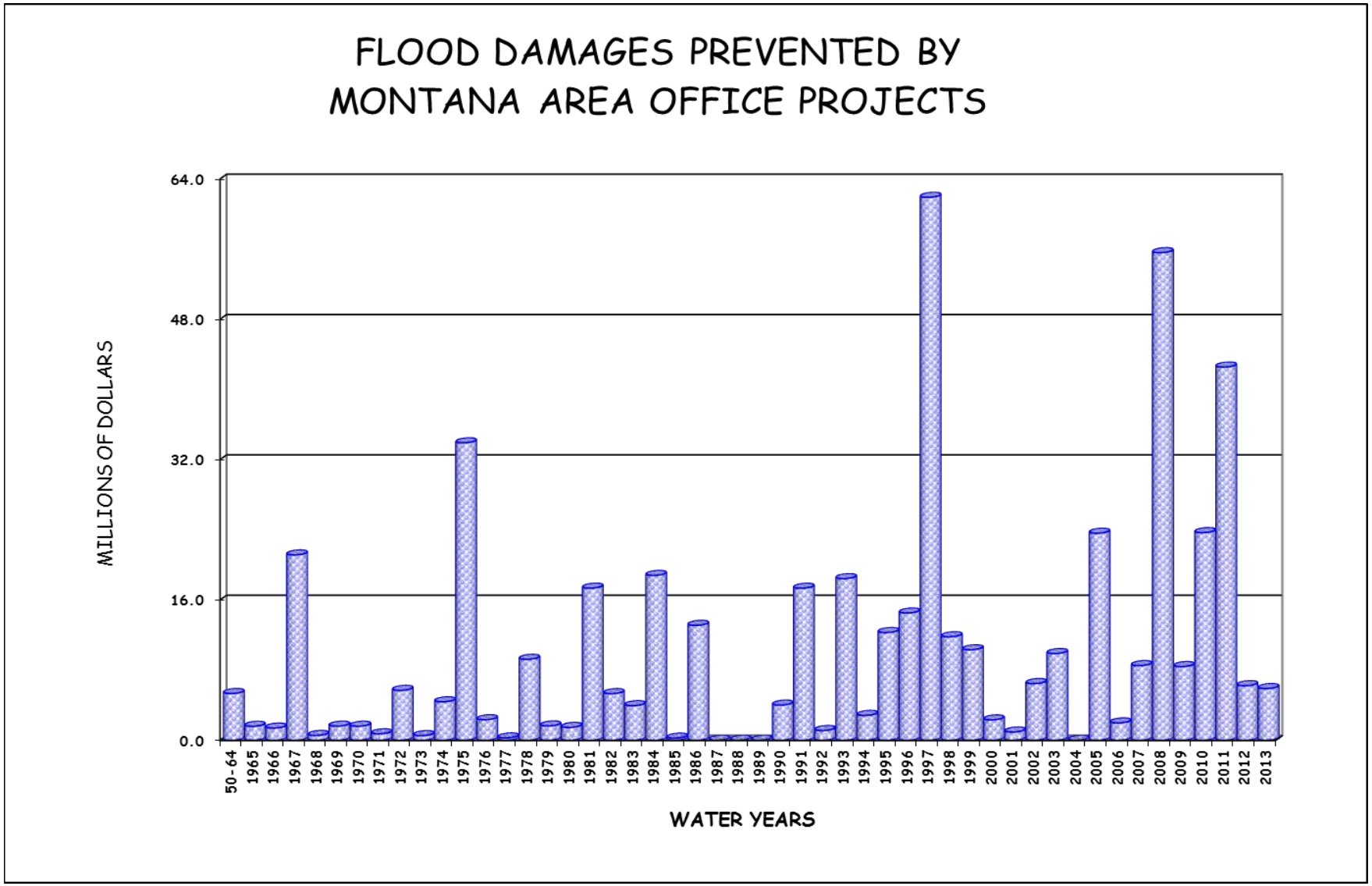
TABLE MTT4
FLOOD DAMAGES PREVENTED
(THOUSANDS OF DOLLARS)

Reservoir	Local	Main Stem	2013 Total	Prev. Accum.	1950-2013 Accum. Total
Clark Canyon	$ 0.0	$ 0.0	$ 0.0	$ 15,995.9	$ 15,995.9
Canyon Ferry	0.0	2,243.6	2,243.6	214,333.1	216,576.7
Gibson[1]	0.0	0.0	0.0	3,075.1	3,075.1
Lake Elwell	0.0	950.2	950.2	92,013.2	92,963.4
Lake Sherburne[2]	870.6	0.0	870.6	7,946.5	8,817.1
Fresno	667.8	0.0	667.8	14,721.7	15,389.5
Bighorn Lake	0.0	1,171.7	1,171,7	154,478.5	155,650.2
Total	$ 1,538.4	$ 4,365.5	$ 5,903.9	$502,564.0	$508,467.9

[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
1969
1970
1971
1972
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2010
2011
2012
2013
WATER YEARS

UNIT OPERATIONAL SUMMARIES FOR WY 2013

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 AF (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 sediment accumulation since dam closure in August 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 5,546.10. Since closure in 1964, the reservoir has accumulated a sediment volume of 4,106 AF below elevation 5546.10. This volume represents 2.3 percent of reservoir capacity and an average annual accumulation of 114.7 AF. The revised area-capacity table was put into effect on October 1, 2001, reflecting the new storage levels.

After spring runoff of WY 2012, the climatic conditions in the Beaverhead River Basin began to decline. Precipitation in both the valley and mountain areas diminished throughout August and September, exhibiting above average temperatures, as much as 5 degrees above normal. The valley precipitation during August and September was 40 and 52 percent of average, respectively. The mountain precipitation was 32 and 60 percent of average for August and September, respectively. By the end of September, the total cumulative valley precipitation for the year was 69 percent of average while the total cumulative mountain precipitation for the Beaverhead Basin was 80 percent of average. In September storage in Clark Canyon Reservoir was low as irrigation demands continued to reduce storage. The reservoir ended WY 2012 with a storage content of 77,405 AF (62 percent of average) at elevation 5523.52.

Weather conditions improved and WY 2013 began with cold temperatures and dry conditions. Dillon set several record lows during the first week in October, ranging from 13 to 16 degrees Fahrenheit. October's valley and mountain precipitation was 46 and 78 percent of average, respectively. Valley precipitation patterns doubled during November and reached average conditions, while the mountain precipitation increased to 89 percent of average. November and December temperatures returned to normal. 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 98 percent.

January temperatures averaged below normal across the basin. On January 1, the Natural Resources Conservation Service (NRCS) measured snowpack in the Beaverhead River Basin at 125 percent of median. Snow fall in the Beaverhead River Basin continued at above average rates and temperatures trended back to normal. By February 1, the snowpack was measured at

115 percent of median. The Beaverhead Basin doubled in valley precipitation during January and February, (217 and 171 percent of average respectively). March was dry and mild.

On March 1, the measured snowpack in the Beaverhead River Basin was 101 percent of median. The year to date valley precipitation was average at 98 percent, while the mountain precipitation rapidly declined to 56 percent of average. Inflow for October - March was 75,400 AF, or 75 percent of the 30 year average.

The East Bench Unit Joint Board, consisting of three representatives from each water user entity, met on March 5 to discuss the water supply outlook for the 2013 irrigation season. The forecast started with average storage and below average runoff projections. Based on the average storage levels, the Joint Board set tentative full allotments of 4.0 AF per acre for the Clark Canyon Water Supply Company (CCWSC) and 3.1 AF per acre for the East Bench Irrigation District. The East Bench Unit Joint Board confirmed full allotments on April 2.

On April 1, the NRCS measured the mountain snowpack to be 98 percent of median. Even though the snowpack was near the median value, the water supply forecast prepared on April 1 indicated the April-July runoff into Clark Canyon Reservoir would be 60 percent of average, totaling approximately 56,000 AF. The precipitation varied in the Beaverhead Basin during April as the valley and mountain precipitation was 168 and 66 percent of average, respectively. On April 21, the snowpack peaked at 13.07 inches of snow water equivalent, 94 percent of the 30 year average. Releases from Clark Canyon began on April 30 to prepare the irrigation canals for the season.

On May 1, the NRCS measured the mountain snowpack to be 93 percent of median. Both the valley and mountain precipitation increased to 137 percent and 93 percent of average when a significant storm passed through the state. The total inflow to Clark Canyon Reservoir during the month of May was only 7,200 AF, which is 36 percent of the 30 year average. This may be attributed to the basins dry soil moisture conditions and irrigation demands upstream of Clark Canyon.

In June, temperatures were slightly above average while the precipitation fell to below average rates in the Beaverhead River Basin. The June valley and mountain precipitation totaled 62 and 72 percent of average, respectively. Due to very low inflows and irrigation demands, the end of June storage reservoir content dropped to 100,460 AF or 83 percent of the 30 year average. July's valley precipitation was very similar to the month of June, while there was a slight increase in mountain precipitation. However, a flash flood occurred in July at Bannack that caused major damage to Bannack State Park, closing the facility for several days.

Snowmelt runoff during April - July was below normal at 41 percent of the 30 year average, totaling 38,100 AF. Daily inflows into Clark Canyon Reservoir averaged 140 cfs during April, 116 cfs during May, 154 cfs during June, and 217 cfs during July. These resulted in respective monthly total inflows of 8,300 AF, 7,200 AF, 9,200 AF, and 13,400 AF. In an average year, the peak inflow would occur during the April- July runoff period; however, the peak inflow for WY 2013 occurred on November 25, 2011 at 280 cfs.

Releases averaged 52 cfs during April, 378 cfs during May, 531 cfs during June and 683 cfs during July. Storage reached the peak for the year of 138,974 AF at elevation 5538.95 on April 29. On July 18 a peak irrigation release from Clark Canyon Reservoir was 754 cfs.

Precipitation in both the valley and mountain areas again diminished throughout August, but rebounded in September. The valley precipitation during August and September was 47 and 151 percent of average, respectively. The mountain precipitation was 42 and 173 percent of average for August and September, respectively. 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.

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 2013. The reservoir peaked at 64,160 AF or elevation 6579.23 on May 13. Lima Reservoir discontinued irrigation releases on August 4 to conserve storage. The drainage area above Lima Reservoir accounts for about 25 percent of the total drainage area above Clark Canyon Reservoir.

Storage in Clark Canyon Reservoir drafted significantly throughout the summer as a result of the lack of rain showers in the basin during June - August, and irrigation demands. The majority of the storage water released from Clark Canyon Reservoir during WY 2013 to meet the downstream irrigation demands was released during the period from May 1 - September 30. Beginning on May 1, storage in Clark Canyon Reservoir declined from 138,880 AF at elevation 5538.93 to 47,983 AF at elevation 5513.05 on September 30.

The East Bench Irrigation District (EBID) water users received approximately 69,220 AF and Clark Canyon Water Supply Company (CCWSC) received approximately 86,450 AF during WY 2013. Even though irrigation diversions to CCWSC continued into October, the river commissioner, appointed by the water court still ended the 2013 irrigation season on September 30. The total diversion recorded by the river commissioner for the "non-signer" users on the Beaverhead River was approximately 39,135 AF.

On September 4, 2013 the East Bench Unit Joint Board held a meeting to discuss the ongoing hydroelectric project and other topics. At this meeting the Montana Fish Wildlife and Parks (MFWP) approached the joint board concerning winter releases and recently published "*Flushing Flow Study*" by Reclamation. MFWP presented a proposal whereby MFWP would support 25 cfs winter release, if they could store the additional water to be made available for a spring sediment flushing flow. This flushing flow would be called for only if a sediment event originating from Clark Canyon Creek occurs in the Beaverhead River prior to the beginning of the 2014 irrigation season.

On September 10, 2013 the East Bench Unit Joint Board passed a motion to set the winter release at 30 cfs. However, upon receipt of a letter from MFWP on a flushing flow proposal and with Reclamation's concurrence, a winter release would be set at 25 cfs, storing 5 cfs through the winter (approximately 2,100 AF) to support a flushing flow. The MFWP proposal letter was received on September 18, 2013.

In response, Reclamation's letter dated September 27 stated that 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 include provisions which encourage working with third parties such as the state of Montana to enhance the environmental health of the Beaverhead River. Environmental health enhancement measures that could be considered appropriate include 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 30 cfs to 25 cfs for the purpose of storing water for a spring 2014 flushing flow is acceptable, provided all parties are in mutual agreement. This reduction will result in approximately 2,100 AF of banked water for this purpose. Reclamation also recommended a memorandum of understanding be created to identify and determine the specific requirements of the flushing flow proposal. The winter release was set at 25 cfs on October 4, 2013.

The reservoir finished WY 2013 at 47,983 AF, 59 percent of the 30 year average, or at elevation 5513.05. The total annual inflow to Clark Canyon Reservoir during WY 2013 was 58 percent of the 30 year average, totaling approximately 134,400 AF. The total annual release to the Beaverhead River from Clark Canyon Reservoir was 163,812 AF.

The Corps determined that during 2013, Clark Canyon Reservoir did not prevent any local or main stem flood damages. Since construction of the Clark Canyon Dam in 1965, Clark Canyon Reservoir has reduced flood damages by a total of $15,995,900.

Important Events – 2013

October 1, 2012: Clark Canyon Reservoir enters the water year with 77,405 AF of storage at elevation 5523.52.

October 10, 2012: Following the 2012 irrigation season, releases from Clark Canyon Reservoir to the Beaverhead River were reduced to approximately 50 cfs for a winter release.

November 25, 2012: Inflows into Clark Canyon Reservoir peaked at 280 cfs.

April 29, 2013: Clark Canyon Reservoir reached peak storage content of 138,974 AF at elevation 5538.95, which is approximately 7.1 feet below full pool.

April 30, 2013: This marked the beginning of when releases from Clark Canyon Reservoir were increased to meet irrigation demands.

July 18, 2013: Releases from Clark Canyon Reservoir reached a peak of 754 cfs to meet downstream water demands from the Beaverhead River.

September 25, 2013: Clark Canyon Reservoir reached its lowest level of the water year with 47,464 AF of storage at elevation 5512.83.

September 30, 2013: Clark Canyon Reservoir ends the water year with 47,983 AF of storage at elevation 5513.05.

October 4, 2013: East Bench Irrigation District sets winter release at 25 cfs.

October 23, 2013: East Bench Irrigation District canal system is dewatered for the winter. Additional hydrologic and statistical information pertaining to the operation of Clark Canyon Reservoir during 2013 can be found in Table MTT5 and Figure MTG3

TABLE MTT5
HYDROLOGIC DATA FOR 2013
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

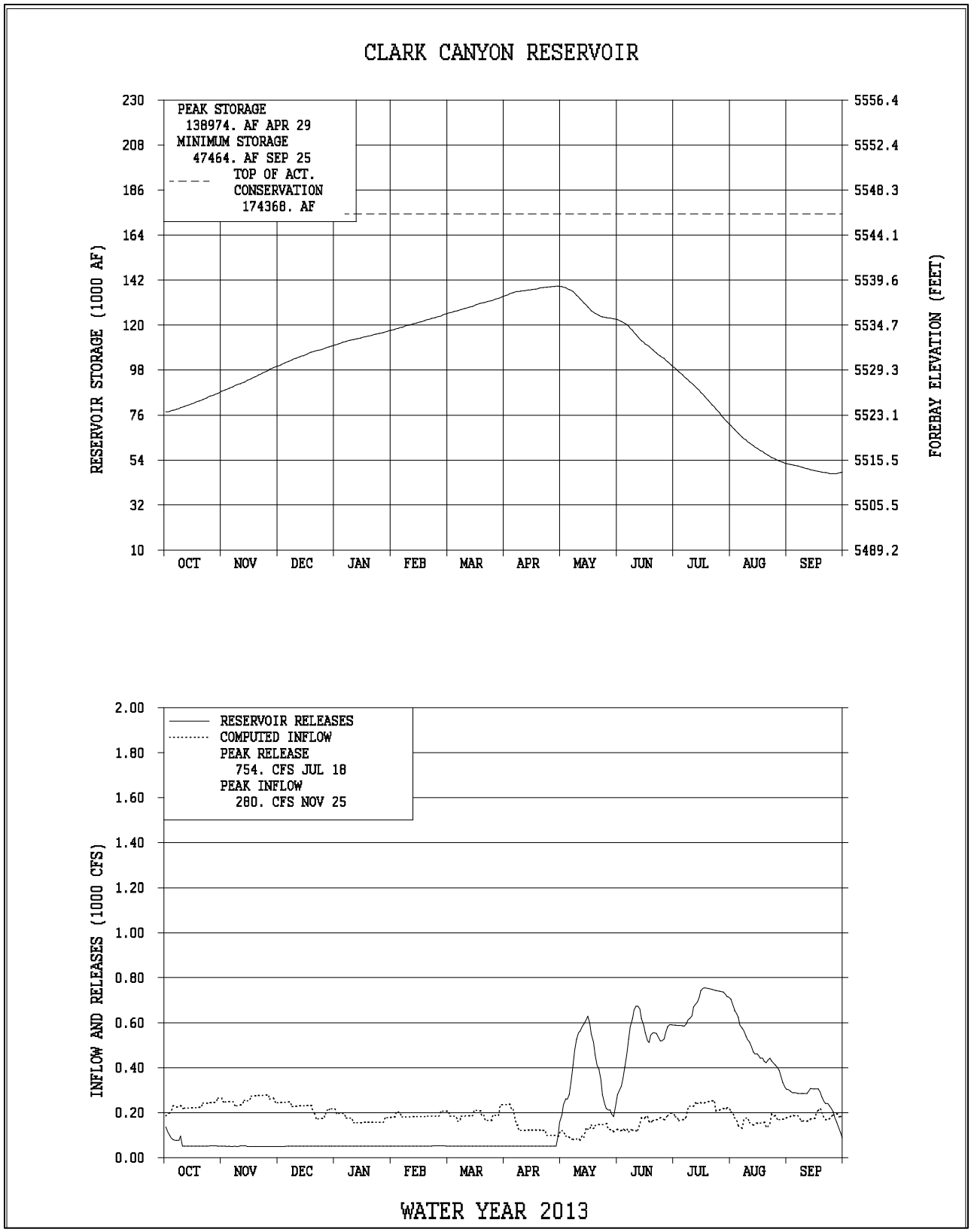
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	5523.52	77,405	OCT 01, 2012
END OF YEAR	5513.05	47,983	SEP 30, 2013
ANNUAL LOW	5512.93	47,464	SEP 25, 2013
ANNUAL HIGH	5538.95	138,974	APR 29, 2013
HISTORIC HIGH	5564.70	283,073	JUN 25, 1984

INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	134,390	OCT 12-	163,812	
DAILY PEAK (CFS)	280	SEP 13	754	OCT 12-SEP
DAILY MINIMUM (CFS)	76	NOV 25,	49	13
DAILY FLOW AT BARRETTS (CFS)		2012	899	JUL 18, 2013
DAILY FLOW AT BARRETTS W/O		MAY 12,		NOV 08, 2012
CLARK CANYON RESERVOIR (CFS)		2013	389	JUL 18, 2013
PEAK SPILL (CFS)			0	
TOTAL SPILL (AF)			0	JUL 18, 2013
				NONE
				NONE

MONTH	INFLOW		OUTFLOW*		CONTENT	
	KAF	% OF AVG	KAF	% OF AVG	KAF	% OF AVG
OCTOBER	14.1	68	3.9	27	87.6	94
NOVEMBER	15.3	76	3.0	23	99.9	97
DECEMBER	13.5	81	3.1	25	110.3	100
JANUARY	10.4	73	3.1	30	117.6	101
FEBRUARY	10.4	83	2.9	31	125.2	103
MARCH	11.7	71	3.1	31	133.8	103
APRIL	8.3	49	3.1	25	139.0	102
MAY	7.2	36	23.2	83	122.9	95
JUNE	9.2	29	31.6	83	100.5	83
JULY	13.4	53	42.0	92	71.8	74
AUGUST	10.1	55	29.6	78	52.3	66
SEPTEMBER	10.8	60	15.1	73	48.0	59
ANNUAL	134.4	58	163.8	65		
APRIL-JULY	38.1	41				

* Average for the 1965-2013 period.

FIGURE MTG3


CLARK CANYON RESERVOIR
PEAK STORAGE
138974. AF APR 29
MINIMUM STORAGE
47464. AF SEP 25
TOP OF ACT.
CONSERVATION
174368. AF
RESERVOIR STORAGE (1000 AF)
FOREBAY ELEVATION (FEET)
230
208
186
164
142
120
98
76
54
32
10
5556.4
5552.4
5548.3
5544.1
5539.6
5534.7
5529.3
5523.1
5515.5
5505.5
5489.2
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
RESERVOIR RELEASES
COMPUTED INFLOW
PEAK RELEASE
754. CFS JUL 18
PEAK INFLOW
280. CFS NOV 25
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 2013

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 feet 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 were 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 receive a supplemental water supply from Canyon Ferry. A small amount of municipal water is also furnished to the city of Helena, Montana, through facilities for the Helena Valley Unit.

In 1997, hydrographic and a topographic surveys were conducted and a new elevation-area-capacity table and curve were 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 3800. Since closure in 1953, the reservoir has accumulated a sediment volume of 59,746 AF below reservoir elevation 3800. This volume represents 2.91 percent of reservoir capacity and an average annual accumulation 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 2012, dry conditions persisted during July - September. As a result, the inflows into Canyon Ferry slowly dropped and releases to the Missouri River were gradually decreased from 4,100 cfs in July to 3,200 cfs in early September in an effort to conserve storage going into WY 2013. As a result storage slowly declined to 1,558,690 AF at elevation 3786.68 on September 30 or about 91 percent of average.

October and November brought much needed precipitation and cooler air temperatures. These few months provided sufficient improvement to the dry summer conditions that by the end of November the cumulative average valley precipitation increased to 94 percent of average while the mountain precipitation increased to 89 percent of average. The month of December varied in temperatures from near normal up to about 4 degrees above normal. The snow water equivalent was slightly above 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 101 in the Jefferson, 108 in the Madison, and 94 in the Gallatin. At this point in time, the conditions in the upstream basins looked favorable for a near average water year.

Releases from Canyon Ferry Lake remained at 3,200 cfs until the middle of December when releases were increased to 3,400 cfs.

The slight increase in releases was made to offset the continual increase in reservoir storage and higher-than-anticipated inflows from October - December. Canyon Ferry Reservoir peaked at elevation 3787.99 feet on December 18, 2012. By the end of December the storage content was at 1,584,040 AF or elevation 3787.49 feet.

On January 1 the Natural Resources Conservation Service (NRCS) measured the mountain snowpack in the Missouri River Basin at 110 percent of median. However, snow fell in the mountains at below normal rates over the next 3 months. By the end of March, year to date mountain precipitation was at 85 percent of average and the valley precipitation was at 95 percent of average. Temperatures varied throughout these months with January producing below normal temperatures, February at above normal temperatures, and then returning to normal temperatures in March.

Beginning in January the storage content was 102 percent of average with continual higher-than-anticipated inflows into Canyon Ferry Reservoir. Therefore, releases out of Canyon Ferry Reservoir were gradually increased to approximately 4,100 cfs by January 11 and were maintained there until February 5. Throughout February releases were again gradually increased to 4,800 cfs to draw down the reservoir for an end-of-March target elevation of 3783.50 feet. Starting in March, releases were reduced to 4,500 cfs as indicated in the revised water supply outlook. The January, February, and March inflows were 93, 101, and 92 percent of the 30 year average, respectively. The end of March storage content was 1,453,184 AF at an elevation of 3783.23 feet. At this time it appeared storage in Canyon Ferry Lake was at a level that would safely accommodate the anticipated spring mountain snowmelt runoff.

By April 1, the NRCS measured the snowpack conditions at 95 percent of median. Snowpack in the Jefferson, Madison, and Gallatin River Basins, major tributaries of the Missouri River Basin were 89, 89, and 94 percent of median, respectively. April temperatures started out warmer than average. However, by the second week the temperatures cooled off and were below average for the remainder of the month. Precipitation for the month declined to approximately 75 percent of average; however, near the end of the month a late snowfall occurred that resulted in a peak snow water equivalent at 96 percent of average.

At the beginning of April the storage content at Canyon Ferry Lake was at 102 percent of average and the anticipated inflows during the April - July period was forecasted to be 77 percent of average. Based upon this water supply forecast releases out of Canyon Ferry Lake to the Missouri River below Holter Dam were planned to be maintained near 4,000 cfs to assure the reservoir of filling to the top of the joint-use pool by the end of June. Therefore, releases were decreased from 4,500 cfs to 4,000 cfs by mid-April. April inflows started at about 4,000 cfs and increased to 5,600 cfs over the next few days. However, due to the cooler temperatures and the start of irrigation diversions upstream, inflows gradually decreased throughout the month ending at 2,500 cfs. Due to these low inflows, the end of April elevation decreased to 3782.34 feet.

May was cooler than expected and produced near average precipitation in the basin. The spring snowmelt runoff started in early May. However, due to milder weather conditions the inflows increased from 2,500 cfs - 3,800 cfs about the middle of May. Canyon Ferry Reservoir continued to draft to a low elevation of 3781.15 feet on May 13. Inflows then quickly increased and by May 21 the inflows peaked at 8,806 cfs with approximately 40 percent of snow water equivalent remaining in the mountains. At that time, the inflows began to slowly decrease and remain near 7,000 cfs throughout the remainder of May.

In late May, the tributary flows downstream of Holter Dam began to increase and as a result the releases out of Canyon Ferry Reservoir were reduced to 3,750 cfs to maintain river flows below Holter Dam near 4,000 cfs. This reduction at Canyon Ferry Reservoir was necessary to assist in filling the reservoir to the top of joint use at elevation 3797. Canyon Ferry Reservoir ended May with a storage content of 1,501,861 AF at an elevation of 3784.84 feet. Inflows for May averaged 5,700 cfs or 65 percent of the 30 year average.

Inflows into Canyon Ferry Reservoir during June continued to steadily decline as heavy irrigation diversions upstream continued to increase. Temperatures were cooler than normal and precipitation was about 75 percent of average. Due to the inflows now being approximately 50 percent of average and based on the June water supply forecast, it was necessary to further reduce releases out of Canyon Ferry Reservoir. Upon close coordination with Pennsylvania Power and Light (PPL) and the Montana Fish Wildlife and Parks (MFWP), releases were gradually reduced to 2,800 cfs by June 5 to conserve storage. This allowed the Missouri River flows below Holter Dam to be maintained near 3,000 cfs. By the end of June, inflows into Canyon Ferry Reservoir had dropped to 3,500 cfs and the storage content was 1,668,410 AF at an elevation of 3790.15 feet. At this time, it was anticipated Canyon Ferry Reservoir would not fill to the top of joint use at elevation 3797.00 feet by 6-7 feet.

July and August experienced above normal temperatures and with below average precipitation. The July valley precipitation in the Jefferson Basin was 58 percent of average, the Madison Basin was 83 percent of average, and the Gallatin Basin was 49 percent of average. August precipitation remained similar except for the Madison Basin which had dropped to 37 percent of average.

Inflows during these months declined from 3,500 cfs to an approximate low of 1,100 cfs on August 22. Releases from Canyon Ferry Reservoir remained between 2,700 cfs and 3,000 cfs in order to maintain the river flows below Holter Dam near 3,000 cfs. Canyon Ferry Reservoir peaked at elevation 3790.28 feet on July 6 and by August 31 the reservoir had declined to elevation 3784.84 feet. July inflows were 42 percent of the 30 year average and August inflows were 51 percent of average.

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 the water

year, the reservoir was at a storage content of 1,446,324 AF at an elevation of 3783.00 feet, with inflows and releases at about 2,900 cfs.

The April-July runoff into Canyon Ferry Lake during 2013 was 57 percent of average, totaling 1,002,958 AF. The annual inflow to Canyon Ferry Lake was 70 percent of average, totaling 2,459,172 AF. This was 954,275 AF less that the total annual inflow experienced in WY 2012.

During 2013, Canyon Ferry Lake power plant generated 273,374,000 kilowatt-hours, 72 percent of the long-term average dating back to 1967. This was 44,203,000 kilowatt-hours more than generated during the record low year of 2002 and 68,910,000 kilowatt-hours less than generated in 2012.

The plant used 88 percent of the water released from the dam in 2013 (2,275,516 AF). The remainder of the water was released to meet the irrigation needs of the Helena Valley Irrigation District (214,043 AF) and spilled through the river outlet gates (81,980 AF) and through the spillway gates (zero AF).

The Corps estimated that during 2013, Canyon Ferry Lake did not prevent any local flood damages but did prevent $2,243,600 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 $216,576,700.

Important Events - WY 2013

October 1: All irrigation deliveries to the Helena Valley Unit were discontinued for the 2012 irrigation season. In response, the total releases out of Canyon Ferry Reservoir were maintained at 3,100 cfs (≈ 3,100 cfs through the power plant, zero cfs through the river outlet gates, and zero cfs for the Helena Valley Project).

November 5-8: Annual maintenance on K2A transformer was required and all releases out of Canyon Ferry Lake were released through the power plant. The turbine releases from Canyon Ferry Lake were maintained at 3,200 cfs (≈ 3,200 cfs through the power plant and zero cfs for the Helena Valley Project).

November 26- December 20: A 25-day maintenance outage was scheduled on Unit No. 1 of the Canyon Ferry Power plant. All releases out of Canyon Ferry Lake were released through the power plant and the turbine releases were restricted to 2-unit capacity. The total releases out of Canyon Ferry Lake were maintained at 3,200 cfs (≈ 3,200 cfs through the power plant, zero cfs through the river outlet gates, and zero cfs for the Helena Valley Project).

December 6: Inflows into Canyon Ferry Lake were slowly increasing over the forecasted amounts. Based on the December 1 forecast, releases from Canyon Ferry Lake were increased to control the rate of storage in Canyon Ferry Lake. With ongoing maintenance to Unit No. 1, turbine releases were still restricted and limited to a 2-unit capacity. The total releases out of Canyon Ferry Lake were increased to 3,400 cfs (≈ 3,400 cfs through the power plant, zero cfs through the river outlet gates, and zero cfs for the Helena Valley Project).

January 6: Based on the January 1 forecast, releases from Canyon Ferry Lake were increased to control the rate of storage in Canyon Ferry Lake. All three units were available for turbine releases as Unit No. 1 became available on January 2. Turbine releases from Canyon Ferry Lake were increased and maintained at 3,700 cfs (≈ 3,700 cfs through the power plant, zero cfs through the river outlet gates, and zero cfs for the Helena Valley Project).

January 10: Based on the January water supply forecast, total releases out of Canyon Ferry to the Missouri River were increased to 4,100 cfs to continue evacuating storage (≈ 4,100 cfs through the power plant, zero cfs through the river outlet gates, and zero cfs for the Helena Valley Project).

February 6: Based on the February water supply forecast, releases from Canyon Ferry Lake were increased in preparation for the anticipated spring runoff into Canyon Ferry Lake. The total releases from Canyon Ferry Lake 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 Helena Valley Project).

February 10: Inflows into Canyon Ferry Lake continued to be higher than anticipated; therefore releases from Canyon Ferry Lake were increased to control the rate of storage. The total releases from Canyon Ferry Lake were increased to 4,500 cfs (≈ 4,500 cfs through the power plant, zero cfs through the river outlet gates, and zero cfs for the Helena Valley Project).

February 21: Inflows into Canyon Ferry Lake have been higher than anticipated; therefore releases from Canyon Ferry Lake were increased to control the rate of storage. The total releases from Canyon Ferry Lake were increased to 4,800 cfs (≈ 4,800 cfs through the power plant, zero cfs through the river outlet gates, and zero cfs for the Helena Valley Project).

February 25-March 28: A 32-day maintenance outage on Unit No. 3 was scheduled. During this outage, turbine releases were limited and restricted to a 2-unit capacity. The total releases out of Canyon Ferry Lake were maintained at 4,800 cfs (≈ 3,500 cfs through the power plant, 1,300 cfs through the river outlet gates, and zero cfs for the Helena Valley Project).

March 8: Based on the March water supply forecast, total releases out of Canyon Ferry to the Missouri River were decreased to 4,500 cfs to control the rate of drawdown. Turbine releases were still limited and restricted to a 2-unit capacity. (≈3,600 cfs through the power plant, 900 cfs through the river outlet gates, and zero cfs for the Helena Valley Project).

March 25-April 11: Scheduled maintenance on Unit No. 3 was extended and therefore turbine releases remained limited and restricted to a 2-unit capacity. The total releases from Canyon Ferry Lake were maintained at 4,500 cfs (≈ 3,600 cfs through the power plant, 900 cfs through the river outlet gates, and zero cfs for the Helena Valley Project).

April 5: Helena Valley Irrigation District initiated diversion to the Helena Valley Reservoir. Diversions were adjusted periodically throughout the irrigation season to meet the irrigation demands. Total releases from Canyon Ferry Lake were maintained at 4,500 cfs (≈ 3,600 cfs through the power plant, 590 cfs through the spillway gates, and 310 cfs for the Helena Valley Project).

April 8: 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 2013.

April 10: Based on close coordination with Montana Fish, Wildlife and Parks, releases from Canyon Ferry Lake were reduced to conserve storage based upon the April water supply forecast. Turbine releases remained limited and restricted to a 2- unit capacity. Total releases from Canyon Ferry Lake were reduced to 4,250 cfs (≈ 3,650 cfs through the power plant, 285 cfs through the spillway gates, and 315 cfs for the Helena Valley Project).

April 17: Inflows into Canyon Ferry Lake continue to remain near 75 percent of average, therefore, in order to conserve storage in Canyon Ferry Lake and maintain flows in the Missouri River below Holter near 4000 cfs, releases from Canyon Ferry Lake were reduced. The total releases from Canyon Ferry Lake were decreased to 3,920 cfs (≈ 3,600 cfs through the power plant, zero cfs through the spillway gates, and 320 cfs for the Helena Valley Project).

April 30: Field personal at Canyon Ferry Lake requested a clearance on the spillway and river outlet gates for inspection. Total releases from Canyon Ferry Lake were maintained at 4,040 cfs

(≈ 3,510 cfs through the power plant, zero cfs through the spillway gates, and 530 cfs for the Helena Valley Project).

May 1-8: An 8-day maintenance outage on Unit No. 3 was scheduled. During this outage, turbine releases were limited and restricted to a 2-unit capacity. The total releases out of Canyon Ferry Lake were maintained at 4,010 cfs (≈ 3,510 cfs through the power plant, zero cfs through the river outlet gates, and 500 cfs for the Helena Valley Project).

May 8: Due to mild temperatures, streamflows began to slowly increase. Based on the May water supply forecast, releases at Canyon Ferry Lake will be reduced to maintain river flows below Holter Dam near 4,000 cfs. The total releases from Canyon Ferry Lake were decreased to 3,740 cfs (≈ 3,240 cfs through the power plant, zero cfs through the river outlet gates, and 500 cfs for the Helena Valley Project).

May 12: Releases at Canyon Ferry Lake were reduced in order to maintain river flows below Hoter Dam near 4,000 cfs. Tributary flows were increasing downstream flows; therefore, reductions at Canyon Ferry Lake were needed to conserve storage. The total releases from Canyon Ferry Lake were decreased to 3,750 cfs (≈ 3,100 cfs through the power plant, zero cfs through the river outlet gates, and 650 cfs for the Helena Valley Project).

May 21: Inflow into Canyon Ferry Lake peaked at 8,806 cfs.

May 22: A 1-day outage on Unit No. 3 was scheduled and turbine releases were limited to 2-unit capacity. The total releases from Canyon Ferry Lake were maintained at 3,840 cfs (≈ 3,020 cfs through the power plant, zero cfs through the river outlet gates, and 820 cfs for the Helena Valley Project).

June 2: Releases at Canyon Ferry Lake were reduced to conserve storage and to maintain river flows below Holter Dam near 4,000 cfs. The total releases from Canyon Ferry Lake were decreased to 3,730 cfs (≈ 2,910 cfs through the power plant, zero cfs through the spillway gates, and 820 cfs for the Helena Valley Project).

June 4-5: Due to current inflows being approximately 50 percent of average and based on the June water supply forecast, releases out of Canyon Ferry Lake were reduced to conserve storage. River flows below Holter Dam were maintained near 3,000 cfs. The total releases from Canyon Ferry Lake were decreased to 2,800 cfs (≈ 2,170 cfs through the power plant, zero cfs through the spillway gates, and 630 cfs for the Helena Valley Project).

June 11: Releases out of Canyon Ferry Lake were increased in order to maintain the river flows below Holter Dam near 3,000 cfs. The total releases from Canyon Ferry Lake were increased to 2,870 cfs (≈ 2,230 cfs through the power plant, zero cfs through the spillway gates, and 640 cfs for the Helena Valley Project).

June 26: Helena Valley Irrigation District decreased diversions to Helena Valley Reservoir. The total release from Canyon Ferry Lake was decreased to 3,650 cfs (≈ 2,200 cfs through the power plant, zero cfs through the river outlet gates, and 450 cfs for the Helena Valley Project).

July 1: Helena Valley Irrigation District increased diversions to Helena Valley Reservoir. The total releases from Canyon Ferry Lake were increased to 2,730 cfs (≈ 2,150 cfs through the power plant, zero cfs through the river outlet gates, and 580 cfs for the Helena Valley Project).

July 9: Helena Valley Irrigation District increased diversions to Helena Valley Reservoir. The total releases from Canyon Ferry were increased to 2,950 cfs (≈ 2,170 cfs through the power plant, zero cfs through the river outlet gates, and 780 cfs for the Helena Valley Project).

July 18: Releases out of Canyon Ferry Lake were increased in order to maintain the river flows below Holter Dam near 3,000 cfs. The total releases from Canyon Ferry Lake were increased to 3,130 cfs (≈ 2,400 cfs through the power plant, zero cfs through the spillway gates, and 730 cfs for the Helena Valley Project).

July 31: Releases out of Canyon Ferry Lake were decreased in order to maintain the river flows below Holter Dam near 3,000 cfs. The total releases from Canyon Ferry Lake were decreased to 3,120 cfs (≈ 2,290 cfs through the power plant, zero cfs through the spillway gates, and 830 cfs for the Helena Valley Project).

September 5: Helena Valley Irrigation District decreased diversions to Helena Valley Reservoir. The total releases from Canyon Ferry Lake were decreased to 2,830 cfs (≈ 2,330 cfs through the power plant, zero cfs through the river outlet gates, and 500 cfs for the Helena Valley Project).

September 16: Responding to a decrease in irrigation demands, Helena Valley Irrigation District reduced diversions to Helena Valley Reservoir. To continue maintaining the river flows below Holter Dam near 3,000 cfs the total releases from Canyon Ferry Lake were increased to 2,825 cfs (≈ 2,450 cfs through the power plant, zero cfs through the river outlet gates, and 375 cfs for the Helena Valley Project).

September 17: To continue maintaining the river flows below Holter Dam near 3,000 cfs the total releases from Canyon Ferry Lake were increased to 2,975 cfs (≈ 2,600 cfs through the power plant, zero cfs through the river outlet gates, and 375 cfs for the Helena Valley Project).

September 18: An outage on Unit # 1 occurred for maintenance; therefore, turbine releases were restricted and limited to a 2-unit capacity. There was no flow changes required for this outage.

September 19: An outage on Unit #3 occurred for corrective maintenance on the DC turbine bearing pump. As a result, turbine releases will be restricted and limited to a 2-unit capacity. No changes in flows are required for this outage.

September 24: An outage on Unit #3 occurred for maintenance therefore; turbine releases were restricted and limited to a 2-unit capacity. No changes in flows are required for this outage.

September 30: The 2013 irrigation season came to a close. The Helena Valley Irrigation District discontinued all irrigation deliveries to Helena Valley Reservoir. Also, in close coordination with Montana Fish, Wildlife and Parks, river flows below Holter Dam were to be maintained

near 2,900 cfs to conserve storage in Canyon Ferry Reservoir. The total release from Canyon Ferry were maintained at 2,850 cfs (≈ 2,850 cfs through the power plant, zero cfs through the river outlet gates, and zero cfs for the Helena Valley Project).

Additional statistical information of Canyon Ferry Reservoir and its operations during 2013 can be found on Table MTT6 and Figure MTG4.

TABLE MTT6
HYDROLOGIC DATA FOR 2013
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

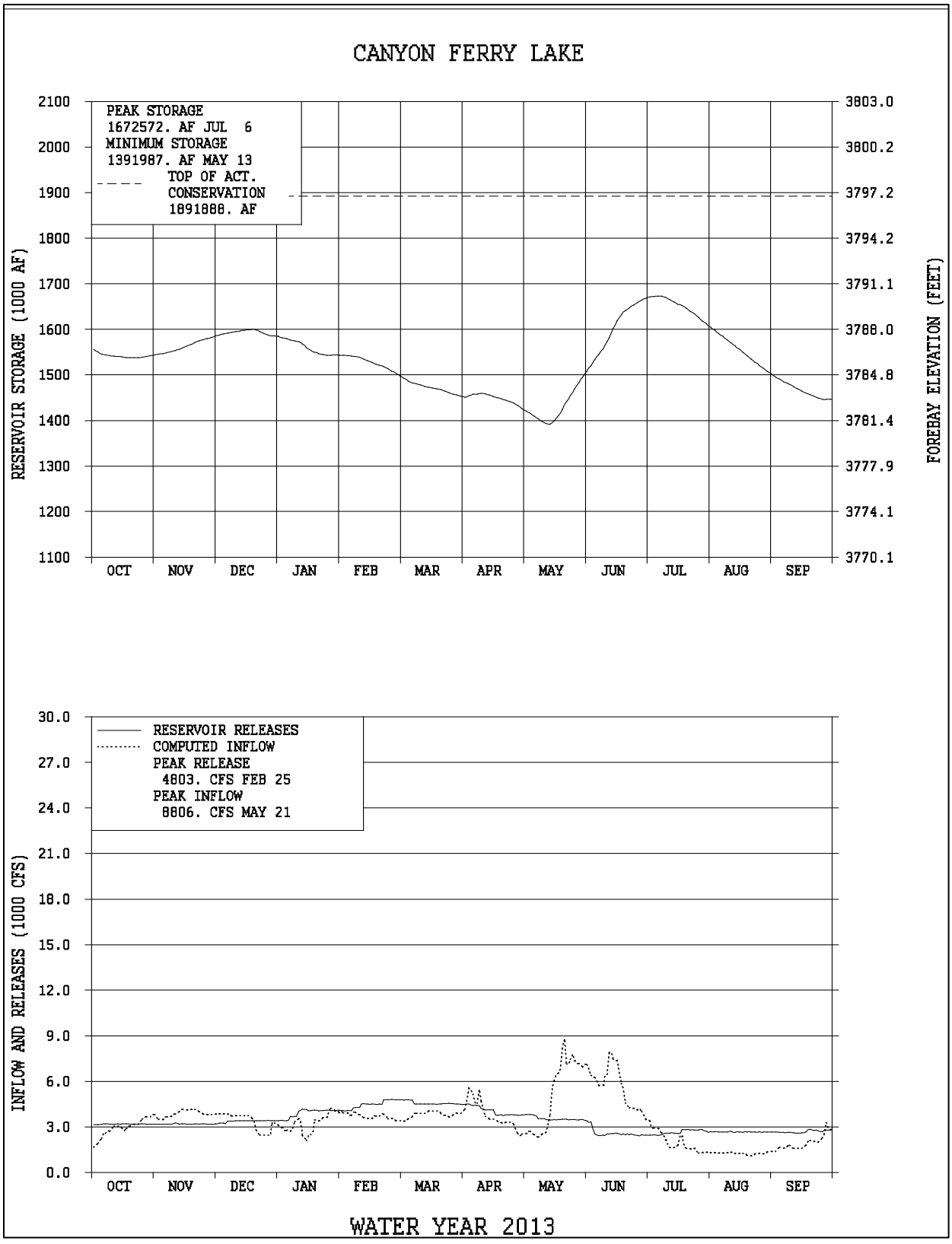
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	3786.68	1,558,690	OCT 01, 2012
END OF YEAR	3783.00	1,446,324	SEP 30, 2013
ANNUAL LOW	3781.15	1,391,987	MAY 13, 2013
ANNUAL HIGH	3790.28	1,672,572	JUL 06, 2013
HISTORIC HIGH	3800.00	2,050,900	JUN 23, 1964

INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	2,459,172	OCT 12-SEP 13	2,470,955	OCT 12-SEP 13
DAILY PEAK (CFS)	8,806	MAY 21, 2013	4,803	FEB 25, 2013
DAILY MINIMUM (CFS)	1,095	AUG 22, 2013	2,412	JUN 27, 2013
PEAK SPILL (CFS)			1,171	FEB 27, 2013
TOTAL SPILL (AF)			81,980	02/25-04/14/13

MONTH	INFLOW		OUTFLOW*				CONTENT	
	KAF	% OF AVG	PUMPED TO HELENA VALLEY (KAF)	% OF AVG	RIVER KAF	% OF AVG	KAF	% OF AVG
OCTOBER	182.4	72	0.0	---	196.6	76	1,544.4	97
NOVEMBER	231.3	88	0.0	---	190.7	71	1,585.0	99
DECEMBER	201.7	96	0.0	---	208.0	71	1,584.0	102
JANUARY	201.0	93	0.0	---	241.6	82	1,543.5	103
FEBRUARY	206.0	101	0.0	---	248.8	94	1,500.6	104
MARCH	234.0	92	0.0	---	281.4	96	1,453.2	102
APRIL	226.0	73	10.2	164	242.2	80	1,426.8	98
MAY	314.1	65	19.9	140	219.1	61	1,501.9	94
JUNE	338.8	50	17.4	105	154.8	32	1,668.4	92
JULY	124.2	42	21.2	115	163.0	45	1,608.3	92
AUGUST	77.9	51	20.3	117	164.1	66	1,501.9	92
SEPTEMBER	116.5	65	11.5	129	160.5	70	1,446.3	92
ANNUAL	2,459.2	70	100.6	121	2,471.0	67		
APRIL-JULY	1,002.9	57						

* Average for the 1955-2013 period.

FIGURE MTG4


CANYON FERRY LAKE
PEAK STORAGE
1672572. AF JUL 6
MINIMUM STORAGE
1391987. AF MAY 13
TOP OF ACT.
CONSERVATION
1891888. AF
RESERVOIR STORAGE (1000 AF)
FOREBAY ELEVATION (FEET)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
3803.0
3800.2
3797.2
3794.2
3791.1
3788.0
3784.8
3781.4
3777.9
3774.1
3770.1
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
RESERVOIR RELEASES
COMPUTED INFLOW
PEAK RELEASE
4803. CFS FEB 25
PEAK INFLOW
8806. CFS MAY 21
INFLOW AND RELEASES (1000 CFS)
30.0
27.0
24.0
21.0
18.0
15.0
12.0
9.0
6.0
3.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
WATER YEAR 2013

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 8,088 AF at an elevation of 3815.10 feet. Helena Valley Reservoir reached a low for the year of 6,355 AF at an elevation of 3810.69 feet on April 4, 2013. 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 5. Storage in Helena Valley Reservoir then steadily increased to a spring peak of 10,461 AF at an elevation of 3820.09 feet on May 2, 2013. Normal irrigation and municipal demands slowly drafted storage to 8,600 AF at an elevation of 3816.26 on June 8, 2013, before filling to a peak for the year of 10,586 AF at an elevation of 3820.33 feet on June 7, 2013. By the end of WY 2013, Helena Valley Reservoir ended with a storage content of 8,682 AF at elevation 3816.44. During 2013, 100,582 AF of water was pumped to Helena Valley Reservoir from Canyon Ferry Reservoir. Helena Valley Irrigation District released 83,127 AF for irrigation. All irrigation deliveries were discontinued for the 2013 season on September 30.

The reservoir provided an adequate water supply to satisfy all irrigation requirements for the Helena Valley Unit in 2013 and supplement the city of Helena's municipal water supply.

Statistical information pertaining to Helena Valley Reservoir is shown on Table MTT 7 below.

TABLE MTT7
HYDROLOGIC DATA FOR 2013
HELENA VALLEY RESERVOIR

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL 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
BEGINNING OF YEAR	3815.10	8,088	Oct 01, 2012
END OF YEAR	3816.44	8,682	Sep 20, 2013
ANNUAL LOW	3810.69	6,355	Apr 04, 2013
ANNUAL HIGH	3820.33	10,586	Jun 07, 2013
HISTORIC HIGH	3820.60	10,738	Jun 02, 1975

INFLOW-OUTFLOW DATA	ANNUAL
PUMPED FROM CANYON FERRY TO HELENA VALLEY UNIT	100,582 AF
INFLOW TO HELENA VALLEY RESERVOIR	85,574 AF
RELEASED FROM RESERVOIR FOR IRRIGATION	83,127 AF
DELIVERED TO THE CITY OF HELENA FOR MUNICIPAL USE	1,955 AF

MONTH	RESERVOIR		
	FOREBAY ELEVATION (FEET)	STORAGE CONTENT (KAF)	PUMPED TO HELENA VALLEY (KAF)
OCTOBER	3814.27	7.7	0
NOVEMBER	3813.65	7.5	0
DECEMBER	3813.35	7.4	0
JANUARY	3812.23	6.9	0
FEBRUARY	3811.49	6.6	0
MARCH	3810.78	6.4	0
APRIL	3820.06	10.4	10.2
MAY	3819.16	10.0	19.9
JUNE	3819.70	10.3	17.4
JULY	3814.47	7.8	21.2
AUGUST	3816.97	8.9	20.3
SEPTEMBER	3816.44	8.7	11.5
ANNUAL			100.6

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 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 acre feet at elevation 4724.0 feet 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 feet (top of active conservation). Since closure in 1929, the reservoir has accumulated a sediment volume of 6,172 AF below reservoir elevation 4724. 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 (83,248 AF). Depending on the runoff conditions and reservoir levels, the spillway gates remain open during the spring 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 to the top of the conservation pool at elevation 4724.0 (98,688 AF).

Weather conditions were dry during August and even dryer in September of WY 2012. During these months, the valley precipitation was less than 30 percent of average. This low precipitation resulted in an inflow into Gibson Reservoir of about 75 percent of average. As a result, Gibson Reservoir entered WY 2013 with a storage content of 6,242 AF at elevation 4612.80. This was 22 percent of the 30 year average and 6 percent of full capacity. This was 5,852 AF lower than at the beginning of WY 2012.

At the conclusion of the 2012 irrigation season, releases from Gibson Reservoir continued to be diverted to Willow Creek Reservoir to bring the reservoir storage back to desired winter carry-over levels. Once all diversions to Willow Creek Reservoir were discontinued for the year, winter releases to the Sun River were reduced and maintained near 140 cfs.

During WY 2013 the valley precipitation in the Sun River Basin was well above average for October - December. The mountain precipitation started out well above average at 172 percent of average and declined to near average conditions during November and December. Cumulative precipitation for October - December was 137 percent of average for valley precipitation and the mountain precipitation was 120 percent of average.

On January 1, the NRCS measured the mountain snowpack in the Sun River Basin at 86 percent of median. Precipitation in the Sun River Basin dropped during the January-March time period. The mountain precipitation was at 79 percent of average and the valley precipitation dropped to between 83 and 73 percent of average. Even though there was below average precipitation in the past 3 months, the NRCS's April 1 snowpack declined slightly to 84 percent of median.

During the first week of April, it looked as if the peak snowpack had occurred as the snowpack started to decline. However, with April precipitation at 120 percent of average, the snow water equivalent in the mountains increased by approximately 20 percent. On April 15 storage was beginning to be moved from Gibson Reservoir to refill Pishkun Reservoir as diversions to the Pishkun Supply Canal were initiated. The snowpack in the Sun River Basin reached its peak accumulation on April 25, which was 102 percent of the average. By April 28 inflows into Gibson Reservoir tripled as a warm spell started the snowmelt.

On May 1 the storage level of Gibson Reservoir was at elevation 4670.24 feet, 54 feet 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 67 and 80 percent of average, respectively. Warming conditions caused storage in Gibson Reservoir to increase as the snowmelt runoff increased and on May 14 the peak inflow of 6,669 cfs was recorded. Concurrently, releases were gradually increased to about 2,500 cfs to control the rate of fill. By May 30, Gibson Reservoir had reached elevation 4723.82 feet, 0.18 feet below full pool. During the remainder of the runoff season, Gibson Reservoir was operated in a manner to pass the inflows while maintaining a near full reservoir.

Valley and mountain precipitation during June was 80 and 101 percent of average, respectively. On June 8, the peak discharge to the Sun River over the Sun River Diversion Dam was recorded at 3,050 cfs. The snowmelt runoff ended on June 21 as temperatures remained near average. Weather conditions turned warmer and extremely dry in July, as precipitation in the valley and mountain areas were much below average at 33 and 17 percent of average, respectively.

The slightly below average snowpack and the below average spring precipitation produced an actual April-July runoff total of 354,300 AF, 88 percent of average for the basin. The inflows during April, May, June, and July were 86, 112, 77, and 61 percent of average, respectively.

Temperatures during August remained above average. The valley precipitation increased in August resulting in 73 percent of average, while the mountain precipitation was 60 percent of average. Diversion to the Pishkun Supply Canal was discontinued on August 17. These conditions drastically improved during September when valley and mountain precipitation were 139 and 161 percent of average, respectively. The August-September inflow to Gibson Reservoir totaled about 28,900 AF, 70 percent of average. During September, the average inflow was approximately 208 cfs. Gibson Reservoir ended the water year with a content of 7,315 AF of storage at elevation 4615.22 on September 30. This was 37 percent of average and 7 percent of normal full.

Total annual inflow to Gibson Reservoir for WY 2013 was 86 percent of average, totaling 450,722 AF. This was 107,731 AF less than in WY 2012.

Even though there is no space allocated to flood control in Gibson Reservoir, the Corps still estimates flood damages prevented by Gibson Reservoir. The Corps determined that during 2013, Gibson Reservoir did not contribute to the reduction of flood damages locally or downstream on the Missouri River below Fort Peck Reservoir. Since 1950 Gibson Reservoir has prevented $3,075,100 in flood damages.

Additional hydrologic and statistical data pertaining to Pishkun Reservoir can be found in Table MTT 8A and Figure MTG5

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.

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 sediment accumulation 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 feet. 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 rather than sediment accumulation. 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 2012 irrigation season were discontinued on September 1, 2012. Reservoir content in Pishkun Reservoir at the beginning of WY 2013 was 17,790 AF at elevation 4344.40.

Storage during the fall and winter of WY 2013 was maintained at 17,790 AF, about 50 percent of average or approximately 28,900 AF below the top of the active conservation pool. Diversions to refill the reservoir began in mid-April, and on May 7 irrigation releases from Pishkun Reservoir began. On May 21 storage had successfully reached the top of active conservation pool at elevation 4370.0 feet.

Once irrigation releases began, storage fluctuated according to irrigation demands. A maximum release of 1,735 cfs was recorded on July 5 while the maximum inflow of 1,416 cfs was on August 1. All diversions from the Sun River into Pishkun Reservoir were discontinued on August 17, 2013, while all irrigation releases from Pishkun Reservoir were discontinued on August 31, 2013.

Based on average diversions to Pishkun Reservoir, Greenfields delivered the initially set full allotments to all of its water users in 2013. Approximately 254,450 AF of water was released from Pishkun Reservoir from May 7 - August 31 to help meet the irrigation demands on the Sun River Project. By the end of the water year the reservoir storage was 22,124 AF at elevation 4349.70. This was 76 percent of average and 47 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 feet. 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 sediment accumulation 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 feet. Since closure in 1911, the reservoir had an estimated volume change of 431 AF below reservoir elevation 4144.00 feet. 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 2012 irrigation season were discontinued on July 25, 2012. Reservoir content in Willow Creek at the beginning of WY 2013 was 20,824 AF at elevation 4133.95 feet.

Since storage in Willow Creek Reservoir was lower than average to start WY 2013, diversions continued throughout the fall and early winter to gain approximately 6,700 AF of storage or 4 feet in reservoir elevation. Diversions from the Sun River to Willow Creek Reservoir during 2013 were initiated on April 18 at a rate of approximately 15 cfs. The diversions began to reach Willow Creek Reservoir and peak storage content for the year of 31,381 AF at elevation 4141.68 was recorded on June 13. This storage level was 110 percent of average and was at 99 percent of full capacity. The peak inflow for the year was 86 cfs on May 18.

To help meet irrigation demands within the Sun River Irrigation Project releases were made from Willow Creek Reservoir from July 8 - August 18. Approximately 9,290 AF of storage was released from Willow Creek Reservoir to help meet the irrigation demands in 2013.

Willow Creek Reservoir ended the water year on September 30 with a storage content of 21,430 AF at elevation 4134.43. This was 109 percent of average and 67 percent of normal full capacity. However, fall and winter diversions continued into Willow Creek Reservoir until December 3, 2013, 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 – 2013

December 18, 2012: Diversion to Willow Creek was discontinued.

January 1, 2013: Snowpack reported at 86 percent of average.

February 1, 2013: Snowpack reported at 89 percent of average.

March 1, 2013: Snowpack reported at 91 percent of average

April 1, 2013: Snowpack reported at 84 percent of average.

April 15, 2013: Diversions to the Pishkun Supply Canal were initiated.

April 18, 2013: Diversions to the Willow Creek Feeder Canal were initiated.

May 1, 2013: Snowpack reported at 102 percent of average.

May 7, 2013: Releases out of Pishkun Reservoir were initiated.

May 14, 2013: Peak Inflow to Gibson Reservoir is 6,669 cfs.

May 23, 2013: Storage in Pishkun Reservoir reached peak content for the year of 47,122 AF at elevation 4370.28.

June 10, 2013: Peak outflow from Gibson Reservoir is 3,409 cfs.

June 13, 2013: Storage in Willow Creek Reservoir reached peak content for the year of 31,381 AF at elevation 4141.68.

June 19, 2013: Storage in Gibson Reservoir reached the top of the conservation pool at elevation 4724.

July 5, 2013: Peak Release from Pishkun Reservoir is 1,735 cfs.

July 8, 2013: Releases out of Willow Creek Reservoir were initiated.

August 1, 2013: Willow Creek Reservoir peak release of 125 cfs. Inflows into Pishkun Reservoir peaked at 1,416 cfs.

August 17, 2013: Diversions to Pishkun Supply Canal were discontinued for the year.

August 18, 2013: Releases from Willow Creek Reservoir were discontinued for the season.

August 31, 2013: Releases from Pishkun Reservoir were discontinued for the season.

TABLE MTT8-A
HYDROLOGIC DATA FOR 2013
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	4612.80	6,242	OCT 01, 2012
END OF YEAR	4615.22	7,315	SEP 30, 2013
ANNUAL LOW	4610.37	5,557	AUG 17, 2013
ANNUAL HIGH	4723.99	98,674	JUN 19, 2013
HISTORIC HIGH	4732.23	116,400	JUN 08, 1964

INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	450,772	OCT 12-SEP 13	220,090	OCT 12-SEP 13
DAILY PEAK (CFS)	6,669	MAY 14, 2013	3,051	JUN 08, 2013
DAILY MINIMUM (CFS)	125	SEP 29, 2013	66	OCT 07, 2012

MONTH	INFLOW		OUTFLOW*				CONTENT	
	KAF	% OF AVG	TOTAL CANAL KAF	% OF AVG	RIVER KAF	% OF AVG	KAF	% OF AVG
OCTOBER	11.9	75	4.9	135	4.7	49	7.9	30
NOVEMBER	14.5	89	4.6	308	4.7	43	11.9	40
DECEMBER	12.6	96	2.0	1208	6.1	56	14.7	45
JANUARY	9.7	82	0.0	---	9.4	96	16.1	45
FEBRUARY	7.9	76	0.0	---	9.8	119	16.8	43
MARCH	11.1	77	0.0	---	7.8	80	23.6	54
APRIL	37.5	86	14.2	160	10.7	49	39.5	66
MAY	162.9	112	58.4	145	57.8	60	98.2	109
JUNE	118.5	77	68.1	120	71.5	54	91.7	101
JULY	35.4	61	86.5	118	14.0	52	30.7	63
AUGUST	16.5	69	33.0	79	10.8	83	6.1	27
SEPTEMBER	12.4	72	0.5	4	12.7	125	7.3	37
ANNUAL	450.7	86	272.1	114	220.1	61		
APRIL-JULY	354.3	88						

* Average for the 1931-2013 period.

FIGURE MTG5

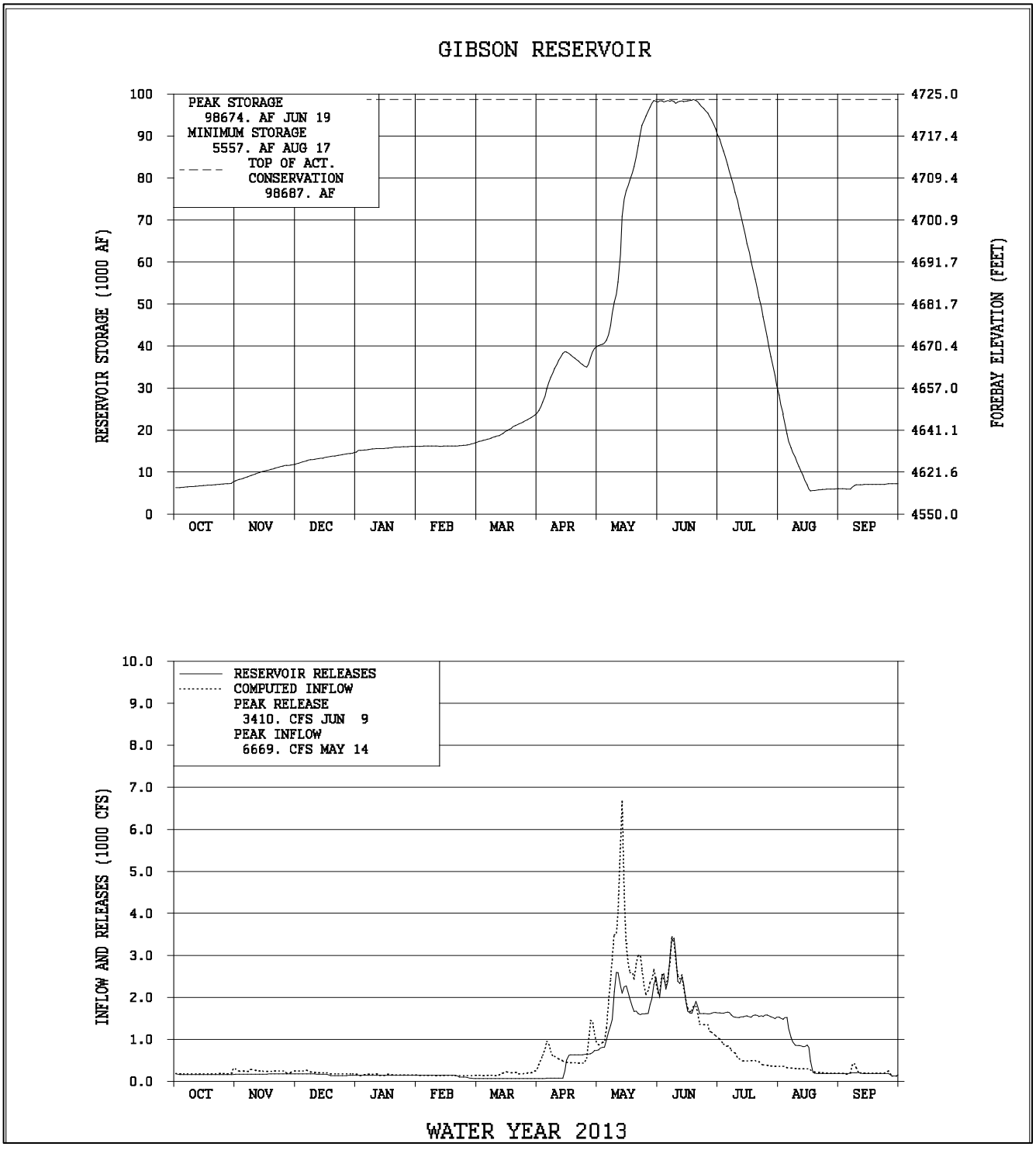

GIBSON RESERVOIR
PEAK STORAGE
98674. AF JUN 19
MINIMUM STORAGE
5557. AF AUG 17
TOP OF ACT.
CONSERVATION
98687. AF
RESERVOIR STORAGE (1000 AF)
FOREBAY ELEVATION (FEET)
100
90
80
70
60
50
40
30
20
10
0
4725.0
4717.4
4709.4
4700.9
4691.7
4681.7
4670.4
4657.0
4641.1
4621.6
4550.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
RESERVOIR RELEASES
COMPUTED INFLOW
PEAK RELEASE
3410. CFS JUN 9
PEAK INFLOW
6669. CFS MAY 14
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 2013

TABLE MTT8-B
HYDROLOGIC DATA FOR 2013
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	4344.40	17,790	OCT 01, 2012
END OF YEAR	4349.70	22,124	SEP 30, 2013
ANNUAL LOW	4344.40	17,790	OCT 01, 2012
ANNUAL HIGH	4370.28	47,122	MAY 23, 2013
HISTORIC HIGH	4371.40	48,950	JUL 04, 1953

INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	258,787	OCT 12-SEP 13	254,453	OCT 12-SEP 13
DAILY PEAK (CFS)	1,416	AUG 01, 2013	1,735	JUL 05, 2013
DAILY MINIMUM (CFS)	0	*	0	*

* During non-irrigation season

MONTH	INFLOW*		OUTFLOW*		CONTENT	
	KAF	% OF AVG	KAF	% OF AVG	KAF	% OF AVG
OCTOBER	0.0	---	0.0	---	17.8	58
NOVEMBER	0.0	---	0.0	---	17.8	55
DECEMBER	0.0	---	0.0	---	17.8	56
JANUARY	0.0	---	0.0	---	17.8	56
FEBRUARY	0.0	---	0.0	---	17.8	56
MARCH	0.0	---	0.0	---	17.8	53
APRIL	17.8	261	0.0	---	35.5	93
MAY	55.5	151	44.7	146	46.4	101
JUNE	67.0	116	71.4	116	41.9	104
JULY	82.5	117	84.6	113	39.8	111
AUGUST	36.0	85	53.7	123	22.1	63
SEPTEMBER	0.0	---	0.0	---	22.1	76
ANNUAL	258.8	112	254.5	111		
APRIL-JULY	222.8	129				

* Average for the 1947-2013 period.

FIGURE MTG6

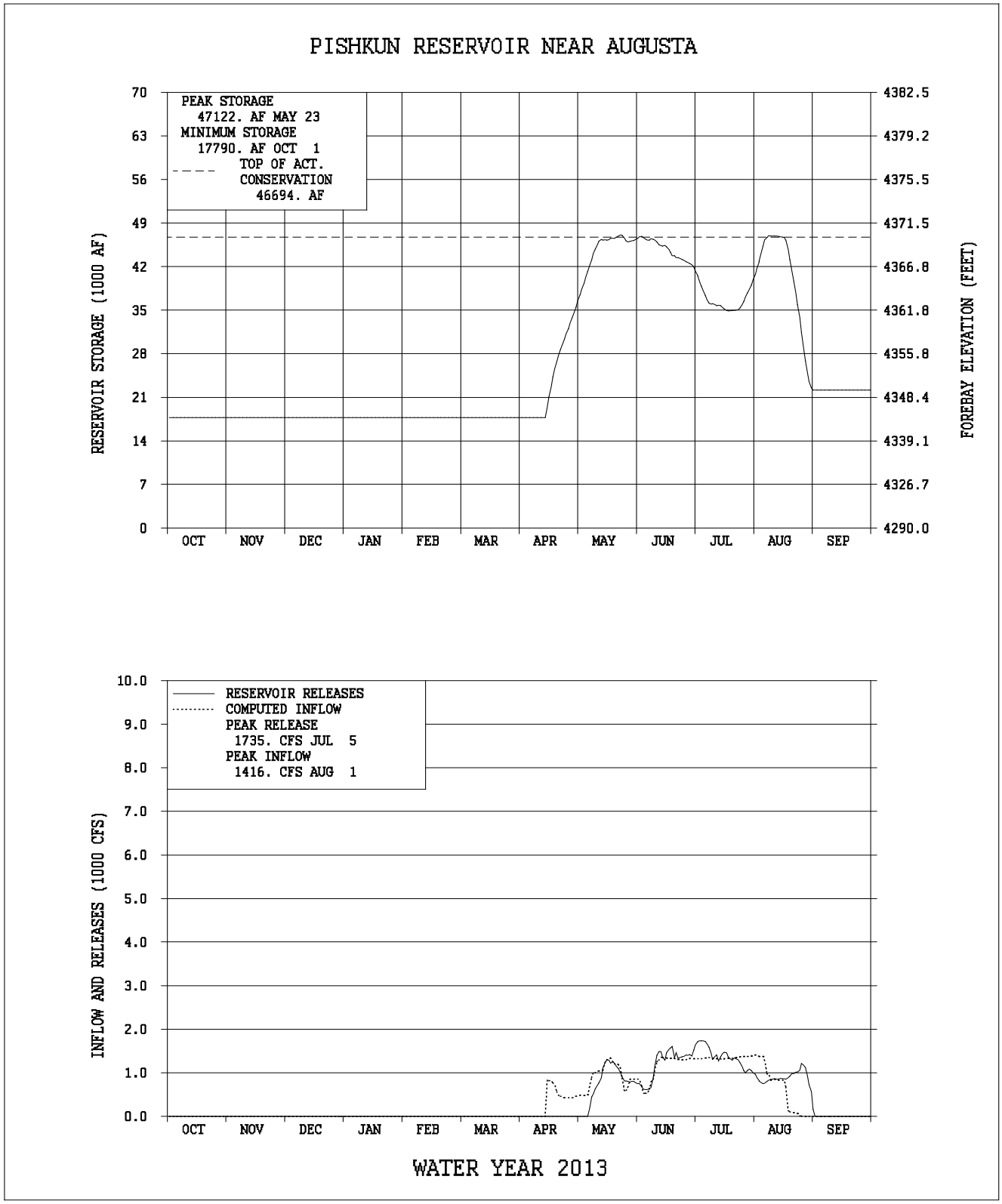

PISHKUN RESERVOIR NEAR AUGUSTA
PEAK STORAGE
47122. AF MAY 23
MINIMUM STORAGE
17790. AF OCT 1
TOP OF ACT.
CONSERVATION
46694. AF
RESERVOIR STORAGE (1000 AF)
FOREBAY ELEVATION (FEET)
70
63
56
49
42
35
28
21
14
7
0
4382.5
4379.2
4375.5
4371.5
4366.8
4361.8
4355.8
4348.4
4339.1
4326.7
4290.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
RESERVOIR RELEASES
COMPUTED INFLOW
PEAK RELEASE
1735. CFS JUL 5
PEAK INFLOW
1416. CFS AUG 1
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 2013

TABLE MTT8-C
HYDROLOGIC DATA FOR 2013
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	4133.95	20,824	OCT 01, 2012
END OF YEAR	4134.43	21,430	SEP 30, 2013
ANNUAL LOW	4133.93	20,799	OCT 02, 2012
ANNUAL HIGH	4141.68	31,381	JUN 16, 2013
HISTORIC HIGH	4144.00	35,300	JUN 22, 1975

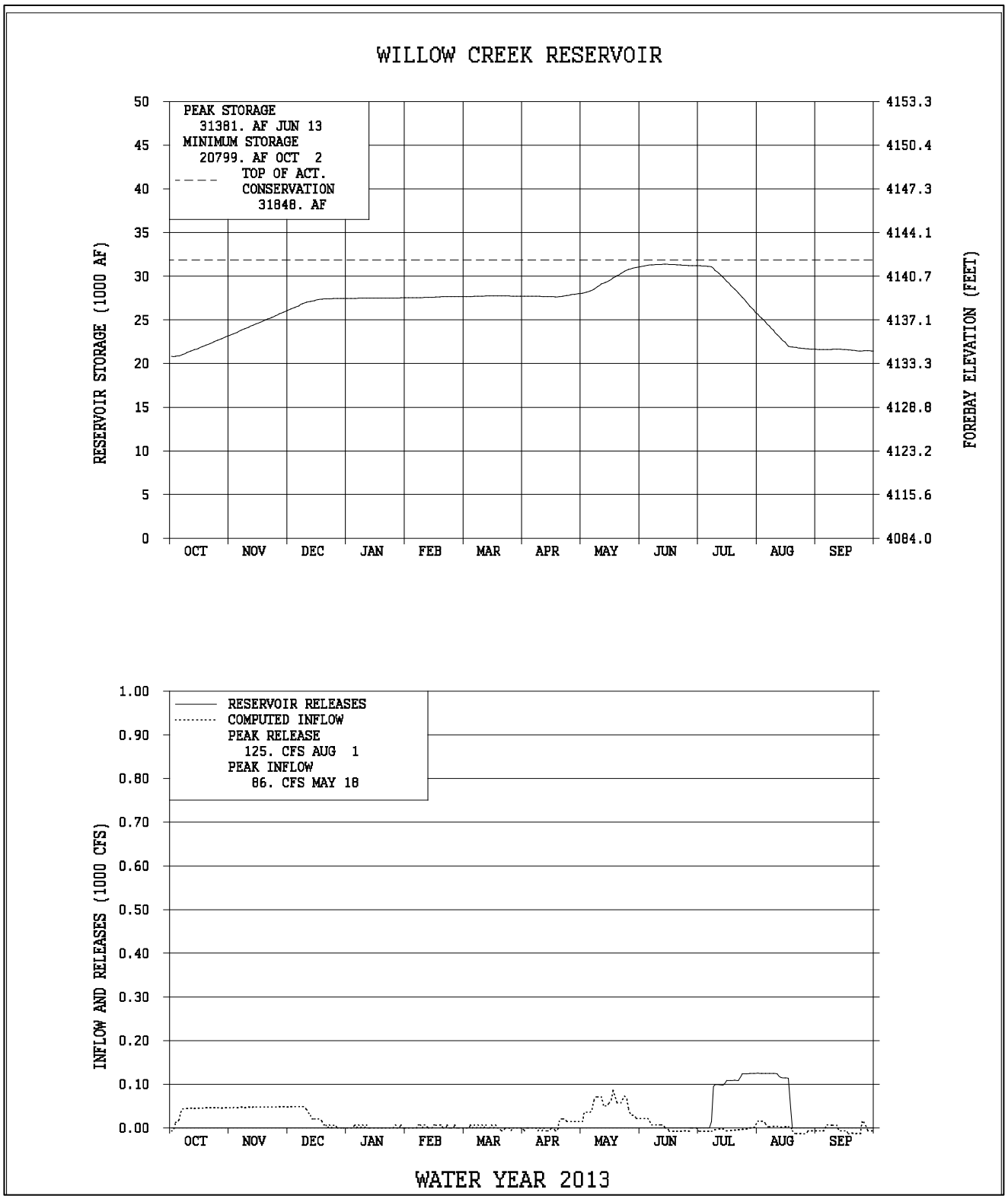
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	9,897	OCT 12-SEP 13	9,291	OCT 12-SEP 13
DAILY PEAK (CFS)	86	MAY 18, 2013	125	AUG 01, 2013
DAILY MINIMUM (CFS)	0	*	0	*

* During non-irrigation season

MONTH	INFLOW*		OUTFLOW*		CONTENT	
	KAF	% OF AVG	KAF	% OF AVG	KAF	% OF AVG
OCTOBER	2.4	296	0.0	---	23.2	114
NOVEMBER	2.8	357	0.0	---	26.1	121
DECEMBER	1.4	308	0.0	---	27.4	124
JANUARY	0.1	24	0.0	---	27.5	122
FEBRUARY	0.2	35	0.0	---	27.7	120
MARCH	0.1	7	0.0	---	27.7	118
APRIL	0.2	12	0.0	---	28.0	110
MAY	3.0	77	0.0	---	31.0	110
JUNE	0.2	5	0.0	---	31.2	110
JULY	-0.3	---	5.1	97	25.9	112
AUGUST	0.0	---	4.2	115	21.6	108
SEPTEMBER	-0.2	---	0.0	---	21.4	109
ANNUAL	9.9	70	9.3	66		
APRIL-JULY	3.2	32				

* Average for the 1952-2013 period.

FIGURE MTG7


WILLOW CREEK RESERVOIR
PEAK STORAGE
31381. AF JUN 13
MINIMUM STORAGE
20799. AF OCT 2
TOP OF ACT.
CONSERVATION
31848. AF
RESERVOIR STORAGE (1000 AF)
FOREBAY ELEVATION (FEET)
50
45
40
35
30
25
20
15
10
5
0
4153.3
4150.4
4147.3
4144.1
4140.7
4137.1
4133.3
4128.8
4123.2
4115.6
4084.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
RESERVOIR RELEASES
COMPUTED INFLOW
PEAK RELEASE
125. CFS AUG 1
PEAK INFLOW
86. CFS MAY 18
INFLOW AND RELEASES (1000 CFS)
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
WATER YEAR 2013

Lake Elwell (Tiber Dam)

Lake Elwell (Tiber Dam) is located on the Marias River near Chester, Montana and is part of the Pick-Sloan Missouri Basin Project (P-S MBP). 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 feet. 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. Since closure in 1957, the reservoir has accumulated a sediment volume of 42,179 AF below elevation 2993.00. 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 megawatt (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 2012 totaled 7,645 AF, 59 percent of average. In an effort to conserve storage in Lake Elwell, releases to the Marias River were reduced to 500 cfs on September 7. Inflow during September 2012 totaled 1,565 AF, 13 percent of average. By the end of September 2012, Lake Elwell storage was drafted to 818,654 AF at an elevation of 2986.75 feet, 104 percent of average.

Both the valley and mountain precipitation in the Marias River Basin above Lake Elwell was below normal during July, August, and September. Valley precipitation was recorded at 77, 42 and 12 percent of average, respectively, while mountain precipitation was 87, 63, and 10 percent of average, respectively.

During October - December there were signs of relief from the dry conditions that had occurred since July. The valley precipitation during October - December was 264, 192, and 120 percent of average while the mountain precipitation was 166, 93, and 121 percent of average, respectively. Inflow during this period totaled 69,861 AF, 124 percent of average. Releases were kept at 500 cfs during October - December. By the end of December Lake Elwell storage was drafted to 794,207 AF, 104 percent of average.

On January 1 the NRCS reported the mountain snowpack in the Marias River Basin above Lake Elwell was only 84 percent of average. The January 1 water supply forecast, based on mountain snowpack, indicated the April-July runoff into Lake Elwell would be 353,000 AF, which was 88 percent of average.

Valley precipitation continued to be above average at 226 percent of average while mountain precipitation was 87 percent of average. On February 1, the NRCS reported the mountain snowpack in the Marias River Basin above Lake Elwell was about the same at 86 percent of average. The February 1 water supply forecast, based on mountain snowpack, indicated the April-July runoff into Lake Elwell would be 321,000 AF, which was 81 percent of average.

Again, valley precipitation was above average at 127 percent of average and mountain precipitation 90 percent of average in February. On March 1, the NRCS reported the mountain snowpack in the Marias River Basin above Lake Elwell was still below average but had improved to 89 percent of average. The March 1 water supply forecast indicated the April-July runoff into Lake Elwell would be 327,000 AF, which was 91 percent of average.

On April 1 the NRCS reported the mountain snowpack in the Marias River Basin above Lake Elwell stayed about the same at 88 percent of average. The snowpack in the Marias River Basin continued to increase and reached its peak accumulation for the year on April 22. The water supply forecast prepared on April 1 indicated the April-July runoff into Lake Elwell was expected to be 90 percent of average, totaling 322,000 AF. This was about 168,000 AF less than was forecasted a year ago. Storage in Lake Elwell slowly drafted to a low content for the year of 763,664 AF at elevation 2983.09 on April 1

Temperatures remained cooler than normal during April, but near the end of April temperatures warmed up and the snowmelt runoff began entering Lake Elwell. April precipitation was above average in the valley and mountains. May 1 snow water content of the snowpack above Lake Elwell had increased to 103 percent of average. The May 1 water supply forecast indicated May-July runoff into Lake Elwell would be 303,000 AF, which was 99 percent of average. Based on the May 1 water supply outlook, it appeared releases out of Tiber Dam would need to be increased to control the rate of fill of storage in Lake Elwell.

In early April the Montana Fish, Wildlife, and Parks inquired about the possibility of providing a release of 2,000 cfs out of Tiber Dam to the Marias River in June and maintaining this release rate for approximately 1 week followed by a flow of 1,000 cfs until the end of June. 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 15 inflows reached a peak for the year at approximately 4,377 cfs. Releases to the Marias River were kept at 500 cfs and storage increased to 870,983 AF at elevation 2989.93, by the end of May which was 107 percent of average by storing the runoff. By the end of May, the accumulated valley precipitation was 132 percent of average while the mountain precipitation was at 103 percent of average. Releases were kept at 500 cfs to store water in anticipation of meeting Montana Fish, Wildlife, and Parks request. On May 30, to control the rate of fill, releases were increased to 700 cfs, approximately the capacity of the power plant.

Mountain precipitation was only 68 percent of average in May. The NRCS reported snowpack conditions in the watershed above Lake Elwell were 71 percent of average on June 1. The June 1 water supply forecast indicated the June-July runoff into Lake Elwell would be 143,000 AF which is 78 percent of average. However, with the storage conserved in May, it was possible to still provide the flows requested by the Montana Fish, Wildlife, and Parks.

Valley and mountain precipitation during June was 124 and 97 percent of average, respectively. Inflow into Lake Elwell during June was below average. Releases were reduced to 730 cfs, approximate power plant capacity, on July 1 to conserve storage.

The valley and mountain precipitation was 116 and 4 percent of average, respectively. On July 8, storage in Lake Elwell reached peak content for the year of 917,268 AF at elevation 2992.54. This was 0.46 feet below the top of the conservation pool.

The April-July runoff into Lake Elwell during 2013 was 88 percent of average, totaling 317,000 AF and was 18,400 AF less than the April-July inflow experienced in 2012. The total annual inflow to Lake Elwell was 90 percent of average, totaling 465,800 AF. This was only 9,800 AF more than the total annual inflow experienced in WY 2012.

Inflow during August and September totaled 12,648 and 7,806 AF, respectively, which was 97 and 63 percent of average. In an effort to conserve storage in Lake Elwell, winter releases from Lake Elwell to the Marias River were reduced to 600 cfs on September 5.

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. By year end both the total annual valley precipitation and the total annual mountain precipitation were 127 and 100 percent of average, respectively.

By the end of the year normal operations of Lake Elwell drafted storage to 833,321 AF at an elevation of 2987.67 feet. This was 107 percent of normal and 14,667 AF or 0.92 feet higher than reported on September 30, 2012.

The Corps determined that during 2013, Lake Elwell did not prevent any local flood damages but prevented $950,200 in 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 $92,963,400.00. Additional hydrologic and statistical data pertaining to Lake Elwell (Timber Dam) can be found in Table MTT9 and and Figure MTG 8.

Important Events – 2013

January 1, 2013: NRCS reported snowpack conditions in the watershed above Lake Elwell were about 84 percent of average. The January water supply forecast indicates the April-July runoff into Lake Elwell would be 353,000 AF which is 88 percent of average.

February 1, 2013: NRCS reported snowpack conditions in the watershed above Lake Elwell were about 86 percent of average. The February water supply forecast indicates the April-July runoff into Lake Elwell would be 321,000 AF which was 80 percent of average.

March 1, 2013: NRCS reported snowpack conditions in the Marias River Basin upstream of Lake Elwell were about 89 percent of average. The March water supply forecast indicates the April-July runoff into Lake Elwell would be 327,000 AF which is 91 percent of average.

April 1, 2013: NRCS reported snowpack conditions in the watershed above Lake Elwell were 88 percent of average. Water supply forecast indicated the April-July runoff into Lake Elwell would be 322,000 AF or 90 percent of average.

April 1, 2013: Storage in Lake Elwell slowly drafted to a low content for the year of 763,664 AF at elevation 2983.09.

May 1, 2013: NRCS reported snowpack conditions in the watershed above Lake Elwell were 103 percent of average. The May 1 water supply forecast indicates the May-July runoff into Lake Elwell would be 303,000 AF which is 99 percent of average.

May 30, 2012: To control the rate of fill in Lake Elwell and meet target objectives, releases to the Marias River were increased to 700 cfs.

June 1, 2013: NRCS reported snowpack conditions in the watershed above Lake Elwell were 71 percent of average. The June 1 water supply forecast indicates the June-July runoff into Lake Elwell would be 143,000 AF which is 78 percent of average.

June 10-12, 2013: To control the rate of fill and to assist MFWP with their fishery study, releases were initiated through the spillway and the total release to the Marias River was increased to 2,000 cfs.

June 24-Jul1, 2013: To control the rate of fill and conserve storage in Lake Elwell, releases were discontinued through the spillway and gradually reduced to 730 cfs.

July 8, 2013: Storage in Lake Elwell reached peak content for the year of 917,268 AF at elevation 2992.54. This was 0.46 feet below the top of the conservation pool.

September 5, 2013: To conserve storage and gradually reduce releases to the Marias River for the winter, releases were reduced to 600 cfs.

September 19, 2013: Tiber Montana LLC conducted an efficiency test of the power plant turbine. Releases were fluctuated between 550 and 600 cfs.

Additional hydrologic and statistical information pertaining to the operation of Lake Elwell during 2013 can be found in Table MTT9 and Figure MTG8.

TABLE MTT9
HYDROLOGIC DATA FOR 2013
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

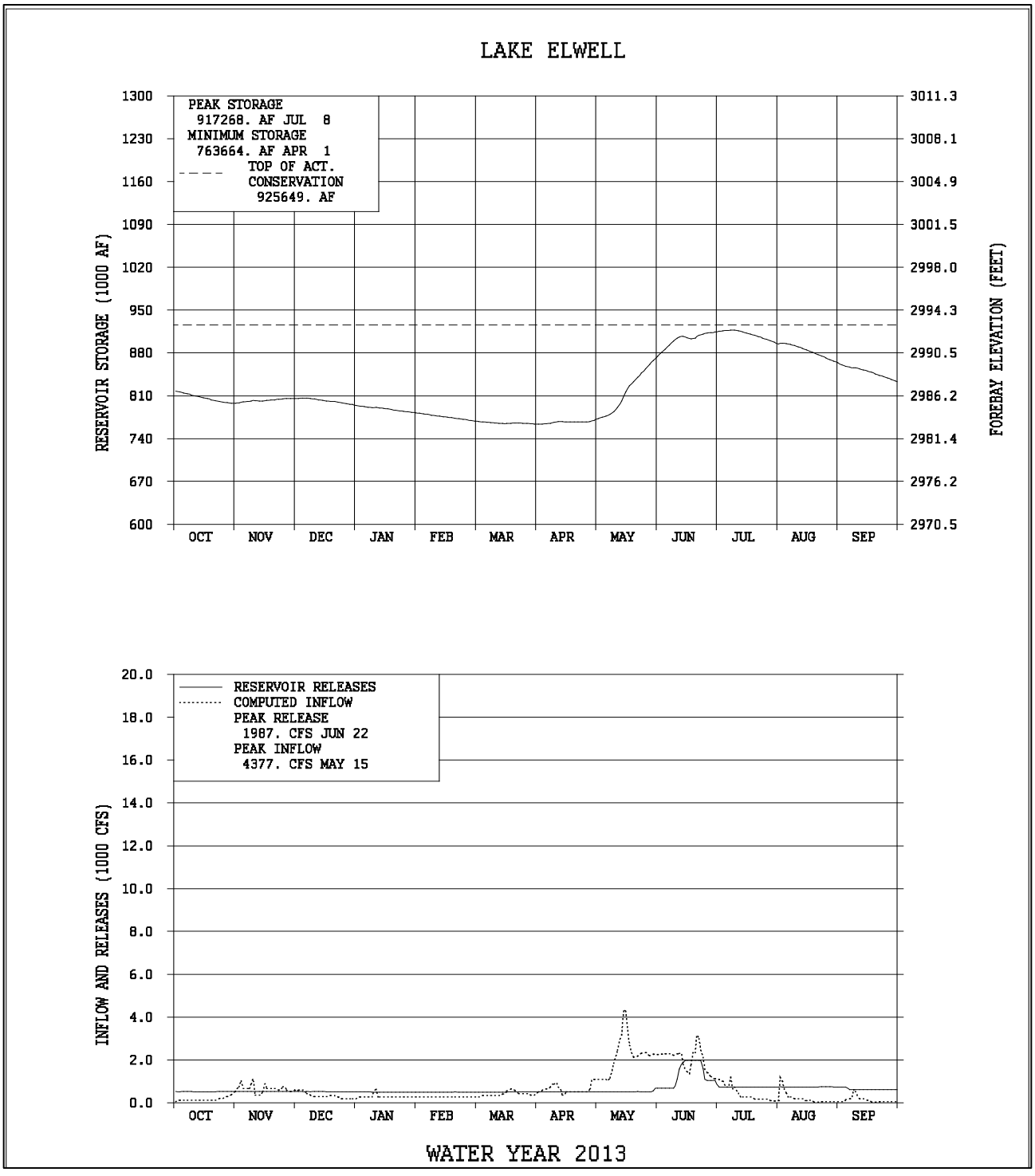
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	2986.75	818,654	OCT 01, 2012
END OF YEAR	2987.67	833,321	SEP 30, 2013
ANNUAL LOW	2983.09	763,664	APR 01, 2013
ANNUAL HIGH	2992.54	917,268	JUL 08, 2013
HISTORIC HIGH	3011.42	1,303,858	JUL 19, 2011

INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	465,756	OCT 12-SEP13	451,089	OCT 12-SEP 13
DAILY PEAK (CFS)	4,377	MAY 15, 2013	1,987	JUN 22, 2013
DAILY MINIMUM (CFS)	29	AUG 10, 2013	492	MAR 17, 2013
PEAK SPILL (CFS)			1,247	JUN 22, 2013
TOTAL SPILL (AF)			17,532	06/10-07/01/13

MONTH	INFLOW		OUTFLOW*		CONTENT	
	KAF	% OF AVG	KAF	% OF AVG	KAF	% OF AVG
OCTOBER	11.1	65	31.9	70	797.8	106
NOVEMBER	38.6	182	31.0	86	805.4	109
DECEMBER	20.2	120	31.4	112	794.2	109
JANUARY	18.2	116	30.7	116	781.7	110
FEBRUARY	15.3	71	27.6	108	769.3	109
MARCH	25.1	63	30.6	88	763.8	108
APRIL	36.5	69	30.1	68	770.2	107
MAY	132.5	108	31.8	49	871.0	109
JUNE	120.4	85	77.5	84	913.8	105
JULY	27.6	64	45.2	61	896.2	106
AUGUST	12.6	100	45.2	77	863.6	106
SEPTEMBER	7.8	65	38.1	74	833.3	107
ANNUAL	465.8	90	451.1	77		
APRIL-JULY	317.0	88				

* Average for the 1957-2013 period.

FIGURE MTG8


LAKE ELWELL
PEAK STORAGE
917268. AF JUL 8
MINIMUM STORAGE
763664. AF APR 1
TOP OF ACT.
CONSERVATION
925649. AF
RESERVOIR STORAGE (1000 AF)
FOREBAY ELEVATION (FEET)
1300
1230
1160
1090
1020
950
880
810
740
670
600
3011.3
3008.1
3004.9
3001.5
2998.0
2994.3
2990.5
2986.2
2981.4
2976.2
2970.5
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
RESERVOIR RELEASES
COMPUTED INFLOW
PEAK RELEASE
1987. CFS JUN 22
PEAK INFLOW
4377. CFS MAY 15
INFLOW AND RELEASES (1000 CFS)
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
WATER YEAR 2013

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. 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 uses 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 feet. The maximum combined discharge of the spillway and river outlet works is 4,000 cfs at a maximum water surface elevation of 4810.0 feet.

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 reservoir 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. Since Lake Sherburne closure in 1919, the measured total volume change at reservoir elevation 4788.00 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.

Overall, the WY 2012 provided above average conditions in the St. Mary River Basin. The cumulative precipitation through the end of September for valley and mountain areas was 86 and 104 percent of average, respectively. Inflows during June, July, August, and September were 136, 137, 102 and 63 percent of average, respectively. Inflow for the water year totaled 161,400 AF, 114 percent of average. Lake Sherburne storage on September 30, 2012, was 23,454 AF or elevation 4756.71, 280 percent of normal.

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

December was 173 percent of average. During the same period, cumulative mountain precipitation was 145 percent of average. Inflows during October - December were 123, 225, and 187 percent of average, respectively. This resulted in storage at the end of December of 54,461 AF, 201 percent of average. This was the record high elevation for this time of year. A decision was made in October to not reopen the gates on Lake Sherburne and release water to lower storage levels but manage storage in the spring.

On January 1, the NRCS reported mountain snowpack in the St. Mary Basin was 104 percent of normal. Precipitation in the mountains was below average during January and resulted in the February 1 snowpack for the St. Mary Basin of 98 percent of average. Snow storms were less frequent in February. The snowpack for the St. Mary Basin was reported to be at 99 percent of average on March 1. Total inflow during January - March was approximately 6,400 AF, 74 percent of average.

The recorded valley and mountain precipitation was above average during March and April. By April 1 mountain snow water content had increased to 105 percent of average. The snow pack peaked on April 24 at 120 percent of average. The April 1 water supply forecast for April - July runoff indicated that the runoff would be 101,100 AF, 102 percent of normal.

Diversions into the St. Mary Canal generally begin in the spring, as soon as weather conditions allow. During mild years this can be as early as March. In 2013 diversions to the St. Mary Canal and releases from Lake Sherburne were initiated on March 11. The 183 percent of average storage in Lake Sherburne on March 1 influenced the decision to start releases from Lake Sherburne in March.

Once releases were started, storage decreased until May 7 when inflows from snowmelt runoff started to exceed the 400 cfs release. Lake Sherburne releases were varied to control the runoff from the basin and allow the reservoir to fill to full pool in late June/early July.

Diversions to the St. Mary Canal started on March 11 and were gradually increased to 400 cfs by the end of March and stayed at this rate until May. Releases from Lake Sherburne increased to an average of 710 cfs in early July to control the rate of fill in the reservoir. Precipitation for April was above average, and precipitation for May and June was below average.

The snowpack was essentially melted out by the end of June. Lake Sherburne storage peaked on July 3 at 65,855 AF, at elevation 4787.83, 0.17 feet below the top of normal full capacity. The peak inflow for the year was 1,620 cfs which occurred on May 14 and again peaked at 1,552 cfs on June 20. The actual April - July runoff was 106 percent of average, totaling 104,500 AF.

July brought on dry conditions with well below average precipitation to the mountain and valley regions at 2 and 28 percent of average, respectively. Mountain and valley precipitation rebounded and was above average in August and September. The cumulative

precipitation was 139 and 112 percent of average through the end of September for valley and mountain areas, respectively. Inflows during June, July, August, and September were 101, 99, 108 and 111 percent of average, respectively. Inflow for the water year totaled 158,400 AF, 113 percent of average. This was approximately 3,000 AF less than the inflow experienced during WY 2012. Storage on September 30, 2013, was 17,651 AF, 114 percent of average.

According to preliminary data, diversions from the St. Mary River to the Milk River totaled 184,145 AF, 117 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 2013 on September 26, while canal diversions from the St. Mary to the Milk River were discontinued on September 24.

During the 2013 irrigation season there were two conference calls, one in September and one in July, held 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.

During 2013 Lake Sherburne prevented $870,600 of flood damages locally 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 $8,817,100 in flood damages.

Additional hydrologic and statistical information pertaining to the operation of Sherburne Reservoir during 2013 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 1999 and finalized during 2000 determined the normal full pool capacity was 92,880 AF, a reduction of 10,517 AF from the previous capacity. The new revised elevation-area-capacity data was used beginning in WY 2001. The top 32,534 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 2012 runoff conditions in the Milk River Basin were above average. However precipitation was well below average in July - September. Cumulative precipitation was

103 percent of average at the end of September. Inflow into Fresno Reservoir during September was 20,800 AF, 94 percent of average. On September 27 releases for irrigation for the Milk River Project users were discontinued. As irrigation wound down for the year, storage in Fresno Reservoir gained and concluded the water year at 48,982 AF, 124 percent of average to begin WY 2013. Releases from Fresno Reservoir were reduced to approximately 50 cfs until the start of the irrigation season.

The valley precipitation during the start of WY 2013 was above average. Precipitation varied from month to month with some months drier and some months wetter than average. The accumulated year to date precipitation from October - March was 151 percent of average.

Reservoir inflows were below average in October and above average in November and December. The end of December storage was 49,864 AF, 135 percent of average.

By January 1 the NRCS reported the snowpack in the Milk River Basin was 57 percent of average. However by February 1, the NRCS reported snowpack had increased to 106 percent of average, producing a March - July runoff forecast for Fresno Reservoir of 60,000 AF, 107 percent of average.

Storage at the end of February was 47,563 AF, 133 percent of average. In the Milk River Basin, the spring runoff season generally occurs from March - 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. On March 1, the snowpack was reported at 131 percent of average. Based on the March 1 water supply forecast, the March-July runoff into Fresno Reservoir was expected to be 111 percent of average or equal to 62,000 AF. Based on this forecast, storage in Fresno Reservoir was expected to fill to the top of the conservation pool at elevation 2575 by May.

Diversions to Nelson Reservoir were initiated in March. Due to the good carryover storage in Fresno Reservoir, Nelson Reservoir, and Lake Sherburne, excess water was delivered to Bowdoin National Wildlife Refuge (Bowdoin).

Fresno Reservoir filled on May 1 from natural flow runoff and diversions through the St. Mary Canal. Cumulative valley precipitation was 167 percent of average through May. However, inflow was below average to Fresno Reservoir during May.

The Milk River Joint Board of Control (MRJBC) set the initial annual allotment at their May 6 meeting at 2.3 AF.

Near the end of May and beginning of June several inches of rain fell in the Bear Paw Mountains. This caused flooding downstream of Fresno Reservoir along the Milk River. Tributaries feeding the Milk River from the south were at record high flows. This included flooding in Havre, Montana along the tributaries. Overflow from Peoples Creek was entering the Dodson South Canal.

Releases from Fresno Dam river outlet works were decreased to try to provide some flood relief. However, releases continued upward once Fresno Reservoir filled and started to spill. Diversions to the St. Mary Canal were reduced 100 cfs but not much could be done since travel times from St. Mary Canal headgate to Fresno Reservoir is approximately 12 days. The canal was not reduced any further to minimize risk to canal bank sloughing.

With all the runoff from the precipitation, Fresno Reservoir storage was able to remain high through the summer months. Spillway releases were made from Fresno from May 1-May 16, and June 2-July 13. The storage in Fresno Reservoir peaked at 99,590 AF at elevation 2576.33 or 1.33 feet above the spillway crest on June 5. Inflow to Fresno Reservoir peaked at 1,953 cfs on June 4, while the peak release of 1,243 cfs was made on June 6.

The average releases for June and July were 834 cfs and 819 cfs. The actual March - July inflow for Fresno Reservoir, excluding St. Mary Canal water was approximately 73,900 AF, 132 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 June was 167 percent of average. Precipitation continued to be above average through the end of the water year. July, August, and September valley precipitation were 161, 160, and 162 percent of average, respectively. Total inflow into Fresno Reservoir for the year was 247,800 AF, 98 percent of average. Diversions from the St. Mary River Basin to the Milk River Basin accounted for about 67 percent of the inflow to Fresno Reservoir during 2013. Releases were reduced to 110 cfs on September 21, allowing storage to be slowly drafted to 63,495 AF at elevation 2567.94 on September 30, 161 percent of average and 69 percent of normal full capacity. Winter releases were set on October 8 at approximately 45 cfs to get close to the desired spring flood control target level at elevation 2567.0.

The Corps determined that during 2013, Fresno Reservoir prevented $667,800 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 $15,389,500.

Additional hydrologic and statistical information pertaining to the operation of Fresno Reservoir during 2013 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 2000-01. Since Nelson Reservoir operation began in 1916, the measured total sedimentation was 446 AF. The 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 2012, diversions were made into Nelson Reservoir. This allowed the storage to continue to increase and thus started WY 2012 with a storage content of 65,919 AF at elevation 2218.42, 116 percent of average and 84 percent of normal full capacity. A small quantity of diversion into Nelson Reservoir continued through part of October. Once the diversions ceased, storage slowly decreased as a result of seepage from November until March 9.

Diversions to Nelson Reservoir began on March 9. Since much of the demand from Malta Irrigation District is for early irrigation, releases are generally discontinued in mid-June for harvest. However, released did continue through the Nelson North Canal to control storage levels. A large precipitation event in the Bear Paw Mountains caused high enough flows in Peoples Creek that water over flowed into Dodson South Canal causing flows to continue into Nelson Reservoir during June. Irrigation releases through the Nelson South Canal were discontinued from June 8 - June 30.

From March 9 storage steadily increased until mid-May when the reservoir reached near full pool. Storage in Nelson Reservoir peaked once at 78,001 AF at elevation 2,221.38 on May 14, which was approximately 0.22 feet below normal full pool. It peaked again at 2221.39 on August 11. The low storage content for the year was 73,498 AF at elevation 2220.31 on September 14. Typically, the district prefers to keep the reservoir about a foot below full pool to reduce wave action on the dikes.

During 2013 piping plovers were not reported nesting on the shores of Nelson Reservoir. Due to the high reservoir levels throughout the summer little to no desired nesting habitat was available for the birds.

Releases to the Milk River were made to control the reservoir elevation intermittently from April - September. In October releases were discontinued out of the north and the south canals. Inflows to the reservoir continued until late October. Total net inflow to Nelson Reservoir during WY 2013 was 67,100 AF. Storage on September 30, 2013, was 75,161 AF at elevation 2220.71, 141 percent of average and 95 percent of normal full capacity.

Additional hydrologic and statistical information pertaining to the operation of Nelson Reservoir during 2012 can be found in Table MTT10-C and Figure MTG11.

Important Events – 2013

March 1, 2013: Milk River runoff forecast indicates spring runoff to be 111 percent of average.

March 8, 2013: Releases begin from Lake Sherburne.

March 11, 2013: St. Mary Canal begins to divert water to the Milk River.

April 1, 2013: Lake Sherburne runoff forecast indicates spring runoff to be 102 percent of average.

April 14, 2013: Releases are initiated from Nelson Reservoir to the North Outlet Canal.

May 6, 2013: MRJBC sets the irrigation allotment to 2.3 AF per acre.

May 1, 2013: Fresno Reservoir fills and begins spilling water over the ungated spillway.

May 7, 2013: Irrigation releases are initiated from Nelson Reservoir to the South Canal.

May 14, 2013: Inflow to Lake Sherburne peaked at 1,620 cfs.

May 14, 2013: Storage in Nelson Reservoir reached peak content for the year of 78,001 AF at elevation 2221.38, 0.22 feet below normal full pool.

May 31-June 4, 2013: Large precipitation event occurs in the Bears Paw Mountains causing flooding along the Milk River.

June 2, 2013: Fresno Reservoir refills and begins spilling water over the ungated spillway.

June 4, 2013: Inflow to Fresno Reservoir peaked at 1,953 cfs.

June 5, 2013: Storage in Fresno Reservoir reached peak content for the year of 99,950 AF at elevation 2576.33, 1.33 feet above normal full pool.

July 3, 2013: Storage in Lake Sherburne reached peak content for the year of 65,855 AF, at elevation 4787.82, 0.18 feet below normal full pool.

July 9, 2013: A conference call was held with the IJC Field Representatives to discuss St. Mary and Milk River apportionments.

August 11, 2013: Storage in Nelson Reservoir reached peak content for the year of 78,044 AF at elevation 2221.39, 0.21 feet below normal full pool.

September 24, 2013: A conference call was held with the IJC Field Representatives to discuss St. Mary and Milk River apportionments.

September 24, 2013: St. Mary Canal diversions are discontinued.

September 26, 2013: Lake Sherburne releases are discontinued.

October 12, 2013: Releases from Nelson Reservoir are discontinued.

October 8, 2013: Releases from Fresno Reservoir are set at approximately 45 cfs for the duration of the winter.

TABLE MTT10-A
HYDROLOGIC DATA FOR 2013
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	4756.71	23,454	OCT 01, 2012
END OF YEAR	4750.85	17,651	SEP 30, 2013
ANNUAL LOW	4749.02	15,958	SEP 25, 2013
ANNUAL HIGH	4787.83	65,855	JUL 04, 2013
HISTORIC HIGH	4788.30	68,371	JUN 30, 1986

INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	158,351	OCT 12-SEP 13	164,154	OCT 12-SEP 13
DAILY PEAK (CFS)	1,620	MAY 14, 2013	710	JUL 05, 2013
DAILY MINIMUM (CFS)	8	FEB 27, 2013	0	*

* During non-irrigation season

MONTH	INFLOW		OUTFLOW*		CONTENT	
	KAF	% OF AVG	KAF	% OF AVG	KAF	% OF AVG
OCTOBER	8.2	124	0.0	---	31.7	171
NOVEMBER	16.6	238	0.0	---	48.3	202
DECEMBER	6.2	192	0.0	---	54.5	206
JANUARY	1.9	64	0.0	---	56.4	192
FEBRUARY	1.4	62	0.0	---	57.7	183
MARCH	3.1	89	10.7	235	50.2	181
APRIL	8.8	80	23.1	152	36.0	193
MAY	37.9	124	26.1	128	47.8	147
JUNE	38.7	102	20.8	108	65.6	121
JULY	19.0	98	29.3	115	55.3	117
AUGUST	9.8	109	32.3	98	32.8	128
SEPTEMBER	6.7	111	21.9	101	17.7	116
ANNUAL	158.4	114	164.2	113		
APRIL-JULY	104.5	106				

* Average for the 1955-2013 period.

FIGURE MTG9

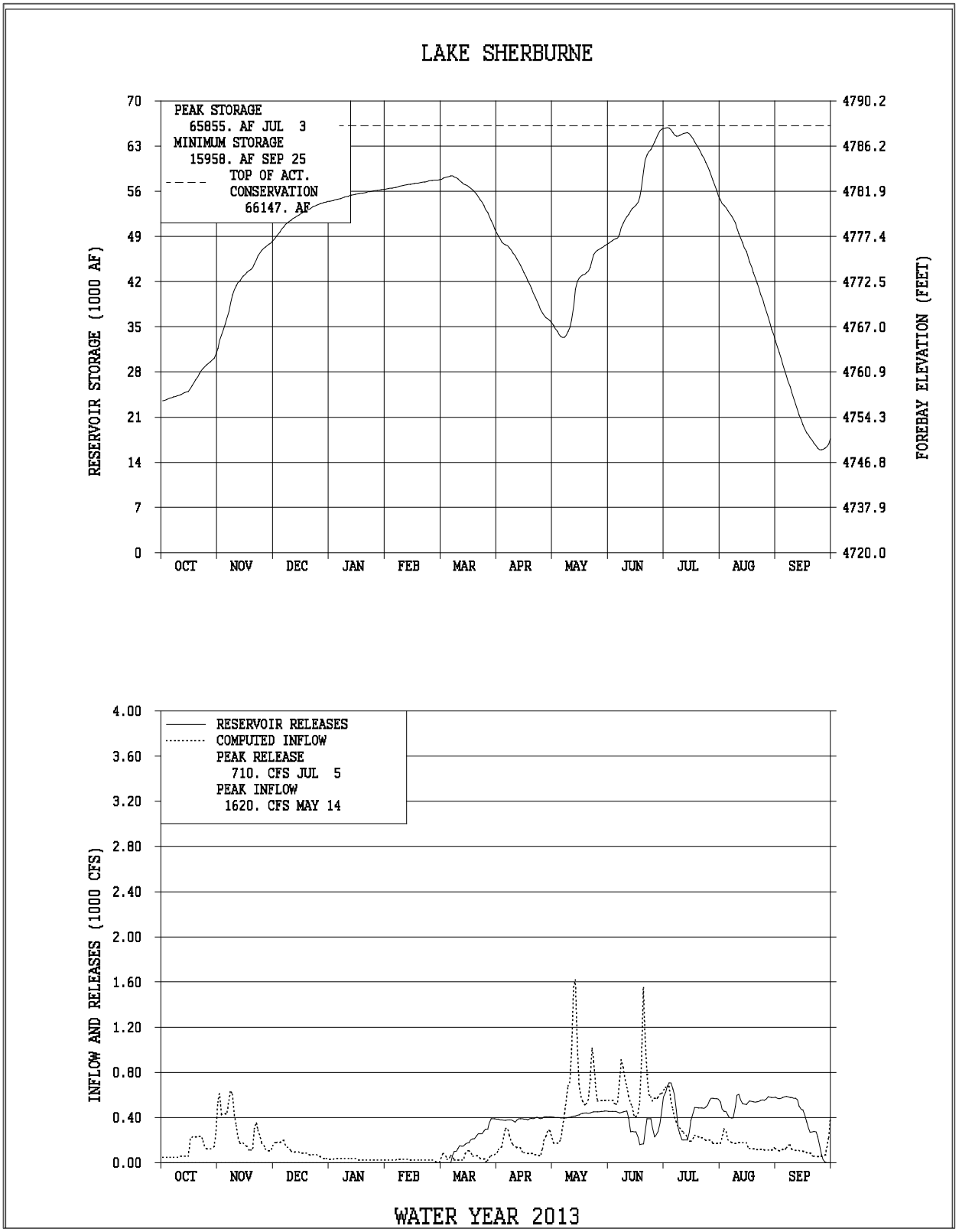

LAKE SHERBURNE
PEAK STORAGE
65855. AF JUL 3
MINIMUM STORAGE
15958. AF SEP 25
TOP OF ACT.
CONSERVATION
66147. AF
RESERVOIR STORAGE (1000 AF)
FOREBAY ELEVATION (FEET)
70
63
56
49
42
35
28
21
14
7
0
4790.2
4786.2
4781.9
4777.4
4772.5
4767.0
4760.9
4754.3
4746.8
4737.9
4720.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
RESERVOIR RELEASES
COMPUTED INFLOW
PEAK RELEASE
710. CFS JUL 5
PEAK INFLOW
1620. CFS MAY 14
INFLOW AND RELEASES (1000 CFS)
4.00
3.60
3.20
2.80
2.40
2.00
1.60
1.20
0.80
0.40
0.00
WATER YEAR 2013

TABLE MTT10-B
HYDROLOGIC DATA FOR 2013
FRESNO RESERVOIR (MILK RIVER PROJECT)
NEW SEDIMENT SURVEY DATA EFFECTIVE 10/1/2000

RESERVOIR ALLOCATIONS	ELEVATION (FEET)	TOTAL RESERVOIR STORAGE (AF)	STORAGE ALLOCATION (AF)
TOP OF INACTIVE AND DEAD	2530.00	448	448
TOP OF ACTIVE CONSERVATION	2567.00	60,346	59,898
TOP OF JOINT USE	2575.00	92,880	32,534

STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	2563.09	48,982	OCT 01, 2012
END OF YEAR	2567.94	63,495	SEP 30, 2013
ANNUAL LOW	2562.26	46,812	FEB 22, 2013
ANNUAL HIGH	2576.33	99,590	JUN 05, 2013
HISTORIC HIGH	2579.35	154,023	APR 03, 1952

INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	247,792	OCT 12-SEP 13	233,279	OCT 12-SEP 13
DAILY PEAK (CFS)	1,953	JUN 04, 2013	1,243	JUN 06, 2013
DAILY MINIMUM (CFS)	6	FEB 05, 2013	45	OCT 06, 2012

MONTH	INFLOW		OUTFLOW*		CONTENT	
	KAF	% OF AVG	KAF	% OF AVG	KAF	% OF AVG
OCTOBER	3.6	48	2.8	38	49.8	123
NOVEMBER	3.5	153	2.9	91	50.4	126
DECEMBER	2.3	188	2.8	105	49.9	130
JANUARY	1.3	121	3.0	113	48.2	131
FEBRUARY	1.9	47	2.5	103	47.6	128
MARCH	20.1	83	3.1	46	64.6	129
APRIL	36.6	122	8.4	42	92.8	143
MAY	35.4	80	38.0	78	90.2	149
JUNE	56.2	111	49.6	100	96.7	154
JULY	27.2	83	50.4	91	73.6	153
AUGUST	31.2	102	41.4	93	63.4	160
SEPTEMBER	28.5	132	28.3	129	63.5	154
ANNUAL	247.8	99	233.3	89		
APRIL-JULY	155.4	98				

* Average for the 1949-2013 period.

FIGURE MTG10

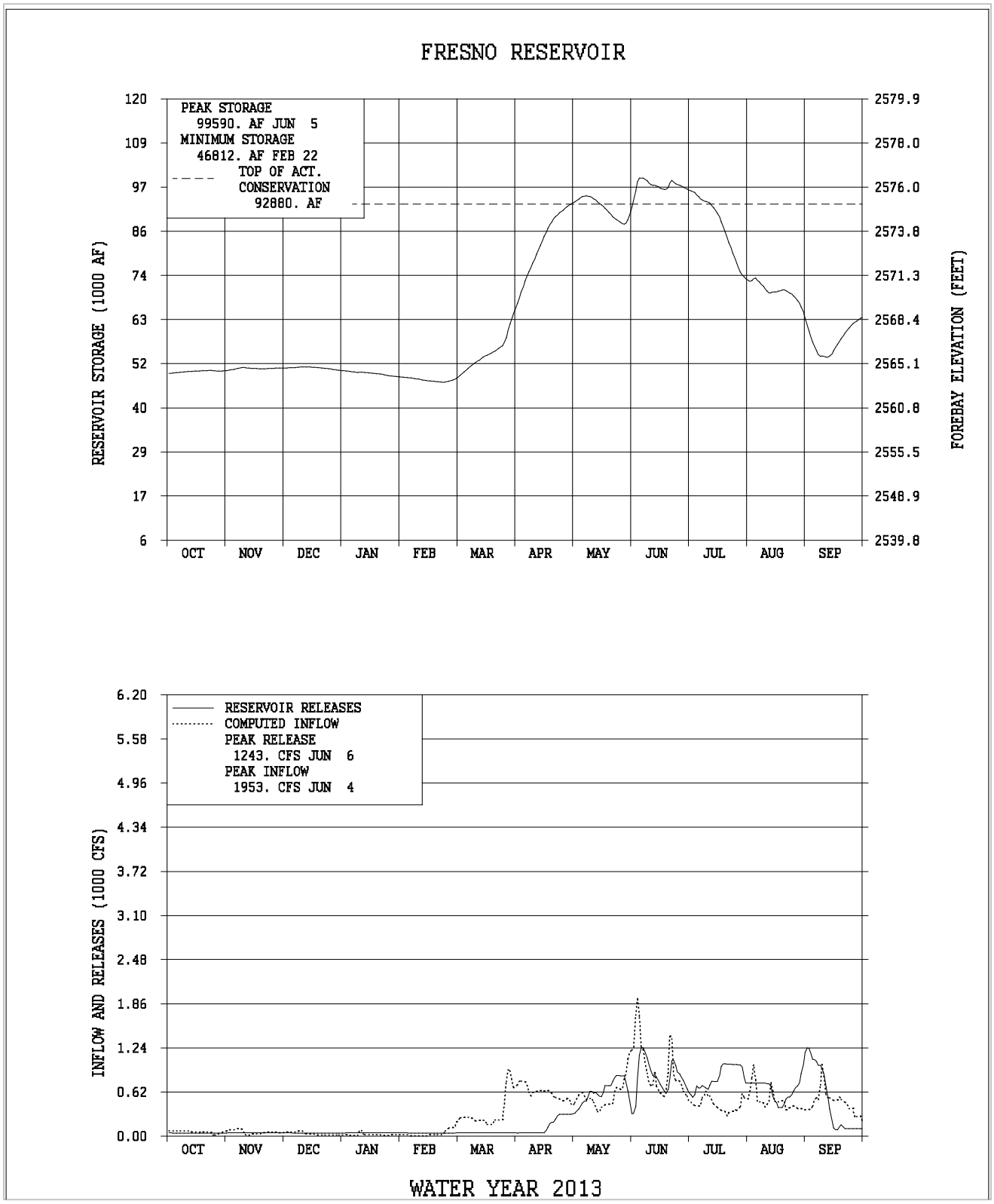


TABLE MTT10-C
HYDROLOGIC DATA FOR 2013
NELSON RESERVOIR (MILK RIVER PROJECT)
NEW SEDIMENT SURVEY DATA EFFECTIVE 10/1/2001

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	2218.42	65,919	OCT 01, 2012
END OF YEAR	2220.71	75,161	SEP 30, 2013
ANNUAL LOW	2216.81	59,785	MAR 08, 2013
ANNUAL HIGH	2221.39	78,044	AUG 11, 2013
HISTORIC HIGH	2221.68	79,297	JUN 01, 2007

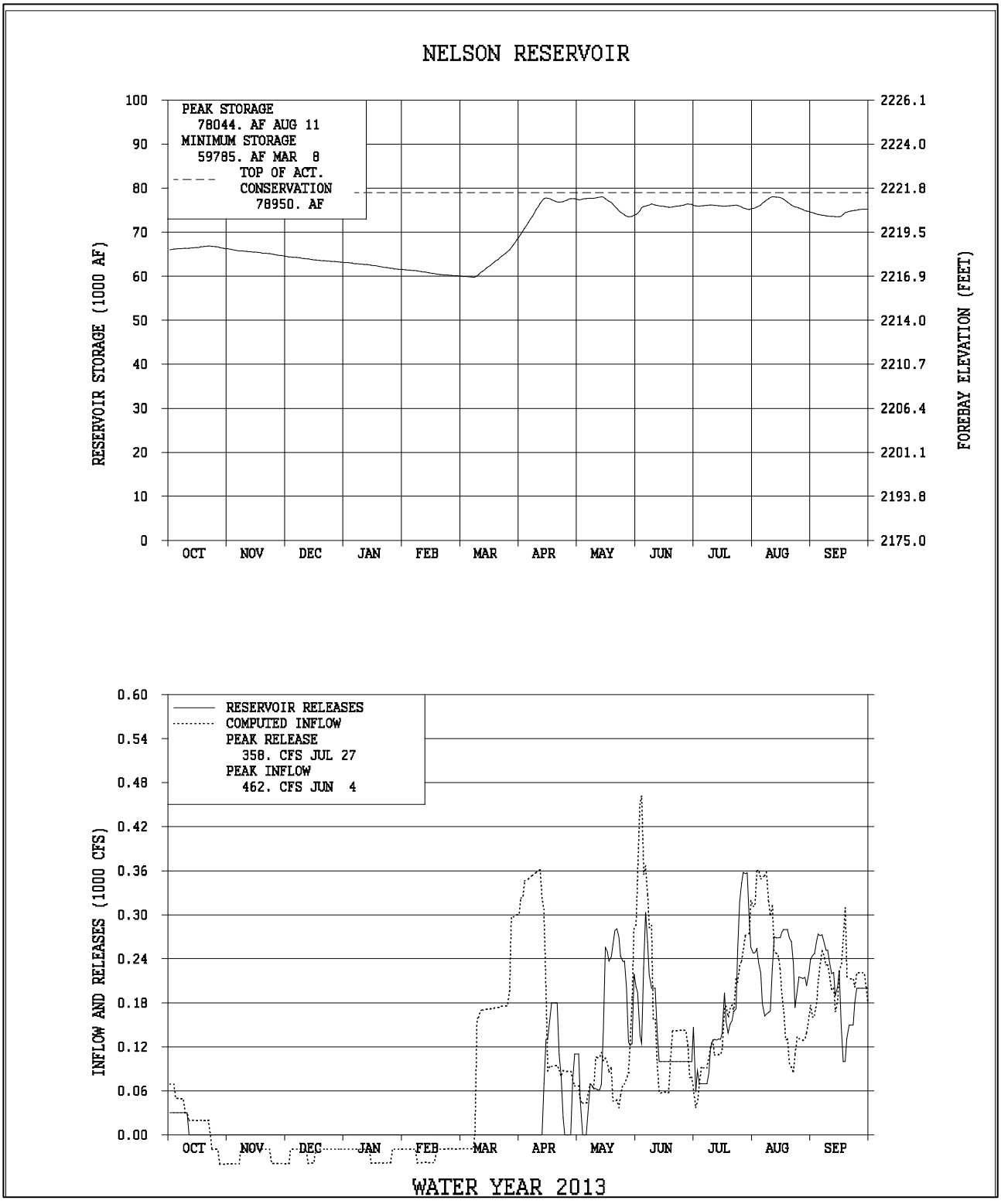
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	67,093	OCT 12-SEP 13	57,851	OCT 12-SEP 13
DAILY PEAK (CFS)	462	JUN 04, 2013	358	JUL 27, 2013
DAILY MINIMUM (CFS)	0	*	0	

* During non-irrigation season

MONTH	INFLOW*		OUTFLOW*		CONTENT	
	KAF	% OF AVG	KAF	% OF AVG	KAF	% OF AVG
OCTOBER	0.9	13	0.6	37	66.2	122
NOVEMBER	-1.7	---	0.0	---	64.5	122
DECEMBER	-1.4	---	0.0	---	63.1	124
JANUARY	-1.6	---	0.0	---	61.5	124
FEBRUARY	-1.4	---	0.0	---	60.1	124
MARCH	8.2	542	0.0	---	68.3	132
APRIL	12.4	165	3.2	509	77.5	129
MAY	5.2	75	8.9	117	73.8	128
JUNE	10.8	137	8.3	110	76.2	134
JULY	9.5	185	10.5	100	75.2	151
AUGUST	13.5	180	14.1	171	74.6	153
SEPTEMBER	12.8	195	12.2	301	75.2	144
ANNUAL	67.1	160	57.9	140		
APRIL-JULY	37.9	138				

* Average for the 1947-2013 period.

FIGURE MTG11



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, 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 & Light, MT (PPL-MT), formerly known as Montana Power Company (MPC) 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 Wyoming Area Office (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 (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. This volume represents a 7.48 percent accumulation and an average annual accumulation of 2,480 AF from November 1965 - 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.

WY 2012 was a dry year. Valley precipitation during July - September was only 28 percent of average while the mountain precipitation was only 36 percent of average. As a result, the inflow into Bighorn Lake during July - September was only 52 percent of average. After June 25 storage in Bighorn Lake slowly and steadily declined to a content of 889,623 AF at elevation 3627.56 feet by September 16. Inflows picked up a bit in late September and, as a result, storage in Bighorn Lake ended the year with a content of 893,277 AF at elevation 3627.98. This was 92 percent of average. Releases to the Bighorn River were reduced to May 23 and stayed at this rate for the rest of WY 2012.

At the end of WY 2012, storages in Boysen and Buffalo Bill Reservoirs located on the Wind and Shoshone Rivers were drafted to 86 and 101 percent of average, respectively, to meet irrigation demands. The WYAO established the minimum winter releases out of these reservoirs at flow rates of 500 and 200 cfs, respectively. These releases were 59 percent of average and 77 percent of average, respectively.

On November 1, total storage in Bighorn Lake was 919,225 AF at elevation 3630.85, about 103 percent of average for this time of year. On November 8 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 below average releases from Boysen Reservoir and Buffalo Bill Reservoir and very dry conditions leading up to the meeting, the winter release from Yellowtail Dam was set at 1,850 cfs on November 13. This was a slight deviation from the operating criteria. For winter releases below 2,000 cfs, the end of March elevation target should be 3615.0. However, with the well below normal precipitation since March 2012, the end of March elevation target was kept at 3617.0. There were no objections with setting a lower winter release and keeping the end of March target at 3617.0 feet. This release rate was 72 percent of average.

At the beginning of WY 2013, weather conditions improved from that experienced during the summer and the fall of WY 2012. However, precipitation during October - December was still below normal. Gains over the 3 month period were 113 percent of average. Warmer weather in November and December may have provided more open water above Bighorn Lake to allow for additional irrigation return flows.

The valley precipitation increased to 78 percent of average while the mountain precipitation had increased to 93 percent of average for October - December. The snow water equivalent of the mountain snowpack was about 89 percent of average on January 1. Snowpack accumulated at a below average rate through the end of March. By March 1 the NRCS measured the mountain snowpack at only 84 percent of average.

Based on the forecasted gains and the planned releases from Boysen and Buffalo Bill Reservoirs, the decision was made to keep releases from Bighorn Lake at 1,850 cfs. Bighorn Lake was at elevation 3626.63 feet on March 1. This was approximately 8.6 feet higher than what was projected at the beginning of November. The gains through March were 106 percent of average. However, the April - July inflow forecast was at only 63 percent of average.

The snowpack was only 77 percent of average on March 1 above each of the upstream reservoirs, Boysen and Buffalo Bill. The March plans for Boysen Reservoir and Buffalo Bill Reservoir showed the both facilities only releasing what was needed for irrigation. The spring outlook was looking bleak. However with the good storage, there was still hope for filling the reservoir and releasing around 2,225 cfs to the river.

Warmer temperatures caused a very slight increase to inflows in March as some of the low elevation snow melted off. The mountain snowpack above Bighorn Lake decreased to 81 percent of average by April 1. April was cooler than average with above average precipitation. Snowpack peaked on April 25 at 96 percent of the average snowpack peak. Although there was a decent snowpack above Bighorn Lake, the planned releases from Boysen and Buffalo Bill Reservoirs were still to meet only irrigation demands. Therefore the April-July inflow was still only forecasted to be 60 percent of average.

May precipitation was also above average. Most of the snowpack melted out in May with the above average temperatures in May. The remaining snowpack as measured by the NRCS was melted out by middle of June, approximately three week early.

With the snowmelt runoff, inflows into Bighorn Lake peaked twice, once in May at 5,300 cfs and again in June at 5,700 cfs. In addition to the snowmelt runoff and above average precipitation in April and May, Buffalo Bill Reservoir releases were increased to control the rate of fill. So more water than what was needed for irrigation ended up being released from Buffalo Bill Reservoir. Boysen Reservoir did not come close to filling, therefore only water needed for irrigation was released.

To control the rate of fill of Bighorn Lake, releases were increased on June 12 to 2,000 cfs. Bighorn Lake filled to the top of the joint-use pool, 3640.0 feet, on July 8.

Little to no precipitation fell in the Bighorn River Basin during June – August. Valley precipitation was 37 percent of average while the mountain precipitation was 63 percent of average. As a result, the inflow into Bighorn Lake during June - August was 53 percent of average. After July 8 storage in Bighorn Lake steadily declined to a content of 931,423 AF at elevation 3632.11 feet by September 13. During this dry period, releases were reduced to 1,900 cfs on August 22. Winter releases were expected to be as low as 1,780 cfs.

September was much different than the previous 3 months. Valley and mountain precipitation in September respectively were 259 and 235 percent of average. Inflows picked up a bit 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 feet. This was 110 percent of average and 74,212 AF or 7.55 feet higher than at the end of WY 2012. Winter releases in the October plans were anticipated to be 2,120 cfs.

Inflows into Bighorn Lake during April-July were 57 percent of average, totaling 627,886 AF. This was 65,267 AF lower than the April-July inflow which occurred in 2012. This was the second year in row with much below average runoff.

The annual runoff into Bighorn Lake during WY 2013 totaled 1,507,787 AF. This was 68 percent of average and 81 percent or 346,179 AF lower than the total runoff experienced during WY 2012.

The total amount of water released to the Bighorn River during 2013 was 1,352,757 AF or 64 percent of average. This was about 71 percent or 536,522 AF lower than what was released to the Bighorn River in 2012.

The water levels of Bighorn Lake during 2013 allowed for full service recreation at all marinas around Bighorn Lake during the recreation season from Memorial Day Weekend through Labor Day Weekend.

Total generation produced at Yellowtail Power plant during 2013 was 423,122 kilowatt-hours, 49 percent of the long term average since construction of the power plant in 1967. This was

109,395 kilowatt-hours more than generated during the record low year of 2003 and 222,124 kilowatt-hours less than generated in 2012. Approximately 97 percent of all the water released from Yellowtail Dam during 2013 was released through the power plant (1,394,520 AF). The remainder of the water (39,055 AF) was released either through the evacuation outlet gates or the spillway gates because of maintenance activities. The Corps estimated that during 2013, Bighorn Lake did not prevent any local flood damages but, however, Bighorn Lake did prevent $1,171,700 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 $155,650,200.

Important Events - WY 2013

September 28-Decebmer 6: Yellowtail Afterbay Dam spillway radial gates refurbishment was conducted by a contractor. The Yellowtail Afterbay Reservoir has to be maintained between elevations 3182.5 and 3186.0 feet. Two different drawdowns to elevation 3178.5 feet and 3187.0 feet of the Afterbay Reservoir were required to remove the cofferdams.

October 4: Streamflow measurements indicated actual river and canal flows were lower than anticipated. Turbine releases were adjusted gradually to maintain total release out of Bighorn Lake at 1,950 cfs. (1,750 cfs to the Bighorn River and 200 cfs to the Bighorn Canal).

October 9: With the 2012 irrigation season coming to a close, the Bureau of Indian Affairs (BIA) has requested all diversions to the Bighorn Canal be discontinued on October 9, 2012. Total releases were gradually reduced to 1,750 cfs (1,750 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

October 10: Staff at the Yellowtail Field Office conducted a black start test on Yellowtail Power plant. Releases out of Bighorn Lake were maintained at 1,750 cfs (1,750 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

October 15-26: Western Area Power Association (WAPA) relocated the power lines attached to the face of Yellowtail Dam. This required all releases through the power plant be discontinued and water was released through either the Yellowtail Dam spillway gates or the Yellowtail Dam evacuation outlet gates. Releases out of Bighorn Lake were maintained at 1,750 cfs (1,750 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

October 16: Streamflow measurements indicated actual river and canal flows were lower than anticipated. Turbine releases were adjusted gradually to maintain total release out of Bighorn Lake at 1,750 cfs. (1,750 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

October 17-20: A drawdown of Yellowtail Afterbay Reservoir was required to accommodate concrete repair on Yellowtail Afterbay Dam between radial gates 1 and 2. Yellowtail Afterbay Reservoir was maintained below elevation 3178.50 feet to accommodate the repairs. Turbine releases out of Bighorn Lake were maintained at 1,750 cfs (1,750 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

November 8: Reclamation hosted the annual fall water supply meeting at the Montana State University of Billings (MSU-B) building in downtown Billings, Montana to discuss the operations of the Bighorn River Basin. Dan Jewell, Area Manager, and Clayton Jordan, 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 2012-2013.

November 13: Based on the operating criteria, Reclamation increased and maintained the fall and winter release out of Bighorn Lake to the Bighorn River at 1,850 cfs (1,850 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

December 3: Power generation indicated actual flows in the Bighorn River were higher than anticipated. Turbine releases were adjusted to maintain total release out of Bighorn Lake at 1,850 cfs (1,850 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

December 13: Streamflow measurements indicated actual river and canal flows were lower than anticipated. Turbine releases were adjusted gradually to maintain total release out of Bighorn Lake at 1,850 cfs. (1,850 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

December 17-19: A drawdown to elevation 3178.5 feet of the Afterbay Reservoir was done to allow the Afterbay Dam gate refurbishment contractor to adjust gate seals.

December 27: Power generation indicated actual flows in the Bighorn River were higher than anticipated. Turbine releases were adjusted to maintain total release out of Bighorn Lake at 1,850 cfs (1,850 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

January 7-16: 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 (1,850 cfs to the river and zero cfs to the Bighorn Canal).

January 15: Power generation indicated actual flows in the Bighorn River were higher than anticipated. Turbine releases were adjusted to maintain total release out of Bighorn Lake at 1,850 cfs (1,850 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

January 22-31: Turbine releases were limited and restricted to 3-unit capacity to allow for a 10-day maintenance outage on Unit #2 of the Yellowtail Power plant (1,850 cfs to the river and zero cfs to the Bighorn Canal).

February 1: 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 (1,850 cfs to the river and zero cfs to the Bighorn Canal).

February 4-March 5: Turbine releases were limited and restricted to 3-unit capacity to allow for a 30-day maintenance outage on Unit #3 of the Yellowtail Power plant (1,850 cfs to the river and zero cfs to the Bighorn Canal).

March 11-20: 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 (1,850 cfs to the river and zero cfs to the Bighorn Canal).

March 18: Streamflow measurements indicated actual river and canal flows were higher than anticipated. Turbine releases were adjusted gradually to maintain total release out of Bighorn Lake at 1,850 cfs. (1,850 cfs to the Bighorn River and zero cfs to the Bighorn Canal).

March 26-April 24: Unit #3 of the Yellowtail Power plant was unavailable due to an exciter SCR bridge failure.

April 1-2: Turbine releases were limited and restricted to 1-unit capacity to allow for a 2-day maintenance outage on Units #1 and #2 and unavailability of Unit #3 of the Yellowtail Power plant (1,850 cfs to the river and zero cfs to the Bighorn Canal).

April 3-4: Turbine releases were limited and restricted to 2-unit capacity to allow for a 2-day maintenance outage on Units #3 and #4 of the Yellowtail Power plant (1,850 cfs to the river and zero cfs to the Bighorn Canal).

April 15-26: Annual maintenance on the Yellowtail Afterbay Dam sluicegates required the Yellowtail Afterbay Reservoir level be maintained between elevations 3186.0 and 3190.0 feet (1,850 cfs to the river and zero cfs to the Bighorn Canal).

May 1-2: The BIA requested diversions to the Bighorn Canal begin and gradually increase to 200 cfs. There was a failure on the canal shortly after startup that caused a short shutdown and restart. In response, the total release out of Bighorn Lake was adjusted to 2,050 cfs (1,850 cfs to the Bighorn River and 200 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. A new rating table for the canal was used this water year.

May 6: The BIA requested an increase of 100 cfs in diversions to the Bighorn Canal (1,850 cfs to the river and 300 cfs to the Bighorn Canal).

May 8: The BIA requested an increase of 100 cfs in diversions to the Bighorn Canal (1,850 cfs to the river and 400 cfs to the Bighorn Canal).

May 13: The BIA requested an increase of 50 cfs in diversions to the Bighorn Canal (1,850 cfs to the river and 450 cfs to the Bighorn Canal).

May 13-22: 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 (1,850 cfs to the river and zero cfs to the Bighorn Canal).

May 15: The BIA requested an increase of 50 cfs in diversions to the Bighorn Canal (1,850 cfs to the river and 500 cfs to the Bighorn Canal).

May 15: Streamflow measurements indicated actual canal flows were lower than anticipated. Turbine releases were adjusted gradually to maintain total release out of Bighorn Lake at 2,350 cfs. (1,850 cfs to the Bighorn River and 500 cfs to the Bighorn Canal).

May 19: The BIA requested a decrease of 200 cfs in diversions to the Bighorn Canal due to precipitation in the area (1,850 cfs to the river and 300 cfs to the Bighorn Canal).

May 21: The BIA requested an increase of 100 cfs in diversions to the Bighorn Canal (1,850 cfs to the river and 400 cfs to the Bighorn Canal).

May 30: The BIA requested a decrease of 100 cfs in diversions to the Bighorn Canal (1,850 cfs to the river and 300 cfs to the Bighorn Canal).

June 10: The BIA requested an increase of 100 cfs in diversions to the Bighorn Canal (1,850 cfs to the river and 400 cfs to the Bighorn Canal).

June 12: The BIA requested an increase of 100 cfs in diversions to the Bighorn Canal (1,850 cfs to the river and 500 cfs to the Bighorn Canal).

June 12: Buffalo Bill Reservoir releases were increased to control the rate of fill of storage in Buffalo Bill Reservoir which caused inflows to Bighorn Lake to increase. In turn, the releases from Bighorn Lake were increased to 2,000 cfs to control the rate of fill of storage of Bighorn Lake (2,000 cfs to the river and 500 cfs to the Bighorn Canal).

June 25: There was a flushing flow of the Yellowtail Dam spillway tunnel in preparation of an inspection. Flows were gradually increased to 3,000 cfs then gradually decreased back to 2,000 cfs. The flush took about 1 hour. It was decided not to install the stoplogs for the July 9-11 facility examination.

July 1-11: There was an inspection of the Yellowtail Dam spillway stilling basin and Yellowtail Afterbay Dam sluiceway drainage tunnel during a facility review during July 9-11. The Yellowtail Afterbay Reservoir was maintained below elevation 3181.0 feet on July 8 for a boat inspection of the spillway stilling basin. The Yellowtail Afterbay Reservoir had to be maintained below 3190.0 feet to accommodate stoplogs on sluicegates of the Yellowtail Afterbay Dam during July 1-11. During July 9-10, the Yellowtail Afterbay Reservoir had to be maintained above elevation 3185.0 feet, to provide flows through the radial gates during the sluiceway drainage tunnel inspection.

July 2: A larger flushing flow of the Yellowtail Dam spillway tunnel was performed with the hopes to move a rock that was located where the stoplogs are placed for the Yellowtail Dam spillway stilling basin. Flows were gradually increased to 5,000 cfs then gradually decreased back to 2,000 cfs. The flush took about 1 hour. The rock was not moved by the larger flush.

June 24: Streamflow measurements indicated actual river and canal flows were lower than anticipated. Turbine releases were adjusted gradually to maintain total release out of Bighorn Lake at 2,500 cfs. (2,000 cfs to the Bighorn River and 500 cfs to the Bighorn Canal).

July 30 – August 1: The BIA requested the diversions to the Bighorn Canal be decreased and maintained at a minimum flow of 150 cfs for approximately 21 hours to allow them to chemically treat the heavy algae growth in the Bighorn Canal.

August 1: Streamflow measurements indicated actual river and canal flows were lower than anticipated. Turbine releases were adjusted gradually to maintain total release out of Bighorn Lake at 2,500 cfs. (2,000 cfs to the Bighorn River and 500 cfs to the Bighorn Canal).

August 7: The BIA requested a decrease of 75 cfs in diversions to the Bighorn Canal (2,000 cfs to the river and 425 cfs to the Bighorn Canal).

August 8: The BIA requested an increase of 25 cfs in diversions to the Bighorn Canal (2,000 cfs to the river and 450 cfs to the Bighorn Canal).

August 13-14: Anode testing of Yellowtail Afterbay gates required the Yellowtail Afterbay Reservoir be maintained below elevation 3188.0 feet on August 13 and above elevation 3186.0 feet on August 14.

August 19-28: Semi-annual maintenance of the Yellowtail Afterbay Dam sluicegates required the Yellowtail Afterbay Reservoir be maintained above elevation 3186.0 feet to maintain river flows through the radial gates and below elevation 3190.0 feet for stoplog protection.

August 22: Water supply projections were showing releases of 2,000 cfs would not be able to be maintained through the winter months. To conserve storage in Bighorn Lake, releases to the Bighorn River were reduced to 1,900 cfs (1,900 cfs to the river and 450 cfs to the Bighorn Canal).

August 27-29: Turbine releases were limited and restricted to 2-unit capacity to allow for testing on all four units (two at a time) of the Yellowtail Power plant (2,000 cfs to the river and 500 cfs to the Bighorn Canal).

September 4: Streamflow measurements indicated actual canal flows were lower than anticipated. However current diversions were meeting demands, therefore turbine releases were maintained and with the new shift canal flows were reduced to 430 cfs total release out of Bighorn Lake was reduced to 2,330 cfs. (1,900 cfs to the Bighorn River and 430 cfs to the Bighorn Canal).

September 4-6: Gate seals on the Yellowtail Afterbay Dam gates had to be adjusted. To accomplish this work, the Yellowtail Afterbay Reservoir had to be maintained below elevation 3178.5 feet.

September 11: The BIA requested a decrease of 50 cfs in diversions to the Bighorn Canal (1,900 cfs to the river and 380 cfs to the Bighorn Canal).

September 17: The BIA requested a decrease of 80 cfs in diversions to the Bighorn Canal (1,900 cfs to the river and 300 cfs to the Bighorn Canal).

September 23: Streamflow measurements indicated actual river flows were lower than anticipated. Turbine releases were adjusted gradually to maintain total release out of Bighorn Lake at 2,200 cfs. (1,900 cfs to the Bighorn River and 300 cfs to the Bighorn Canal).

October 1: The BIA requested a decrease of 100 cfs in diversions to the Bighorn Canal (1,900 cfs to the river and 200 cfs to the Bighorn Canal).

Additional hydrologic and statistical information pertaining to the operations of Bighorn Lake during 2013 can be found on Table MTT11 and MTG12.

For more detailed information on the operations of Boysen and Buffalo Bill Reservoirs during 2013, refer to the narratives for Boysen Reservoir and Power plant and Shoshone Project under the responsibility of the WYAO.

TABLE MTT11
HYDROLOGIC DATA FOR 2013
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	3627.98	893,277	OCT 01, 2012
END OF YEAR	3635.53	967,489	SEP 30, 2013
ANNUAL LOW	3624.67	865,398	MAY 15, 2013
ANNUAL HIGH	3640.13	1,022,211	JUL 10, 2013
HISTORIC HIGH	3656.43	1,365,198	JUL 06, 1967

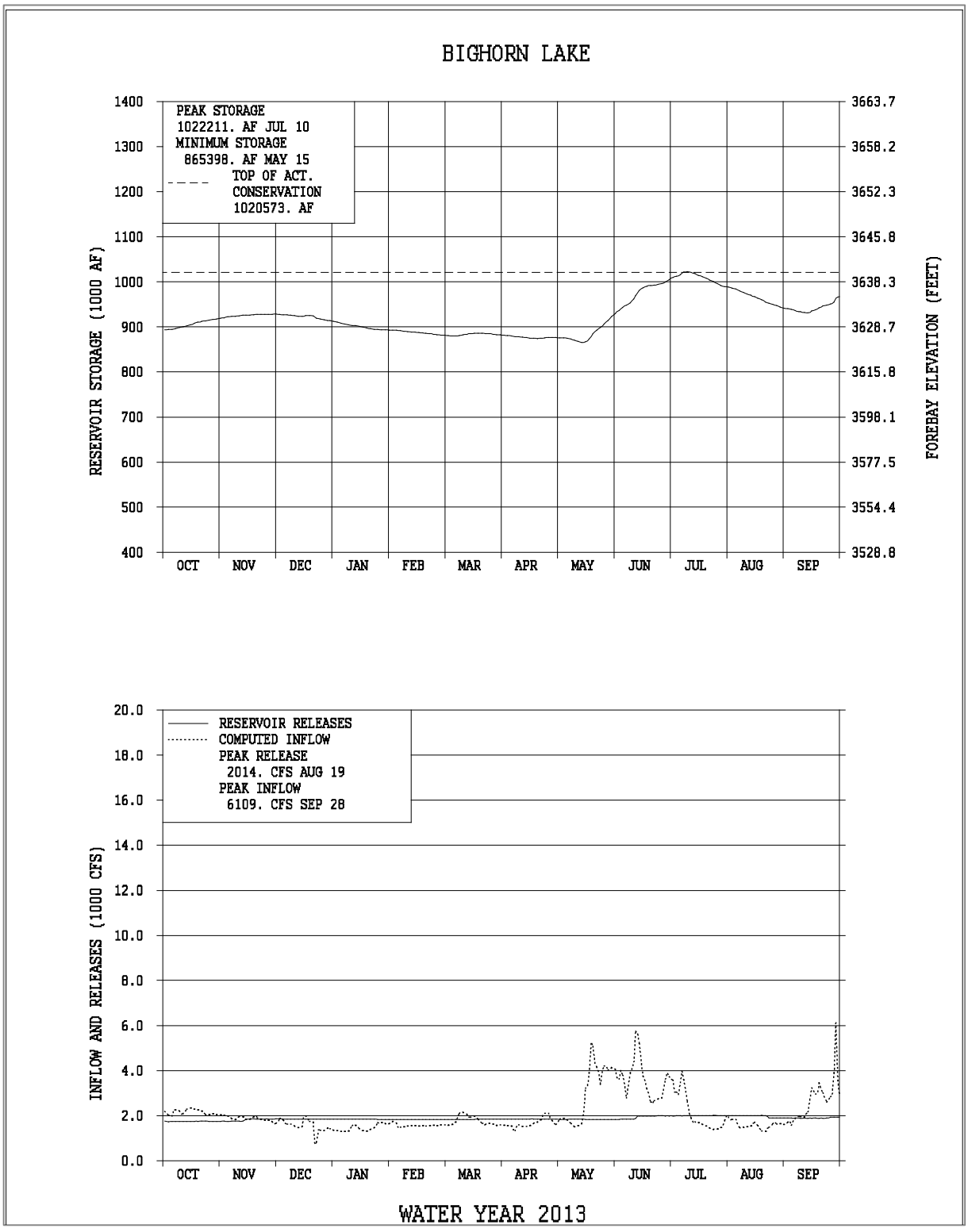
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW*	DATE
ANNUAL TOTAL (AF)	1,507,787	OCT 12-SEP 13	1,352,758	OCT 12-SEP 13
DAILY PEAK (CFS)	6,109	SEP 28, 2013	2,014	AUG 19, 2013
DAILY MINIMUM (CFS)	715	DEC 21, 2012	1,729	OCT 03, 2012
PEAK SPILL (CFS)			1,709	OCT 24,2012
TOTAL SPILL (KAF)			39,055	10/15-26/2012
				6/25/2013
				7/02/2013

*Discharge to the Bighorn River

MONTH	INFLOW		OUTFLOW*				CONTENT	
	KAF	% OF AVG	CANAL KAF	% OF AVG	RIVER KAF	% OF AVG	KAF	% OF AVG
OCTOBER	132.5	79	3.8	104	107.5	63	919.2	103
NOVEMBER	111.6	87	0.0	---	107.9	62	928.2	107
DECEMBER	95.2	88	0.0	---	114.0	64	912.0	110
JANUARY	90.1	82	0.0	---	113.5	64	892.8	113
FEBRUARY	86.8	79	0.0	---	101.9	64	881.7	116
MARCH	109.4	74	0.0	---	113.1	63	882.4	117
APRIL	99.4	67	0.0	---	110.0	62	875.9	118
MAY	180.8	68	22.1	196	113.0	59	925.9	114
JUNE	215.1	51	25.6	121	114.8	41	1,005.0	109
JULY	132.6	50	29.9	108	122.6	44	989.0	109
AUGUST	97.3	64	28.0	105	121.2	70	941.4	108
SEPTEMBER	157.0	96	21.8	118	113.3	75	967.5	110
ANNUAL	1,507.8	69	131.2	119	1,352.8	59		
APRIL-JULY	627.9	57						

* Average for the 1967-2013 period.

FIGURE MTG12



SUMMARY

OF OPERATIONS

FOR WATER YEAR 2013

FOR BIGHORN BASIN RESERVOIRS

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

UNDER THE RESPONSIBILITY

OF THE

WYOMING AREA OFFICE

CLIMATE SUMMARY

October was very close to being an average month in the Bighorn Basin. Temperatures at most weather stations in the Shoshone and Wind River drainages were within a degree of average and precipitation in the Shoshone watershed was right at normal. Almost all of the moisture received in October occurred during the last half of the month, with the only significant storm dropping about a foot of snow at locations in the Wind River Mountains on October 22 and 23. On November 1, the snowpack above Boysen and Buffalo Bill Reservoirs was 91 and 81 percent of average, respectively.

Dry air and mild temperatures settled over Wyoming during the first part of November and remained until November 8 when a winter storm pushed in from the west. As the storm moved through, temperatures dropped rapidly and freezing rain preceded the snow. The southern end of the Wind River Range was the chief beneficiary of the storm, receiving up to a foot and a half of snow, but sites in the Shoshone basin also reported up to a foot of new snow. As the storm moved out of the state, temperatures moderated and drier air returned. A couple more Pacific fronts passed through Wyoming during the last half of the month, with a storm over Thanksgiving weekend bringing widespread snowfall of eight to ten inches. Precipitation at lower elevation weather stations in the Wind River drainage was 87 percent of average with temperatures across the basin about seven degrees warmer than normal. The Shoshone watershed received about 70 percent of normal rainfall and was about four degrees warmer than normal in November. The snowpack increased incrementally from the storms as they passed through, but over the month the snowpack in both the Shoshone and Wind River basins lost ground compared to average. On December 1, the snowpack above Boysen Reservoir was 84 percent of average and 81 percent of average snowpack was reported above Buffalo Bill.

A significant shift in weather patterns occurred during December as a series of weather systems moved through Wyoming, bringing high winds and much needed precipitation. Three separate systems moved quickly across the western mountains between December 1 and 3 with snowfall totals from the three day event generally in the six to twelve inch range, although a few locations above 8,000 feet received up to two feet of snow. High winds accompanied these storms, especially on December 2 when many locations reported winds above 60 miles per hour and gusts in the Lander area reached 75 miles per hour. A moisture-laden southwest flow brought more wind and precipitation on December 4 and 5. Gusts in excess of 60 miles per hour were measured at locations throughout the basin with snowfall amounts generally less than eight inches accumulating as a result of this storm. The next storm, on December 7 and 8 also contained winds in excess of 60 miles per hour and brought widespread snowfall of six to eight inches, with the South Pass Snotel site reporting a foot of snow. More settled conditions prevailed for about a week before another winter storm moved into western Wyoming on December 16. Storm totals of about one foot of snow were reported in the Wind River Mountains, while up to 18 inches fell at the Blackwater Snotel in the Absaroka Range above Buffalo Bill. The final storm of the month began on Christmas Eve and continued into Christmas Day. The Evening Star Snotel site received about a foot of snow from the storm, but most stations reported accumulations of six inches or less. The Buffalo Bill watershed received the greatest benefit from the wet month, with lower elevation weather stations reporting

190 percent of average precipitation and mountain snowpack increasing 13 percent to 94 percent of average on January 1. The Lake Yellowstone weather station received measurable precipitation on 22 of the 31 days of December and was about two degrees warmer than normal. At stations farther downstream in the Shoshone basin, temperatures during December were up to four degrees below average. In the Boysen drainage, precipitation at the lower elevation stations was 90 percent of average while snowpack in the mountains increased to 89 percent of average on January 1. Temperatures were about one degree warmer than normal in the Wind River basin during December.

January was a pretty uneventful month for weather in the Bighorn Basin. Only two moisture bearing fronts moved through the area, and the mountains received little benefit from either storm. By February 1, the snowpack above Boysen and Buffalo Bill had fallen to 79 and 83 percent of average, respectively. January precipitation at lower elevation sites in the Shoshone basin was 76 percent of average with temperatures about three degrees below normal. Weather stations in the Wind River valley reported 132 percent of average precipitation for the month, but precipitation in the mountains was only 44 percent of normal. January temperatures in the Wind River valley were about four degrees colder than average.

Moist air finally made its way back into Wyoming as a winter storm brought snow to much of the state on February 8. The Lander foothills received the brunt of the storm with accumulations of almost two feet while the mountains above Buffalo Bill got hardly any snow. The second storm of the month on February 23 followed a similar path across the state, with similar results. The southern end of the Wind River Range and the Lander foothills received about a foot of snow, but very little moisture reached into the Shoshone basin. As a result, the snowpack above Boysen lost two percent of average over the month, while the Buffalo Bill snowpack dropped six percent of average. Temperatures in both the Shoshone and Wind River basins were very close to normal during February.

In spite of the fact that there were no major snow producing storms during March and Lander and Riverton experienced record warm temperatures during the middle of the month, the snowpack in both the Shoshone and Wind River basins remained at about 75 percent of average through the month. Fast moving fronts brought snow on March 6, 17, and 22, but only the storm on March 22 produced significant accumulation, and that was localized to the Lander foothills. A ridge of high pressure over Wyoming on March 14 and 15 produced record highs of 68 degrees at Lander and 70 degrees at Riverton. Over the month, temperatures in the Wind River basin were about two degrees warmer than normal while the Shoshone basin was about two degrees colder than average. Weather stations in the Wind River valley only received 39 percent of average precipitation, with the low elevation stations above Buffalo Bill recording 83 percent of average precipitation during March. On April 1, the snowpack was 74 percent of average in the Boysen watershed and 76 percent of average in the mountains above Buffalo Bill Reservoir.

A strong spring storm entered Wyoming on April 8 bringing winds in excess of 70 miles per hour and heavy snow to the southern Wind River Range. Storm totals of almost 30 inches were reported in and around Lander, with a large area reporting accumulations of over a foot of snow. The mountains above Buffalo Bill only picked up about six inches of snow from this storm but a

Pacific system on April 14 followed a track that dropped well over a foot of snow on the Absaroka Range. A low pressure system to the west of Wyoming resulted in a moist southwest flow over the state from April 15 - 18 and the southern end of the Wind River Range was once again the recipient of the heaviest snowfall as over two feet of new accumulation was noted in the South Pass area and the Lander foothills. Cold temperatures accompanied the snow as maximum temperatures reached 32 degrees on April 15, 16, and 17. Lander, Riverton, Worland all set new record lows during the period but temperatures at Lake Yellowstone plummeted to three degrees below zero on April 17, which was twelve degrees colder than the previous record. April 18 was even colder, with a low of ten degrees below zero that broke the old record by 15 degrees. A strong cold front moved south across Wyoming on the April 22, bringing over a foot of new snow to the Lander area while lesser accumulations occurred throughout the Wind River Mountains. This storm also brought record low temperatures to a wide area of Wyoming with the Dubois area being the coldest in the Bighorn Basin, reporting temperatures that dropped below -10 degrees on April 23. Lander, Riverton, Worland, and Cody all set new records for lowest temperature on April 23. For the month, the average temperature in the Shoshone basin was about five degrees below normal while the Wind River basin was about four degrees colder than average. The snowpack improved in both the Wind and Shoshone River basins to 80 and 84 percent of average, respectively.

Snow returned to Wyoming on the first of May as a spring storm intensified across the Wind River basin. The heaviest snowfall occurred in the Lander foothills where 10 to 20 inches of snow accumulated. Following the storm, more seasonable temperatures and dry conditions covered the Basin. Much above normal temperatures occurred across western Wyoming beginning on May 12 and on May 13 highs approached 90 degrees, with Riverton setting a new record for the date of 89 degrees. The warm temperatures melted much of the lower elevation snowpack and stream flows increased rapidly, especially in the Shoshone drainage. Unsettled conditions from May 15 - May 20 brought much needed rain to western and central Wyoming, with widespread rainfall totals in excess of one inch common and areas around Lander and Cody getting over an inch and a half of rain. A late spring storm on May 29 brought snow to the Absarokas and heavy rain to locations in the Wind River valley, with the highest rainfall amount of two inches reported at Crowheart. May temperatures were about three degrees above average in the Wind and Shoshone River basins and most of the snowpack melted during the month. On June 1 the snowpack in the Boysen drainage was 29 percent of average while the mountains above Buffalo Bill held 37 percent of normal snowpack.

June was warm and dry, especially in the Wind River basin where the lower elevation weather stations received only three percent of normal June precipitation with temperatures about four degrees warmer than normal. June of 2013 was the fourth driest of record at both Lander and Riverton. Precipitation in the Shoshone basin was 32 percent of average and the Lake Yellowstone weather station recorded the third driest June of record. Temperatures in the Buffalo Bill watershed were about two degrees warmer than average. The snowpack in both the Wind and Shoshone basins was essentially gone by mid-June.

July continued to be warmer than normal with temperatures about four degrees above average across the Bighorn Basin. In the Wind River basin, temperatures climbed into the mid-90's on July 11 with Riverton's high of 96 degrees setting a new record. Most of the rain that fell in the

Basin occurred during the first ten days of the month as the right conditions came together for thunderstorms to form across western and central Wyoming. Locations in the irrigated area below Buffalo Bill Dam and on the Riverton Unit received the greatest benefit from the storms. Precipitation for the month was 93 percent of average in the Boysen drainage while the Shoshone basin received 85 percent of normal.

Hot and dry continued to be the norm during August. In the Shoshone drainage, precipitation was only about half of normal and temperatures at the Lake Yellowstone weather station were the warmest of record for August with new record highs on six days of the month. The Wind River basin didn't fare any better, receiving just 26 percent of average precipitation along with above average temperatures. Lander only received 0.01 inch of rainfall during the month with 16 days where the high reached the nineties.

September was a complete turn-around from the rest of the summer. Temperatures were a little above average over the entire Bighorn Basin for the month but precipitation was close to or above 300 percent of average over a widespread area. The rainfall events were spread throughout the entire month and many stations reported the highest September totals in well over 30 years. The much needed rains brought an early end to the irrigation season and also gave a big boost to reservoir inflow in September. The 2013 mountain snow water content for the drainage basins in Wyoming is shown on Table WYT1. The 2013 water supply forecasts are shown on Table WYT2 and the 2013 precipitation in inches and the percent of average is shown on Table WYT3.

TABLE WYT1
2012 MOUNTAIN SNOW WATER CONTENT[1]
AS A PRECENT OF THE 1971-2000 AVERAGE

DRAINAGE BASIN	JAN 1		FEB 1		MAR 1		APR 1		MAY 1	
	INCHES	%	INCHES	%	INCHES	%	INCHES	%	INCHES	%
BULL LAKE	3.80	83	4.53	62	5.96	66	6.97	62	6.07	59
BOYSEN	5.44	83	6.40	69	7.78	68	9.63	69	10.60	76
BUFFALO BILL	7.81	89	9.44	77	11.11	74	13.39	73	15.13	77

[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 Black water, Evening Star, Kirwin, Marquette, Sylvan Lake, Slyvan Road, and Younts Peak

TABLE WYT2
2012 WATER SUPPLY FORECAST OF 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	125	89	125	89	110	79	120	86	110	79	110	79	119.7	77	100
BOYSEN	400	71	400	71	350	62	375	67	250	45	250	45	412.3	49	110
BUFFALO BILL	600	90	550	82	525	79	550	82	500	75	500	75	657.4	84	120

Averages are based on the 1981-2010 period

TABLE WYT3
PRECIPITATION IN INCHES AND PRECENT 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	1.15	99	0.82	71	1.94	188	0.82	75	0.53	62	0.94	82	1.63	117	2.42	117	0.66	31	1.20	84	0.63	50	0.00	0
YEAR-TO-DATE PRECIP AND % OF AVERAGE	1.15	99	1.97	85	3.91	117	4.73	107	5.26	99	6.20	96	7.83	100	10.25	104	10.91	91	12.11	90	12.74	87	12.74	80
BOYSEN																								
MONTHLY PRECIP AND % OF AVERAGE	0.67	81	0.41	89	0.28	93	0.32	133	0.47	131	0.22	38	1.17	97	1.81	96	0.04	3	0.77	90	0.15	25	0.00	0
YEAR-TO-DATE PRECIP AND % OF AVERAGE	0.67	81	1.08	84	1.36	86	1.68	92	2.15	98	2.37	86	3.54	89	5.35	91	5.39	75	6.16	77	6.31	73	6.31	66
BULL LAKE																								
MONTHLY PRECIP AND % OF AVERAGE	0.96	137	0.36	92	0.19	86	0.24	133	0.29	100	0.16	37	0.67	57	2.15	118	0.02	2	1.16	123	0.27	39	0.00	0
YEAR-TO-DATE PRECIP AND % OF AVERAGE	0.96	137	1.32	121	1.51	115	1.75	117	2.04	115	2.20	100	2.87	85	5.02	97	5.04	77	6.20	83	6.47	79	6.47	70
MOUNTAIN PRECIPITATION [2]																								
BUFFALO BILL																								
MONTHLY PRECIP AND % OF AVERAGE	2.90	121	2.60	70	4.20	136	2.00	67	1.70	68	2.50	89	3.50	103	4.10	108	1.00	33	1.60	73	1.20	75	5.70	261
YEAR-TO-DATE PRECIP AND % OF AVERAGE	2.90	121	5.50	90	9.70	106	11.70	96	13.40	91	15.90	91	19.40	93	23.50	95	24.50	88	26.10	87	27.30	87	33.00	98
BOYSEN																								
MONTHLY PRECIP AND % OF AVERAGE	2.30	109	1.20	40	2.90	116	0.50	20	1.10	50	2.00	69	2.60	75	2.30	67	0.30	13	1.50	88	0.50	35	4.80	240
YEAR-TO-DATE PRECIP AND % OF AVERAGE	2.30	109	3.50	69	6.40	84	6.90	68	8.00	65	10.00	66	12.60	67	14.90	67	15.20	62	16.70	64	17.20	62	22.00	74
BULL LAKE																								
MONTHLY PRECIP AND % OF AVERAGE	2.30	115	1.00	45	1.50	88	0.90	56	1.50	94	1.00	42	2.60	82	2.60	77	0.90	38	1.00	67	0.20	14	4.90	259
YEAR-TO-DATE PRECIP AND % OF AVERAGE	2.30	115	3.30	78	4.80	81	5.70	76	7.20	79	8.20	71	10.80	74	13.40	74	14.30	70	15.30	70	15.50	66	20.40	81

[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 1980-2009 period
Averages for Mountain Precipitation are based on the 1971-2000 period

FLOOD BENEFITS

Flood Damage Prevented in the Wind/Bighorn and Shoshone River Systems[1]					
Reservoir	**Local**	**Main Stem**	**2013 Total**	**Previous Accumulation[3]**	**1950 - 2013 Accumulation Total**
Bull Lake[2]	$ 0	$ 0	$ 0	$ 3,221,000	$ 3,221,000
Boysen	$ 0	$ 185,000	$ 185,000	$108,996,300[4]	$109,181,300
Buffalo Bill[2]	$ 273,900	$ 0	$ 273,900	$ 28,894,000	$29,167,900

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 - 2013.
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 (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.

During WY 2012, 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. Once the irrigation season ended, diversion into the Wyoming Canal ended for the remainder of the water year. Bull Lake releases averaged about 25 cfs in 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, November, and December was greater than the release and the content of Bull Lake increased through the period. By the end of December, storage in Bull Lake had increased to 77,990 AF, which was 101 percent of average. On January 1, snowpack in the basin above Bull Lake was 89 percent of average. Water supply forecasts of the April-July snowmelt runoff were prepared each month, beginning in January and continuing through June. The January forecast indicated the April-July snowmelt runoff would be approximately 130,000 AF, which was 93 percent of average. 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 82 percent of average on February 1. The February 1 snowmelt runoff forecast was reduced to 125,000 AF. Inflow during January and February was slightly above average and at the end of February the reservoir held 78,312 AF. February precipitation was a little below average in the Wind River valley and in the mountains but the snowpack remained pretty stable and was 83 percent of average on March 1. The March 1 snowmelt runoff forecast was unchanged at 125,000 AF.

March was slightly warmer and much drier than normal in the Bull Lake drainage as low elevation weather stations in the area only received 38 percent of average precipitation while the mountains recieved 46 percent of average. The snowpack slowly but steadily fell further from average through the month and on April 1 the snowpack was 74 percent of average. March inflow was slightly less than the release and Bull Lake ended the month with 78,164 AF of water in storage. With the snowpack losing nine percent to average during March, the April snowmelt runoff forecast was reduced to 110,000 AF. Precipitation continued to be less than average during April but the snowpack remained fairly stable through the month. Midvale began diverting water into the Wyoming Canal in April to flush the canal system and finish filling Pilot Butte. Irrigation releases on the Riverton Unit began on April 29, with flows in the Wind River satisfying the diversion into the Wyoming Canal. The release from Bull Lake was maintained at

about 25 cfs during all of April, but the April inflow only averaged 46 cfs and the reservoir level stood at 79,433 AF at the end of the month. On May 1 the snowpack was 72 percent of average and the snowmelt runoff forecast was nudged upward a little to 120,000 AF, 86 percent of average.

During early May Midvale demands were low enough that they could be met with natural flow in the Wind River. As warmer weather moved in, demands increased but so did the flow in the river from snowmelt runoff and the month ended without having to use any Bull Lake water. Inflow to Bull Lake started increasing around the middle of the month and with a release of only 30 cfs, Bull Lake storage rose to 106,343 AF by the end of the month. May inflow was 103 percent of average while the release was only 12 percent of average. Midvale continued to store as much as they could during June, with the Bull Lake release below 50 cfs for most of the month. The inflow was only 67 percent of average, but with a release that was only 16 percent of average the reservoir level rose through the month. Runoff reached its peak on June 11 with a maximum inflow of 1,340 cfs. Releases were increased during the latter part of the month, partly to meet demand and partly to control the reservoir rate of fill and by the end of June Bull Lake was less than 9,000 AF from full.

Bull Lake continued to rise in July and releases were increased to 944 cfs on July 6 as the lake approached full. As inflows receded, releases were adjusted downward and the lake was allowed to inch up to its maximum content of 150,886 AF at elevation 5804.50 feet on July 18. This was just 1,573 AF short of a full reservoir and 0.5 feet below the elevation of the top of the active conservation pool. Inflow to Bull Lake decreased through the month as the snowmelt runoff ended, as did the flow in the Wind River. To meet Midvale's irrigation needs, Bull Lake storage was required and the release from the dam exceeded 850 cfs by the end of the month. During the last two weeks of July the reservoir level dropped about 2.5 feet, holding 142,940 AF of water on July 31. Warm and dry conditions persisted in the Wind River basin during August and as flows in the Wind River continued to fall, Bull Lake storage water met a larger portion of the irrigation demand. The August release from Bull Lake averaged almost 1,000 cfs and with only 65 percent of average inflow for the month, Bull Lake storage was drawn down to 96,391 AF on August 31. This was 93 percent of average content for the end of August. The August release was 128 percent of average and the fifth highest August release since the dam was closed. The maximum release of 1,167 cfs occurred on August 21. Releases continued to exceed 1,000 cfs during the first week of September, but were rapidly reduced during the second week of the month to less than 40 cfs by September 18 as rainfall lessened the need for irrigation water. The 2013 irrigation season on the Riverton Unit ended on September 20 and the release of about 40 cfs was maintained through the end of the month. The Bull Lake watershed received over 300 percent of average precipitation during September, ending the need for irrigation and substantially increasing the flow into Bull Lake. With most of the precipitation falling during the last half of the month, inflows of over 600 cfs entered the reservoir and Bull Lake storage rose from a low of 77,446 AF on September 14 to 89,167 AF on September 30. September inflow was about 230 percent of average and end of September content about 120 percent of normal. Bull Lake releases in September averaged about 470 cfs, which was 77 percent of average.

April-July inflows totaled 106,272 AF, 76 percent of average. Total inflow to Bull Lake for the water year was 154,338 AF, which was 83 percent of average. The flow of the Wind River

above the mouth of Bull Lake Creek during the April-July period was estimated to be 72 percent of average, totaling 287,746 AF. The total diversion into the Wyoming Canal for the April-September period was 312,676 AF, 93 percent of average.

Additional hydrologic and statistical information pertaining to Bull Lake operations during 2013 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 2013 with a total storage content of approximately 13,907 AF at elevation 5433.67 feet. Irrigation season on the Riverton Unit ended on September 20 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 22 when Pilot Butte storage reached 28,052 AF at elevation 5453.45 feet. 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 27,195 AF. Diversion into Wyoming Canal resumed on April 16 to continue filling Pilot Butte and flush the canal system. Irrigation deliveries began on April 29. Some Pilot Butte storage was used during April and at the end of the month the content was 26,746 AF at 5451.86 feet. During May Pilot Butte storage was used to meet irrigation demand and was drawn down to 25,619 AF on May 8. As flows in the river increased, additional water was stored in Pilot Butte and on May 30 the maximum content for the year of 29,887 AF was reached. The 2013 runoff was short lived and to help meet demand during the rest of the summer Pilot Butte storage was called upon, reducing storage in the reservoir to a low of 15,379 AF at 5436.08 feet on September 6. As rainfall entered the basin in September, demands decreased and there was natural flow available to store in Pilot Butte. On September 30 storage had increased to 19,841 AF at 5442.79 feet. Irrigation deliveries on the Riverton Unit ended on September 20, 2013.

Pilot Butte Powerplant was unavailable for service during WY 2012 and did not generate any electricity. In June of 2009, both units at Pilot Butte Powerplant were placed in "Mothballed" status 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 2013 can be found in Table WYT5 and Figure WYG2.

TABLE WYT4
HYDROLOGIC DATA FOR WATER YEAR 2013
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	5776.71	73,231	OCT 01, 2012
END OF YEAR	`5783.05	89,167	SEP 30, 2013
ANNUAL LOW	5776.71	73,231	OCT 01, 2012
HISTORIC LOW*	5743.03	6,228	MAR 31, 1950
ANNUAL HIGH	5804.50	150,886	JUL 18, 2013
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)	154,338	OCT 12-SEP 13	138,400	OCT 12-SEP 13
DAILY PEAK (cfs)	1,340	JUN 11, 2013	1,167	AUG 21, 2013
DAILY MINIMUM (cfs)	1	DEC 10, 2013	24	OCT 03, 2013
PEAK SPILLWAY FLOW (cfs)			0	
TOTAL SPILLWAY FLOW (AF)			0	

	INFLOW		OUTFLOW		CONTENT	
MONTH	KAF	% of Avg*	KAF	% of Avg*	KAF	% of Avg*
OCTOBER	3.6	64	1.6	24	75.2	98
NOVEMBER	2.9	93	1.5	64	76.6	99
DECEMBER	2.4	101	1.6	79	77.4	100
JANUARY	2.1	101	1.5	76	78.0	101
FEBRUARY	1.7	106	1.4	86	78.3	101
MARCH	1.4	77	1.5	85	78.2	101
APRIL	2.8	71	1.5	39	79.4	103
MAY	28.7	103	1.8	12	106.3	118
JUNE	41.1	67	3.9	16	143.6	113
JULY	33.7	72	34.4	77	142.9	110
AUGUST	13.1	65	59.7	128	96.4	93
SEPTEMBER	20.8	232	28.1	77	89.2	118
ANNUAL	154.3	83	138.4	74		

APRIL - JULY INFLOW (AF)	
ACTUAL	AVERAGE
106.272	139.800

* Average for the 1983-2012 period

FIGURE WYG1

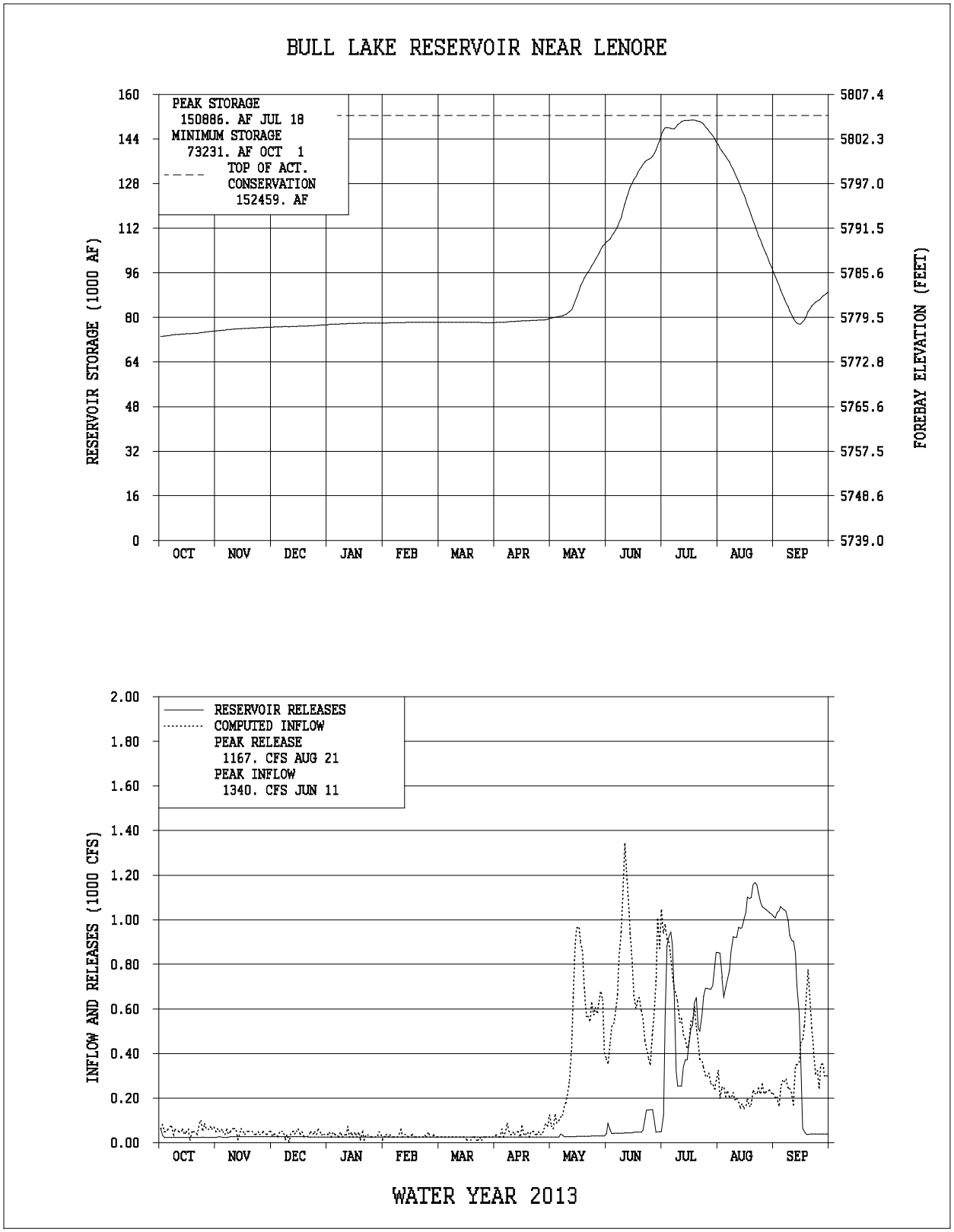

BULL LAKE RESERVOIR NEAR LENORE
PEAK STORAGE
150886. AF JUL 18
MINIMUM STORAGE
73231. AF OCT 1
TOP OF ACT.
CONSERVATION
152459. AF
RESERVOIR STORAGE (1000 AF)
FOREBAY ELEVATION (FEET)
160
144
128
112
96
80
64
48
32
16
0
5807.4
5802.3
5797.0
5791.5
5785.6
5779.5
5772.8
5765.6
5757.5
5748.6
5739.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
RESERVOIR RELEASES
COMPUTED INFLOW
PEAK RELEASE
1167. CFS AUG 21
PEAK INFLOW
1340. CFS JUN 11
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 2013

TABLE WYT5
HYDROLOGIC DATA FOR WATER YEAR 2013
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	5433.68	13,913	OCT 01, 2012
END OF YEAR	5442.79	19,841	SEP 30, 2013
ANNUAL LOW	5433.68	13,913	OCT 01, 2012
HISTORIC LOW	5409.80	3,748	DEC 01, 2006
ANNUAL HIGH	5456.34	30,496	JUL 09, 2013
HISTORIC HIGH	5460.60	37,465	APR 20, 1988

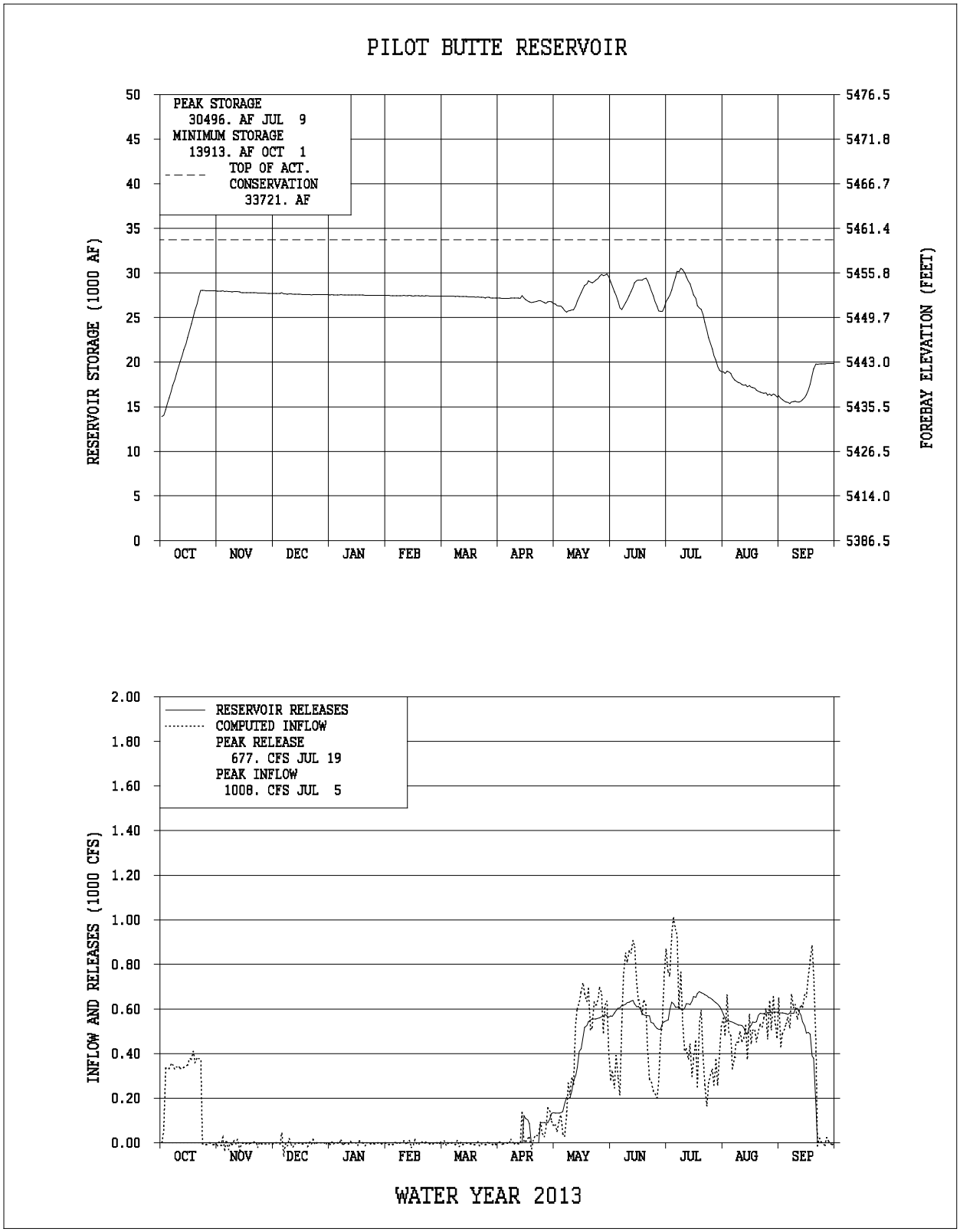
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	160,204	OCT 12-SEP 13	153,513	OCT 12-SEP 13
DAILY PEAK (cfs)	1,008	JUL 05, 2013	677	JUL 19, 2013
DAILY MINIMUM (cfs)	0	WINTER MONTHS	0	WINTER MONTHS
PEAK SPILLWAY FLOW (cfs)			0	
TOTAL SPILLWAY FLOW (AF)			0	

	INFLOW*		OUTFLOW		CONTENT	
MONTH	KAF	% of Avg**	KAF	% of Avg**	KAF	% of Avg**
OCTOBER	14.0	121	0.0	N/A	28.0	103
NOVEMBER	-0.2	N/A	0.0	N/A	27.7	98
DECEMBER	-0.2	N/A	0.0	N/A	27.5	97
JANUARY	-0.1	N/A	0.0	N/A	27.5	96
FEBRUARY	-0.1	N/A	0.0	N/A	27.4	96
MARCH	-0.2	N/A	0.0	N/A	27.2	93
APRIL	1.8	25	2.2	37	26.7	88
MAY	26.3	112	23.5	87	29.6	111
JUNE	31.1	84	34.6	102	26.1	87
JULY	31.4	78	38.6	86	18.9	75
AUGUST	31.2	96	33.9	93	16.2	77
SEPTEMBER	24.4	104	20.8	78	19.8	110
ANNUAL	160.2	90	153.5	87		

* Negative values are the result of calculated inflow based on reservoir release and change in reservoir content.

** Average for the 1983-2012 period.

FIGURE WYG2


PILOT BUTTE RESERVOIR
PEAK STORAGE
30496. AF JUL 9
MINIMUM STORAGE
13913. AF OCT 1
TOP OF ACT.
CONSERVATION
33721. AF
RESERVOIR STORAGE (1000 AF)
FOREBAY ELEVATION (FEET)
50
45
40
35
30
25
20
15
10
5
0
5476.5
5471.8
5466.7
5461.4
5455.8
5449.7
5443.0
5435.5
5426.5
5414.0
5386.5
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
RESERVOIR RELEASES
COMPUTED INFLOW
PEAK RELEASE
677. CFS JUL 19
PEAK INFLOW
1008. CFS JUL 5
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 2013

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 feet and elevation 4725.00 feet, which is the top of the spillway gates when closed. The exclusive flood control space is located between elevation 4725.00 feet and elevation 4732.20 feet. When the reservoir rises above elevation 4724.50 feet, 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 2013 began with 513,636 AF of water stored in Boysen Reservoir, which was 86 percent of the 30 year average. The corresponding reservoir elevation of 4711.49 feet was 13.51 feet below the top of the joint use pool. The winter release was set on October 6, 2012, when the release from the dam was reduced to 500 cfs. October inflow was 42 percent of average and the reservoir level fell until late in the month. Inflow during November averaged about 690 cfs and by the end of the month the reservoir level had increased to 517,785 AF. December inflow was slightly more than the winter release so the lake remained fairly stable through the month and at the end of the year Boysen held 518,649 AF of water at elevation 4711.84 feet.

Forecasts of April-July snowmelt runoff were prepared at the beginning of each month starting in January and continuing through June. On January 1 the snowpack in the mountains above Boysen was 89 percent of average and the forecast indicated approximately 450,000 AF of water, 80 percent of average, would enter Boysen Reservoir during the April-July snowmelt runoff period. January inflow continued to be less than average, but almost matched the release so the reservoir level held almost constant through the month. Precipitation during January was about 130 percent of average at lower elevations but the mountains only received 44 percent of average snowfall and the snowpack dropped ten percent to 79 percent of average on February 1. The February 1 forecast was lowered to 400,000 AF, which was 71 percent of average.

February was similar to January with above average precipitation in the Wind River valley and

below average mountain precipitation. Reservoir inflow continued to closely follow the release and at the end of February, Boysen content stood at 518,937 AF. The snowpack only lost one percent over the month when compared to average and the March 1 forecast of April-July runoff remained at 400,000 AF.

Low elevation weather stations in the Boysen watershed only received 39 percent of average precipitation during March and the mountains didn't fare much better at 62 percent of average. No major snow storms occurred during the month either, but somehow the snowpack managed to only drop three percent further from average during March. Warm temperatures around the middle of the month melted some of the low elevation snow, which resulted in increased reservoir inflow and Boysen gained about 10,000 AF of content in March. At the end of the month the reservoir held 528,076 AF of water at elevation 4712.49 feet. On April 1 the snowpack was 74 percent of average and the prospect of a good runoff season was fading. The snowmelt runoff forecast prepared on April 1 indicated a further reduction and that 350,000 AF water could be expected to flow into Boysen during the April-July period.

April precipitation came in close to normal and storms began to drop significant snow in the mountains. Cold temperatures slowed down the inflow to the reservoir but with the release held at 500 cfs, the lake level rose slightly during the first half of the month. The heavy, wet snow that falls in April and May has a big impact on the spring runoff and the April storms provided hope that the snowpack would continue to build and storage use accounting could be avoided. Irrigation season began around the middle of the month and irrigation demands were closely monitored. Releases were adjusted to satisfy the demand and at the end of the month Boysen held 527,784 AF of water. The snowpack increased to 80 percent of average on May 1 and the May snowmelt runoff forecast was increased by 25,000 AF to 375,000 AF.

Moisture in early May helped keep demand for irrigation water down but inflow was also low and the reservoir level declined through the first half of the month. As warmer temperatures and dry air entered the basin around May 12, the snow melt got under way and inflow to Boysen increased to more than 2,000 cfs for a few days. The dry conditions also increased the demand and releases of around 1,200 cfs were required for much of the last two weeks of May. Most of the snowpack melted during May but it only produced about 80,000 AF of inflow to the reservoir for the month, which was just 67 percent of average. On June 1 only 30 percent of average snowpack remained and it was clear that without some good rains in June the runoff would be well below average. Even with normal June precipitation the runoff prospects looked bleak and the June snowmelt runoff forecast was cut to 250,000 AF, 45 percent of normal. At the end of May, storage in Boysen was 545,064 AF at elevation 4713.64 feet.

The much needed June rains failed to materialize and when temperatures in the basin rose into the 90s, what little snowpack remained melted and found its way to the Wind River. June precipitation in the Wind River basin was only three percent of average and both the Lander and Riverton weather stations recorded the fourth lowest June precipitation of record. There were only three days in June when Boysen inflow exceeded 2,500 cfs and the maximum inflow for the year of 3,125 cfs occurred on June 12. Early in the month it was evident that Boysen storage water would be heavily relied upon to get through the irrigation season and the irrigation districts that rely upon Boysen Reservoir storage water were notified that they would be charged for

storage water use under the terms of their contracts with Reclamation. Boysen Reservoir storage use accounting was initiated on June 10 to keep track of the amount of storage water the districts were diverting. The release from the dam was held to the minimum necessary to meet the needs of the irrigators and averaged about 1,250 cfs. Reservoir inflow was only 26 percent of average during June and the maximum reservoir content for the year of 556,515 AF at elevation 4714.40 feet occurred on June 15. At the maximum elevation, Boysen was about 10.5 feet below the elevation of the full reservoir. By the end of June, Boysen content was down to 537,771 AF at 4713.15 feet.

July inflow averaged about 600 cfs, which was 27 percent of average while the release from the dam was almost double the inflow and the lake level dropped about two and a half feet over the month. In August the reservoir fell another three feet as releases continued to outpace the inflow. At the end of August, Boysen held 463,526 AF at elevation 4707.84 feet. Conditions changed for the better in September as the Wind River basin received almost 350 percent of normal precipitation for the month. Once the rains came, inflow to the reservoir increased substantially while the demand for irrigation water fell. The September inflow of 62,511 AF was 127 percent of average and almost as much inflow as Boysen got in June. Irrigation demand fell to the point where the demand was being satisfied with the natural flow in the river and storage use accounting was discontinued on September 22. Work at Boysen Powerplant required taking both units off-line on September 9, so releases were made using the spillway until September 26 when the spillway gates were shut and all releases were made through the hollow-jet valve for the remainder of the month.

Actual inflow for the April-July period totaled 216,218 AF, which was 39 percent of average. Total inflow to Boysen during water year 2013 was 502,010 AF, 53 percent of average. The reservoir ended the water year at 4709.18 feet with a content of 481,464 AF. This was 82 percent of the average end of September content and 2.31 feet lower than at the end of September of 2012. The peak inflow for the year of 3,125 cfs occurred on June 12 and the maximum daily release of 1,337 cfs was made on July 2. During water year 2013, Boysen Powerplant generated 38,639,000 kWh of electricity, about 59 percent of average and 6,362,000 kWh more than was generated in 2012. Of the 534,182 AF of water released from Boysen in water year 2013, 498,901 AF was discharged through the powerplant and 35,281 AF bypassed the powerplant.

Important Events - 2013

October 6, 2012: Release was set at 500 cfs as irrigation demand fell below the planned winter release of 500 cfs.

March 12, 2013: Boysen Reservoir spring water information meeting was held in Worland to discuss the water supply and proposed operation of Boysen Reservoir in 2013.

June 10, 2013: Boysen storage use accounting was initiated for the 2013 irrigation season.

June 15, 2013: Boysen Reservoir reached its maximum elevation for the year of 4714.40 feet.

September 22, 2013: Boysen storage use accounting ended for the 2013 irrigation season.

September 30, 2013: Release was set at 500 cfs as irrigation demand fell below the planned winter release of 500 cfs.

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

TABLE WYT6
HYDROLOGIC DATA FOR WATER YEAR 2013
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	4711.49	513,636	OCT 01, 2012
END OF YEAR	4709.18	481,464	SEP 30, 2013
ANNUAL LOW	4707.12	454,112	SEP 14, 2013
HISTORIC LOW ELEVATION *	4684.18		MAR 18, 1956
HISTORIC LOW CONTENT *		235,737	SEP 24, 2002
ANNUAL HIGH	4714.40	556,515	JUN 15, 2013
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)	502,010	OCT 12-SEP 13	534,182*	OCT 12-SEP 13
DAILY PEAK (cfs)	3,125	JUN 12, 2013	1,337	JUL 02, 2013
DAILY MINIMUM (cfs)	16	OCT 03, 2012	489	JAN 29, 2013
PEAK SPILLWAY FLOW (cfs)			829	SEP 10, 2013
TOTAL SPILLWAY FLOW (AF)			22,208	SEP 09-SEP 26

* Of the 534,182 AF of water released from Boysen Reservoir, 35,281 AF bypassed the powerplant.

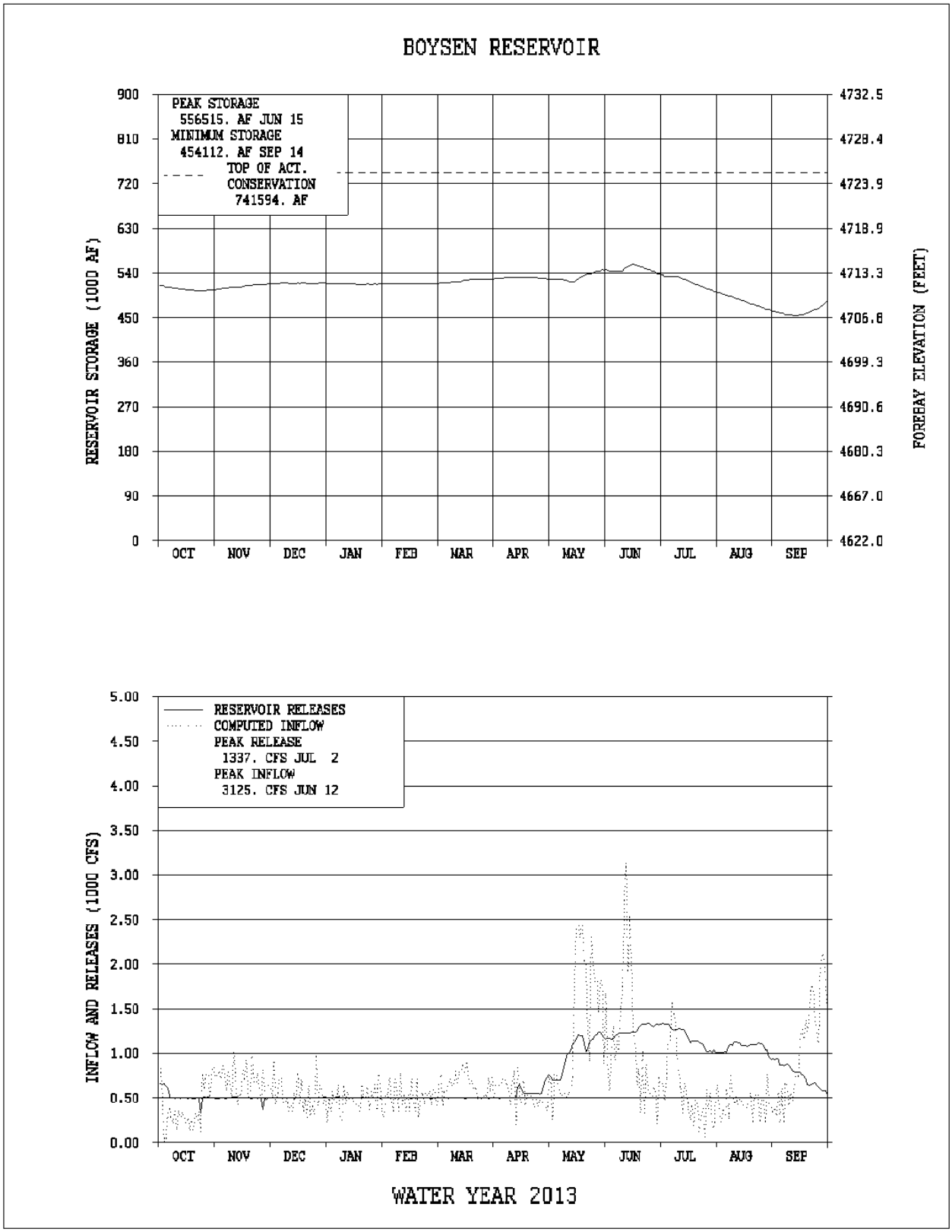
	INFLOW		OUTFLOW		CONTENT	
MONTH	KAF	% of Avg*	KAF	% of Avg*	KAF	% of Avg*
OCTOBER	24.5	42	31.9	53	506.3	85
NOVEMBER	41.0	83	29.4	55	517.8	88
DECEMBER	31.7	84	30.8	57	518.6	90
JANUARY	29.7	80	30.9	59	517.5	93
FEBRUARY	29.2	78	27.8	60	518.9	94
MARCH	39.9	75	30.8	53	528.1	97
APRIL	32.5	65	32.8	52	527.8	99
MAY	79.8	67	62.5	62	545.1	99
JUNE	67.4	26	74.7	48	537.8	83
JULY	36.6	27	72.8	50	501.6	78
AUGUST	27.3	50	65.4	74	463.5	76
SEPTEMBER	62.5	127	44.6	65	481.5	82
ANNUAL	502.1	53	534.4	56		

APRIL - JULY INFLOW (AF)

ACTUAL	AVERAGE
216,218	561,600

* Average for the 1983-2012 period

FIGURE WYG3


BOYSEN RESERVOIR
PEAK STORAGE
556515. AF JUN 15
MINIMUM STORAGE
454112. AF SEP 14
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
4726.4
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
1337. CFS JUL 2
PEAK INFLOW
3125. CFS JUN 12
INFLOW AND RELEASES (1000 CFS)
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
WATER YEAR 2013

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 feet. However, when the reservoir rises above elevation 6412.80 feet, water flows through a notch in one of the dikes into the sinkhole area. The reservoir is operated not to exceed elevation 6412.80 feet. 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 feet. Operation above 6400.00 feet will be directed by Wyoming Area Office (WYAO) staff to avoid overtopping of the dikes.

Storage in Anchor Reservoir at the beginning of WY 2013 was 314 AF at elevation 6357.00 feet. The reservoir level remained fairly stable through mid-March when a warm up got the runoff started. March inflows were stored and the reservoir held 628 AF at the end of the month. This was the maximum content for the year and the corresponding maximum elevation was 6365.00 feet. Inflow during April was only 22 percent of average and the reservoir level fell to 252 AF at the end of the month. May and June inflows were about 65 percent of the thirty year average but were greater than releases on most days of the period. When the maximum inflow for the year of 136 cfs occurred on June 10, the reservoir held almost 500 AF of water but that fell to 319 AF by the end of the month. Following the peak, inflows declined rapidly while releases were increased to meet irrigation demands. During July and August, reservoir inflow was passed through Anchor to supplement irrigation demand and storage was reduced to 239 AF at the end of August. September was much wetter than normal, which reduced the need for irrigation water and rainfall in the watershed above Anchor boosted inflow for the month to about 250 percent of average. As a result, Anchor stored water for most of September and at the end of WY 2013, the reservoir level was 6358.27 feet with 354 AF of water in storage.

Hydrologic and statistical data pertaining to Anchor Reservoir operations during 2013 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 WATER YEAR 2013
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	6357.00	314	OCT 01,2012
END OF YEAR	6358.27	354	SEP 30, 2013
ANNUAL LOW	6352.94	211	MAY 03, 2013
HISTORIC LOW			
ANNUAL HIGH	6365.00	628	MAR 31, 2013
HISTORIC HIGH	6418.52	9,252	JUL 03, 1967

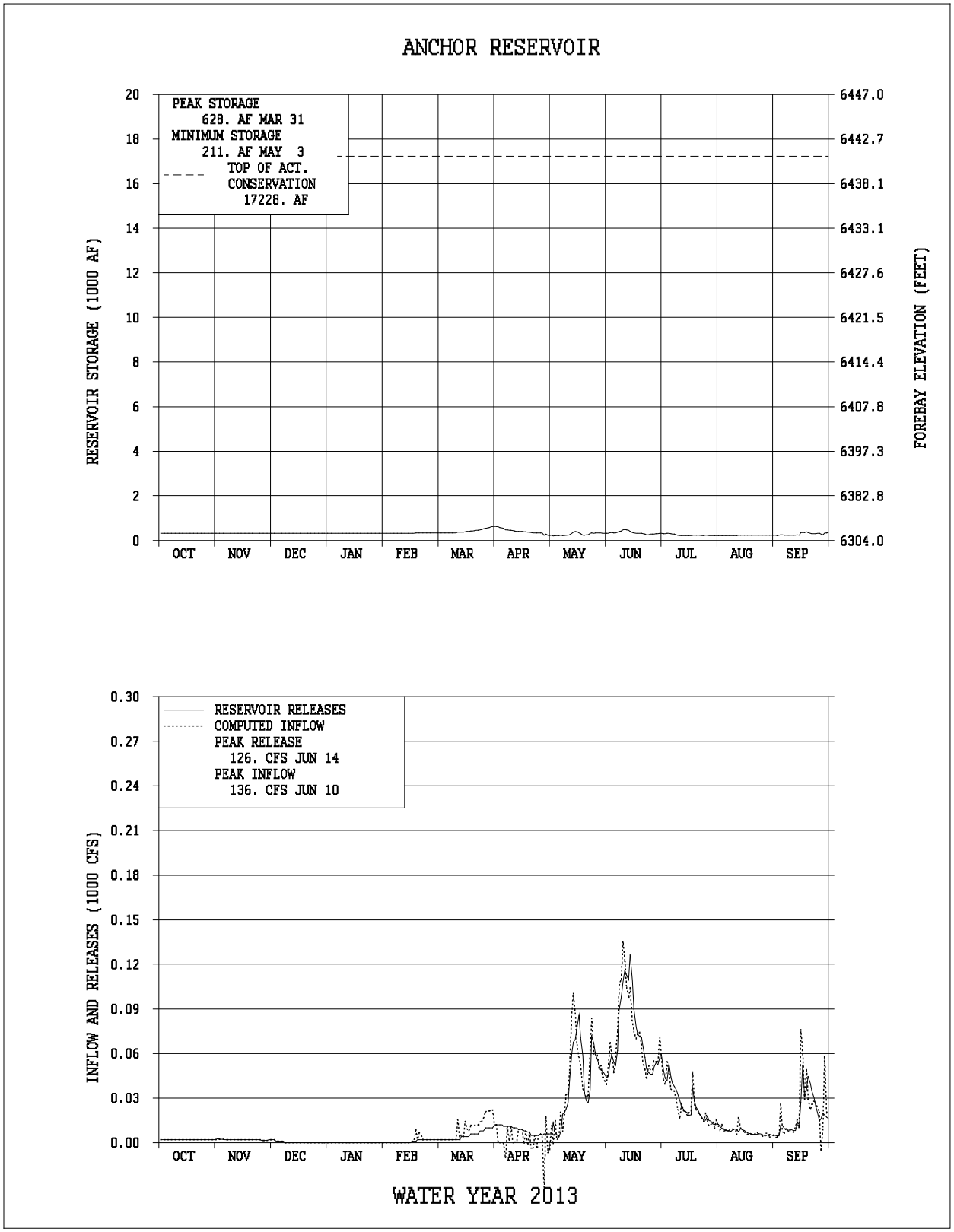
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW *	DATE
ANNUAL TOTAL (AF)	11,146	OCT 12-SEP 13	11,105	OCT 12-SEP 13
DAILY PEAK (cfs)	136	JUN 10, 2013	126	JUN 14, 2013
DAILY MINIMUM (cfs)	0	WINTER MONTHS	0	WINTER MONTHS
PEAK SPILLWAY FLOW (cfs)			0	
TOTAL SPILLWAY FLOW (AF)			0	

* 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 2013, no water flowed over the notch in the dike.

	INFLOW		OUTFLOW*		CONTENT	
MONTH	KAF	% of Avg*	KAF	% of Avg*	KAF	% of Avg*
OCTOBER	0.1	20	0.1	19	0.3	110
NOVEMBER	0.1	38	0.1	40	0.3	126
DECEMBER	0.0	10	0.0	9	0.3	130
JANUARY	0.0	0	0.0	0	0.3	134
FEBRUARY	0.1	61	0.1	49	0.3	131
MARCH	0.6	189	0.3	136	0.6	167
APRIL	0.1	22	0.5	107	0.3	52
MAY	2.5	67	2.5	91	0.3	22
JUNE	4.3	63	4.3	85	0.3	10
JULY	1.6	73	1.7	51	0.2	11
AUGUST	0.5	92	0.5	25	0.2	41
SEPTEMBER	1.2	248	1.1	141	0.4	108
ANNUAL	11.1	70	11.1	71		

* Average is for the 1991-2012 period. This period was used because of the availability of data at Anchor Reservoir.

FIGURE WYG4


ANCHOR RESERVOIR
PEAK STORAGE
628. AF MAR 31
MINIMUM STORAGE
211. AF MAY 3
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
126. CFS JUN 14
PEAK INFLOW
136. CFS JUN 10
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
OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP
WATER YEAR 2013

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 feet, 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 feet, 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 feet, the top of the active conservation pool.

Storage in Buffalo Bill Reservoir at the beginning of WY 2013 was 448,858 AF of water at elevation 5367.31 feet. Irrigation releases to the Heart Mountain Canal continued until October 18, 2012. Irrigation releases to the Shoshone River also ended on October 18 and the release to the river was reduced to 200 cfs in accordance with the Buffalo Bill Reservoir Enlargement Winter Release Operation Agreement. At the end of October the reservoir held 423,760 AF of water at elevation 5363.61 feet. By maintaining the reservoir elevation below 5370 feet during the winter months, problems associated with ice jams on the South Fork of the Shoshone River during the winter are reduced significantly. Inflows during the November and December period were below average, but greater than the release from the dam and by the end of December storage in the reservoir had increased to 430,753 AF. Precipitation was 117 percent of average during the period and the snowpack in the Buffalo Bill watershed stood at 94 percent of average on January 1.

Forecasts of the April-July snowmelt runoff are made each month beginning in January and continuing through June for Buffalo Bill Reservoir. Conditions on January 1 indicated that 650,000 AF of runoff could be expected to flow into Buffalo Bill Reservoir during the April-July period, which was 97 percent of the 30 year average.

January inflow to Buffalo Bill was slightly less than the release and at the end of the month storage in the reservoir stood at 430,228 AF of water at elevation 5364.63 feet. Precipitation in the Buffalo Bill watershed was 76 percent of average during January and snowpack

accumulation was below average as well. The February 1 snowmelt runoff forecast was reduced to 600,000 AF with snowpack in the basin at 83 percent of average on February 1.

Below average precipitation continued during February and March. The snowpack dropped six percent compared to average during February but held at about 75 percent of average through the month of March. Inflow over the period closely matched what was released and the reservoir level held steady through the end of March. The forecast prepared on March 1 was reduced to 550,000 AF, 82 percent of average, and the April 1 forecast was lowered to 525,000 AF.

The first week of April saw temperatures reaching into the 60's with nighttime lows remaining above freezing, which started to melt the low elevation snow. As inflows increased, the reservoir began to slowly fill and the reservoir level rose until April 15. Irrigation releases to the Shoshone River were initiated on April 15 and Heart Mountain Canal releases began on April 18. The reservoir level fell through the remainder of the month due to the increased releases along with cold weather slowing down the runoff. At the end of April, Buffalo Bill Reservoir held 420,520 AF at elevation 5363.11 feet. When the snowpack in the Shoshone watershed peaked for the year on April 24, it was 88 percent of average. By May 1 the snowpack was down to 84 percent of average and the forecast of April - July runoff was 550,000 AF, 82 percent of average.

The reservoir level continued to fall during the first week of May, reaching its minimum content for the year of 409,317 AF at elevation 5361.42 feet on May 6. Well above average temperatures within the drainage caused inflow to the reservoir to increase rapidly, reaching a peak for the month of over 7,200 cfs on May 14. Heart Mountain Canal diversions rose to over 850 cfs by mid-May and releases to the river were close to 1,100 cfs during the first half of the month. The last half of the month was much wetter and irrigation demands were stepped down through the remainder of May. For the month, releases from the dam were about 90 percent of average while inflow to Buffalo Bill was above average. Precipitation was also above average but most of the snowpack melted during May and was only 37 percent of average on June 1. At the end of May, the reservoir held 528,198 AF of water at elevation 5378.23 feet.

Inflow continued to exceed releases and the reservoir level rose through the month of June. As the inflow shot back up to over 7,000 cfs, releases from the dam were increased above the demand on June 10 to slow the rate of fill. The peak inflow for the year of 7,482 cfs occurred on June 11. Releases were adjusted as necessary through the remainder of the month as the lake level gradually rose to elevation 5392 feet. With little remaining space in the reservoir, warm weather brought off the remaining snow and inflows rose to almost 4,000 cfs. Releases were increased to stabilize the reservoir and at the end of June the reservoir held 635,527 AF of water at elevation 5392.13 feet. Provisional data from the U.S. Geological Survey shows that the inflow on the North Fork of the Shoshone River peaked at 5,710 cfs on May 15 during the first surge of runoff and the peak on the South Fork of 3,150 cfs occurred on June 10.

Buffalo Bill reached its maximum content for the year of 636,200 AF on July 5. This was 10,365 AF below the top of the active conservation pool and the maximum elevation of 5392.21 feet was 1.29 feet below the level of the full reservoir. As inflows began to decrease in July, releases were also reduced and the control of the release from the dam was turned over to

the Shoshone Irrigation District on July 10. Precipitation was below average during July while temperatures were hotter than normal, which led to higher than average irrigation demand. Buffalo Bill inflow was about half of normal and the reservoir level fell to elevation 5386.50 feet at the end of July.

August continued to be warm and dry with below average inflow, but things turned around in September as well above average precipitation fell in the Shoshone drainage. Inflow was 144 percent of average during September and the wet weather slowed the need for irrigation water. On September 30 Buffalo Bill Reservoir held 466,421 AF of water at elevation 5369.75 feet. This was 105 percent of the 1993-2012 average for the enlarged reservoir. The total inflow to Buffalo Bill during the April - July runoff period was 576,400 AF, which was 86 percent of average. The total water year inflow of 717,701 AF was 85 percent of average.

Total energy generated at all powerplants that directly receive water out of Buffalo Bill Reservoir totaled 105,074,000 kWh in 2013. Of this total amount, Heart Mountain Powerplant generated 18,304,000 kWh, Buffalo Bill Powerplant generated 51,444,000 kWh, Shoshone Powerplant generated 17,581,000 kWh and Spirit Mountain Powerplant generated 17,745,000 kWh. The powerplants used 582,917 AF of water to generate this amount of energy and 83 percent of the total water released from Buffalo Bill Reservoir during WY 2013 was used for generation. About 34 percent, or 235,927 AF of the total water released from Buffalo Bill Reservoir, was released to the Heart Mountain Canal for irrigation purposes.

Important Events - 2013

October 18, 2012: Releases to the Shoshone River were reduced to the winter release of 200 cfs.

October 18, 2012: Irrigation diversions to the Heart Mountain Canal were discontinued for the 2012 irrigation season.

March 27, 2013: Buffalo Bill Reservoir Public Information meeting was held in Powell to discuss WY 2012 operation and expected 2013 operation.

April 15, 2013: Irrigation releases to the Shoshone River were initiated for the 2013 irrigation season.

April 18, 2013: Irrigation releases to the Heart Mountain Canal were initiated for the 2013 irrigation season.

July 5, 2013: Buffalo Bill Reservoir reached a maximum elevation for the water year of 5392.21 feet.

Additional hydrologic and statistical information pertaining to the operations of Buffalo Bill Reservoir during WY 2013 can be found in Table WYT8 and Figure WYG5.

TABLE WYT8
HYDROLOGIC DATA FOR WATER YEAR 2013
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	5367.31	448,858	OCT 01,2012
END OF YEAR	5369.75	466,421	SEP 30, 2013
ANNUAL LOW	5361.42	409,317	MAY 06, 2013
HISTORIC LOW*		19,080	JAN 31, 1941
ANNUAL HIGH	5392.21	636,200	JUL 05, 2013
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)	717,701	OCT 12-SEP 13	699,894	OCT 12-SEP 13
DAILY PEAK (cfs)	7,482	JUN 11, 2013	3,103	JUN 28, 2013
DAILY MINIMUM (cfs)	14	DEC 20, 2012	166	FEB 28, 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	12.8	50	37.7	104	423.8	100
NOVEMBER	18.6	86	12.3	67	430.1	101
DECEMBER	13.6	86	12.9	73	430.8	101
JANUARY	12.3	84	12.9	77	430.2	102
FEBRUARY	11.2	87	11.4	69	430.0	103
MARCH	12.4	64	12.6	60	429.8	104
APRIL	25.7	61	35.0	62	420.5	107
MAY	213.4	134	105.7	90	528.2	121
JUNE	243.8	81	136.4	77	635.5	112
JULY	93.6	57	138.1	80	591.0	103
AUGUST	25.7	58	109.2	97	507.5	100
SEPTEMBER	34.7	144	75.8	92	466.4	105
ANNUAL	717.7	85	699.9	83		

APRIL - JULY INFLOW (AF)	
ACTUAL	AVERAGE
576.400	668.500

* Average for inflow and outflow is [illegible] Bill Reservoir in 1992, the period of record on which average [illegible]

FIGURE WYG5

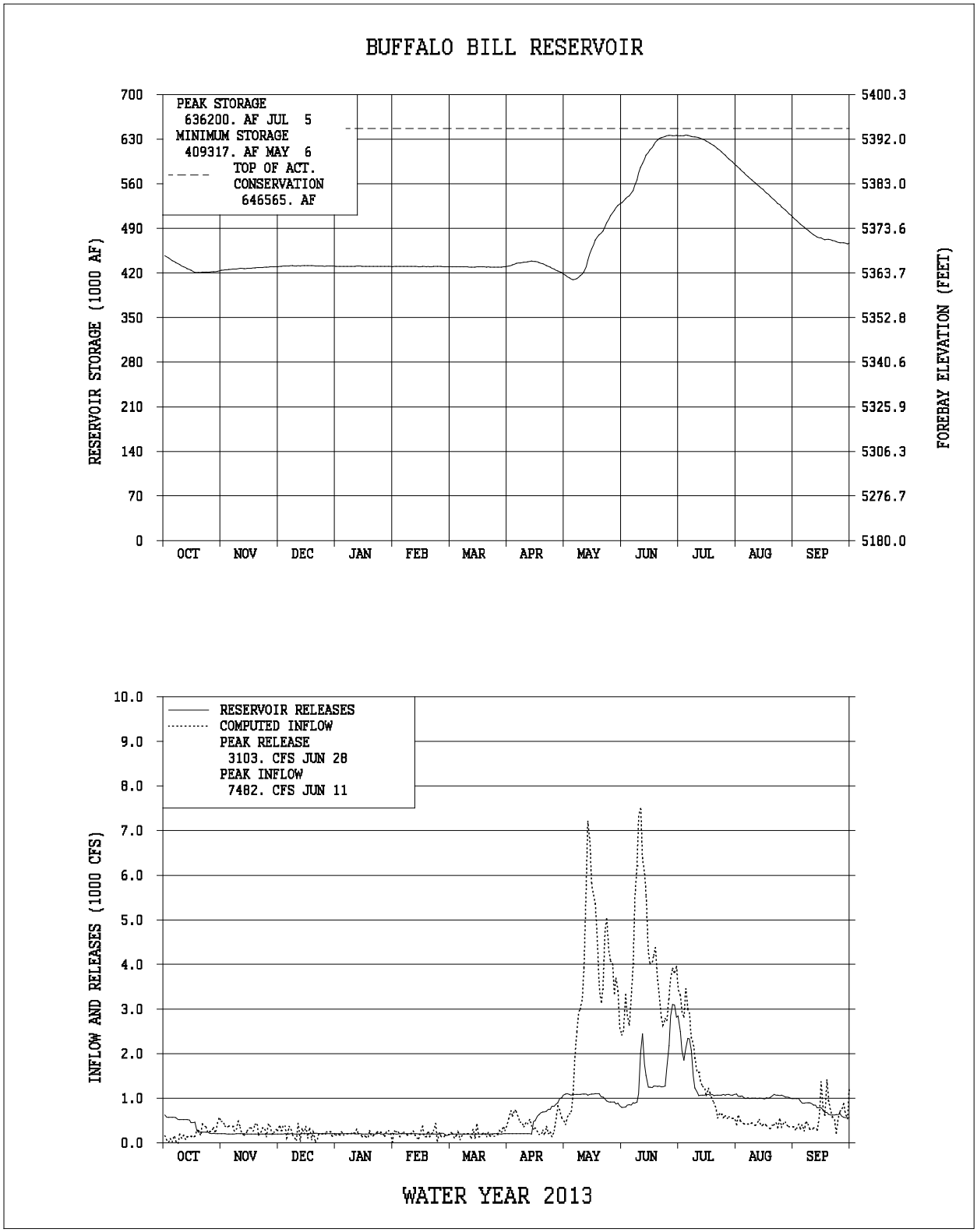

BUFFALO BILL RESERVOIR
PEAK STORAGE
636200. AF JUL 5
MINIMUM STORAGE
409317. AF MAY 6
TOP OF ACT.
CONSERVATION
646565. AF
RESERVOIR STORAGE (1000 AF)
FOREBAY ELEVATION (FEET)
700
630
560
490
420
350
280
210
140
70
0
5400.3
5392.0
5383.0
5373.6
5363.7
5352.8
5340.6
5325.9
5306.3
5276.7
5180.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
RESERVOIR RELEASES
COMPUTED INFLOW
PEAK RELEASE
3103. CFS JUN 28
PEAK INFLOW
7482. CFS JUN 11
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 2013

Table WYT9

WATER YEAR 2013 ACTUAL OUTAGES FOR WYOMING POWERPLANTS

Facilities	Description of Work	Outage Dates
BOYSEN		
Unit 1	Major Annual Maintenance	01/31/13 – 03/28/13
Unit 1	K1A Doble Testing	05/06/13 – 05/09/13
Unit 1	Plant Isolated for Asbestos Removal	09/09/13 – 09/30/13
Unit 2	Major Annual Maintenance	10/22/12 – 12/13/13
Unit 2	K1A Doble Testing	05/06/13 – 05/09/13
Unit 2	Plant Isolated for Asbestos Removal	09/09/13 – 09/30/13
PILOT BUTTE		
Unit 1	Unit in “Mothballed” status	06/01/09 - 09/30/13
Unit 2	Unit in “Mothballed” status	06/01/09 - 09/30/13
BUFFALO BILL		
Buffalo Bill Powerplant		
Unit 1	Annual Maintenance / SEL Relay Installation	10/15/12 - 01/23/13
Unit 2	Annual Maintenance / SEL Relay Installation	10/15/12 - 01/24/13
Unit 3	Annual Maintenance / SEL Relay Installation	01/22/13 - 04/24/13
Shoshone Powerplant		
Unit 3	Annual Maintenance	10/01/12 - 10/17/12
Unit 3	Hi-Pot Stator / Cables & Penstock Inspection / Exciter Problems	02/25/13 - 03/12/13
Unit 3	Penstock Ultrasound Inspection	04/08/13 - 04/10/13
Heart Mountain Powerplant		
Unit 1	Annual Maintenance	02/04/13 - 02/28/13
Spirit Mountain Powerplant		
Unit 1	SEL Replacement on BBP Bus #1	10/15/12 - 01/22/13
Unit 1	Annual Maintenance / Sleeve Valve Inspection	03/11/13 - 03/28/13

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 2013. The Boysen water stored in Bull Lake allows Bull Lake to be maintained at a higher content and also provides a flow of 20 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, 2012, Bull Lake Reservoir held 73,231 AF of water. Of the 73,231 AF held in Bull Lake, 1,945 AF was Boysen water in Bull Lake. Inflow to Bull Lake was slightly greater than the release and the reservoir slowly rose through the winter. Inflow from snowmelt runoff began in mid-May and during the April-July period the inflow to Bull Lake was 76 percent of average. The reservoir reached a maximum elevation for the year of 5804.50 feet on July 18, which was 27.79 feet higher than the minimum elevation for the year of 5776.71 feet that occurred on October 1, 2012. At the end of WY 2013, the content of Bull Lake was 89,167 AF. At the beginning of water year 2013, there was 8,580 AF of Boysen storage water in Bull Lake. This water will be transferred back to Boysen during the winter months of WY 2013 to provide a winter flow in Bull Lake Creek.

Boysen Reservoir

Boysen Reservoir storage at the beginning of WY 2013 was 86 percent of average and 69 percent of capacity. Following the 2012 irrigation season, the release from Boysen Dam was set at approximately 500 cfs, where it remained through the winter months. 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 of 2013, the inflow to Boysen was only about 300 AF less than the release and the reservoir level was stable through the month. The reservoir level remained fairly constant well into May before it began rising as the snowmelt runoff began. The reservoir level was at 4713.23 feet going into the Memorial Day weekend, which was 4.20 feet lower than at the beginning of the holiday weekend in 2012

Buffalo Bill Reservoir

Following the 2012 irrigation season, the release from Buffalo Bill Reservoir was set at approximately 200 cfs, based on winter release criteria contained in the Buffalo Bill Reservoir Enlargement Winter Release Operation Agreement. 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. A release of 100 cfs will be maintained in the river below the dam at all times.

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 October 1, 2012, - May 17, 2013, the water surface elevation of Buffalo Bill Reservoir was below the top of the North Fork Dike (elevation 5370.00 feet). The minimum elevation of the pool behind the South Fork Dike of 5391.37 feet occurred on March 9, 2013, and the maximum elevation of 5394.05 feet occurred on July 9, 2013. At the maximum elevation, the pool behind the South Fork Dike covered 207 surface acres. On May 6, 2013, when the water surface elevation of Buffalo Bill Reservoir was at its low for the year of 5361.42 feet, the water surface elevation of the pool behind the North Fork Dike was approximately 5361.00 feet and the water surface elevation of the pool behind the South Fork Dike was 5393.23 feet. At the minimum reported elevation of Buffalo Bill Reservoir, 198 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 feet 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 feet and a minimum of 5339.50 feet with the normal water surface elevation being 5340.00 feet. In WY 2013, 10,590 AF of water was pumped from Diamond Creek Reservoir into Buffalo Bill Reservoir.

Reservoir levels during all of WY2013 were adequate for recreational activities on Buffalo Bill Reservoir.

SUMMARY

OF OPERATIONS

FOR WATER YEAR 2013

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 2013

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

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

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

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

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

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

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

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

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

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

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

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

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	2013 Total	Average Total	Percent
Angostura 1/	21.53	17.67	122
Belle Fourche 2/	16.54	15.86	104
Deerfield 3/	11.11	13.78	81
Keyhole 4/	19.93	19.20	104
Pactola	16.05	20.58	78
Shadehill 5/	27.29	17.86	153
Dickinson	18.22	15.77	116
Heart Butte	24.36	16.27	150
Jamestown	13.12	18.77	70

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, 2012	Storage September 30, 2013	Change in Storage
Angostura	71,790	73,411	1,621
Belle Fourche	58,201	96,548	38,347
Deerfield	15,302	15,243	-59
Keyhole	150,576	150,023	-553
Pactola	47,585	51,048	3,463
Shadehill	80,382	112,027	31,645
Dickinson	5,788	8,612	2,824
Heart Butte	57,028	65,405	8,377
Jamestown	28,010	27,787	-223

Table DKT2. displays the changes in storage content between September 30, 2012, and September 30, 2013, 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 2013. They are: Heart Butte on the Heart River near Glen Ullin, 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; and Jamestown on the James River near Jamestown, North Dakota.

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 2013
ACCUMULATED TOTAL 1950-2013

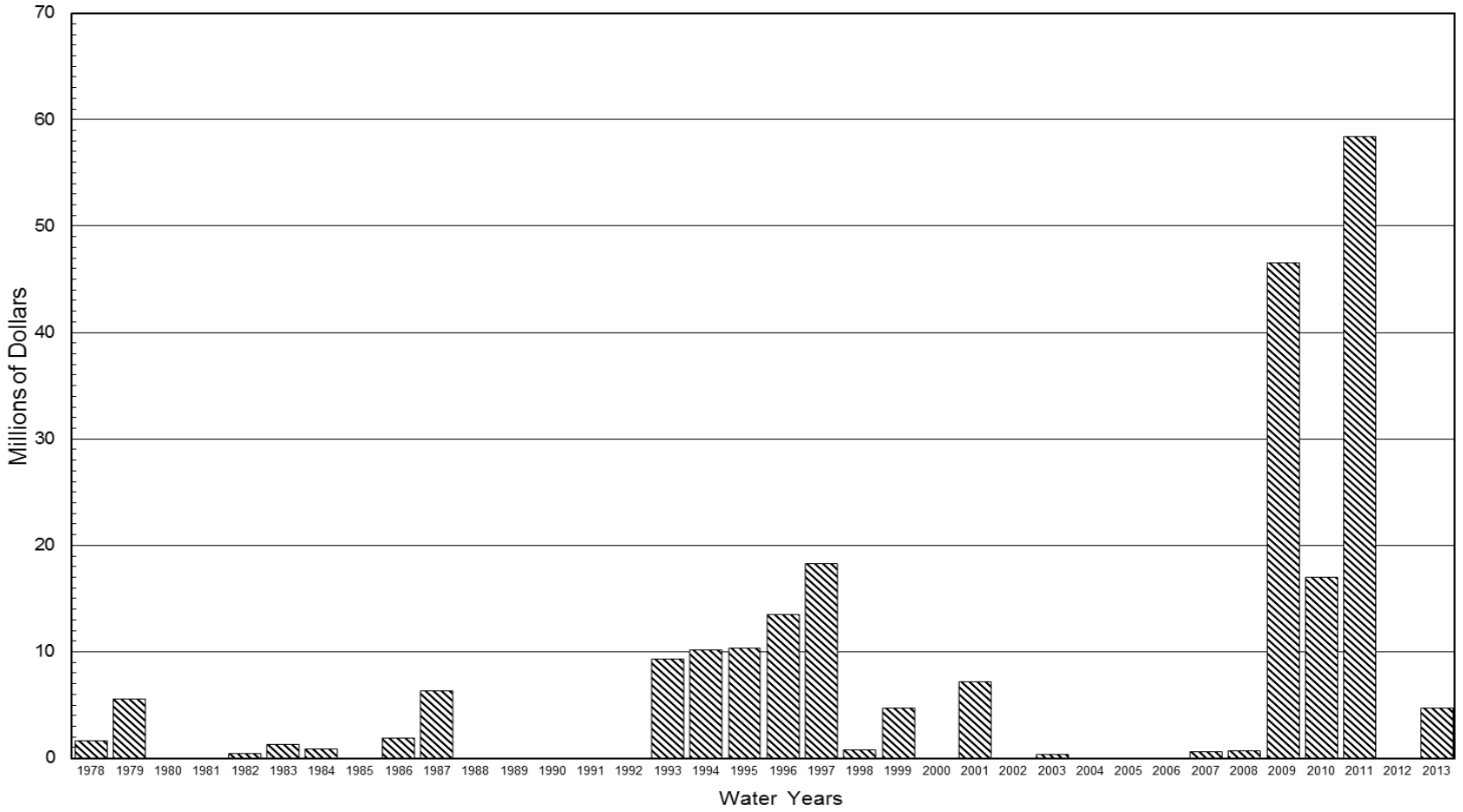
	Local	Main-Stem	2013 Total	Previous Accumulations	1950-2013 Accum Totals
Heart Butte	$0	$3,300	$3,300	$15,563,700	$15,567,000
Shadehill	$99,400	$60,000	$159,400	$12,001,300	$12,160,700
Angostura	$0	$0	$0	$22,800	$22,800
Pactola	$0	$4,000	$4,000	$3,547,100	$3,551,100
Keyhole	$12,500	$13,600	$26,100	$4,155,400	$4,181,500
Jamestown	$4,446,400	$0	$4,446,400	$203,605,700	$208,052,100
Total	$4,558,300	$80,900	$4,639,200	$239,071,600	$243,710,800

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 2013

Dickinson Reservoir

BACKGROUND

Dickinson Dam and Edward Arthur Patterson Lake (Dickinson Reservoir) is located on the Heart River near 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 2420.00). 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 2013 OPERATIONS SUMMARY

Flood operations occurred in May - June 2013 at Dickinson Dam. Inflows for WY 2013 totaled 15,650 AF (81percent of average). Peak inflows occurred in June, totaling 5,367 AF (224 percent of average) which were the 9th highest June inflows of record. Inflows for WY 2013 were the 30th highest of record.

The reservoir peaked at elevation 2420.69 on June 1, 2013 which is tied for the 13th highest elevation in the reservoir's 62 year history.

Dickinson Reservoir started WY 2013 at elevation 2417.31 and storage of 5,788 AF, which is 2.69 feet, and 2,824 AF below the top of the conservation pool (elevation 2420.00 and storage 8,612 AF). Dickinson Reservoir peaked at elevation 2420.69 on June 1, 2013 with 9,461 AF of storage. The minimum reservoir elevation for WY 2013 was 2417.24 and storage of 5,724 AF occurred on October 21, 2012. The reservoir elevation on September 30, 2013 was 2420.00 with storage of 8,612 AF, which is 0.00 feet, and zero AF below the top of conservation pool.

The maximum instantaneous discharge of 885 cfs occurred on June 1st. Reservoir net inflows for WY 2013 were the 31st highest on record for the dam and totaled 15,650 AF, 81 percent of average. The maximum 24 hour computed inflow occurred on June 1, 2013 with 897 cfs. Precipitation for the water year totaled 18.22 inches, which is 116 percent of average. 71 AF of water was released specifically for downstream irrigation.

An Emergency Management/Security orientation was conducted on February 6, 2013 and a functional exercise was held on September 23, 2013. On May 21, 2013 Dickinson Reservoir went into internal alert with a reservoir elevation over 2420.00 and remained there until June 10, 2013 when the reservoir dropped below elevation 2420.00 and was put into normal operating conditions. Then on September 9th went into Internal Alert again with a reservoir elevation over 2420.00 and remained there until September 30, 2013 when the reservoir dropped below elevation 2420.00 and was put into normal operating conditions.

An Annual Site Inspection (ASI) was conducted on September 3, 2013 by personnel from the Dakotas Area Office. The Annual Site Inspection report was signed on January 7, 2014.

MONTHLY STATISTICS FOR WY 2013

Record and near record monthly inflows in 62 years of record keeping were recorded in the following months: November had its 7th highest inflow, December had its 7th highest inflow, June had its 9th highest inflow, August had its 8th lowest inflow, and September had its 2nd highest inflow.

Record or near record monthly end of month content in 62 years of record keeping were recorded in the following months: May had its 9th highest storage, and September had its 4th 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 2013
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			

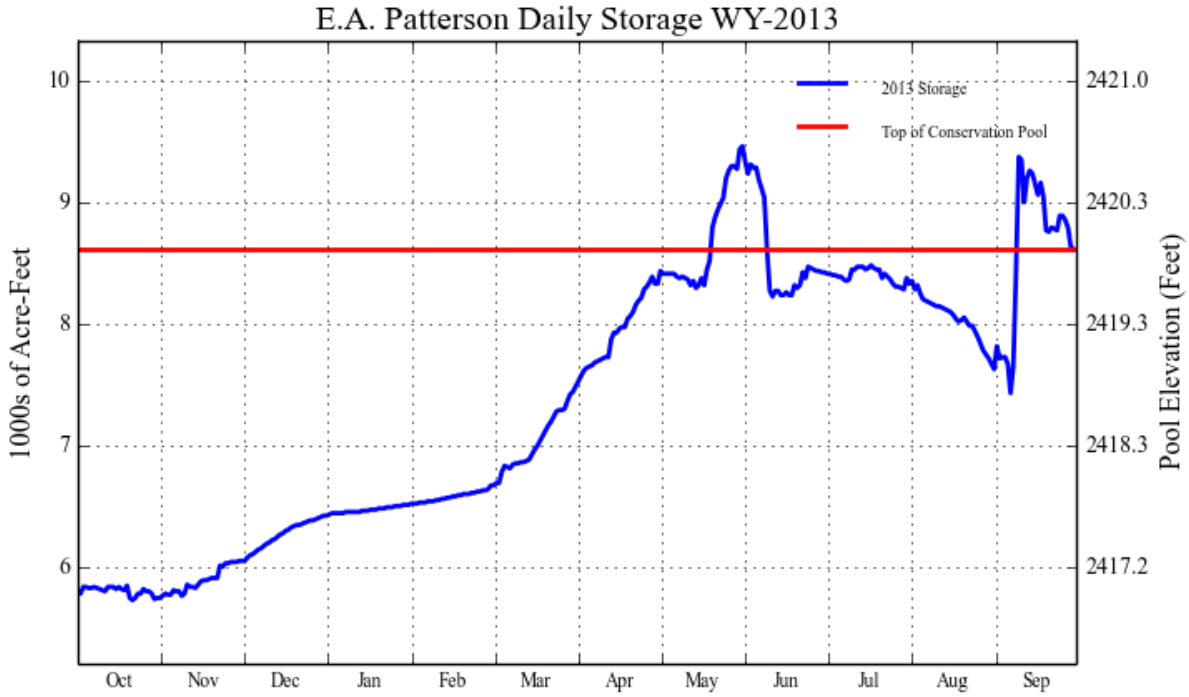
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	2,417.31	5,788	OCT 01, 2012
END OF YEAR	2,420.00	8,612	SEP 30, 2013
ANNUAL LOW	2,417.24	5,724	OCT 21, 2012
ANNUAL HIGH	2,420.69	9,461	JUN 01, 2013
HISTORIC HIGH	2,422.19	***9,348	MAR 21, 1997

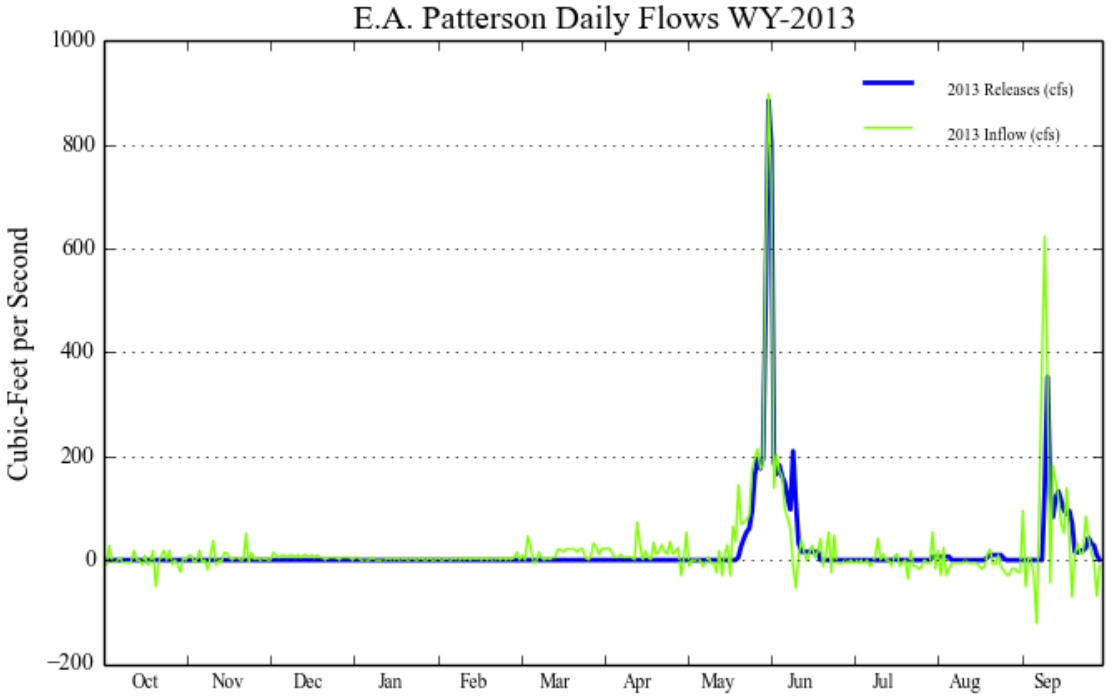
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	15,650	OCT 12-SEP 13	12,826	OCT 12-SEP 13
DAILY PEAK (CFS)*	897	JUN 01, 2013	885	JUN 01,2013
DAILY MINIMUM (CFS)**	0	**	0	**

MONTH	INFLOW		OUTFLOW		CONTENT	
	AF	% OF AVG	AF	% OF AVG	AF	% OF AVG
OCTOBER	-46	-18	0	NA	5,742	105
NOVEMBER	305	218	0	NA	6,047	112
DECEMBER	373	308	0	NA	6,420	119
JANUARY	99	56	0	NA	6,519	120
FEBRUARY	119	12	0	NA	6,638	115
MARCH	801	11	0	NA	7,439	107
APRIL	890	19	0	NA	8,329	118
MAY	4,122	167	3,015	117	9,436	134
JUNE	5,367	224	6,381	265	8,422	120
JULY	-31	-3	16	1	8,375	128
AUGUST	-517	-172	189	24	7,669	127
SEPTEMBER	4,167	9,992	3,224	898	8,612	151
ANNUAL	15,650	81	12,826	66		
APRIL-JULY	19,440	100				

* 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 near 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), and an exclusive flood control space of 147,027 AF. Flood control storage is located above the crest of an ungated glory-hole 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 2013 OPERATIONS SUMMARY

Flood operations occurred in April - June 2013 at Heart Butte Dam. Inflows for WY 2013 totaled 79,975 AF (92 percent of average). Peak inflows occurred in June, totaling 42,744 AF (427 percent of average) which were the 2nd highest June inflows of record. Inflows for WY 2013 were the 26th highest of record.

The reservoir peaked at elevation 2069.97 on June 3, 2013 which is the 16th highest elevation in the reservoir's 64 year history.

Heart Butte Reservoir started WY 2013 at elevation 2061.30 and storage of 57,028 AF, which is 3.20 feet, and 10,114 AF below the top of conservation pool (elevation 2064.50 and storage 67,142 AF). Heart Butte Reservoir peaked at elevation 2069.97 on June 3, 2013 with 86,479 AF of storage. The minimum reservoir elevation for WY 2013 was 2,061.27 and storage of 56,937 AF occurred on October 2, 2012. The reservoir elevation on September 30, 2013 was 2,063.97 with storage of 65,405 AF, which is 0.53 feet and 1,737 AF below the top of conservation pool.

A maximum discharge of 3,118 cfs occurred on June 3, 2013. Reservoir net inflows for WY 2013 were the 26th highest on record for the dam and totaled 79,975 AF, 92 percent of average. The maximum 24 hour computed inflow occurred on June 1, 2013 with 5,212 cfs. Precipitation for the water year totaled 24.36 inches, which is 150 percent of average.

4,768 AF of water was released specifically for downstream irrigation.

An Emergency Management/Security orientation was conducted on January 30, 2013 and a functional exercise was held on September 23, 2013.

On January 25, 2013 we went into Internal Alert for abnormal seepage coming from a joint located in the outlet works tunnel and remain on internal alert. This seepage location was being watched on a monthly basis and now has a stainless steel plate with filter fabric bolted in place covering it.

On April 11, 2013 Heart Butte Reservoir went into Internal Alert with a reservoir elevation over 2,064.50 and remained there until May 31, 2013 when the reservoir went into Response Level One with the reservoir elevation above 2,067.00 and remained there until June 9, 2013 when the reservoir went back into Internal Alert with the reservoir elevation below 2,067.00 and remained there until June 16, 2013 when the reservoir dropped below elevation 2,064.50 and was put into normal operating conditions. Then on June 21, 2013 went into Internal Alert again with a reservoir elevation over 2,064.50 and remained there until June 28, 2013 when the reservoir dropped below elevation 2,064.50 and was put into normal operating conditions.

An Annual Site Inspection (ASI) was conducted on September 4, 2013 by personnel from the Dakotas Area Office. The Annual Site Inspection report was signed on January 7, 2014.

MONTHLY STATISTICS FOR WY 2013

Record and near record monthly inflows in 64 years of record keeping were recorded in the following months: December had its 9th highest inflow, June had its 2nd highest inflow and September has its 2nd highest inflow.

Record and near record monthly end of month content in 64 years of record keeping were recorded in the following months: there were none in the top or lower 15.

Additional statistical information on Heart Butte Reservoir and its operations during 2013 can be found on Table DKT4 and Figure DKG3.

TABLE DKT4
HYDROLOGIC DATA FOR 2013
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

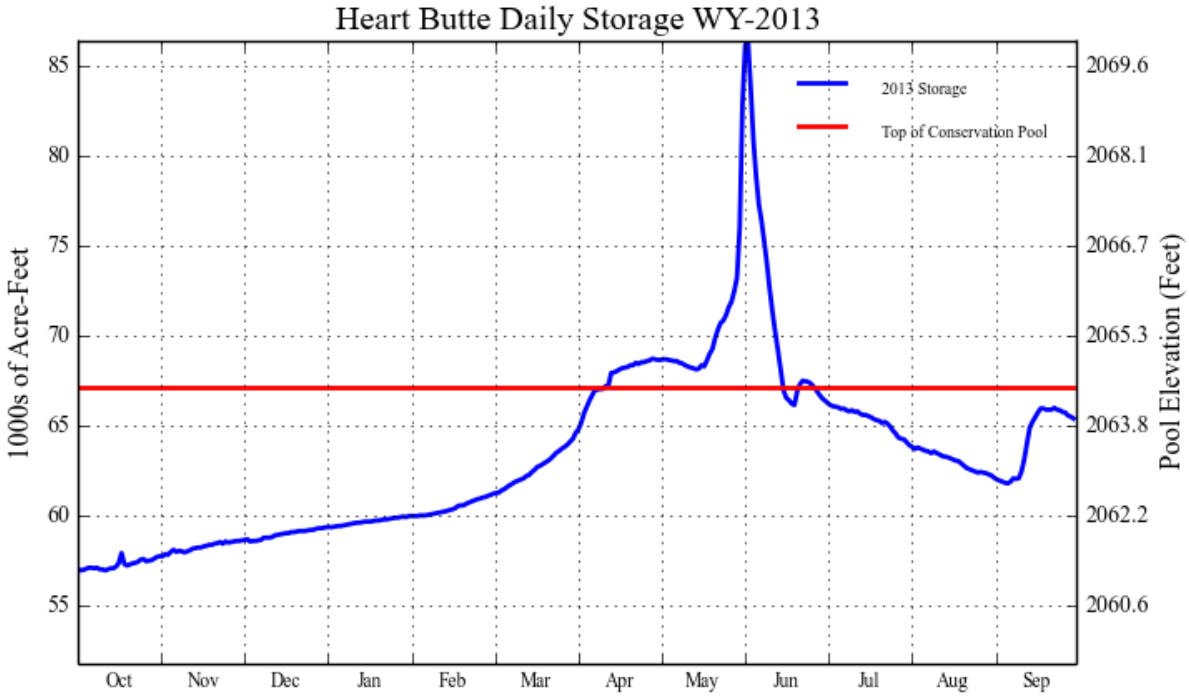
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	2,061.30	57,028	OCT 01, 2012
END OF YEAR	2,063.97	65,405	SEP 30, 2013
ANNUAL LOW	2,061.27	56,937	OCT 02, 2012
ANNUAL HIGH	2,069.97	86,479	JUN 03, 2013
HISTORIC HIGH	2,086.23	173,203	APR 09, 1952

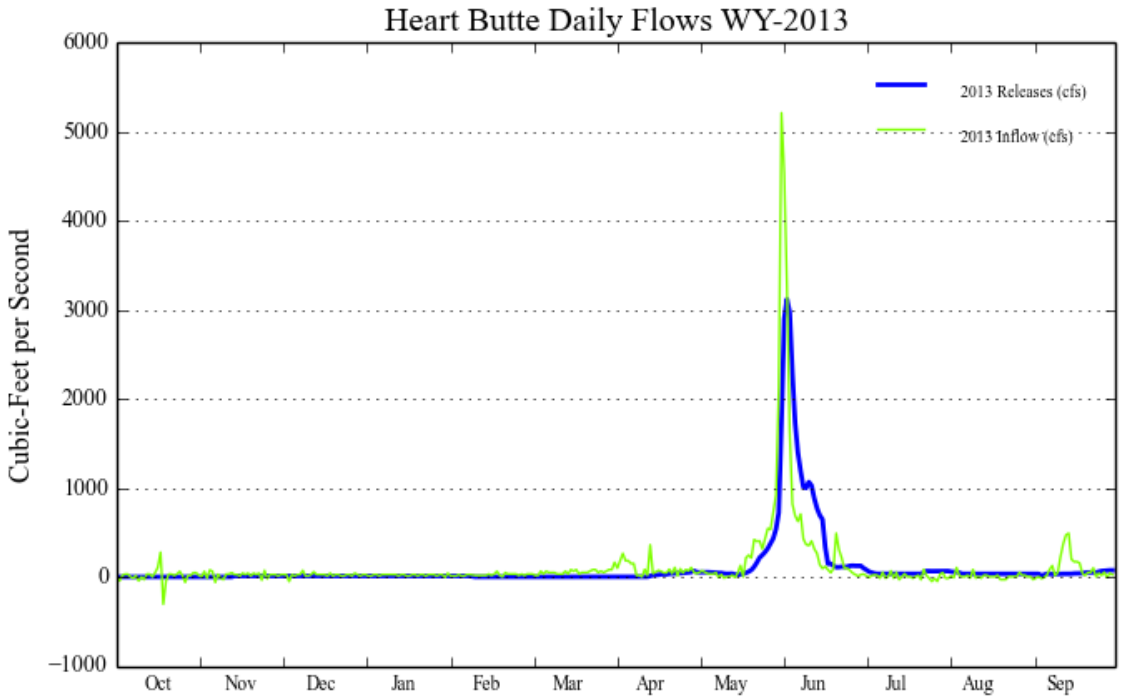
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	79,975	OCT 12-SEP 13	71,598	OCT 12-SEP 13
DAILY PEAK (CFS)	5,212	JUN 01, 2013	3118	JUN 03, 2013
DAILY MINIMUM (CFS)	0	*	0	*

MONTH	INFLOW		OUTFLOW		CONTENT	
	AF	% OF AVG	AF	% OF AVG	AF	% OF AVG
OCTOBER	698	71	0	NA	57,726	99
NOVEMBER	1,243	106	357	26	58,612	101
DECEMBER	1,357	161	619	50	59,350	103
JANUARY	1,240	136	621	57	59,969	105
FEBRUARY	1,274	38	150	9	61,093	104
MARCH	3,179	11	0	NA	64,272	92
APRIL	5,654	23	1,224	5	68,702	98
MAY	15,940	157	8,596	76	76,046	110
JUNE	42,744	427	52,240	578	66,550	95
JULY	448	11	2,919	37	64,079	97
AUGUST	464	41	2,316	45	62,227	100
SEPTEMBER	5,732	2179	2,554	100	65,405	109
ANNUAL	79,975	92	71,598	83		
APRIL-JULY	64,786	130				

* Frequently observed during fall and winter months

Figure DKG3
Heart Butte Reservoir





Jamestown Reservoir

BACKGROUND

Jamestown Reservoir is located on the James River above 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), a joint-use capacity of 6,262 AF, and an exclusive flood control space of 190,502 AF. The exclusive flood control storage is below the crest of an ungated glory-hole spillway, and flood control releases are controlled by the 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 2013 OPERATIONS SUMMARY

Flood operations occurred in April - August 2013 at Jamestown Dam. Inflows for WY 2013 totaled 141,324 AF (243 percent of average). Peak inflows occurred in May, totaling 91,954 AF (1,143 percent of average) which were the highest ever May inflows of record. Inflows for WY 2013 were the 9th highest of record.

The reservoir peaked at elevation 1,441.00 on June 5, 2013 which is the 13th highest elevation in the reservoir's 60 year history.

Jamestown Reservoir started WY 2013 at elevation 1,429.36 and storage of 28,010 AF, which is 1.36 feet, and 3,784 AF above the top of the conservation pool (elevation 1428.00 and storage 24,226 AF). Jamestown Reservoir peaked at elevation 1441.00 on June 5, 2013 with 80,438 AF of storage. The minimum reservoir elevation for WY 2013 was 1429.23 feet and storage of 26,624 AF occurred on October 12, 2012. The reservoir elevation on September 30, 2013 was 1429.79 with storage of 27,787 AF, which is 1.79 feet, and 3,561 AF above the top of active conservation pool.

The maximum instantaneous discharge of 1,015 cfs occurred on June 2, 2013. Reservoir net inflows for WY 2013 were the 9th highest inflows on record for the dam and totaled 141,324 AF, 243 percent of average. The maximum 24 hour computed inflow occurred on May 19, 2013 with 2,692 cfs. Precipitation for the water year totaled 13.12 inches at 70 percent of average. No water was released specifically for downstream irrigation.

An Emergency Management/Security orientation was conducted on January 29, 2013.

On April 28, 2013 Jamestown Reservoir went into Internal Alert with a reservoir elevation over 1,431.00 and remained there until May 31, 2013, when the reservoir went into Response Level One with the reservoir elevation above 1440.00 and remained there until June 14, 2013, when the reservoir went back into Internal Alert with the reservoir elevation below 1,440.00 and remained there until August 1, 2013, when the reservoir dropped below elevation 1,431.00 and was put into normal operating conditions.

An Annual Site Inspection (ASI) was conducted on September 5, 2013 by personnel from the Dakotas Area Office. The Annual Site Inspection report is out for signature.

MONTHLY STATISTICS FOR WY 2013

Record and near record monthly inflows in 60 years of record keeping were recorded in the following months: March had its 9th lowest inflow, May and June had its highest ever inflows and July had its 9th highest inflows.

Record and near record monthly end of month content in 60 years of record keeping were recorded in the following months: May and June had its 6th highest storages.

Additional statistical information on Jamestown Reservoir and its operations during 2013 can be found on Table DKT5 and Figure DKG4.

TABLE DKT5
HYDROLOGIC DATA FOR 2013
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

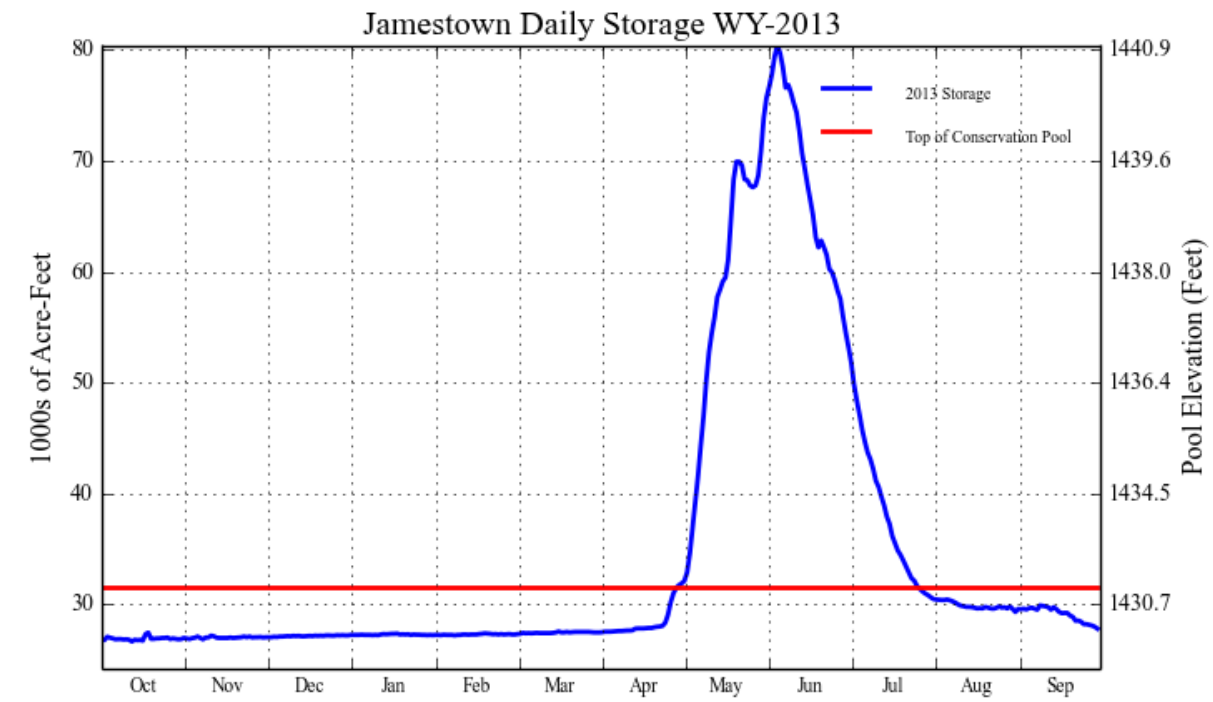
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	1,429.36	28,010	OCT 01, 2012
END OF YEAR	1,429.79	27,787	SEP 30, 2013
ANNUAL LOW	1,429.23	26,624	OCT 12, 2012
ANNUAL HIGH	1,441.00	80,438	JUN 05, 2013
HISTORIC HIGH	1,454.10	222,318	APR 26, 2009

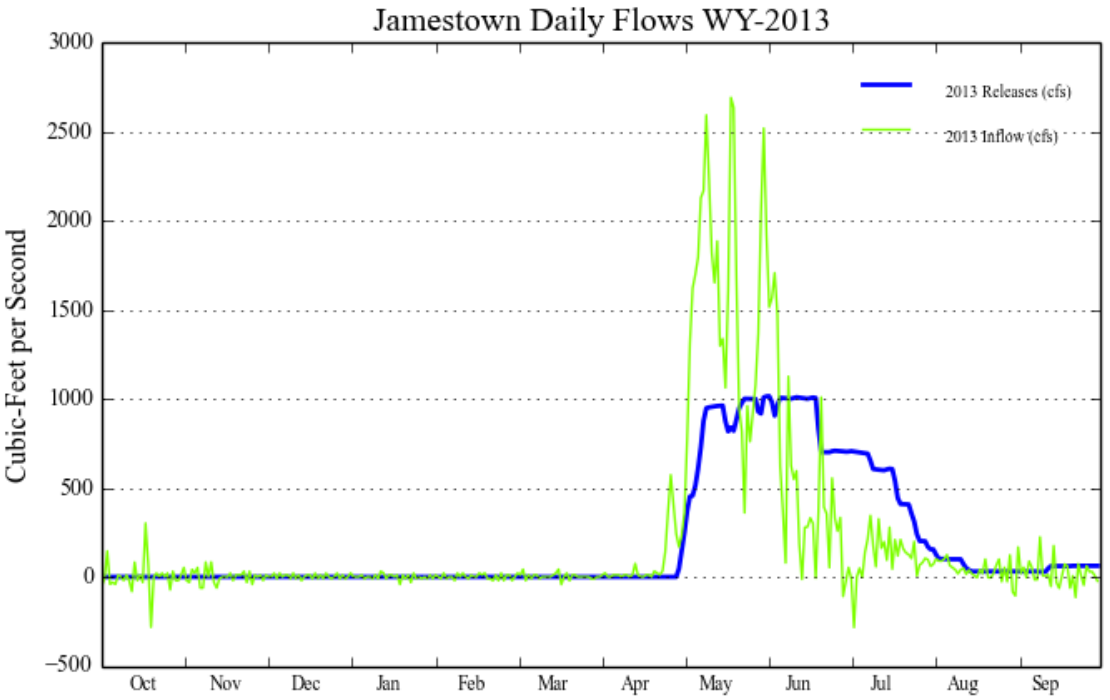
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	141,324	OCT 12-SEP 13	140,426	OCT 12-SEP 13
DAILY PEAK (CFS)	2,692	MAY 19, 2013	1,015	JUN 02, 2013
DAILY MINIMUM (CFS)	0	*	0	*

MONTH	INFLOW		OUTFLOW		CONTENT	
	AF	% OF AVG	AF	% OF AVG	AF	% OF AVG
OCTOBER	62	5	0	NA	26,951	107
NOVEMBER	62	6	0	NA	27,013	108
DECEMBER	207	51	0	NA	27,220	109
JANUARY	0	NA	0	NA	27,220	109
FEBRUARY	41	16	0	NA	27,261	109
MARCH	188	3	0	NA	27,449	88
APRIL	4,349	17	91	1	31,707	67
MAY	91,954	1,143	49,787	353	73,874	179
JUNE	33,745	972	53,148	549	54,471	156
JULY	6,937	167	30,779	481	30,629	93
AUGUST	2,342	54	3,676	69	29,295	92
SEPTEMBER	1,436	107	2,944	58	27,787	99
ANNUAL	141,324	249	140,426	249		
APRIL-JULY	136,985	318				

* 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 feet, 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 1995-1996 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 SD 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-in bypass is capable of providing.

WY 2013 OPERATIONS SUMMARY

Deerfield Reservoir started WY 2013 at elevation 5,907.14 feet and storage of 15,302 AF, which is 0.86 feet and 353 AF below the top of the conservation pool. Inflows for WY 2013 totaled 10,136 AF (103 percent of the average). The peak inflows occurred in April, totaling 1,172 AF for the month. The peak reservoir elevation for WY 2013 was 5,907.84 feet, storage of 15,596 AF, and occurred on June 8, 2013. The minimum elevation for WY 2013 was 5,907.00 feet, storage of 15,243 AF, and occurred on Sep. 30, 2013. WY 2013 ended at elevation 5,907.00 feet and storage of 15,243 AF, which is 1.00 feet and 412 AF below the top of the conservation pool. Precipitation for 2013 was 81 percent of average. Inflows for WY 2013 were average.

Rapid Valley Water Conservancy District ordered 658 AF from Deerfield for irrigation and Rapid City ordered 3,107 AF from Pactola during the summer of 2013.

An Emergency Action Plan Functional Exercise was held February 28, 2013.

An Annual Examination of Deerfield was conducted July 23, 2013. There are no new and no incomplete SOD Recommendations.

MONTHLY STATISTICS FOR WY 2013

October EOM elevation at Deerfield Reservoir was 2nd highest in 61 years of record. October inflow was above average. EOM release was 12 cfs. Deerfield ended the month 0.5 feet below full.

November EOM elevation at Deerfield Reservoir was 2nd highest in 61 years of record. November inflow was above average. EOM release was 14 cfs. Deerfield finished the month 0.6 foot from full.

December EOM elevation at Deerfield Reservoir was 3rd highest in 61 years of record. December inflow was above average. EOM release was 14 cfs. Deerfield ended the month 0.7 feet from full.

January EOM elevation at Deerfield Reservoir was 6th highest in 61 years of record. January inflow was above average. EOM release was 14 cfs. Deerfield finished the month 0.8 feet from full.

February EOM elevation at Deerfield Reservoir was above average. February inflow was above average. Emergency Management Functional Exercise was performed on February 28, 2013. EOM release was 14 cfs. Deerfield finished the month 0.9 feet from full.

March EOM elevation at Deerfield Reservoir was above average. March inflow was much average. EOM release was 14 cfs. Deerfield finished the month 0.9 foot from full.

April EOM elevation at Deerfield Reservoir was above average. April inflow was below average. EOM release was 20 cfs. Deerfield finished the month 0.2 foot from full.

May EOM elevation at Deerfield Reservoir was above average. May inflow was below average. EOM release was 15 cfs. Deerfield finished the month 0.3 foot from full.

June EOM elevation at Deerfield Reservoir was above average. June inflow was below average. EOM release was 15 cfs. Deerfield ended the month 0.5 foot from full.

July EOM elevation at Deerfield Reservoir was above average. July inflow was below average. EOM release was 12 cfs. Deerfield ended the month 0.8 foot from full.

August EOM elevation at Deerfield Reservoir was above average. August inflow was above average. EOM release was 12 cfs. Deerfield finished the month 0.8 feet from full.

September EOM elevation at Deerfield Reservoir was 3rd highest in 61 years of record. September inflow was average. EOM release was 12 cfs. Deerfield finished the month 1.0 feet from full.

Additional statistical information on Deerfield Reservoir and its operations during 2013 can be found on Table DKT6 and Figure DKG5.

TABLE DKT6
HYDROLOGIC DATA FOR WATER YEAR 2013
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			

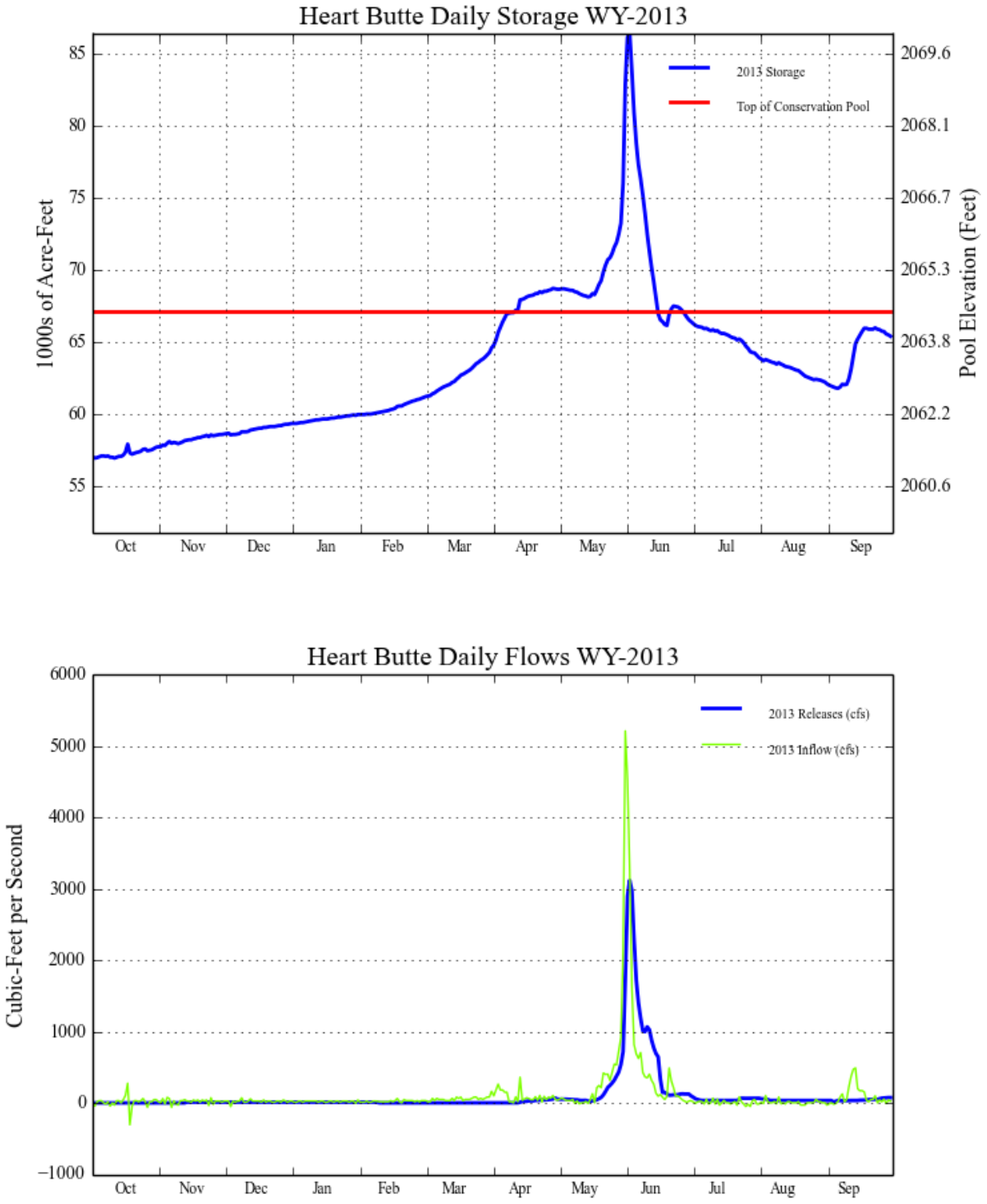
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	5,907.14	15,302	OCT 01, 2012
END OF YEAR	5,907.00	15,243	SEP 30, 2013
ANNUAL LOW	5,907.00	15,243	SEP 30, 2013
ANNUAL HIGH	5,907.84	15,596	JUN 8, 2013
HISTORIC HIGH	5,909.05	16,157	FEB 25, 1985

INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	10,138	OCT 01-SEP 30	10,195	OCT 01-SEP 30
PEAK DAILY (CFS)	32.14	MAY 31, 2013	10	OCT 1, 2012
MINIMUM DAILY (CFS)	1.41	JUL 10, 2013	20	APR 30, 2013

MONTH	INFLOW		OUTFLOW		EOM CONTENT**	
	AF	% OF AVG	AF	% OF AVG	AF	% OF AVG
OCTOBER	789	120	625	84	15466	122
NOVEMBER	745	125	804	213	15407	120
DECEMBER	822	132	861	255	15368	117
JANUARY	807	130	861	256	15314	114
FEBRUARY	741	129	778	229	15277	112
MARCH	886	102	861	144	15302	112
APRIL	1172	98	899	87	15575	111
MAY	1170	84	1195	91	15550	110
JUNE	920	76	1021	82	15449	111
JULY	662	78	788	71	15323	109
AUGUST	807	119	790	66	15340	116
SEPTEMBER	617	102	714	62	15243	121
ANNUAL	10,138	103	10,197	104	15385	115
APRIL-JULY	3924	85	3903	83	15474	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 Snowtel (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 feet, widening the existing rock-cut spillway chute and stilling basin from 240 feet to 425 feet, 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 2013 OPERATIONS SUMMARY

Pactola Reservoir started WY 2013 at elevation 4,569.81 feet and storage of 47,585 AF, which is 10.39 feet and 387 AF below the top of the conservation pool. Inflows for WY 2013 totaled 27,178 AF (77 percent of average). Peak inflows occurred in May, totaling 3,798 AF for the month. The peak reservoir elevation for WY 2013 was 4,580.14 feet, storage of 55,924 AF, and occurred on June 22, 2013. The minimum elevation for WY 2013 was 4,569.69 feet, storage of 47,494 AF, and occurred on October 10, 2012. WY 2013 ended at elevation 4,574.27 feet and storage of 51,048 AF, which is 5.73 feet and 4,924 AF below the top of the conservation pool. Precipitation for 2013 was 78 percent of average. Inflows for WY 2013 were below average.
An Emergency Action Plan Functional Exercise was held February 28, 2013.

Rapid Valley Water Conservancy District ordered 658 AF from Deerfield for irrigation and Rapid City ordered 3,107 AF from Pactola during the summer of 2013.

The Annual Examination Report for Pactola Dam was completed Aug. 7, 2013; based on the observations made at the examination on July 24, 2013. There are no new and no incomplete SOD Recommendations.

Releases from Pactola Dam peaked at 85 cfs on Aug 24, 2013.

MONTHLY STATISTICS FOR WY 2013

October EOM elevation at Pactola Reservoir was above average. October inflow was below average. EOM release was 19 cfs. Pactola ended the month 10.2 feet from full.

November EOM elevation at Pactola Reservoir was above average. November inflow was average. EOM release was 19 cfs. Pactola ended the month 9.5 feet from full.

December EOM elevation at Pactola Reservoir was above average. December inflow was above average. EOM release was 19 cfs. Pactola ended the month 9.0 feet from full.

January EOM elevation at Pactola Reservoir was above average. January inflow was much above average. EOM release was 19 cfs. Pactola ended the month 8.0 feet from full.

February EOM elevation at Pactola Reservoir was above average. February inflow was above average. EM Functional Exercise meeting was done on February 28, 2013. EOM release was 19 cfs. Pactola ended the month 7.1 feet from full.

March EOM elevation at Pactola Reservoir was above average. March inflow was average. EOM release was 19 cfs. Pactola ended the month 5.9 feet from full.

April EOM elevation at Pactola Reservoir was above average. April inflow was below average. EOM release was 19 cfs. Pactola ended the month 3.7 feet into the flood pool.

May EOM elevation at Pactola Reservoir was above average. May inflow was much below average. EOM release was 29 cfs. Pactola ended the month 1.4 feet into the flood pool.

June EOM elevation at Pactola Reservoir was above average. June inflow was much below average. EOM release was 49 cfs. Pactola ended the month 0.2 feet from full.

July EOM elevation at Pactola Reservoir was above average. July inflows were much below average. EOM release was 57 cfs. Pactola ended the month 2.0 feet from full.

August EOM elevation at Pactola Reservoir was above average. August inflow was average. EOM release was 76 cfs. Pactola ended the month 3.7 feet from full.

September EOM elevation at Pactola Reservoir was above average. September inflow was below average. EOM release was 20 cfs. Pactola ended the month 5.5 feet from full. WY 2013 inflows were below average.

Additional statistical information on Pactola Reservoir and its operations during 2013 can be found on Table DKT7 and Figure DKG6

Table DKT7
Hydrologic Data for Water Year 2013
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

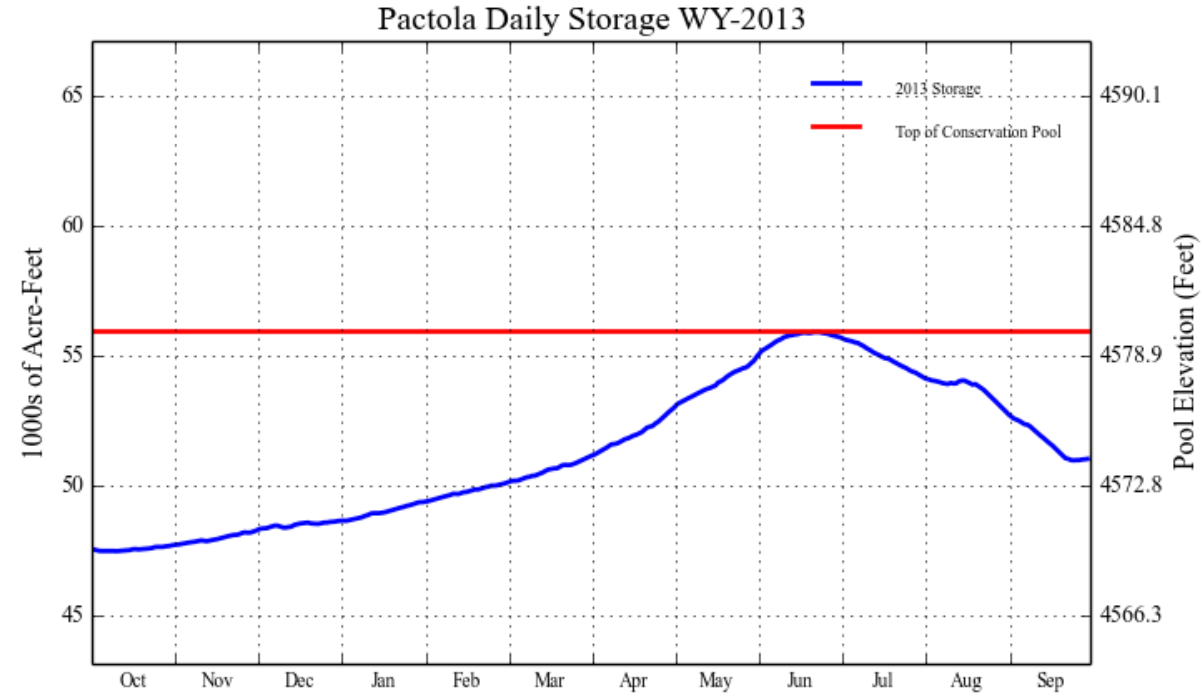
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	4,569.81	47,585	OCT 01, 2012
END OF YEAR	4,574.27	51,048	SEP 30, 2013
ANNUAL LOW	4,569.69	47,494	OCT 10, 2012
ANNUAL HIGH	4,580.14	55,924	JUN 22, 2013
HISTORIC HIGH	4,585.87	61,105	MAY 19, 1965

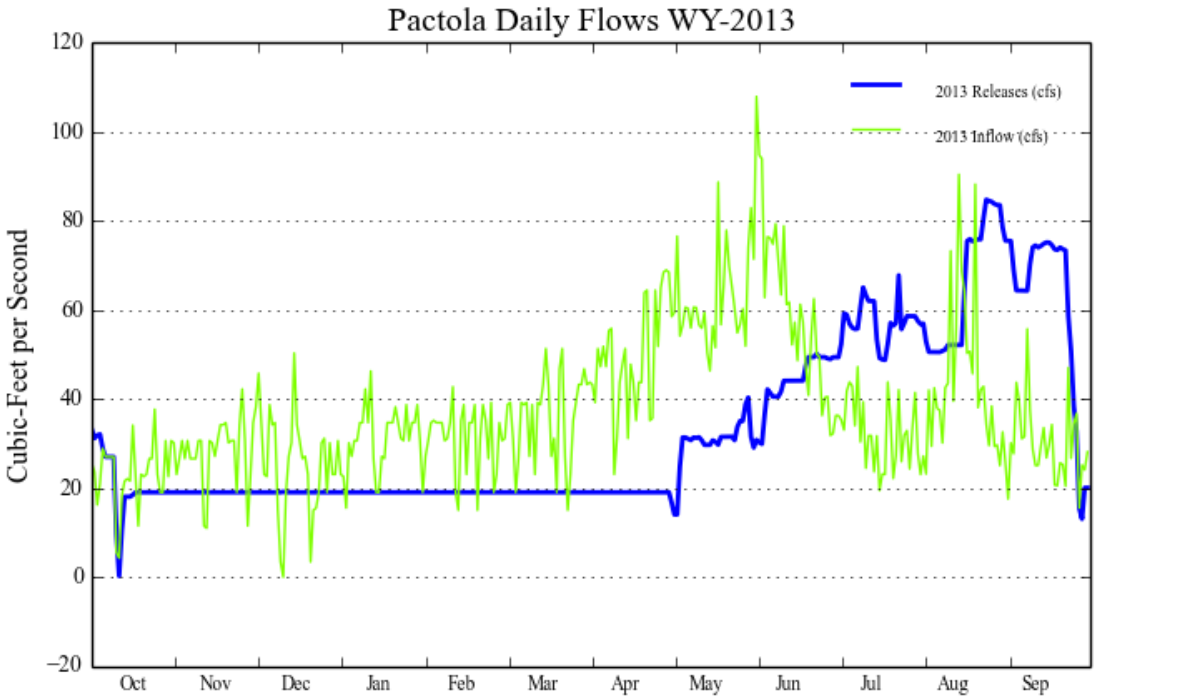
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	27,178	OCT 01-SEP 30	23,715	OCT 01-SEP 30
DAILY PEAK (CFS)	108	JUN 1, 2013	85	AUG 24, 2013
DAILY MINIMUM (CFS)	0	DEC 10, 2012	0	OCT 11, 2012

MONTH	INFLOW		OUTFLOW		EOM CONTENT*	
	AF	% OF AVG	AF	% OF AVG	AF	% OF AVG
OCTOBER	1,424	70	1,274	77	47,735	107
NOVEMBER	1,678	110	1,131	82	48,282	108
DECEMBER	1,551	118	1,168	82	48,665	109
JANUARY	1,902	139	1,168	87	49,399	110
FEBRUARY	1,735	126	1,055	86	50,079	111
MARCH	2,176	90	1,168	68	51,087	112
APRIL	2,901	70	1,131	40	52,857	113
MAY	3,798	58	1,843	35	54,812	114
JUNE	3,569	54	2,612	43	55,769	114
JULY	1,989	55	3,511	68	54,247	115
AUGUST	2,676	101	4,033	100	52,890	118
SEPTEMBER	1,778	82	3,620	137	51,048	115
ANNUAL	27,177	76	23,714	68	51,406	112
APRIL-JULY	12,257	58	9,097	47	54,421	114

* 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- 2004 has averaged 670 AF per year. The new Area and Capacity Tables were first used in WY 2006.

WY 2013 OPERATIONS SUMMARY

Angostura Reservoir started WY 2013 at elevation 3,173.96 feet and storage of 71,790 AF, which is 13.24 feet and 51,258 AF below the top of the conservation pool. Inflows for WY 2013 totaled 32,763 AF (42 percent average). Peak inflows occurred in August, totaling 7,742 AF for the month. The peak reservoir elevation for WY 2013 was 3,178.94 feet and storage of 88,810 AF and occurred on June 6, 2013. The minimum elevation for WY 2013 was 3,173.94 feet and storage of 71,727 AF and occurred on October 4, 2012. WY 2013 ended at elevation 3,174.47 feet and storage of 73,411 AF, which is12.73 feet and 49,637 AF below the top of the conservation pool. Precipitation for WY 2013 was 122 percent of average. Inflows for WY 2013 were much below average.

The Angostura Irrigation District had a full water allotment for its irrigators. Releases for irrigation began May 28, 2013 and reached a peak of 230 cfs on July 19, 2013. The irrigation release was terminated on September 20 with 73,027 AF in total storage and 30,822 AF in active storage. Total irrigation releases were 28,829 AF.

An Emergency Action Plan Functional Exercise was held on February 27, 2013.

The Annual Examination (AE) report for Angostura Dam was completed on September 9, 2013. The evaluations, analyses, and recommendations provided in this report are based on a review and assessment of the available records and data and the observations made at the examination on September 5, 2013. There are no incomplete SOD Recommendations for Angostura.

MONTHLY STATISTICS FOR WY 2013

October EOM elevation at Angostura Reservoir was below average. October inflow was much below average. Angostura ended the month 13.0 feet from full.

November EOM elevation at Angostura Reservoir was below average. November inflow was average. Angostura ended the month 12.3 feet from full.

December EOM elevation at Angostura Reservoir was below average. December inflow was average. Angostura ended the month 11.8 feet from full.

January EOM elevation at Angostura Reservoir was above average. January inflow was average. Angostura ended the month 11.2 feet from full.

February EOM elevation at Angostura Reservoir was below average. February inflow was much below average. EAP Functional Exercise was performed February 27. Angostura ended the month 10.5 feet from full.

March EOM elevation at Angostura Reservoir was below average. March inflow was 6th lowest in 62 years of record. Angostura ended the month 9.7 feet from full.

April EOM elevation at Angostura Reservoir was below average. April inflow was much below average. Angostura ended the month 8.7 feet from full.

May EOM elevation at Angostura Reservoir was below average. May inflow was very much below average. EOM release was 60.9 cfs. Angostura ended the month 8.4 feet from full.

June EOM elevation at Angostura Reservoir was below average. June inflow was very much below average. EOM release was 165.9 cfs. Angostura ended the month 9.1 feet from full.

July EOM elevation at Angostura Reservoir was below average. July inflow was very much below average. EOM release was 112.3 cfs. Angostura ended the month 11.7 feet from full.

August EOM elevation at Angostura Reservoir was below average. August inflow was very much above average. EOM release was 110.8 cfs. Angostura ended the month 11.8 feet from full.

September EOM elevation at Angostura Reservoir was below average. September inflow was below average. Canal shut off on September 20. Angostura ended the month 12.7 feet from full.

Additional statistical information on Angostura Reservoir and its operations during 2013 can be found on Table DKT8 and Figure DKG7.

Table DKT8
Hydrologic Data for 2013
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			

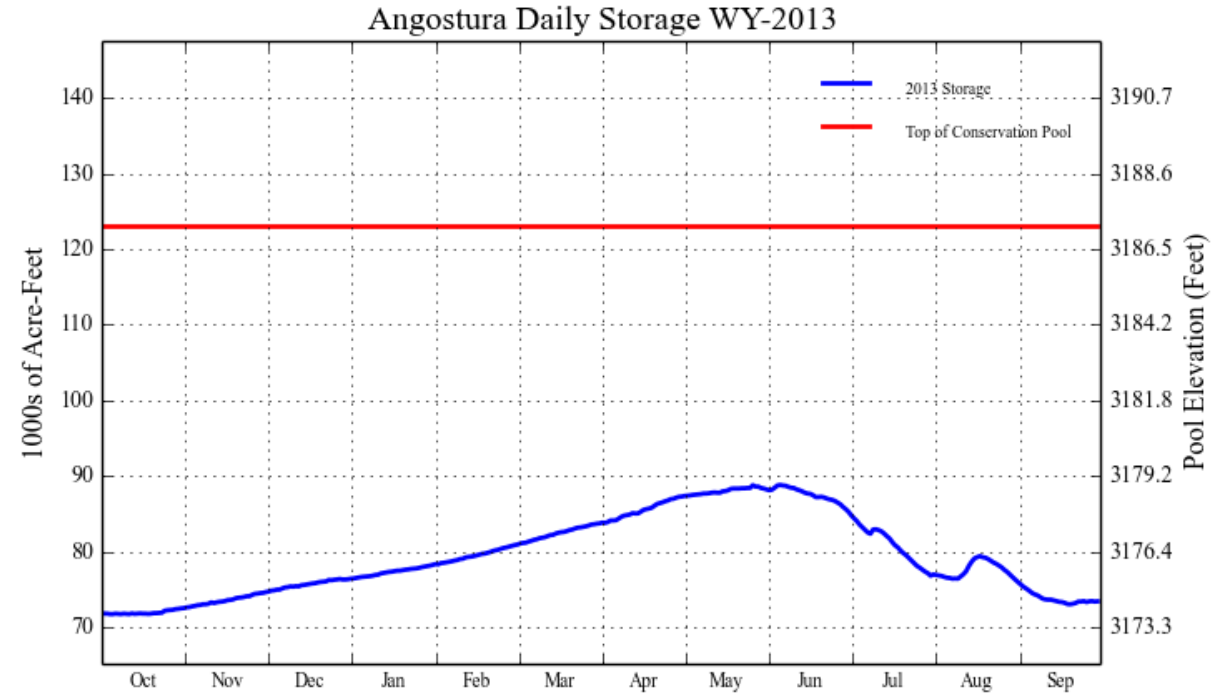
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	3,173.96	71,790	OCT 01, 2012
END OF YEAR	3,174.47	73,411	SEP 30, 2013
ANNUAL LOW	3,173.95	71,727	OCT 04, 2012
ANNUAL HIGH	3,186.00	88,810	JUN 06, 2013
HISTORIC HIGH	3,189.37	**152,228	MAY 20, 1978

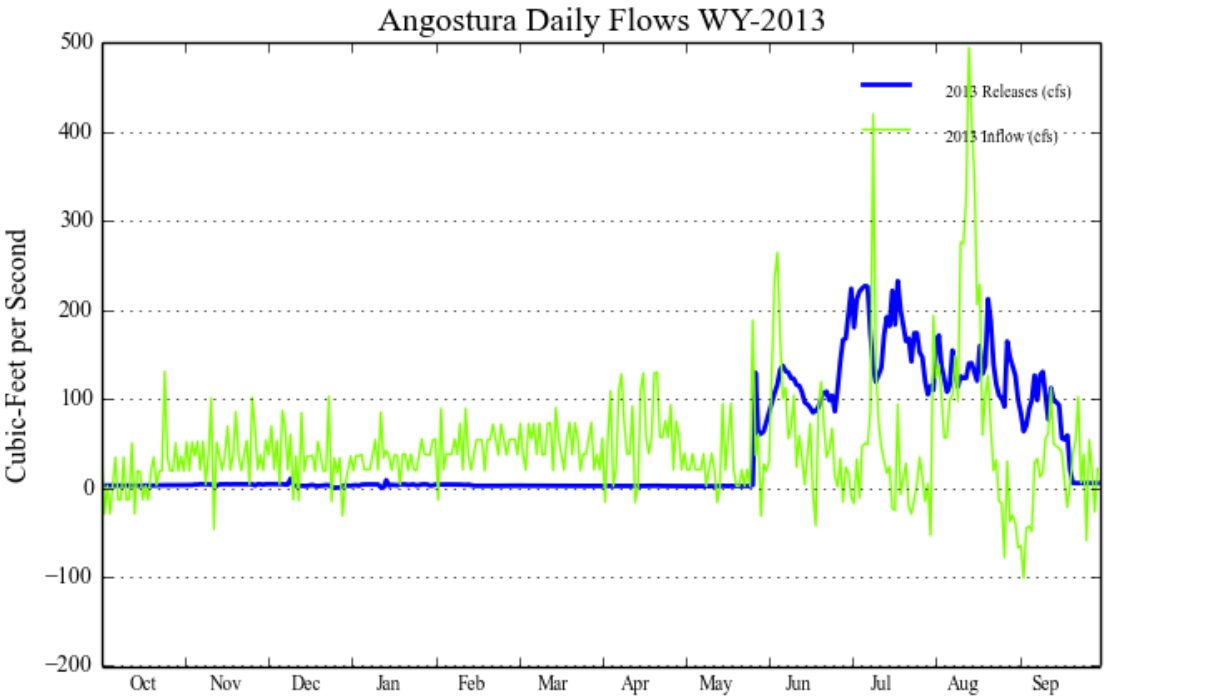
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	32,763	OCT 01-SEP 30	31,136	OCT 01-SEP 30
DAILY PEAK (CFS)	494	AUG 14, 2013	232	JUL 19, 2013
DAILY MINIMUM (CFS)	0	*	0	JAN 12, 2013

MONTH	INFLOW		OUTFLOW		EOM CONTENT***	
	AF	% OF AVG	AF	% OF AVG	AF	% OF AVG
OCTOBER	895	57	168	18	72,517	74
NOVEMBER	2,342	107	221	16	74,638	76
DECEMBER	1,946	108	178	37	76,406	77
JANUARY	2,142	104	207	44	78,341	77
FEBRUARY	2,577	59	160	18	80,758	77
MARCH	3,069	27	140	3	83,687	75
APRIL	3,676	48	127	3	87,236	75
MAY	1,827	10	730	6	88,333	73
JUNE	3,875	20	6,594	35	85,610	71
JULY	1,953	28	10,758	69	76,804	69
AUGUST	7,742	257	8,271	65	76,274	75
SEPTEMBER	719	72	3,582	66	73,411	76
ANNUAL	32,763	42	31,136	40	79,501	75
APRIL-JULY	11,331	22	18,209	36	84,496	72

* 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 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 water years 1992 - 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 1952-2003 has averaged 240 AF per year. The new Area and Capacity Tables were first used in WY 2006.

WY 2013 OPERATIONS SUMMARY

Keyhole Reservoir started WY 2013 at elevation 4,094.91 feet and storage of 150,576 AF, which is 4.39 feet and 38,095 AF below the top of the conservation pool. Inflows for WY 2013 totaled 179 AF (1 percent of the average). Peak inflows occurred in June, totaling 2,439 AF for the month. The peak reservoir elevation for WY 2013 was 4,095.67 feet, storage of 156,710 AF, and occurred on June 24, 2013. The minimum elevation for WY 2013 was 4,094.62 feet, storage of 148,289 AF, and occurred on November 30, 2012. WY 2013 ended at elevation 4,094.84 feet and storage of 150,023 AF, which is 4.46 feet and 38,648 AF below the top of the conservation pool. Precipitation for WY 2013 was 104 percent of average. Inflows for WY 2013 were very much below average.

There were irrigation releases ordered by both the Belle Fourche Irrigation District (BFID) and the Crook County Irrigation District (CCID) for WY 2013. BFID ordered 555 AF. CCID ordered 114 AF. BFID and CCID releases began August 28, 2013 and ended September 3, 2013

with a total of 669 AF used from storage.

An Emergency Management/Security Orientation Exercise was held February 20, 2013.

A Programmatic Facility Review (PFR) was conducted July 9, 2013 by personnel from the Rapid City Field Office with Dave Nelson from the Regional Office.

MONTHLY STATISTICS FOR WY 2013

October EOM elevation at Keyhole Reservoir was above average. October inflow was average. Keyhole ended the month 4.6 feet from full.

November EOM elevation at Keyhole Reservoir was above average. November inflow was average. Keyhole ended the month 4.7 feet from full.

December EOM elevation at Keyhole Reservoir was above average. December inflow was much below average. Keyhole ended the month 4.6 feet from full.

January EOM elevation at Keyhole Reservoir was above average. January inflow was below average. Keyhole ended the month 4.6 feet from full.

February EOM elevation at Keyhole Reservoir was above average. February inflow was very much below average. Keyhole ended the month 4.6 feet from full.

March EOM elevation at Keyhole Reservoir was above average. March inflow was very much below average. Keyhole ended the month 4.4 feet from full.

April EOM elevation at Keyhole Reservoir was above average. April inflow was much below average. Keyhole ended the month 4.3 feet from full.

May EOM elevation at Keyhole Reservoir was above average. May inflow was much below average. Keyhole ended the month 4.0 feet from full.

June EOM elevation at Keyhole Reservoir was above average. June inflow was below average. Keyhole ended the month 3.7 feet from full.

July EOM elevation at Keyhole Reservoir was above average. July inflow was average. Keyhole ended the month 4.0 feet from full.

August EOM elevation at Keyhole Reservoir was above average. August inflow was above average. Keyhole ended the month 4.1 feet from full.

September EOM elevation at Keyhole Reservoir was above average. September inflow was average. Keyhole ended the month 3.5 feet from full.

Additional statistical information on Keyhole Reservoir and its operations during 2013 can be found on Table DKT9 and Figure DKG8.

Table DKT9
Hydrologic Data for 2013
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

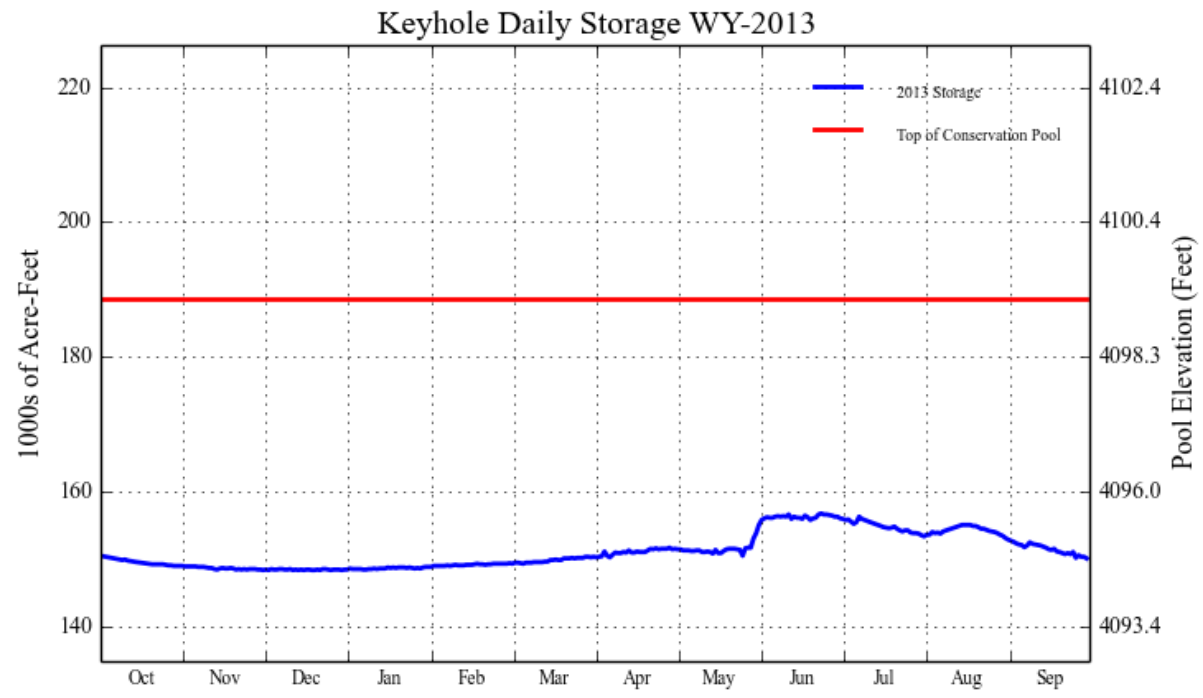
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	4,094.91	150,576	OCT 01, 2012
END OF YEAR	4,094.84	150,023	SEP 30, 2013
ANNUAL LOW	4,094.94	148,289	NOV 30, 2012
ANNUAL HIGH	4,095.67	156,710	JUN 24, 2013
HISTORIC HIGH	4,100.38	210,222	MAY 21, 1978

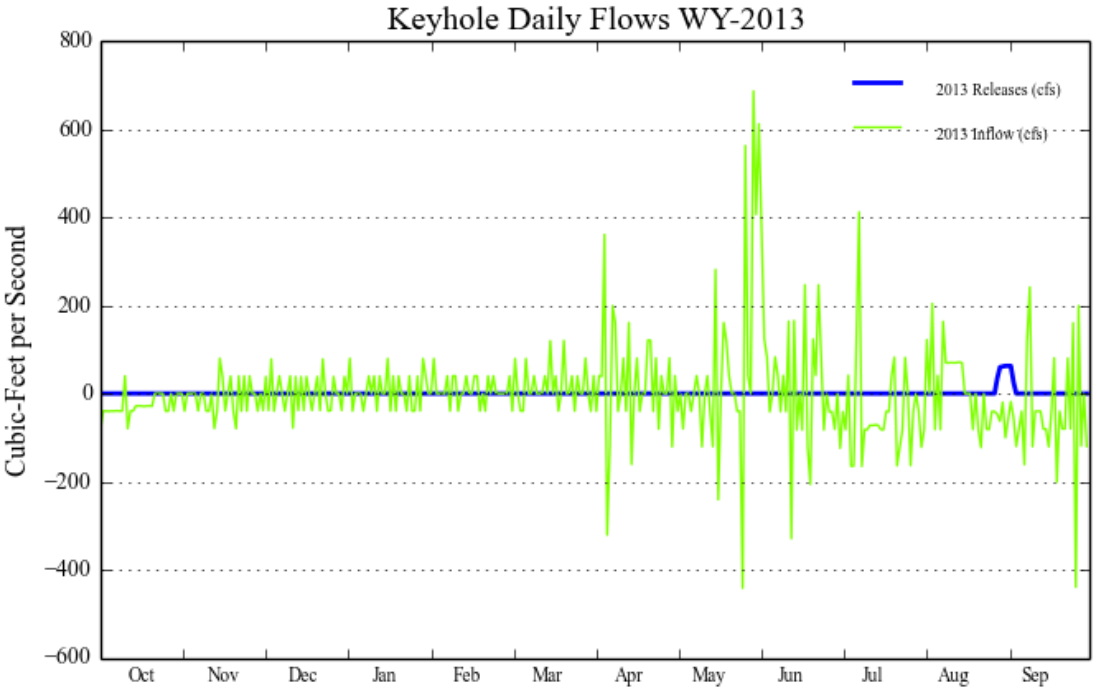
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	7,961	OCT 01-SEP 30	733	OCT 01-SEP 30
DAILY PEAK (CFS)	687	MAY 30, 2013	63	AUG 31, 2013
DAILY MINIMUM (CFS)	0	*	0	*

MONTH	INFLOW		OUTFLOW		EOM CONTENT**	
	AF	% OF AVG	AF	% OF AVG	AF	% OF AVG
OCTOBER	-1,660	NA	0	0	148,916	165
NOVEMBER	-627	NA	0	0	148,289	165
DECEMBER	76	54	0	0	148,365	165
JANUARY	394	85	0	0	148,759	165
FEBRUARY	473	17	0	0	149,232	161
MARCH	949	14	0	0	150,181	152
APRIL	1,192	47	0	0	151,373	152
MAY	2,409	48	0	0	153,782	150
JUNE	2,439	72	0	0	156,221	150
JULY	-2762	NA	0	0	153,459	154
AUGUST	29	NA	433	12	153,055	163
SEPTEMBER	-2732	NA	300	42	150,023	164
ANNUAL	179	1	733	5	150,971	
APRIL-JULY	3,278	32	0	0		158

* 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 and 2272 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 and 2272, 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 and 2272 revert to Reclamation. By a revised field working agreement dated May 15, 1972, it was agreed that the space between elevation 2260 and 2272 (51,500 AF) be reallocated to conservation use. However, space below elevation 2272 will continue to be evacuated before the start of the spring runoff, but to a lesser extent than in the past.

WY 2013 OPERATIONS SUMMARY

Shadehill Reservoir started WY 2013 at elevation 2,262.97 feet and storage of 80,382 AF, which is 9.03 feet and 39,790 AF below the top of the conservation pool. Inflows for WY 2013 totaled 46,788 AF (63 percent of the average). Peak inflows occurred in September, totaling 19,121 AF for the month. The peak reservoir elevation for WY 2013 was 2,270.58 feet, storage of 113,181AF, and occurred on September 24, 2013. The minimum elevation for WY 2013 was 2,262.44 feet, storage of 78,410 AF, and occurred on December 30, 2013. WY 2013 ended at elevation 2,270.34 feet and storage of 112,027 AF, which is 1.66 feet and 8,145 AF below the top of the conservation pool. Precipitation for WY 2013 was 153 percent of average. Inflows for WY 2013 were much below average.

All project irrigation demands were met from river maintenance releases. There were no storage releases for irrigation needed during WY 2013.

An Emergency Management/Security Orientation and Facility Security Meeting was conducted on February 21, 2013.

The Mechanical Inspection for the Comprehensive Review (CR) was conducted on March 25, 2013 by personnel from the Rapid City Field Office, Matt Gappa and Nathan Nakamoto. The Civil Inspection was conducted May 20, 2013 by personnel from the Rapid City Field Office, Matt Gappa, Justin Hall and Dave Curran.

MONTHLY STATISTICS FOR WY 2013

October EOM elevation at Shadehill Reservoir was below average. October inflow was very much below average. EOM release was 15 cfs. Shadehill finished the month 9.3 feet from full.

November EOM elevation at Shadehill Reservoir was below average. November inflow was average. EOM release was 15 cfs. Shadehill finished the month 9.4 feet from full.

December EOM elevation at Shadehill Reservoir was below average. December inflow was very much below average. EOM release was 15 cfs. Shadehill finished the month 9.6 feet from full.

January EOM elevation at Shadehill Reservoir was below average. January inflow was above average. EOM release was 16 cfs. Shadehill finished the month 9.5 feet from full.

February EOM elevation at Shadehill Reservoir was below average. February inflow was below average. EOM release was 16 cfs. Shadehill finished the month 9.4 feet from full.

March EOM elevation at Shadehill Reservoir was below average. March inflow was very much below average. EOM release was 16 cfs. Shadehill ended the month 9.1 feet from full.

April EOM elevation at Shadehill Reservoir was below average. April inflow was very much below average. EOM release was 16 cfs. Shadehill ended the month 8.8 feet from full.

May EOM elevation at Shadehill Reservoir was below average. May inflow was below average. EOM release was 16 cfs. Shadehill ended the month 7.0 feet below full.

June EOM elevation at Shadehill Reservoir was below average. June inflow above average. EOM release was 16 cfs. Shadehill ended the month 4.5 feet below full.

July EOM elevation at Shadehill Reservoir was below average. July inflow was very much below average. EOM release was 16 cfs. Shadehill ended the month 4.7 feet below full.

August EOM elevation at Shadehill Reservoir was below average. August inflow was very much above average. EOM release was 16 cfs. Shadehill ended the month 4.9 feet below full.

September EOM elevation at Shadehill Reservoir was above average. September inflow was the highest in record. Shadehill received 19,121AF of water in September. EOM release was 200 cfs. Shadehill ended the month 1.7 feet below full.

Additional statistical information on Shadehill Reservoir and its operations during 2013 can be found on Table DKT10 and Figure DKG9.

TABLE DKT10
HYDROLOGIC DATA FOR 2013
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

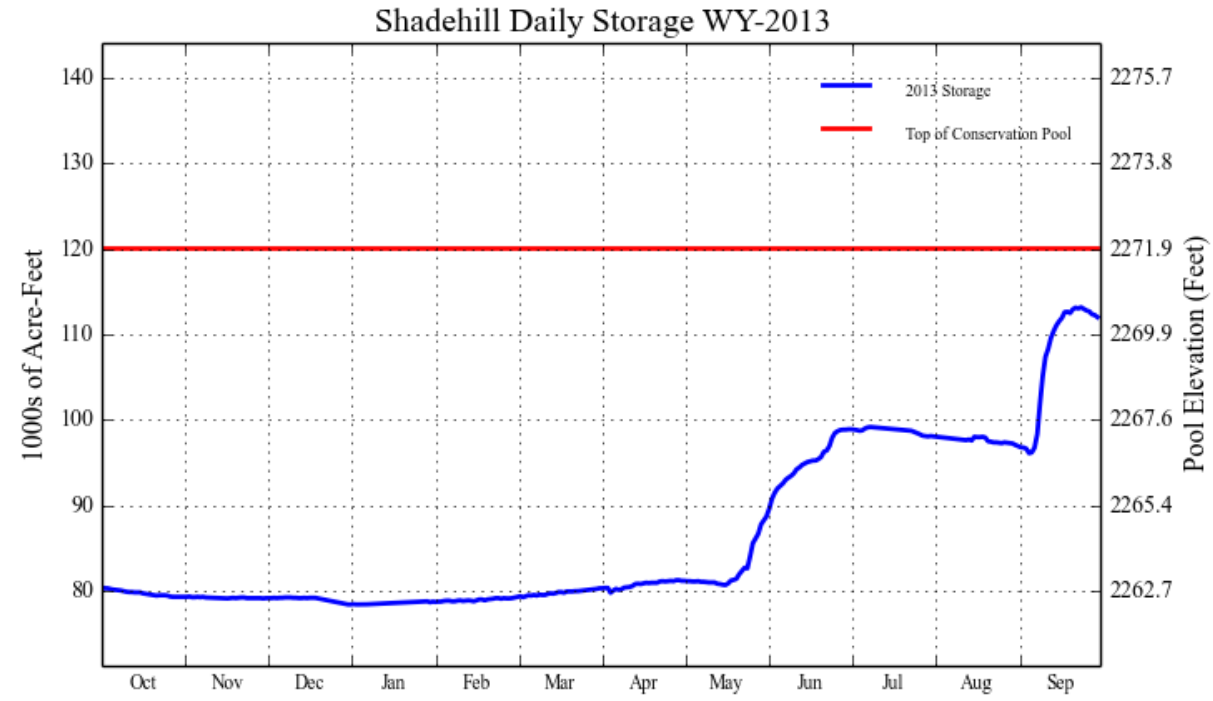
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	2,262.97	80,382	OCT 01, 2012
END OF YEAR	2,270.34	112,027	SEP 30, 2013
ANNUAL LOW	2,262.44	78,410	DEC 30, 2012
ANNUAL HIGH	2,270.58	113,181	SEP 24, 2013
HISTORIC HIGH	2,297.90	318,438	APR 10, 1952

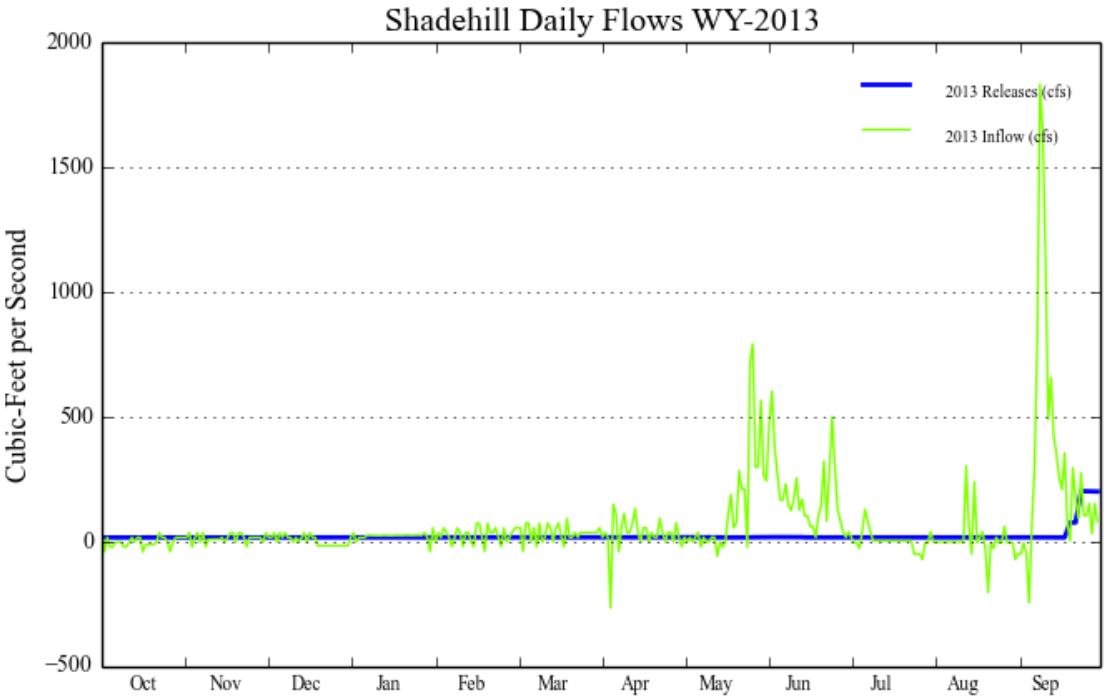
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	46,788	OCT 01-SEP 30	14,538	OCT 01-SEP 30
DAILY PEAK (CFS)	1,832	SEPT 09, 2013	201	SEP 24, 2013
DAILY MINIMUM (CFS)	-268	APR 05, 2013	15	JAN 11, 2013

MONTH	INFLOW		OUTFLOW		EOM CONTENT**	
	AF	% OF AVG	AF	% OF AVG	AF	% OF AVG
OCTOBER	-157751	NA	928	28	79,297	73
NOVEMBER	189	101	899	31	79,149	74
DECEMBER	1,221	26	928	38	78,410	74
JANUARY	1,321	132	932	40	78,705	76
FEBRUARY	2,056	42	877	43	79,149	75
MARCH	1,971	9	974	9	80,231	68
APRIL	7,982	9	952	5	81,250	67
MAY	11,573	21	977	9	88,255	72
JUNE	232	71	967	11	98,861	80
JULY	522	129	979	18	98,114	81
AUGUST	19,121	6	967	22	97,064	83
SEPTEMBER		NA	4,158	118	112,027	99
ANNUAL	46,7	63	14,538	20	87,543	77
APRIL-JULY	21,758	49	3,875	9	91,620	75

* 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 - May 1977, the active capacity of the reservoir was temporarily limited to 160,300 AF at elevation 2981.8 feet 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 - 2006 averages 375 AF per year. The new Area and Capacity Tables were first used in WY 2008.

WY 2013 OPERATIONS SUMMARY

Belle Fourche Reservoir started WY 2013 at elevation 2,956.41 feet and storage of 58,201 AF, which is 18.59 feet and 114,672 AF below the top of the conservation pool. Inflows for WY 2013 totaled 142,505 AF, which was 123 percent of average. Peak inflows occurred in June, totaling 27,310 AF for the month. The peak reservoir elevation for WY 2013 was 2,974.83 feet, storage of 171,510 AF, and occurred on June 25, 2013. The minimum elevation for WY 2013 was 2,956.27 feet, storage of 57,601 AF, and occurred on October 1, 2013. WY 2013 ended at elevation 2,964.00 feet and storage of 96,548 AF, which is 11.00 feet and 76,325 AF below the top of the conservation pool. Precipitation for WY 2013 was 104 percent of average. Inflows for WY 2013 were above average.

The Belle Fourche Irrigation District (BFID) had a water allotment of 22 inches for its irrigators. Releases for irrigation began May 13 and reached a peak of 778 cfs on July 19 for North Canal. The irrigation release was terminated on September 30 with 96,548 AF in total storage and 93,465 AF in active storage. Total irrigation releases were 107,139 AF.

The North Canal and South Canals were turned on May 13, 2013. The South Canal and North Canal were shut off September 30, 2013. The Inlet Canal was shutoff November 8, 2013. Irrigation releases for the 2013 season were North Canal 59,890 AF, South Canal 44,227 AF, and Inlet Canal-Johnson Lateral 3,022 AF for a total of 107,139 AF.

An Emergency Action Plan (EAP) Functional Exercise was conducted February 26, 2013.

Inclinometer readings were taken twice this year at high and low reservoir elevation as required by the periodic monitoring schedule.

The Mechanical Inspection for the Comprehensive Review (CR) was conducted on March 27, 2013 by personnel from the Rapid City Field Office, BFID, Matt Gappa and Nathan Nakamoto. The Civil Inspection was conducted May 22, 2013 by personnel from the Rapid City Field Office, BFID, Matt Gappa, Zeh-Zon Lee and Dave Curran.

The Belle Fourche Reservoir Road Maintenance Contract, Solicitation No. R13PC60258, was awarded to 80th Street Aggregates for $66,961.20. The contract bladed the Belle Fourche Reservoir roads on three separate dates during the recreation season. The contract was completed on November 5, 2013.

MONTHLY STATISTICS FOR WY 2013

October EOM elevation at Belle Fourche Reservoir was average. October inflow was below average. Belle Fourche ended the month 16.8 feet from full.

November EOM elevation at Belle Fourche Reservoir was average. November inflow was average. Belle Fourche ended the month 14.5 feet from full.

December EOM elevation at Belle Fourche Reservoir was average. December inflow was average. Belle Fourche ended the month 12.6 feet from full.

January EOM elevation at Belle Fourche Reservoir was average. January inflow was average. Belle Fourche ended the month 10.8 feet from full.

February EOM elevation at Belle Fourche Reservoir was average. February inflow was average. Belle Fourche ended the month 9.2 feet from full.

March EOM elevation at Belle Fourche Reservoir was average. March inflow was much below average. Belle Fourche ended the month 7.5 feet from full.

April EOM elevation at Belle Fourche Reservoir was average. April inflow was average. Belle Fourche ended the month 5.7 feet from full.

May EOM elevation at Belle Fourche Reservoir was average. May inflow was much above average. Belle Fourche ended the month 2.9 feet below full.

June EOM elevation at Belle Fourche Reservoir was above average. June inflow was very much below average. Belle Fourche ended the month 0.2 feet from full.

July EOM elevation at Belle Fourche Reservoir was above average. July inflow was much above average. Belle Fourche ended the month 4.5 feet from full.

August EOM elevation at Belle Fourche Reservoir was much above average. August inflow was very much above average. Belle Fourche ended the month 7.8 feet from full.

September EOM elevation at Belle Fourche Reservoir was much above average. Inflow was above average. Belle Fourche ended the month 11.0 feet from full.

Additional statistical information on Belle Fourche Reservoir and its operations during 2013 can be found on Table DKT11 and Figure DKG10.

Table DKT11
Hydrologic Data for Water Year 2013
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			

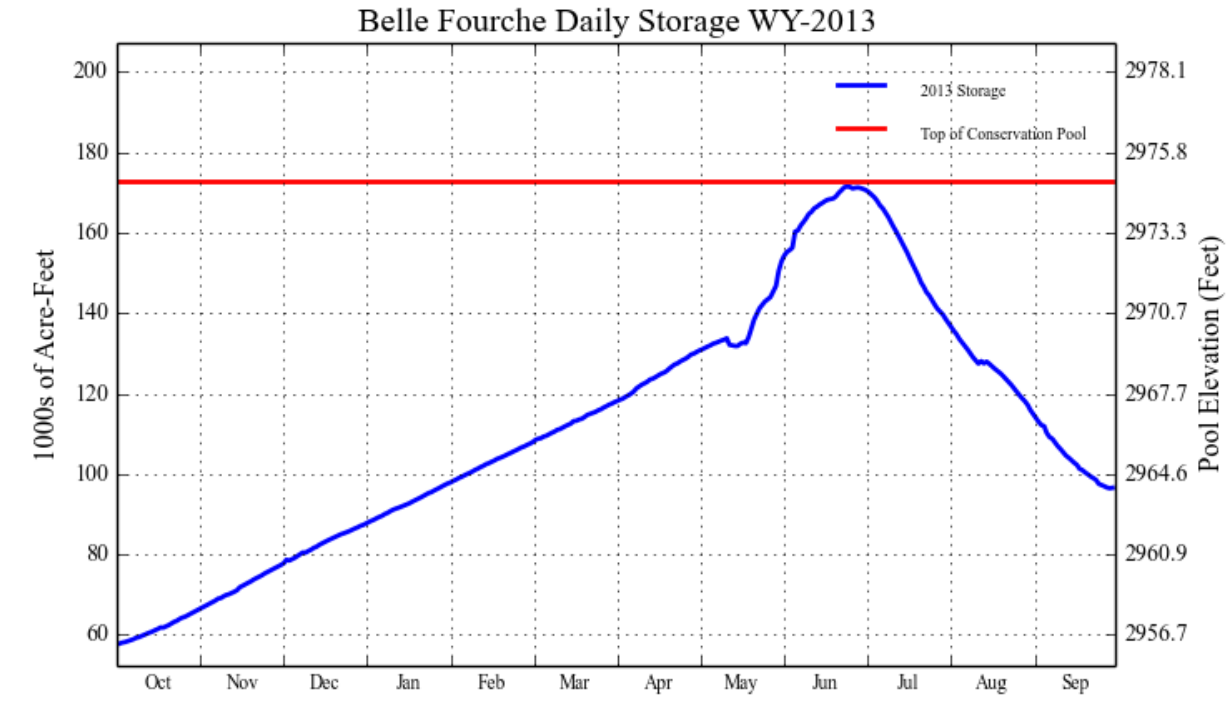
STORAGE-ELEVATION DATA	ELEVATION (FT)	STORAGE (AF)	DATE
BEGINNING OF YEAR	2,956.41	58,201	OCT 01, 2012
END OF YEAR	2,964.00	96,548	SEP 30, 2013
ANNUAL LOW	2,956.27	57,601	OCT 01, 2012
ANNUAL HIGH	2,974.83	171,510	JUN 25, 2013
HISTORIC HIGH	2,975.92	196,792	MAY 30, 1996

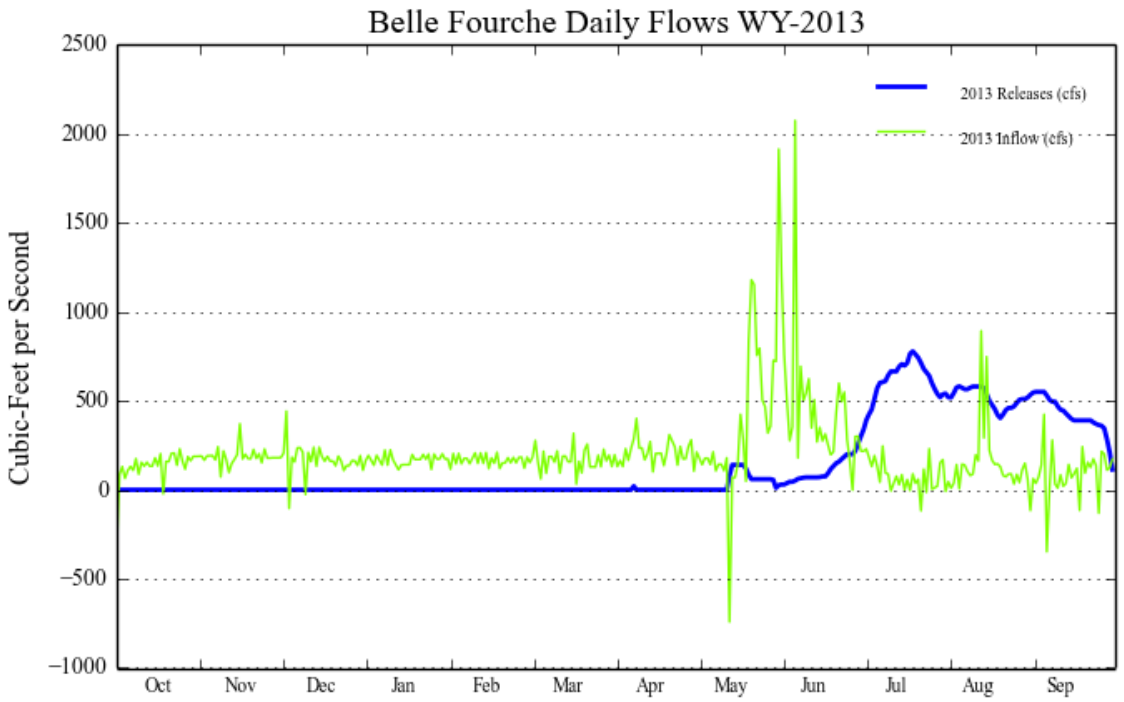
INFLOW-OUTFLOW DATA	INFLOW	DATE	OUTFLOW	DATE
ANNUAL TOTAL (AF)	142,505	OCT 01-SEP 30	104,158	OCT 01-SEP 30
DAILY PEAK (CFS)	2074	JUN 6, 2013	778	JUN 19, 2013
DAILY MINIMUM (CFS)	-742	MAY 13,2013	0	*

MONTH	INFLOW		OUTFLOW		EOM CONTENT**	
	AF	% OF AVG	AF	% OF AVG	AF	% OF AVG
OCTOBER	8,097	80	0	N/A	66,298	92
NOVEMBER	11,051	113	0	N/A	77,349	95
DECEMBER	10,261	111	0	N/A	87,610	97
JANUARY	10,258	109	0	N/A	97,868	98
FEBRUARY	9,353	93	0	N/A	107,221	98
MARCH	10,280	64	0	N/A	117,501	94
APRIL	12,485	91	41	10	129,945	94
MAY	23,670	158	3,088	42	150,527	103
JUNE	27,310	231	6,728	41	171,109	121
JULY	5,114	137	37,663	102	138,560	128
AUGUST	9,107	385	31,779	90	115,888	153
SEPTEMBER	5,519	119	24,859	144	96,548	153
ANNUAL	142,505	123	104,158	91	113,035	108
APRIL-JULY	68,579	155	47,520	78	147,535	110

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

Figure DKG10
Belle Fourche Reservoir





OUTLOOK

AND OPERATING PLANS

FOR

WATER YEAR 2014

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 2014

Clark Canyon Reservoir

Three operating plans were prepared for 2014 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 by March 1.

(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 during late May or early June.

(3) During May - 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.

(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 25-30 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.

The total annual inflow to Clark Canyon Reservoir during 2013 was approximately 134,400 AF, 58 percent of the 30 year average. Storage on September 30, 2013, was 47,983 AF at elevation 5513.05, 59 percent of the 30 year average for the end of September. This was 59 percent of average and about 29,422 AF or 10.47 feet lower than at the end of WY 2011.

Storage in Lima Reservoir, a private facility located upstream of Clark Canyon Reservoir, ended WY 2013 at 53 percent of the 30 year average. This was about 9,669 AF or 4.85 feet lower than at the end of WY 2012.

Depending on snowpack and storage conditions Lima Reservoir may store much of the early season runoff during 2014 from the Red Rock River drainage.

Clark Canyon Reservoir is expected to fill during 2014 under the maximum probable runoff condition and is expected to peak in early June. The reservoir water level under the most probable runoff condition is expected to peak in early April, approximately 11.5 feet 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 16.1 feet below the top of the joint-use pool. Under the most, minimum, and maximum plans the winter releases is expected to be 25 cfs. Irrigation shortages are expected to occur under the most and minimum plans.

The most probable October - December inflows were estimated near the 19 percentile inflows, are historically exceeded 81 percent of the time. Inflows during January - March were estimated at the 12.5 percentile inflows, which historically exceeded 87.5 percent of the time. Inflows during April - September were estimated at the 25 percentile inflows.

The minimum probable October - March inflows were estimated by analyzing each individual month's five lowest historical inflow years. These months' inflows are all lower than the 10 percentile inflow values. Inflows during April - September were estimated at the 10 percentile inflows.

The maximum probable October - January inflows were estimated starting near the 25 percentile inflows, that are historically exceeded 75 percent of the time with a gradual increase to the 57 percentile inflows, that are historically exceeded 43 percent of the time. The maximum probable February - September inflows were estimated to equal 75 percentile inflows.

TABLE MTT12A
CLARK CANYON RESERVOIR OPERATING PLAN
Based on October 1 2013 Inflow Estimates

2014 Minimum Probable Plan

Clark Canyon Reservoir	2013		Initial	Cont: Elev:	48.0 5513.05	kaf ft	Min	Cont: Elev:	10.0 5489.22	kaf ft	Max	Cont: Elev:	310.1 5569.57	kaf ft
Hydrology	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	9.6	10.5	10.1	8.3	7.2	8.7	8.4	6.5	9.8	11.2	8.5	8.4	107.2
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	
River Release	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	17.4	26.4	32.9	23.5	4.7	115.3
River Release	cfs	24	25	24	24	25	24	25	283	444	535	382	79	
Min Release	cfs	25	25	25	25	25	25	25	250	250	250	250	30	
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	
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	
End-Month Elevation	ft	5516.31	5519.55	5522.37	5524.45	5526.15	5528.14	5529.96	5527.05	5522.12	5514.38	5507.64	5509.44	
End-Month Content	kaf	56.1	65.1	73.7	80.5	86.3	93.5	100.4	89.5	72.9	51.2	36.2	39.9	
Net Change Content	kaf	8.1	9.0	8.6	6.8	5.8	7.2	6.9	-10.9	-16.6	-21.7	-15.0	3.7	-8.1

Diversions	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
East Bench Demand	kaf								5.2	6.6	8.9	3.7	0.5	25.0
East Bench Req Rels	kaf								9.5	12.0	16.2	6.8	0.9	45.4
CCWSC Tot Demand	kaf								12.6	18.6	22.9	20.0	3.9	78.0
CCWSC Req Rels	kaf								7.9	11.7	14.4	12.6	2.5	49.1
Non-proj Demand	kaf								2.4	6.7	6.0	8.9	4.4	28.4

TABLE MTT12B

CLARK CANYON RESERVOIR OPERATING PLAN
Based on October 1 2013 Inflow Estimates

2014 Most Probable Plan

Clark Canyon Reservoir	2013		Initial	Cont:	48.0	kaf	Min	Cont:	10.0	kaf	Max	Cont:	310.1	kaf
				Elev:	5513.06	ft		Elev:	5489.22	ft		Elev:	5569.57	ft

Hydrology	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	12.0	13.1	12.7	10.4	9.1	10.9	13.0	12.1	19.1	16.2	12.2	12.3	153.1
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	
River Release	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	21.9	32.5	41.0	27.9	5.4	139.1
River Release	cfs	24	25	24	24	25	24	25	356	546	667	454	91	
Min Release	cfs	25	25	25	25	25	25	25	250	250	250	250	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	
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	
End-Month Elevation	ft	5517.21	5521.22	5524.69	5527.24	5529.31	5531.71	5534.47	5532.13	5528.71	5521.44	5515.93	5518.47	
End-Month Content	kaf	58.5	70.1	81.3	90.2	97.9	107.3	118.8	109.0	95.6	70.8	55.1	62.0	
Net Change Content	kaf	10.5	11.6	11.2	8.9	7.7	9.4	11.5	-9.8	-13.4	-24.8	-15.7	6.9	14.0

Diversions	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
East Bench Demand	kaf								7.0	8.9	12.0	5.0	0.7	33.6
East Bench Req Rels	kaf								12.7	16.2	21.8	9.1	1.2	61.0
CCWSC Tot Demand	kaf								14.7	21.7	26.8	23.4	4.6	91.0
CCWSC Req Rels	kaf								9.2	13.6	16.9	14.7	2.9	57.3
Non-proj Demand	kaf								2.4	6.7	6.0	8.9	4.4	28.4

TABLE MTT12C

CLARK CANYON RESERVOIR OPERATING PLAN
Based on October 1 2013 Inflow Estimates

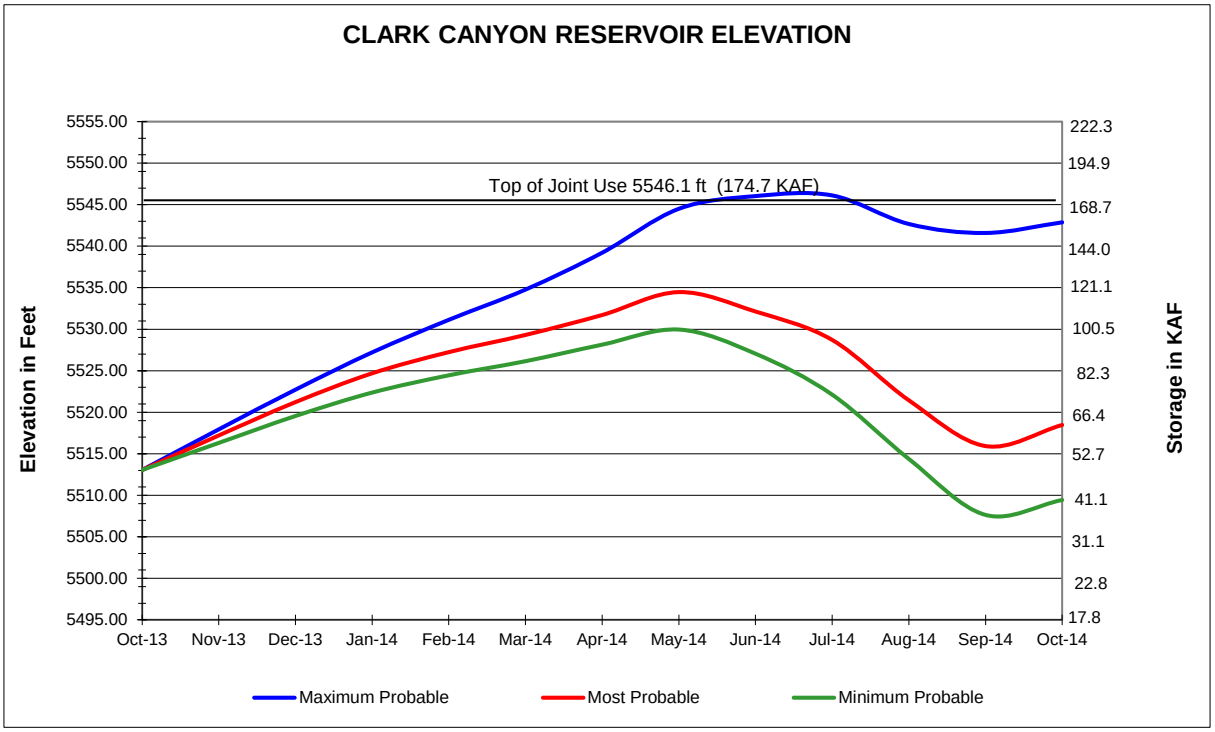
2014 Maximum Probable Plan

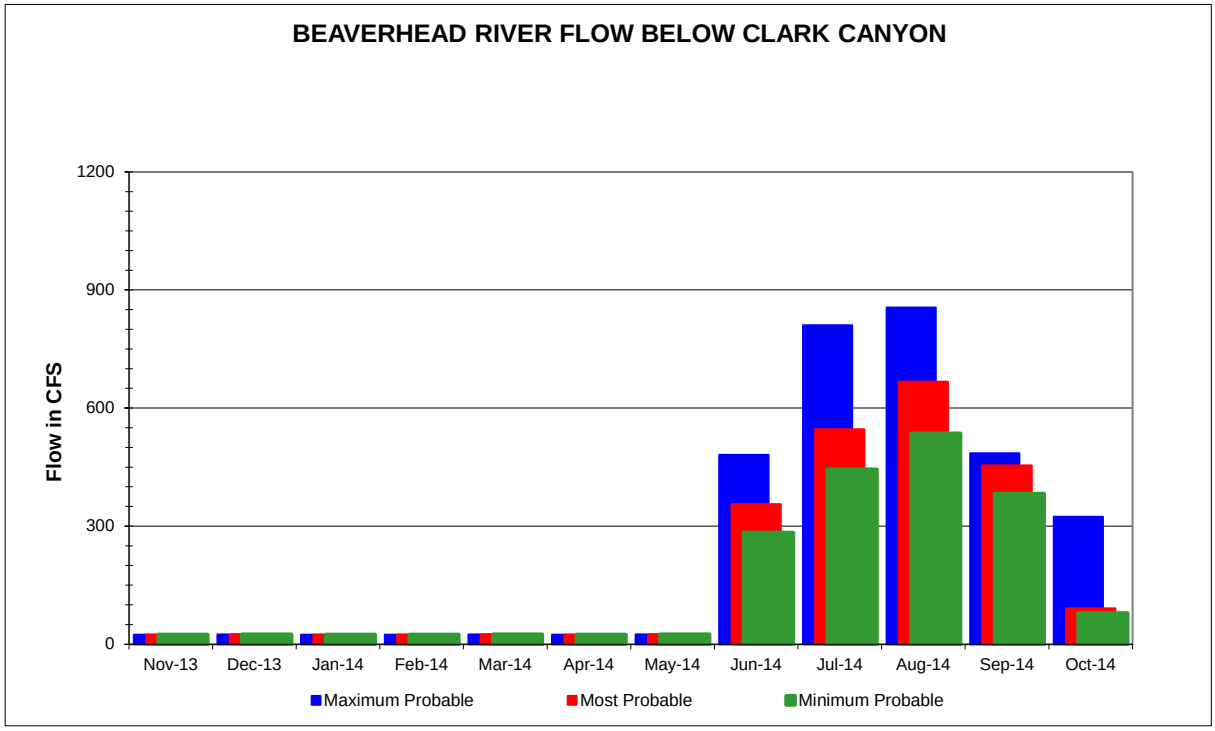
Clark Canyon Reservoir	2013		Initial	Cont: Elev:	48.0 5513.05	kaf ft	Min	Cont: Elev:	10.0 5489.22	kaf ft	Max	Cont: Elev:	310.1 5569.57	kaf ft
Hydrology	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	14.0	15.8	16.8	16.4	16.5	21.6	27.5	37.4	48.6	35.2	24.5	25.6	299.9
Evaporation 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	
River Release	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	29.6	48.2	52.6	29.8	19.3	189.9
River Release	cfs	24	25	24	24	25	24	25	481	810	855	485	324	
Min Release	cfs	25	25	25	25	25	25	25	250	250	250	250	250	
Excess Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	4.6	4.6	4.4	
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	
End-Month Elevation	ft	5517.94	5522.72	5527.21	5531.13	5534.77	5539.21	5544.50	5546.03	5546.11	5542.67	5541.59	5542.87	
End-Month Content	kaf	60.5	74.8	90.1	105.0	120.1	140.2	166.2	174.0	174.4	157.0	151.7	158.0	
Net Change Content	kaf	12.5	14.3	15.3	14.9	15.1	20.1	26.0	7.8	0.4	-17.4	-5.3	6.3	110.0

Diversions	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
East Bench Demand	kaf								9.0	10.5	14.0	4.5	0.7	38.7
East Bench Req Rels	kaf								16.4	19.1	25.5	8.2	1.3	70.5
CCWSC Tot Demand	kaf								21.0	27.5	32.0	20.5	3.0	104.0
CCWSC Req Rels	kaf								13.2	17.3	20.2	12.9	1.9	65.5
Non-proj Demand	kaf								2.4	6.7	6.0	8.9	4.4	28.4

FIGURE MTG13

CLARK CANYON RESERVOIR





WATER YEAR 2014

Canyon Ferry Lake and Powerplant

Three operating plans were prepared for 2014 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 October 2013. 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 feet between elevations 3797 (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 3780-3782 (1,358,973 AF - 1,416,767 AF) by the following April 1. Each month inflows are reevaluated 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-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 (1,792,884 AF) after December 1. Storage below elevation 3794 (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 (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 (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 (1,097,599 AF). In a series of dry years, the pool may be drawn as low as elevation 3728 (396,031 AF) to meet firm power generation requirements and satisfy PPL-MT's prior water rights. If storage is drawn below elevation 3728 (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.

July and August experienced above normal temperatures and with below average precipitation. The July valley precipitation in the Jefferson basin was 58 percent of average, the Madison Basin was 83 percent of average, and the Gallatin Basin was 49 percent of average. August precipitation remained similar except for the Madison Basin which had dropped to 37 percent of average.

Inflows during these months declined from 3,500 cfs to an approximate low of 1,100 cfs on August 21. Releases from Canyon Ferry remained between 2,700 cfs and 3,000 cfs to maintain the river flows below Holter Dam near 3,000 cfs. Canyon Ferry Reservoir peaked at elevation 3790.28 feet on July 6 and by August 31 the reservoir had declined to elevation 3784.84 feet. July inflows were 42 percent of the 30 year average and August inflows were 51 percent of average.

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 the water year, the reservoir was at a storage content of 1,446,324 AF at an elevation of 3783.0 feet, with inflows and releases at about 2,900 cfs. This was 92 percent of average and about 112,366 AF or 3.68 feet lower than at the end of WY 2012.

The most probable October - March natural inflows to Canyon Ferry Lake, without the effects of Clark Canyon and Hebgen Reservoirs, were estimated to vary from 85 percent of average beginning in October and slowly increasing to 91 percent of average in March. The most probable April - September natural inflows were estimated to equal 37.5 percentile or natural inflows that historically have been exceeded 62.5 percent of the time.

Under the minimum probable operating plan, the October - March natural inflows to Canyon Ferry Lake, without the effects of Clark Canyon and Hebgen Reservoirs, were estimated to be about 10 percent lower than the most probable natural inflows. The April - September natural inflows were estimated to equal lower decile natural inflows or natural inflows that have historically been exceeded 90 percent of the time.

Under the maximum probable operating plan, the October - February natural inflows to Canyon Ferry Lake, without the effects of Clark Canyon and Hebgen Reservoirs, were estimated to be about 10 percent higher than the most probable natural inflows. The maximum probable March-September natural inflows were estimated to equal 80 percentile natural inflows or natural inflows that have historically been exceeded 20 percent of the time.

Based on the storage level on October 1, 2013, Canyon Ferry Reservoir would be expected to fill to the top of the joint-use pool at elevation 3797 by the end of June only 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 at about 2,900 cfs beginning in October and continue through the remainder of the year to conserve storage and allow Canyon Ferry Reservoir to fill to elevation 3796.1, about .9 feet below the top of the joint-use pool. Under the most probable runoff condition, releases to the Missouri River downstream of Holter Dam are started at 2,900 cfs in October and gradually increase to 4,100 cfs by March. The flow of 4,100 cfs or greater would then be maintained for the remainder of the year. Under the maximum runoff scenario, it is anticipated the river releases could be increased above 4,100 cfs beginning in December in preparation for the anticipated spring snowmelt runoff expected in 2014.

The average power generation produced at Canyon Ferry Power plant during 1967-2013 is 382.0 million kilowatt-hours. Under the minimum and most probable runoff conditions, power generation produced at Canyon Ferry Power plant during 2014 would be about 157.7 and 38.0 million kilowatt-hours less than average, respectively.

Under the maximum probable runoff condition, power generation would be about 43.1 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 2013 Probable Inflow Estimates

2014 Minimum Probable Plan

Canyon Ferry Reservoir		Initial Cont Elev	1446.3 kaf 3783.00 ft			Maximum Cont Elev	1993.0 kaf 3800.00 ft			Minimum Cont Elev	445.5 kaf 3732.31 ft		
2013		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Reservoir Inflow	kaf	176.8	195.0	168.5	167.9	168.5	203.2	233.7	295.6	348.3	139.7	91.0	125.3	2313.5
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	13.8	16.9	17.4	17.1	13.4	84.7
Turbine Release	kaf	172.8	166.5	170.6	173.7	152.8	167.8	157.6	162.9	146.0	154.3	157.2	155.0	1937.2
Turbine Release	cfs	2810	2798	2775	2825	2751	2729	2649	2649	2454	2509	2557	2605	
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	172.8	166.5	170.6	173.7	152.8	167.8	163.7	176.7	162.9	171.7	174.3	168.4	2021.9
River Release	cfs	2810	2798	2775	2825	2751	2729	2751	2874	2738	2792	2835	2830	
Min Release	cfs	2810	2798	2775	2825	2751	2729	2751	2874	2738	2792	2835	2830	
Total Dam Release	kaf	172.8	166.5	170.6	173.7	152.8	167.8	168.7	188.7	178.9	188.7	190.3	180.4	2099.9
Total Dam Release	cfs	2810	2798	2775	2825	2751	2729	2835	3069	3007	3069	3095	3032	
End-Month Content	kaf	1450.3	1478.8	1476.7	1470.9	1486.6	1522.0	1587.0	1693.9	1863.3	1814.3	1715.0	1659.9	
End-Month Elevation	ft	3783.1	3784.1	3784.0	3783.8	3784.3	3785.5	3787.6	3791.0	3796.1	3794.7	3791.6	3789.9	
Net Change	kaf	4.0	28.5	-2.1	-5.8	15.7	35.4	65.0	106.9	169.4	-49.0	-99.3	-55.1	213.6

Canyon Ferry Power	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	cfs	2810	2798	2775	2825	2751	2729	2649	2649	2454	2509	2557	2605	
Tailwater Elev	ft	3650.7	3650.7	3650.7	3650.7	3650.7	3650.7	3650.7	3650.7	3650.7	3650.7	3650.7	3650.7	
Average Head	ft	132.4	132.9	133.4	133.2	133.4	134.2	135.9	138.6	142.9	144.7	142.4	140.0	
Average Power	mw	26.6	26.5	26.3	26.9	26.0	25.9	25.1	25.5	23.7	24.6	24.9	25.2	
Average Kwh/Af		115	115	115	115	114	115	115	116	117	119	118	117	116
Generation	gwh	19.790	19.080	19.567	20.014	17.472	19.270	18.072	18.972	17.064	18.302	18.526	18.144	224.273
End-Month Power Cap	mw	57	57	57	57	57	57	57	57	57	57	57	57	

Hauser	2013	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	176.8	171.3	177.7	178.2	160.0	176.4	171.5	177.1	164.8	173.6	175.2	170.2	2072.8
Release	cfs	2875	2879	2890	2898	2881	2869	2882	2880	2770	2823	2849	2860	
Turbine Release	cfs	2875	2879	2890	2898	2881	2869	2882	2880	2770	2823	2849	2860	
Turbine Bypass	cfs	0	0	0	0	0	0	0	0	0	0	0	0	
Generation	gwh	7.444	7.214	7.483	7.503	6.737	7.428	7.221	7.457	6.941	7.309	7.376	7.166	87.279

Holter	2013	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	178.3	172.6	178.3	178.3	161.1	178.3	172.6	178.3	172.6	178.3	178.3	172.6	2099.6
Release	cfs	2900	2901	2900	2900	2901	2900	2901	2900	2901	2900	2900	2901	
Min Release	cfs	2900	2900	2900	2900	2900	2900	2900	2900	2900	2900	2900	2900	
Turbine Release	cfs	2900	2901	2900	2900	2901	2900	2901	2900	2901	2900	2900	2901	
Turbine Bypass	cfs	0	0	0	0	0	0	0	0	0	0	0	0	
Generation	gwh	15.190	14.705	15.190	15.190	13.724	15.190	14.705	15.190	14.705	15.190	15.190	14.705	178.874

TABLE MTT13B

CANYON FERRY LAKE MONTHLY OPERATIONS

Based on October 1 2013 Probable Inflow Estimates

2014 Most Probable Plan

Canyon Ferry Reservoir		Initial Cont Elev	1446.3 kaf 3783.00 ft			Maximum Cont Elev	1993.0 kaf 3800.00 ft			Minimum Cont Elev	445.5 kaf 3732.31 ft		
2013		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Reservoir Inflow	kaf	208.0	220.0	190.0	189.4	190.0	229.2	296.0	465.8	632.8	240.9	129.6	177.8	3169.5
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	14.3	22.6	18.3	18.4	19.2	13.3	106.1
Turbine Release	kaf	167.5	168.7	199.2	238.1	215.0	238.1	250.5	288.6	308.3	226.4	225.2	221.4	2747.0
Turbine Release	cfs	2724	2835	3240	3872	3871	3872	4210	4694	5181	3682	3663	3721	
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	167.5	168.7	199.2	238.1	215.0	238.1	264.8	311.2	326.6	244.8	244.4	234.7	2853.1
River Release	cfs	2724	2835	3240	3872	3871	3872	4450	5061	5489	3981	3975	3944	
Min Release	cfs	2718	2835	3240	3528	3493	3480	3911	3959	3707	3981	3975	3944	
Total Dam Release	kaf	167.5	168.7	199.2	238.1	215.0	238.1	275.8	329.6	343.6	263.2	262.8	246.7	2948.3
Total Dam Release	cfs	2724	2835	3240	3872	3871	3872	4635	5360	5774	4281	4274	4146	
End-Month Content	kaf	1486.8	1538.1	1528.9	1480.2	1455.2	1446.3	1466.5	1602.7	1891.9	1869.6	1736.4	1667.5	
End-Month Elevation	ft	3784.4	3786.0	3785.7	3784.1	3783.3	3783.0	3783.7	3788.1	3797.0	3796.3	3792.3	3790.1	
Net Change	kaf	40.5	51.3	-9.2	-48.7	-25.0	-8.9	20.2	136.2	289.2	-22.3	-133.2	-68.9	221.2

Canyon Ferry Power	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	cfs	2724	2835	3240	3872	3871	3872	4210	4694	5181	3682	3663	3721	
Tailwater Elev	ft	3650.7	3650.7	3650.8	3650.8	3650.8	3650.8	3650.9	3651.0	3651.0	3650.8	3650.8	3650.8	
Average Head	ft	133.0	134.5	135.1	134.1	132.9	132.3	132.4	134.9	141.6	145.9	143.5	140.4	
Average Power	mw	25.6	27.2	32.3	39.8	39.4	39.3	43.2	49.2	56.6	40.1	39.4	39.4	
Average Kwh/Af		114	116	121	124	123	123	124	127	132	132	130	128	125
Generation	gwh	19.046	19.584	24.031	29.611	26.477	29.239	31.104	36.605	40.752	29.834	29.314	28.368	343.965
End-Month Power Cap	mw	57	57	57	57	57	57	57	57	57	57	57	57	

Hauser	2013	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	176.6	177.1	208.0	247.1	224.3	248.3	273.8	316.6	339.7	246.1	247.7	239.9	2945.2
Release	cfs	2872	2976	3383	4019	4039	4038	4601	5149	5709	4002	4028	4032	
Turbine Release	cfs	2872	2976	3383	4019	4039	4038	4601	4740	4740	4002	4028	4032	
Turbine Bypass	cfs	0	0	0	0	0	0	0	409	969	0	0	0	
Generation	gwh	7.436	7.457	8.759	10.406	9.445	10.455	11.528	12.272	11.877	10.362	10.429	10.103	120.529

Holter	2013	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	178.7	178.5	209.1	248.7	226.5	251.6	276.1	319.9	350.0	252.1	252.1	244.0	2987.3
Release	cfs	2906	3000	3401	4045	4078	4092	4640	5203	5882	4100	4100	4101	
Min Release	cfs	2900	3000	3400	3700	3700	3700	4100	4100	4100	4100	4100	4100	
Turbine Release	cfs	2906	3000	3401	4045	4078	4092	4640	5203	5882	4100	4100	4101	
Turbine Bypass	cfs	0	0	0	0	0	0	0	0	0	0	0	0	
Generation	gwh	15.221	15.206	17.814	21.187	19.293	21.433	23.519	27.252	29.815	21.475	21.475	20.787	254.477

TABLE MTT13C

CANYON FERRY LAKE MONTHLY OPERATIONS

Based on October 1 2013 Probable Inflow Estimates

2014 Maximum Probable Plan

Canyon Ferry Reservoir		Initial Cont Elev	1446.3 kaf 3783.00 ft			Maximum Cont Elev	1993.0 kaf 3800.00 ft			Minimum Cont Elev	445.5 kaf 3732.31 ft		
2013		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Reservoir Inflow	kaf	228.8	242.0	209.3	206.4	211.0	289.5	389.1	724.6	998.6	462.7	218.2	254.6	4434.8
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
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	23.4	18.6	18.3	19.0	13.1	107.4
Turbine Release	kaf	161.6	208.9	240.7	287.3	259.5	287.3	335.2	344.9	312.4	310.3	313.5	308.7	3370.3
Turbine Release	cfs	2628	3511	3915	4672	4673	4672	5633	5610	5250	5046	5099	5188	
Spill/Waste	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	198.3	314.2	115.7	0.0	0.0	628.2
River Release	kaf	161.6	208.9	240.7	287.3	259.5	287.3	350.2	566.6	645.2	444.3	332.5	321.8	4105.9
River Release	cfs	2628	3511	3915	4672	4673	4672	5885	9215	10843	7226	5408	5408	
Min Release	cfs	2628	3511	3915	3915	3833	3825	3850	3711	3284	3731	3807	3838	
Total Dam Release	kaf	161.6	208.9	240.7	287.3	259.5	287.3	361.2	585.0	662.2	462.7	350.9	333.8	4201.1
Total Dam Release	cfs	2628	3511	3915	4672	4673	4672	6070	9514	11129	7525	5707	5610	
End-Month Content	kaf	1513.5	1546.6	1515.2	1434.3	1385.8	1388.0	1415.9	1555.5	1891.9	1891.9	1759.2	1680.0	
End-Month Elevation	ft	3785.2	3786.3	3785.3	3782.6	3780.9	3781.0	3782.0	3786.6	3797.0	3797.0	3793.0	3790.5	
Net Change	kaf	67.2	33.1	-31.4	-80.9	-48.5	2.2	27.9	139.6	336.4	0.0	-132.7	-79.2	233.7

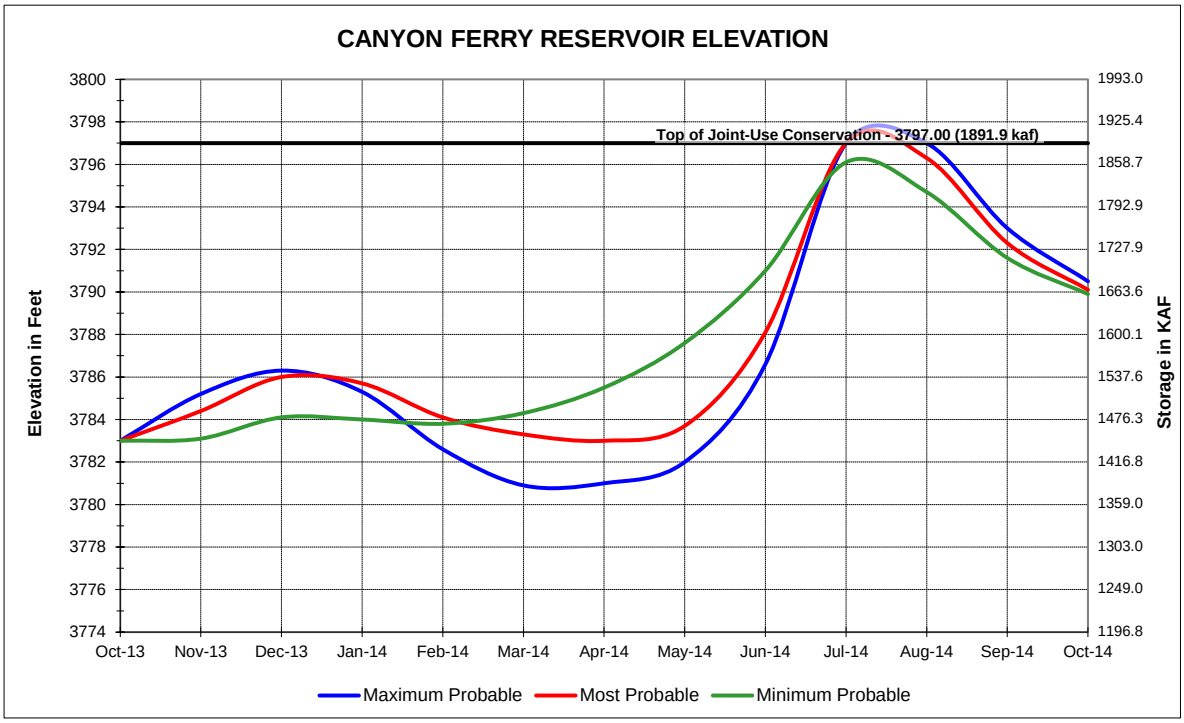
Canyon Ferry Power	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	cfs	2628	3511	3915	4672	4673	4672	5633	5610	5250	5046	5099	5188	
Tailwater Elev	ft	3650.7	3650.8	3650.8	3650.9	3650.9	3650.9	3651.1	3651.5	3651.8	3651.2	3651.0	3651.0	
Average Head	ft	133.4	135.0	135.0	133.0	130.9	130.1	130.4	132.8	140.1	145.8	144.0	140.7	
Average Power	mw	24.5	35.6	40.5	48.4	47.6	47.3	55.7	56.7	56.7	56.7	56.6	56.3	
Average Kwh/Af		113	123	125	125	123	122	120	122	131	136	134	131	126
Generation	gwh	18.228	25.632	30.132	36.010	31.987	35.191	40.104	42.185	40.824	42.185	42.110	40.536	425.124
End-Month Power Cap	mw	57	57	57	56	56	56	56	57	57	57	57	57	

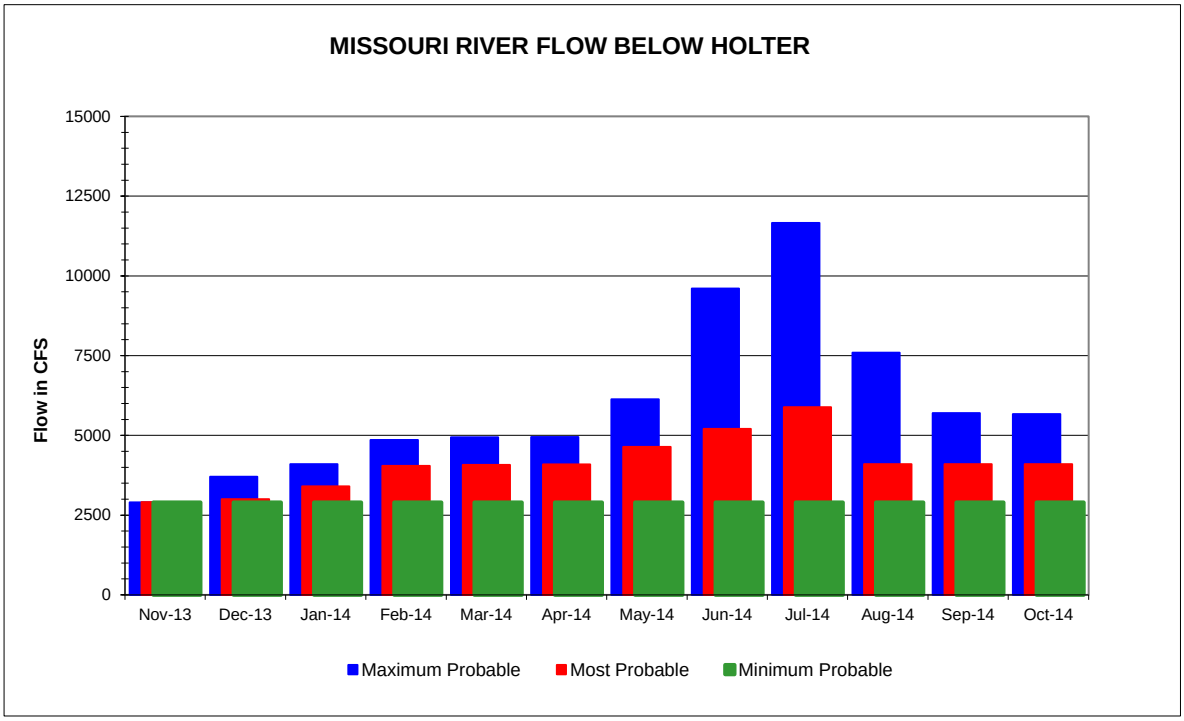
Hauser	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Missouri Gain	kaf	13.0	9.3	9.4	8.9	11.9	13.3	11.8	17.2	34.1	13.3	10.8	10.0	163.0
End-Month Content	kaf	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	
Release	kaf	174.6	218.2	250.1	296.2	271.4	300.6	362.0	583.8	679.3	457.6	343.3	331.8	4268.9
Release	cfs	2840	3667	4067	4817	4887	4889	6084	9495	11416	7442	5583	5576	
Turbine Release	cfs	2840	3667	4067	4740	4740	4740	4740	4740	4740	4740	4740	4740	
Turbine Bypass	cfs	0	0	0	77	147	149	1344	4755	6676	2702	843	836	
Generation	gwh	7.353	9.188	10.530	12.272	11.085	12.272	11.877	12.272	11.877	12.272	12.272	11.877	135.147

Holter	2013	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	178.3	220.2	252.1	298.7	274.3	304.2	365.1	590.5	693.8	467.0	350.5	337.4	4332.1
Release	cfs	2900	3701	4100	4858	4939	4947	6136	9604	11660	7595	5700	5670	
Min Release	cfs	2900	3700	4100	4100	4100	4100	4100	4100	4100	4100	4100	4100	
Turbine Release	cfs	2900	3701	4100	4858	4939	4947	6136	7100	7100	7100	5700	5670	
Turbine Bypass	cfs	0	0	0	0	0	0	0	2504	4560	495	0	0	
Generation	gwh	15.190	18.760	21.475	25.445	23.366	25.911	31.102	37.188	35.988	37.188	29.855	28.740	330.208

FIGURE MTG14

CANYON FERRY RESERVOIR





WATER YEAR 2014

Gibson Reservoir

Three operating plans were prepared for 2014 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 until the peak of the spring runoff has passed and has begun to recede.

(2) The spillway crest elevation is 4712.0 feet (83,248 AF). The spillway gates will remain open until after the peak inflow has occurred. The remaining 12 feet 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 been 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.

(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 feet (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 feet (83,248 AF) to provide incidental flood control. During most years, Gibson Reservoir is generally maintained below elevation 4700.9 (70,000 AF). When normal or above normal inflow is forecast, the end-of-April target storage content is 55,000 AF. When below normal inflow is forecast, 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-September are made as necessary to meet irrigation requirements.

The total inflow for Gibson Reservoir during 2013 was approximately 450,700 AF, 86 percent of the 30 year average. By the end of WY 2013, storage in Gibson Reservoir was drafted to 7,315 AF at elevation 4615.22. This was 37 percent of average for this time of year. September inflows into Gibson Reservoir were approximately 72 percent of average.

The most probable October - January inflows to Gibson Reservoir were estimated to equal 47.3 AF, which is approximately 84 percent of average. February - September flows are estimated to be 50 percentile flows.

The minimum probable October and November inflows were estimated near the lowest on record. December and January inflows to Gibson Reservoir were estimated at the 10 percentile flows, or flows that would be exceeded 90 percent of the time. February - September inflows to Gibson Reservoir were estimated at the 12.5 percentile.

The maximum probable October-December inflows to Gibson Reservoir were estimated to equal 50 percentile flows, or flows that would be exceeded 50 percent of the time. The January-September inflows to Gibson Reservoir were estimated to equal 75 percentile.

With storage in Gibson Reservoir at 7,315 AF on September 30, Gibson Reservoir is expected to fill to the top of the conservation pool at elevation 4724 (98,688 AF) under the most, minimum, and maximum probable runoff scenarios. Based upon the storage content of Gibson Reservoir on September 30, 2013, a winter release of approximately 50-200 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 2013 Inflow Estimates
2014 Minimum Probable Runoff

Gibson Reservoir		Initial Cont		7.3 kaf		Maximum Cont		98.7 kaf		Minimum Cont		5.0 kaf	
		Elev	4615.18 ft			Elev	4724.01 ft			Elev	4608.47 ft		
	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	9.0	8.6	9.2	10.1	8.7	11.4	30.2	103.5	94.1	34.9	16.4	12.7	348.8
Spillway Rels	cfs	0	0	0	0	0	0	0	0	0	0	0	0	
Total Release	kaf	7.6	5.0	1.6	1.5	1.4	1.0	23.7	60.0	91.6	99.2	45.8	12.7	351.1
Total Release	cfs	124	84	26	24	25	16	398	976	1539	1613	745	213	
End-Month Content	kaf	8.7	12.3	19.9	28.5	35.8	46.2	52.7	96.2	98.7	34.4	5.0	5.0	
End-Month Elevation	ft	4618.60	4626.57	4640.89	4654.78	4665.04	4677.63	4684.48	4722.13	4724.01	4663.16	4608.47	4608.47	
End-Month Area	acre	421.8	483.8	575.1	670.5	753.1	910.4	984.2	1319.3	1334.0	737.6	271.7	271.7	
Net Change Content	kaf	1.4	3.6	7.6	8.6	7.3	10.4	6.5	43.5	2.5	-64.3	-29.4	0.0	-2.3

Sun River Div Dam	2013	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	75	54	0	0	0	0	37	0	0	0	0	44	
Rels to PSC	cfs	0	0	0	0	0	0	318	909	1333	1360	405	0	
Total Diversion	kaf	4.6	3.2	0.0	0.0	0.0	0.0	21.1	55.9	79.3	83.6	24.9	2.6	275.2
Total Diversion	cfs	75	54	0	0	0	0	355	909	1333	1360	405	44	
Flow Over Div Dam	kaf	4.2	3.0	3.1	3.1	2.8	3.1	6.0	15.4	25.1	20.4	22.7	11.4	120.3
Flow Over Div Dam	cfs	68	50	50	50	50	50	101	250	422	332	369	192	
Min River Rels	kaf	3.1	3.0	3.1	3.1	2.8	3.1	6.0	15.4	17.9	3.1	3.1	3.0	66.7
Min River Rels	cfs	50	50	50	50	50	50	100	250	300	50	50	50	

Willow Crk Operations		Initial Cont		21.4 kaf		Maximum Cont		31.9 kaf		Minimum Cont		0.1 kaf		
		Elev	4134.41 ft			Elev	4142.04 ft			Elev	4093.42 ft			
	2013	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	3.9	2.7	0.0	0.0	0.0	0.1	2.0	0.0	0.0	0.0	0.0	2.2	10.9
WCR Dam Rels	kaf	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	4.8	0.0	4.9
End-Month Content	kaf	25.3	28.0	28.0	28.0	28.0	28.0	30.0	30.0	30.0	30.0	25.2	27.4	
End-Month Elevation	ft	4137.35	4139.31	4139.31	4139.31	4139.31	4139.31	4140.72	4140.72	4140.72	4140.72	4137.28	4138.88	
Net Change Content	kaf	3.9	2.7	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	-4.8	2.2	6.0

Pishkun Operations		Initial Cont		22.1 kaf		Maximum Cont		46.7 kaf		Minimum Cont		16.0 kaf		
		Elev	4349.67 ft			Elev	4370.00 ft			Elev	4341.99 ft			
	2013	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	18.9	55.9	79.3	83.6	24.9	0.0	262.6
Total Inflow	kaf	0.0	0.0	0.0	0.0	0.0	0.0	16.1	44.7	65.0	71.1	21.2	0.0	218.1
PSH Dam Rels	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	65.0	88.0	35.0	0.0	223.0
End-Month Content	kaf	22.1	21.9	21.7	21.5	21.3	21.1	37.0	46.7	46.7	29.8	16.0	16.0	
End-Month Elevation	ft	4349.67	4349.44	4349.21	4348.98	4348.75	4348.51	4363.28	4370.00	4370.00	4357.50	4341.99	4341.99	
Net Change Content	kaf	0.0	-0.2	-0.2	-0.2	-0.2	-0.2	15.9	9.7	0.0	-16.9	-13.8	0.0	-6.1

Greenfields Irrig	2013	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	35.0	65.0	88.0	35.0	0.0	223.0
GID Delivery	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	65.0	88.0	35.0	0.0	223.0

River Blw Div Dam	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Flow Over Div Dam	cfs	68	50	50	50	50	50	101	250	422	332	369	192	
PSC Return Flow	cfs	0	0	0	0	0	0	37	146	192	203	60	0	
WCR Dam Rels	cfs	0	0	0	0	0	2	0	0	0	0	78	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	50	59	63	65	67	76	187	294	413	236	213	134	
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	5.0	44.4
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	5.0	44.4
Flow blw Ft. Shaw	cfs	50	59	63	65	67	76	170	156	271	50	50	50	

TABLE MTT14B
GIBSON RESERVOIR MONTHLY OPERATIONS
Based on October 2013 Inflow Estimates

2014 Most Probable Runoff

Gibson Reservoir		Initial Cont		7.3 kaf		Maximum Cont		98.7 kaf		Minimum Cont		5.0 kaf		
			Elev	4615.18 ft			Elev	4724.01 ft			Elev	4608.47 ft		
	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	12.5	12.0	11.4	11.4	11.2	14.3	39.0	185.3	174.7	59.4	25.3	19.6	576.1
Spillway Rels	cfs	0	0	0	0	0	0	0	0	0	0	0	0	
Total Release	kaf	8.6	4.6	4.3	4.3	6.9	10.2	34.9	136.8	169.8	99.2	78.0	15.9	573.5
Total Release	cfs	140	77	70	70	124	166	587	2225	2854	1613	1269	267	
End-Month Content	kaf	11.2	18.6	25.7	32.8	37.1	41.2	45.3	93.8	98.7	58.9	6.2	9.9	
End-Month Elevation	ft	4624.26	4638.60	4650.50	4660.97	4666.75	4671.88	4676.63	4720.30	4724.01	4690.60	4612.27	4621.39	
End-Month Area	acre	466.0	560.4	636.3	720.7	769.3	829.9	897.7	1305.0	1334.0	1038.5	357.0	441.2	
Net Change Content	kaf	3.9	7.4	7.1	7.1	4.3	4.1	4.1	48.5	4.9	-39.8	-52.7	3.7	2.6

Sun River Div Dam	2013	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	75	47	7	0	0	0	76	0	0	0	0	0	
Rels to PSC	cfs	0	0	0	0	0	0	318	909	1333	1360	994	76	
Total Diversion	kaf	4.6	2.8	0.4	0.0	0.0	0.0	23.4	55.9	79.3	83.6	61.1	4.5	315.6
Total Diversion	cfs	75	47	7	0	0	0	393	909	1333	1360	994	76	
Flow Over Div Dam	kaf	5.2	3.0	5.4	5.9	8.3	12.3	14.9	92.2	103.3	20.4	18.7	12.7	302.3
Flow Over Div Dam	cfs	85	50	88	96	149	200	250	1499	1736	332	304	213	
Min River Rels	kaf	3.1	3.0	3.1	3.1	8.3	12.3	14.9	92.2	89.3	3.1	3.1	3.0	238.5
Min River Rels	cfs	50	50	50	50	150	200	250	1500	1500	50	50	50	

Willow Crk Operations		Initial Cont		21.4 kaf		Maximum Cont		31.9 kaf		Minimum Cont		0.1 kaf		
			Elev	4134.41 ft			Elev	4142.04 ft			Elev	4093.42 ft		
	2013	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	3.9	2.4	0.3	0.0	0.0	0.1	3.9	0.0	0.0	0.0	0.0	0.0	10.6
WCR Dam Rels	kaf	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	3.9	3.0	7.0
End-Month Content	kaf	25.3	27.7	28.0	28.0	28.0	28.0	31.9	31.9	31.9	31.9	28.0	25.0	
End-Month Elevation	ft	4137.35	4139.10	4139.31	4139.31	4139.31	4139.31	4142.04	4142.04	4142.04	4142.04	4139.31	4137.13	
Net Change Content	kaf	3.9	2.4	0.3	0.0	0.0	0.0	3.9	0.0	0.0	0.0	-3.9	-3.0	3.6

Pishkun Operations		Initial Cont		22.1 kaf		Maximum Cont		46.8 kaf		Minimum Cont		16.0 kaf		
			Elev	4349.67 ft			Elev	4370.07 ft			Elev	4341.99 ft		
	2013	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	18.9	55.9	79.3	83.6	61.1	4.5	303.3
Total Inflow	kaf	0.0	0.0	0.0	0.0	0.0	0.0	16.1	44.7	65.0	71.1	51.9	3.8	252.6
PSH Dam Rels	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	65.0	88.0	35.0	18.0	241.0
End-Month Content	kaf	22.1	21.9	21.7	21.5	21.3	21.1	37.0	46.7	46.7	29.8	46.7	32.5	
End-Month Elevation	ft	4349.67	4349.44	4349.21	4348.98	4348.75	4348.51	4363.28	4370.00	4370.00	4357.50	4370.00	4359.81	
Net Change Content	kaf	0.0	-0.2	-0.2	-0.2	-0.2	-0.2	15.9	9.7	0.0	-16.9	16.9	-14.2	10.4

Greenfields Irrig	2013	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	35.0	65.0	88.0	35.0	18.0	241.0
GID Delivery	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	65.0	88.0	35.0	18.0	241.0

River Blw Div Dam	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Flow Over Div Dam	cfs	85	50	88	96	149	200	250	1499	1736	332	304	213	
PSC Return Flow	cfs	0	0	0	0	0	0	37	146	217	203	150	12	
WCR Dam Rels	cfs	0	0	0	0	0	2	0	0	0	0	63	50	
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	67	59	101	111	166	226	336	1543	1753	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	50	59	101	111	166	226	336	1415	1618	50	50	50	

TABLE MTT14C
GIBSON RESERVOIR MONTHLY OPERATIONS
Based on October 2013 Inflow Estimates
2014 Maximum Probable Runoff

Gibson Reservoir		Initial Cont		7.3 kaf		Maximum Cont		98.7 kaf		Minimum Cont		5.0 kaf	
			Elev	4615.18 ft			Elev	4724.01 ft			Elev	4608.47 ft	
	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	19.3	17.0	14.9	15.1	13.5	15.8	46.3	203.3	257.3	87.4	31.7	24.6	746.2
Spillway Rels	cfs	0	0	0	0	0	0	0	0	0	0	0	0	
Total Release	kaf	18.8	16.9	13.9	13.8	12.5	13.3	35.5	148.2	238.2	101.1	82.2	20.5	714.9
Total Release	cfs	306	284	226	224	225	216	597	2410	4003	1644	1337	345	
End-Month Content	kaf	7.8	7.9	8.9	10.2	11.2	13.7	24.5	79.6	98.7	85.0	34.5	38.6	
End-Month Elevation	ft	4616.43	4616.68	4619.08	4622.06	4624.26	4629.40	4648.59	4709.02	4724.01	4713.41	4663.30	4668.67	
End-Month Area	acre	406.1	408.4	424.8	446.9	466.0	503.7	622.6	1214.2	1334.0	1249.8	738.7	790.1	
Net Change Content	kaf	0.5	0.1	1.0	1.3	1.0	2.5	10.8	55.1	19.1	-13.7	-50.5	4.1	31.3

Sun River Div Dam	2013	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	75	54	0	0	0	0	25	47	0	0	0	0	
Rels to PSC	cfs	0	0	0	0	0	0	378	847	1333	1360	994	124	
Total Diversion	kaf	4.6	3.2	0.0	0.0	0.0	0.0	24.0	55.0	79.3	83.6	61.1	7.4	318.2
Total Diversion	cfs	75	54	0	0	0	0	403	894	1333	1360	994	124	
Flow Over Div Dam	kaf	15.4	14.9	15.4	15.4	13.9	15.4	14.9	104.5	171.7	22.3	22.9	14.4	441.1
Flow Over Div Dam	cfs	250	250	250	250	250	250	250	1700	2886	363	372	242	
Min River Rels	kaf	15.4	14.9	15.4	15.4	13.9	15.4	14.9	104.5	101.2	3.1	3.1	8.9	326.1
Min River Rels	cfs	250	250	250	250	250	250	250	1700	1700	50	50	150	

Willow Crk Operations		Initial Cont		21.4 kaf		Maximum Cont		31.9 kaf		Minimum Cont		0.1 kaf	
			Elev	4134.41 ft			Elev	4142.04 ft			Elev	4093.42 ft	
	2013	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	3.9	2.7	0.0	0.0	0.0	0.1	1.4	2.5	0.0	0.0	0.0	0.0	10.6
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	25.3	28.0	28.0	28.0	28.0	28.0	29.4	31.9	31.9	31.9	31.9	31.0	
End-Month Elevation	ft	4137.35	4139.31	4139.31	4139.31	4139.31	4139.31	4140.30	4142.04	4142.04	4142.04	4142.04	4141.42	
Net Change Content	kaf	3.9	2.7	0.0	0.0	0.0	0.0	1.4	2.5	0.0	0.0	0.0	-0.9	9.6

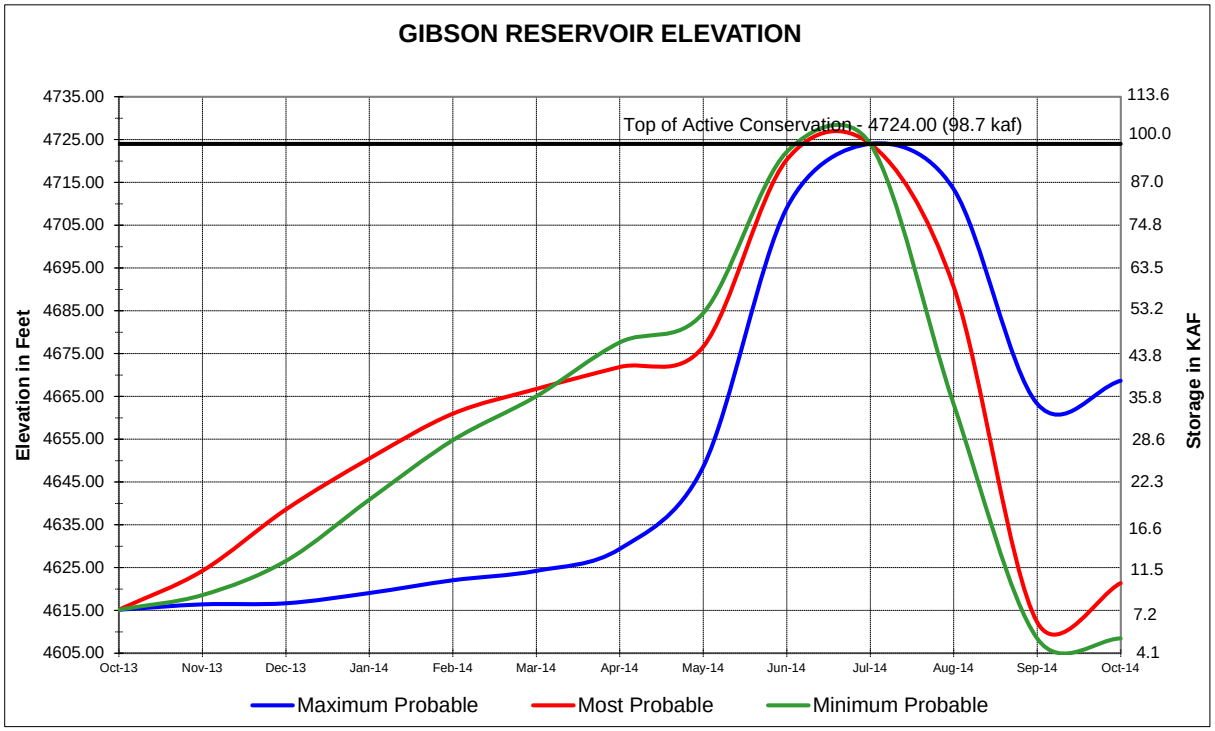
Pishkun Operations		Initial Cont		22.1 kaf		Maximum Cont		46.8 kaf		Minimum Cont		16.0 kaf	
			Elev	4349.67 ft			Elev	4370.07 ft			Elev	4341.99 ft	
	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Rels to PSC	kaf	0.0	0.0	0.0	0.0	0.0	0.0	22.5	52.1	79.3	83.6	61.1	7.4	306.0
Total Inflow	kaf	0.0	0.0	0.0	0.0	0.0	0.0	19.1	41.7	65.0	71.1	51.9	6.3	255.1
PSH Dam Rels	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	65.0	88.0	35.0	18.0	241.0
End-Month Content	kaf	22.1	21.9	21.7	21.5	21.3	21.1	40.0	46.7	46.7	29.8	46.7	35.0	
End-Month Elevation	ft	4349.67	4349.44	4349.21	4348.98	4348.75	4348.51	4365.44	4370.00	4370.00	4357.50	4370.00	4361.78	
Net Change Content	kaf	0.0	-0.2	-0.2	-0.2	-0.2	-0.2	18.9	6.7	0.0	-16.9	16.9	-11.7	12.9

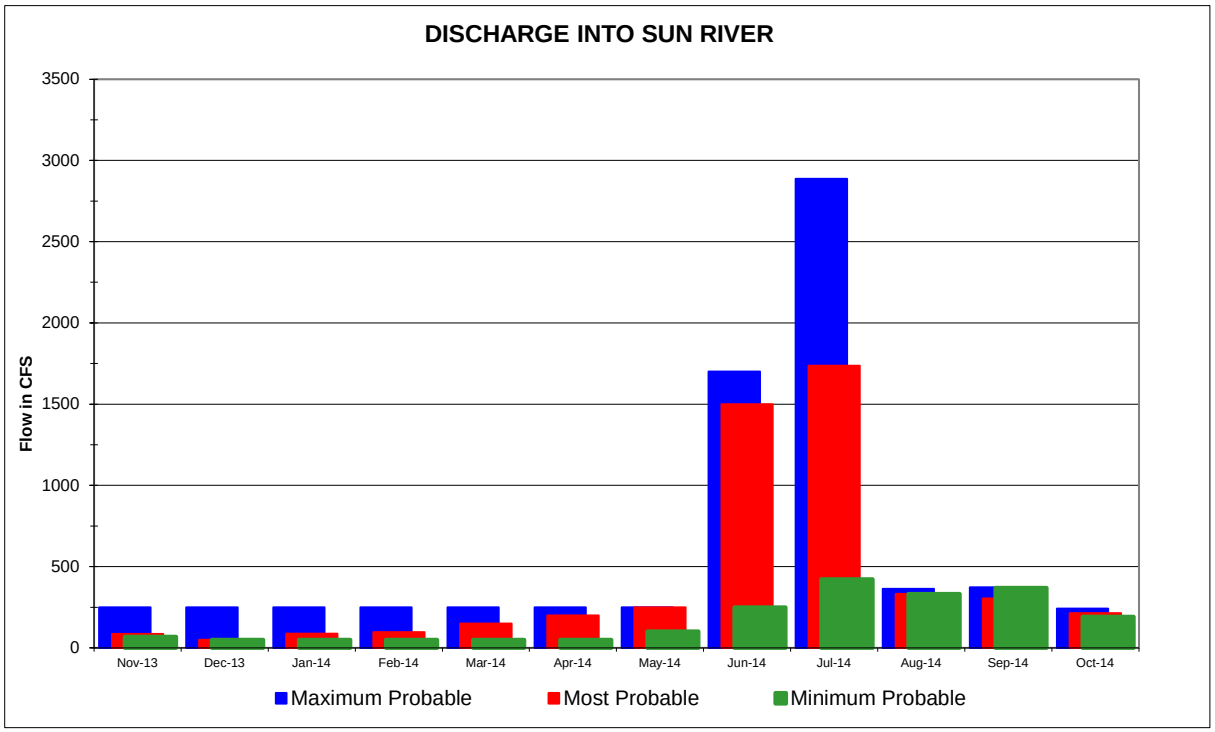
Greenfields Irrig	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
GID Demand	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	65.0	88.0	35.0	18.0	241.0
GID Delivery	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	65.0	88.0	35.0	18.0	241.0

River Blw Div Dam	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Flow Over Div Dam	cfs	250	250	250	250	250	250	250	1700	2886	363	372	242	
PSC Return Flow	cfs	0	0	0	0	0	0	45	135	192	172	135	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	345	1732	2877	236	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	328	1594	2734	50	50	50	

FIGURE MTG15

GIBSON RESERVOIR





WATER YEAR 2014

Lake Elwell (Tiber Dam)

Three operating plans were prepared for 2014 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 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. Since closure in 1957, the reservoir has accumulated a sediment volume of 42,179 AF below elevation 2993.00. 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 - June, releases are adjusted to allow storage to fill to elevation 2993 (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 2976-2980 (667,213-719,885 AF) by March 1. 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 (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 - May 15 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 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 - June will be maintained at about 500 cfs, allowing storage to exceed elevation 2993 feet (925,649 AF), the top of the joint use pool.

12. March-June releases are based on forecasted inflows with the objective of filling Lake Elwell to an elevation of 2993 feet (925,649 AF) by the end of June. However, in some years, March-June releases may be based on filling the reservoir to as high as an elevation of 3008 feet (1,227,174 AF) by the end of June, to provide replacement storage and assist the Corps with the operations of their main stem 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 - September 15.

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 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 2013, the total annual valley precipitation was above average at 127 percent of average and the total annual mountain precipitation in the Marias River Basin was 100 percent of average. The total annual runoff into Lake Elwell during 2013 was 465,756 AF, 90 percent of average but 9,802 AF more than experienced in 2012. At the beginning of WY 2013, the storage content in Lake Elwell was 833,321 AF at elevation 2987.67 feet, approximately 107 percent of normal and 90 percent of full capacity. This was 0.92 feet and 14,667 AF higher than at this same time a year ago.

The most probable October - December inflows to Lake Elwell were estimated to vary from 20 to 30 percentile. The most probable inflows to Lake Elwell for January - September were estimated to equal 40 percentile inflows or inflows that are historically exceeded 60 percent of the time.

The minimum probable October - September inflows to Lake Elwell were estimated to equal lower decile inflows or inflows that are historically exceeded 90 percent of the time.

The maximum probable October - December inflows to Lake Elwell were estimated to equal 75 percentiles inflows or inflows that are historically exceeded 25 percent of the time. The maximum probable January - September inflows were estimated to equal 80 percentile.

Lake Elwell is not expected to fill during 2014 under the minimum probable runoff condition, but would fill under the most and maximum probable runoff conditions. Water levels are expected to peak in late June or early July at approximately 6.25 feet 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 500 cfs would be maintained through the winter under the minimum probable runoff condition, a minimum river release of 600 cfs would be maintained through the winter under the most probable runoff conditions, and a minimum river release of 740 cfs would be maintained through the winter under the maximum probable inflow conditions.

TABLE MTT15
TIBER RESERVOIR OPERATING PLAN
Based on October 1 2013 Inflow Estimates

2014 MINIMUM Probable Inflow Forecast

Tiber Reservoir		Initial Cont Elev	833.3 kaf 2987.67 ft			Maximum Cont Elev	1356.5 kaf 3013.69 ft			Minimum Cont Elev	260.7 kaf 2932.27 ft		
	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	8.4	10.7	9.3	11.1	13.4	21.5	34.8	78.3	68.6	18.6	4.9	4.9	284.5
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	30.7	29.8	30.7	30.7	27.8	30.7	29.8	30.7	29.8	30.7	30.7	29.8	361.9
Dam Release	cfs	499	501	499	499	501	499	501	499	501	499	499	501	
End-Month Content	kaf	811.0	791.9	770.5	750.9	736.5	727.3	732.3	779.9	818.7	806.6	780.8	755.9	
End-Month Elevation	ft	2986.26	2985.01	2983.56	2982.21	2981.19	2980.54	2980.89	2984.20	2986.75	2985.98	2984.26	2982.55	
Net Change Content	kaf	-22.3	-19.1	-21.4	-19.6	-14.4	-9.2	5.0	47.6	38.8	-12.1	-25.8	-24.9	-77.4

2014 MOST Probable Inflow Forecast

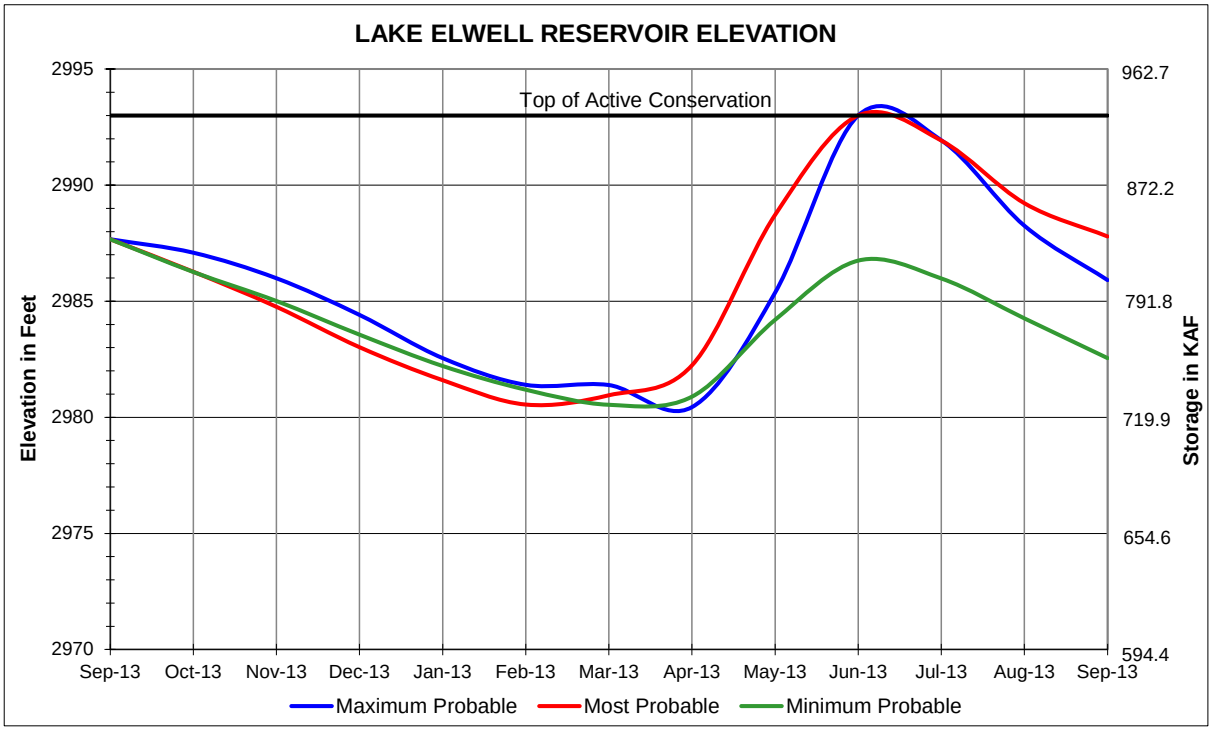
Tiber Reservoir		Initial Cont Elev	833.3 kaf 2987.67 ft			Maximum Cont Elev	1356.5 kaf 3013.69 ft			Minimum Cont Elev	260.7 kaf 2932.27 ft		
	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	14.8	12.8	11.2	16.6	18.5	42.5	54.0	142.2	124.2	41.9	14.4	12.0	505.1
Evaporation	kaf	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	33.3	36.9	35.7	43.0	49.2	61.5	61.5	35.7	503.2
Dam Release	cfs	600	600	600	600	600	600	600	699	827	1000	1000	600	
End-Month Content	kaf	811.2	788.3	762.6	742.3	727.5	733.1	751.4	850.6	925.6	906.0	858.9	835.2	
End-Month Elevation	ft	2986.27	2984.76	2983.02	2981.60	2980.55	2980.95	2982.24	2988.72	2993.00	2991.92	2989.22	2987.79	
Net Change Content	kaf	-22.1	-22.9	-25.7	-20.3	-14.8	5.6	18.3	99.2	75.0	-19.6	-47.1	-23.7	1.9

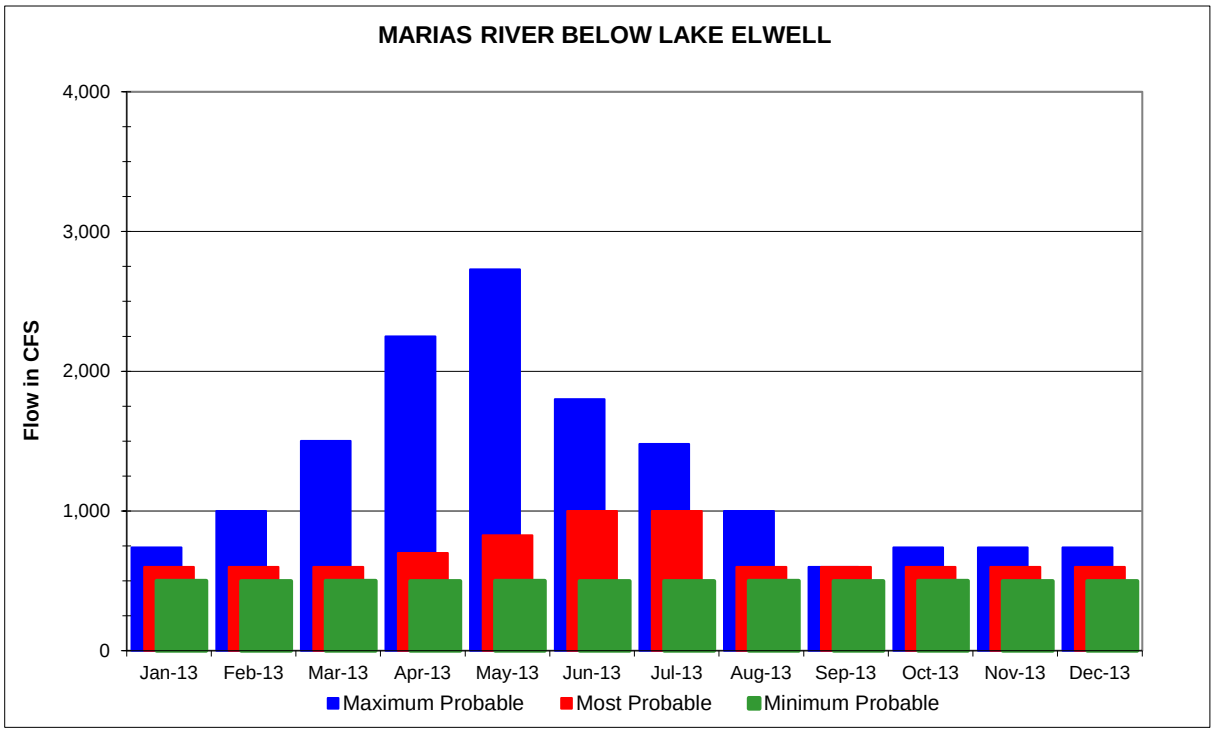
2014 MAXIMUM Probable Inflow Forecast

Tiber Reservoir		Initial Cont Elev	833.3 kaf 2987.67 ft			Maximum Cont Elev	1356.5 kaf 3013.69 ft			Minimum Cont Elev	260.7 kaf 2932.27 ft		
	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	27.7	26.7	21.7	18.4	24.6	61.4	75.9	209.7	290.7	91.3	27.6	22.3	898.0
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	44.0	45.5	45.5	41.1	61.5	89.3	138.3	162.4	110.7	91.0	59.5	925.7
Dam Release	cfs	600	739	740	740	740	1000	1501	2249	2729	1800	1480	1000	
End-Month Content	kaf	824.1	806.8	783.0	755.9	739.4	739.3	725.9	797.3	925.6	906.2	842.8	805.6	
End-Month Elevation	ft	2987.09	2985.99	2984.41	2982.55	2981.40	2981.39	2980.44	2985.37	2993.00	2991.93	2988.25	2985.91	
Net Change Content	kaf	-9.2	-17.3	-23.8	-27.1	-16.5	-0.1	-13.4	71.4	128.3	-19.4	-63.4	-37.2	-27.7

FIGURE MTG16

LAKE ELWELL





WATER YEAR 2014

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 Reservoir, 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, 2013 was 17,651 AF, 114 percent of normal at elevation 4750.85. The total inflow to Lake Sherburne during WY 2013 was 158,400 AF, 113 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. The final reservoir filling up to elevation 4788.00 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, 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.

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. The outlet gates should be fully opened during the spring runoff when the water surface rises to or above elevation 4788.00 and fully open at any time the water surface is above elevation 4788.00.

Three operating plans were prepared for 2014 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 - September inflows were estimated at 50 percentile .

The minimum probable October - September inflows to Lake Sherburne were estimated to equal 10 percentile.

The maximum probable October - September inflows to Lake Sherburne are estimated to equal 90 percentile.

Fresno Reservoir

The cumulative valley precipitation through the end of June was 167 percent of average. Precipitation continued to be above average through then end of the water year. July, August, and September valley precipitation were 161, 160, and 162 percent of average, respectively. Total inflow into Fresno Reservoir for the year was 247,800 AF, 98 percent of average. Storage on September 30, 2013, was 63,495 AF at elevation 2567.94, 161 percent of average and 69 percent of normal full capacity. Winter releases were set on October 8 at approximately 45 cfs to get close to the desired spring flood control target level at elevation 2567.0.

The natural runoff of the Milk River at the Eastern Crossing, which is immediately upstream of Fresno Reservoir, is computed as part of the International Joint Commission accounting and published in associated report each subsequent water year. The natural flow at Eastern Crossing for March - July 2013 period was approximately 73,900 AF.

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 by March 1, prior to spring runoff. Maintaining the water level below elevation 2567.0 provides 32,534 AF of space for storage of spring runoff.

Winter releases will be the amount necessary to provide a minimum of 32,534 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 45 cfs will be made from Fresno Reservoir during October - 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 that 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 35 percentile natural inflows, this relates to natural inflows that have historically been exceeded 65 percent of the time for October - December. The natural inflows estimated for January - September were estimated at 50 percentile.

The minimum probable natural inflows during October - September to Fresno Reservoir are estimated to equal 10 percentile that are historically exceeded 90 percent of the time.

The maximum probable natural inflows during October - December to Fresno Reservoir are estimated to equal 75 percent exceedance levels or conditions that would typically only be exceeded 25 percent of the time. The natural inflows estimated for January - September were estimated at 90 percentile, this relates to natural inflows that are exceeded only 10 percent of the time.

Nelson Reservoir

Storage in Nelson Reservoir on September 30, 2013 was 75,161 AF, 141 percent of average at elevation 2220.71. Nelson Reservoir is filled 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.

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 2014. Nelson Reservoir is expected to fill from natural runoff occurring between Fresno Reservoir and Dodson Diversion Dam.

TABLE MTT16A
MILK RIVER BASIN OPERATING PLAN
Based on October 1 Inflow Estimates

2013 Minimum Probable Runoff

Sherburne Reservoir	2013		Initial	Cont:	17.7	kaf	Min	Cont:	3.1	kaf	Max	Cont:	66.2	kaf
				Elev:	4750.90	ft		Elev:	4731.73	ft		Elev:	4788.03	ft

Sherburne Res	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Sherburne Inflow	kaf	4.5	3.9	3.3	2.2	1.4	2.9	8.5	25.1	27.2	14.4	6.4	3.9	103.7
Sherburne Rels	kaf	0.0	0.0	0.0	0.0	0.0	5.5	34.3	25.6	18.5	24.1	6.4	0.0	114.4
Sherburne Rels	cfs	0	0	0	0	0	89	576	416	311	392	104	0	
End-Month Content	kaf	22.2	26.1	29.4	31.6	33.0	30.4	4.6	4.1	12.8	3.1	3.1	7.0	
End-Month Elev	ft	4755.49	4759.20	4762.18	4764.10	4765.30	4763.06	4734.32	4733.49	4745.42	4731.73	4731.73	4737.94	

St. Mary River	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
St Mary Runoff	kaf	8.4	4.8	4.8	4.0	4.6	4.1	7.4	68.2	81.5	42.1	21.7	14.5	266.1
Nat Flow @ Boundary	kaf	12.9	8.7	8.1	6.2	6.0	7.0	15.9	93.3	108.7	56.5	28.1	18.4	369.8
US Share	kaf	3.2	4.4	4.0	3.1	3.0	3.5	4.0	36.4	44.4	18.0	7.0	4.6	135.6
CA Share	kaf	9.7	4.3	4.1	3.1	3.0	3.5	11.9	56.9	64.3	38.5	21.1	13.8	234.2
CA Delivery	kaf	8.2	4.3	4.1	3.1	3.0	3.5	11.9	56.9	64.3	38.5	21.1	13.8	232.7
Excess to CA	kaf	0.2	0.5	0.7	0.9	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.7	4.6
Desired canal div	cfs	0	0	0	0	0	100	500	600	600	600	550	0	
St Mary canal rels	cfs	0	0	0	0	0	99	501	600	600	450	114	0	
Max canal release	cfs	0	0	0	0	0	100	500	600	600	600	550	0	
St Mary canal rels	kaf	0.0	0.0	0.0	0.0	0.0	6.1	29.8	36.9	35.7	27.7	7.0	0.0	143.2

Fresno Reservoir	2013		Initial	Cont:	61.3	kaf	Min	Cont:	0.5	kaf	Max	Cont:	91.7	kaf
				Elev:	2567.95	ft		Elev:	2531.77	ft		Elev:	2575.00	ft

Fresno Reservoir	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Milk River runoff	kaf	1.0	0.5	0.2	0.3	0.7	2.5	3.2	2.2	2.8	0.8	0.8	1.9	16.9
From St Mary Canal	kaf	0.0	0.0	0.0	0.0	0.0	5.5	26.8	33.2	32.1	24.9	6.3	0.0	128.8
Fresno inflow	kaf	1.0	0.5	0.2	0.3	0.7	8.0	30.0	35.4	34.9	25.7	7.1	1.9	145.7
Fresno Min Rels	kaf	2.8	2.7	2.8	2.8	2.5	2.8	2.7	2.8	2.7	2.8	2.8	2.7	32.9
Fresno Release	kaf	2.8	2.7	2.8	2.8	2.5	2.8	2.7	26.6	46.5	39.5	49.9	6.0	187.6
Fresno Release	cfs	46	45	46	46	45	46	45	433	781	642	812	101	
End-Month Content	kaf	59.5	57.3	54.7	52.2	50.4	55.6	82.9	91.7	80.1	66.3	23.5	19.4	
End-Month Elev	ft	2567.45	2566.83	2566.06	2565.30	2564.71	2566.33	2573.21	2575.00	2572.60	2569.29	2552.58	2550.16	
Project Allotment	f/ac								0.2	0.5	0.5	0.6		1.8
Project Delivery	kaf								14.6	36.5	36.5	43.9		131.5
FBIIP Demand	kaf										1.0	6.0	6.0	13.0
Fresno-Dodson Gain	kaf						10.0	15.0						25.0
Bowdoin Demand	kaf							2.0	1.5					3.5
Transfer to Nelson	kaf	0.0	0.0	0.0	0.0	0.0	10.0	10.0	10.0	10.0	2.0	0.0	0.0	42.0

Nelson Reservoir	2013		Initial	Cont:	75.2	kaf	Min	Cont:	18.0	kaf	Max	Cont:	79.0	kaf
				Elev:	2220.72	ft		Elev:	2199.91	ft		Elev:	2221.61	ft

Nelson Reservoir	2013	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	9.0	9.0	9.0	9.0	1.8	0.0	0.0	37.8
End-Month Content	kaf	73.4	71.6	69.8	68.0	66.3	73.5	77.2	77.2	70.5	56.6	38.2	36.4	
End-Month Elev	ft	2220.29	2219.85	2219.40	2218.95	2218.52	2220.31	2221.19	2221.19	2219.58	2215.94	2209.94	2209.20	
Net Change Content	kaf	-1.8	-1.8	-1.8	-1.8	-1.7	7.2	3.7	0.0	-6.7	-13.9	-18.4	-1.8	-38.8
Total Release	kaf							3.5	7.2	13.9	13.9	16.6		55.1
Malta Delivery	kaf								3.7	9.2	9.2	11.0		33.1
Glasgow Delivery	kaf								1.9	4.7	4.7	5.6		16.9

TABLE MTT16B
MILK RIVER BASIN OPERATING PLAN
Based on October 1 Inflow Estimates

2013 Most Probable Runoff

Sherburne Reservoir	2013		Initial	Cont:	17.7	kaf	Min	Cont:	3.1	kaf	Max	Cont:	66.2	kaf
				Elev:	4750.90	ft		Elev:	4731.73	ft		Elev:	4788.03	ft

Sherburne Res	2013	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	3.3	24.8	9.7	20.1	17.5	32.2	22.9	130.5
Sherburne Rels	cfs	0	0	0	0	0	54	417	158	338	285	524	385	
End-Month Content	kaf	24.5	29.8	33.5	36.4	39.2	39.1	23.8	47.0	66.2	66.2	42.6	26.9	
End-Month Elev	ft	4757.71	4762.53	4765.72	4768.12	4770.36	4770.29	4757.04	4776.02	4788.03	4788.03	4772.92	4759.93	

St. Mary River	2013	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
US Share	kaf	6.4	9.1	6.2	5.0	4.4	6.0	8.5	53.9	77.2	38.8	10.2	6.6	232.3
CA Share	kaf	19.1	9.1	6.3	5.1	4.5	5.9	25.5	74.5	97.1	59.3	30.7	19.6	356.7
CA Delivery	kaf	17.2	9.1	6.3	5.1	4.5	5.9	25.5	74.5	97.1	59.3	30.7	19.6	354.8
Excess to CA	kaf	1.5	3.8	2.5	2.1	1.6	0.0	0.0	0.0	22.3	1.9	0.0	0.0	35.7
Desired canal div	cfs	0	0	0	0	0	100	400	500	600	600	550	375	
St Mary canal rels	cfs	0	0	0	0	0	99	400	499	600	600	550	375	
Max canal release	cfs	0	0	0	0	0	100	400	500	600	600	550	375	
St Mary canal rels	kaf	0.0	0.0	0.0	0.0	0.0	6.1	23.8	30.7	35.7	36.9	33.8	22.3	189.3

Fresno Reservoir	2013		Initial	Cont:	61.3	kaf	Min	Cont:	0.5	kaf	Max	Cont:	91.7	kaf
				Elev:	2567.95	ft		Elev:	2531.77	ft		Elev:	2575.00	ft

Fresno Reservoir	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Milk River runoff	kaf	4.3	2.3	1.4	1.9	4.9	19.6	22.6	23.8	19.4	6.8	3.5	7.7	118.2
From St Mary Canal	kaf	0.0	0.0	0.0	0.0	0.0	5.5	21.4	27.6	32.1	33.2	30.4	20.1	170.3
Fresno inflow	kaf	4.3	2.3	1.4	1.9	4.9	25.1	44.0	51.4	51.5	40.0	33.9	27.8	288.5
Fresno Min Rels	kaf	2.8	2.7	2.8	2.8	2.5	2.8	2.7	2.8	2.7	2.8	2.8	2.7	32.9
Fresno Release	kaf	2.8	2.7	2.8	2.8	2.5	6.9	33.0	51.4	51.5	49.9	54.9	33.6	294.8
Fresno Release	cfs	46	45	46	46	45	112	555	836	865	812	893	565	
End-Month Content	kaf	62.8	62.4	61.0	60.1	62.5	80.7	91.7	91.7	91.7	81.8	60.8	55.0	
End-Month Elev	ft	2568.36	2568.25	2567.87	2567.62	2568.28	2572.73	2575.00	2575.00	2575.00	2572.97	2567.81	2566.15	
Project Allotment	f/ac								0.3	0.5	0.6	0.6	0.2	2.2
Project Delivery	kaf								21.9	36.5	43.9	43.9	14.6	160.8
FBIIP Demand	kaf										1.0	6.0	6.0	13.0
Fresno-Dodson Gain	kaf						10.0	15.0					2.0	27.0
Bowdoin Demand	kaf							2.0	1.5					3.5
Transfer to Nelson	kaf	0.0	0.0	0.0	0.0	0.0	10.0	10.0	10.0	10.0	5.0	5.0	15.0	65.0

Nelson Reservoir	2013		Initial	Cont:	75.2	kaf	Min	Cont:	18.0	kaf	Max	Cont:	79.0	kaf
				Elev:	2220.72	ft		Elev:	2199.91	ft		Elev:	2221.61	ft

Nelson Reservoir	2013	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	9.0	9.0	9.0	9.0	4.5	4.5	13.5	58.5
End-Month Content	kaf	73.4	71.6	69.8	68.0	66.3	73.5	77.2	77.2	75.2	61.3	47.4	53.5	
End-Month Elev	ft	2220.29	2219.85	2219.40	2218.95	2218.52	2220.31	2221.19	2221.19	2220.72	2217.22	2213.24	2215.07	
Net Change Content	kaf	-1.8	-1.8	-1.8	-1.8	-1.7	7.2	3.7	0.0	-2.0	-13.9	-13.9	6.1	-21.7
Total Release	kaf							3.5	7.2	9.2	16.6	16.6	5.6	58.7
Malta Delivery	kaf								5.5	9.2	11.0	11.0	3.7	40.4
Glasgow Delivery	kaf								2.8	4.7	5.6	5.6	1.9	20.6

TABLE MTT16C
MILK RIVER BASIN OPERATING PLAN
Based on October 1 Inflow Estimates

2013 Maximum Probable Runoff

Sherburne Reservoir	2013		Initial	Cont:	17.7	kaf	Min	Cont:	3.1	kaf	Max	Cont:	66.2	kaf
				Elev:	4750.90	ft		Elev:	4731.73	ft		Elev:	4788.03	ft

Sherburne Res	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Sherburne Inflow	kaf	6.8	5.3	3.8	3.4	2.8	3.2	9.5	36.1	54.5	27.9	12.3	7.8	173.4
Sherburne Rels	kaf	0.0	0.0	0.0	0.0	0.0	1.5	15.4	21.5	38.5	30.7	29.2	26.8	163.6
Sherburne Rels	cfs	0	0	0	0	0	24	259	350	647	499	475	450	
End-Month Content	kaf	24.5	29.8	33.6	37.0	39.8	41.5	35.6	50.2	66.2	63.4	46.5	27.5	
End-Month Elev	ft	4757.71	4762.53	4765.81	4768.61	4770.83	4772.11	4767.47	4778.16	4788.03	4786.39	4775.67	4760.48	

St. Mary River	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
St Mary Runoff	kaf	45.9	37.3	21.2	15.8	14.4	21.7	46.1	147.5	215.6	130.5	51.7	39.3	787.0
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
US Share	kaf	16.1	21.3	12.5	9.6	8.6	12.4	17.9	81.5	125.1	68.9	21.7	13.6	409.2
CA Share	kaf	36.6	21.3	12.5	9.6	8.6	12.5	37.7	102.1	145.0	89.5	42.3	33.5	551.2
CA Delivery	kaf	32.9	21.3	12.5	9.6	8.6	12.5	37.7	102.1	145.0	89.5	42.3	33.5	547.5
Excess to CA	kaf	13.0	16.0	8.7	6.2	5.8	4.6	0.0	36.2	73.4	34.8	4.8	10.3	213.8
Desired canal div	cfs	0	0	0	0	0	100	400	500	600	600	550	375	
St Mary canal rels	cfs	0	0	0	0	0	99	400	499	600	600	550	375	
Max canal release	cfs	0	0	0	0	0	100	400	500	600	600	550	375	
St Mary canal rels	kaf	0.0	0.0	0.0	0.0	0.0	6.1	23.8	30.7	35.7	36.9	33.8	22.3	189.3

Fresno Reservoir	2013		Initial	Cont:	61.3	kaf	Min	Cont:	0.5	kaf	Max	Cont:	91.7	kaf
				Elev:	2567.95	ft		Elev:	2531.77	ft		Elev:	2575.00	ft

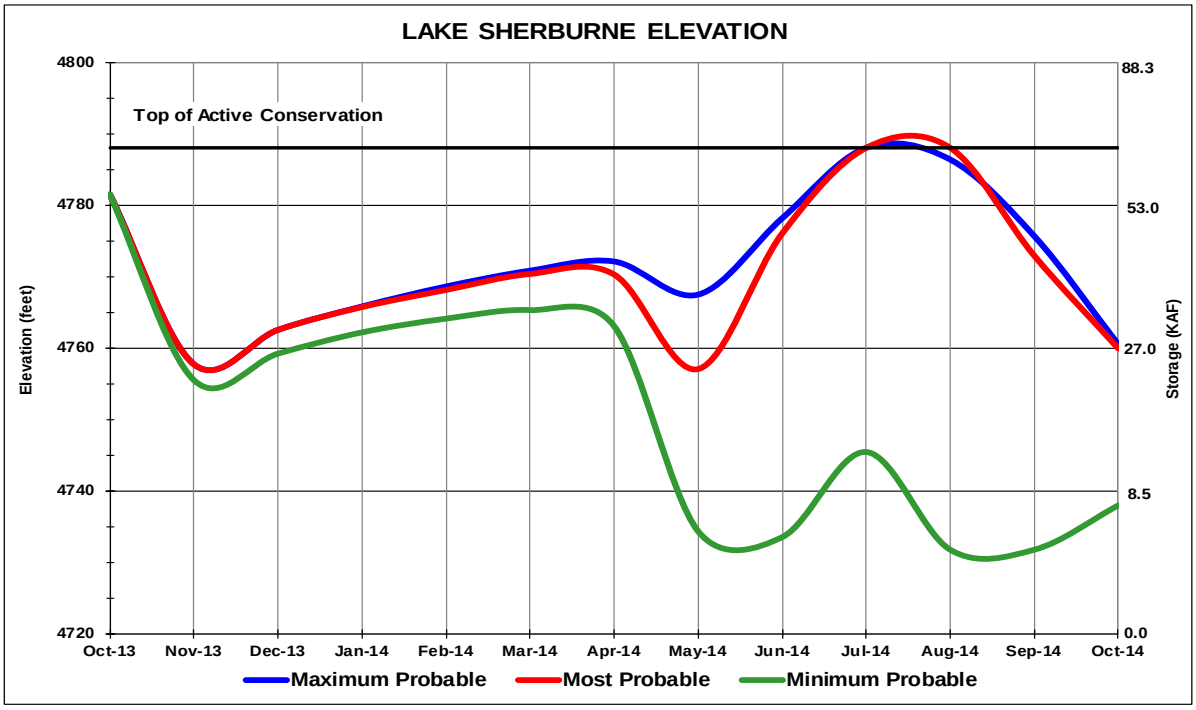
Fresno Reservoir	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Milk River runoff	kaf	8.8	4.0	2.9	1.9	4.9	41.3	41.1	40.7	42.9	18.2	7.7	11.2	225.6
From St Mary Canal	kaf	0.0	0.0	0.0	0.0	0.0	5.5	21.4	27.6	32.1	33.2	30.4	20.1	170.3
Fresno inflow	kaf	8.8	4.0	2.9	1.9	4.9	46.8	62.5	68.3	75.0	51.4	38.1	31.3	395.9
Fresno Min Rels	kaf	2.8	5.4	5.5	5.5	5.0	5.5	5.4	2.8	2.7	2.8	2.8	2.7	48.9
Fresno Release	kaf	2.8	5.4	5.5	5.5	5.0	24.1	53.1	68.3	75.0	53.5	58.5	40.9	397.6
Fresno Release	cfs	46	91	89	89	90	392	892	1111	1260	870	951	687	
End-Month Content	kaf	67.3	65.9	63.3	59.7	59.6	82.3	91.7	91.7	91.7	89.6	69.2	59.6	
End-Month Elev	ft	2569.55	2569.19	2568.49	2567.51	2567.48	2573.08	2575.00	2575.00	2575.00	2574.58	2570.04	2567.48	
Project Allotment	f/ac								0.3	0.5	0.7	0.7	0.3	2.4
Project Delivery	kaf								21.9	36.5	47.5	47.5	21.9	175.3
FBIIP Demand	kaf										1.0	6.0	6.0	13.0
Fresno-Dodson Gain	kaf						10.0	15.0					2.0	27.0
Bowdoin Demand	kaf							2.0	1.5					3.5
Transfer to Nelson	kaf	0.0	0.0	0.0	0.0	0.0	10.0	10.0	10.0	10.0	5.0	5.0	15.0	65.0

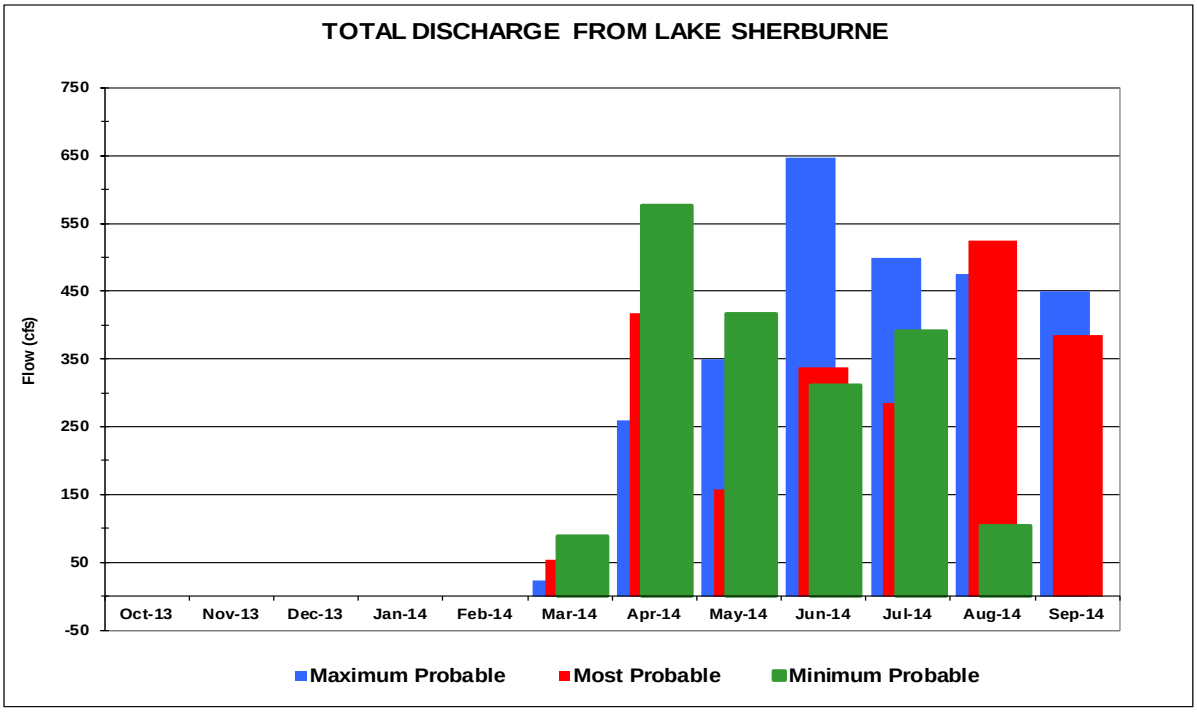
Nelson Reservoir	2013		Initial	Cont:	75.2	kaf	Min	Cont:	18.0	kaf	Max	Cont:	79.0	kaf
				Elev:	2220.72	ft		Elev:	2199.91	ft		Elev:	2221.61	ft

Nelson Reservoir	2013	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	9.0	9.0	9.0	9.0	4.5	4.5	13.5	58.5
End-Month Content	kaf	73.4	71.6	69.8	68.0	66.3	73.5	77.2	77.2	75.2	59.9	44.6	48.0	
End-Month Elev	ft	2220.29	2219.85	2219.40	2218.95	2218.52	2220.31	2221.19	2221.19	2220.72	2216.84	2212.33	2213.43	
Net Change Content	kaf	-1.8	-1.8	-1.8	-1.8	-1.7	7.2	3.7	0.0	-2.0	-15.3	-15.3	3.4	-27.2
Total Release	kaf							3.5	7.2	9.2	18.0	18.0	8.3	64.2
Malta Delivery	kaf								5.5	9.2	11.9	11.9	5.5	44.0
Glasgow Delivery	kaf								2.8	4.7	6.1	6.1	2.8	22.5

FIGURE MTG17

LAKE SHERBURNE

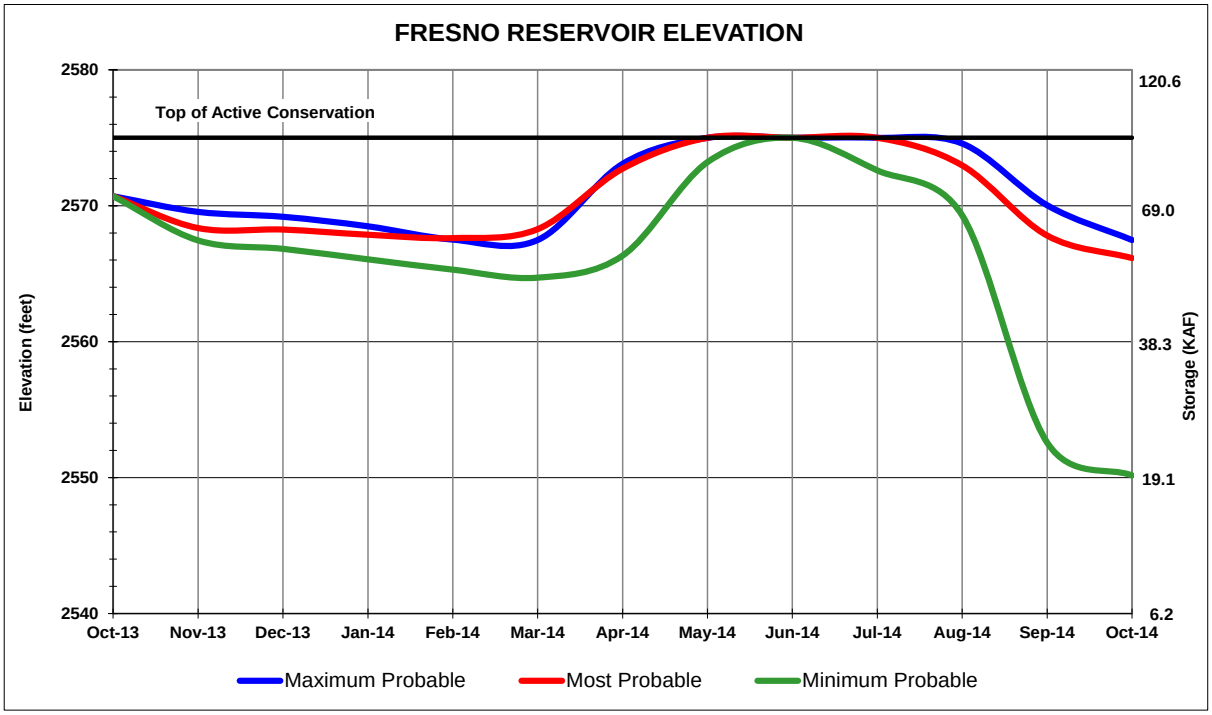


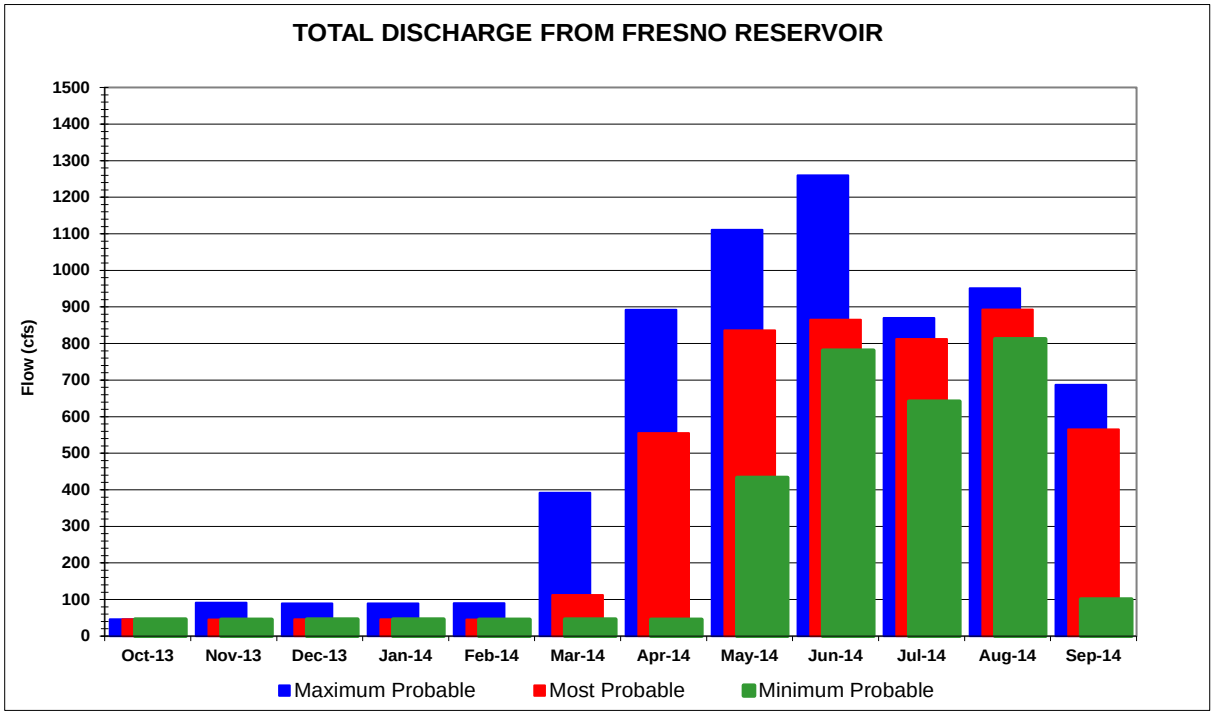


WATER YEAR 2014

FIGURE MTG18

FRESNO RESERVOIR





WATER YEAR 2014

Bighorn Lake and Yellowtail Powerplant

Three operating plans were prepared for 2014 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.

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 (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. This volume represents a 7.48 percent loss in capacity and an average annual loss of 2,480 AF from November 1965 - 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 (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 (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 (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 - March with the objective of evacuating storage to an elevation between 3615-3619 (794,613-821,949 AF) by the end of March, depending on the forecasted snowmelt runoff into Bighorn Lake.

This attempt 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 7,500-8,200 cfs) is avoided, except during times of unusually heavy 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 - 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 and September 15, 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 June - August of 2013 was 37 percent of average while the mountain precipitation during June - August was 63 percent of average. The inflows into Bighorn Lake during June - August were only 53 percent of average. However, valley and mountain precipitation during September was 259 and 235 percent of average respectfully. The inflows into Bighorn Lake during September were 95 percent of average. Due to the dry conditions before September, releases from Bighorn Lake to the Bighorn River were at 1,900 cfs to conserve storage in Bighorn Lake. This was 600 cfs below the optimum fishery flow of 2,500 cfs as recommended by Montana Fish, Wildlife, and Parks. By September 30, 2013, storage in Bighorn Lake increased to 967,489 AF at elevation 3635.53. This was 110 percent of average and 4.47 feet below the top of the joint-use pool and 7.55 feet and 74,212 AF higher than reported on September 30, 2012.

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.

There is a set process for setting the November - 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 - 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 provides the best projected operations, the operating plan includes actual October operations with November - September projected operations.

The most probable November-March accretions were estimated to equal 30 percentile. The April-September accretions were estimated to equal 40 percentile.

The minimum probable November-March accretions were estimated to be about 35,000 AF less than the most probable November-March accretions. The April-September accretions were estimated to equal 10 percentile historic.

The maximum probable November-March accretions were estimated to be about 35,000 AF greater than the most probable November-March accretions. The April-September accretions were estimated to equal 75 percentile.

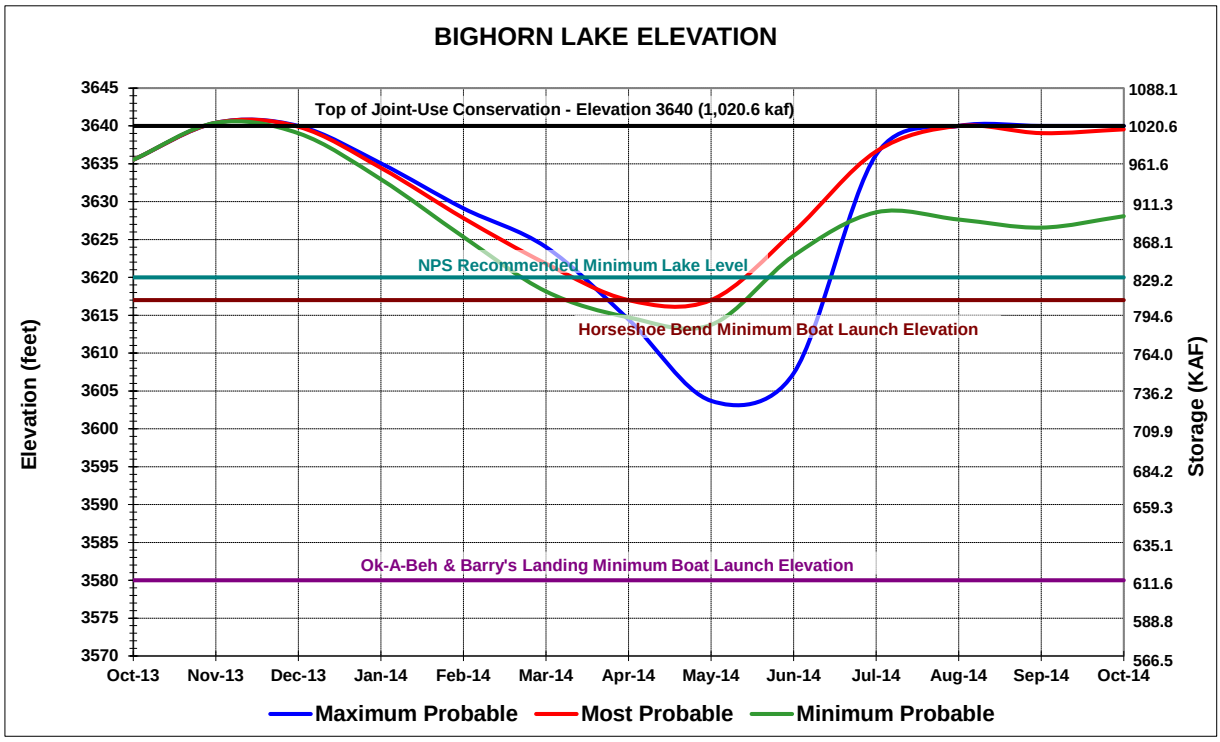
In all three runoff conditions, the release from November - March will be 2,330 cfs. Under the most probable and maximum probable runoff conditions, storage in Bighorn Lake would be expected to fill to the top of the joint-use pool at elevation 3640 (1,020,573 AF) by the end of July and essentially remain full through October. However, under the minimum probable runoff scenario, Bighorn Lake would be expected to slowly fill to near elevation 3628.59 by the end of June. This would be about 114.1 feet below the top of the joint-use pool. Under the minimum probable runoff condition, releases would be reduced to 1,750 cfs in April to meet the operating objectives of the lake during WY 2014. Under the most and maximum probable runoff conditions, it is anticipated river releases would be increased and maintained above 2,500 cfs beginning in May and continuing through September.

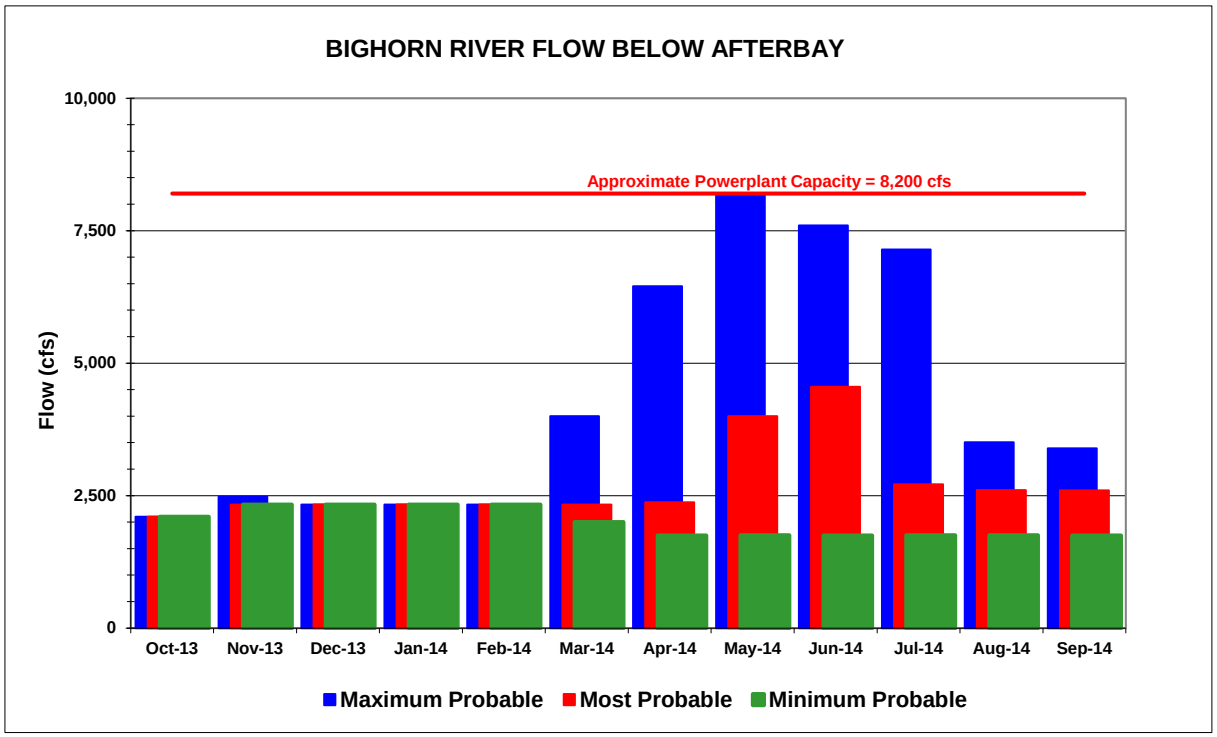
The average power generation produced annually at Yellowtail Power plant during 1967-2013 is 853.7 million kilowatt-hours. Under the minimum and most probable runoff conditions, power generation produced at Yellowtail Power plant during 2014 would be expected to be about 312.8 and 50.2 million kilowatt-hours less than average, respectively. Under the maximum probable runoff conditions, power generation would be about 438.6 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.

FIGURE MTG19

BIGHORN LAKE





WATER YEAR 2014

TABLE MTT17A
BIGHORN LAKE OPERATING PLAN
Based on October 1 2013 Inflow Estimates

2014 MINIMUM Probable Runoff

Bighorn Reservoir		Initial Cont Elev	967.5 kaf 3635.53 ft			Maximum Cont Elev	1278.9 kaf 3657.00 ft			Minimum Cont Elev	469.9 kaf 3547.00 ft		
	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Boysen Release	kaf	31.1	28.3	29.2	29.2	26.4	36.8	44.6	67.6	69.9	76.9	64.6	53.6	558.2
Boysen Release	cfs	506	476	475	475	475	598	750	1099	1175	1251	1051	901	
Buffalo Bill Release	kaf	36.9	30.6	12.6	12.6	11.4	12.6	31.7	101.2	105.0	118.7	109.3	82.3	664.9
Buffalo Bill Release	cfs	600	514	205	205	205	205	533	1646	1765	1930	1778	1383	
Station Gain	kaf	118.0	58.3	28.6	28.2	32.6	46.2	20.3	10.0	1.3	-70.0	-52.3	-0.8	220.4
Monthly Inflow	kaf	186.0	117.2	70.4	70.0	70.4	95.6	96.6	178.8	176.2	125.6	121.6	135.1	1443.5
Monthly Inflow	cfs	3025	1970	1145	1138	1268	1555	1623	2908	2961	2043	1978	2270	
Turbine Release	kaf	127.7	134.4	139.0	139.0	125.5	118.7	102.9	114.3	128.5	134.0	130.7	122.1	1516.8
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	127.7	134.4	139.0	139.0	125.5	118.7	102.9	114.3	128.5	134.0	130.7	122.1	1516.8
Total Release	cfs	2077	2259	2261	2261	2260	1930	1729	1859	2160	2179	2126	2052	
Spring Flow	kaf	4.3	4.2	4.3	4.3	3.9	4.3	4.2	4.3	4.2	4.3	4.3	4.2	50.8
Irrigation Reqmnt	kaf	2.9	0.0	0.0	0.0	0.0	0.0	3.0	11.0	28.6	30.7	27.4	22.2	125.8
Afterbay Rels	kaf	132.0	138.6	143.3	143.3	129.4	123.0	107.1	118.6	132.7	138.3	135.0	126.3	1567.6
Afterbay Rels	cfs	2147	2329	2331	2331	2330	2000	1800	1929	2230	2249	2196	2123	
River Release	kaf	129.1	138.6	143.3	143.3	129.4	123.0	104.1	107.6	104.1	107.6	107.6	104.1	1441.8
River Release	cfs	2100	2329	2331	2331	2330	2000	1749	1750	1749	1750	1750	1749	
Min Release	kaf	129.1	138.6	143.3	143.3	129.4	123.0	104.1	107.6	104.1	107.6	107.6	104.1	1441.8
End-Month Content	kaf	1025.8	1008.6	940.0	871.0	815.9	792.8	786.5	851.0	898.7	890.3	881.2	894.2	
End-Month Elevation	ft	3640.41	3639.04	3632.96	3625.35	3618.15	3614.72	3613.73	3622.86	3628.59	3627.64	3626.57	3628.08	
Net Change Content	kaf	58.3	-17.2	-68.6	-69.0	-55.1	-23.1	-6.3	64.5	47.7	-8.4	-9.1	13.0	-73.3

Yellowtail Power	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	kaf	127.7	134.4	139.0	139.0	125.5	118.7	102.9	114.3	128.5	134.0	130.7	122.1	1516.8
Generation	gwh	47.888	50.757	52.131	51.250	44.621	41.402	34.766	40.305	47.003	49.314	47.751	44.157	551.345
End-Month Power Cap	mw	287.9	286.6	280.8	273.6	266.8	263.5	262.6	271.2	276.7	275.8	274.8	276.2	
% Max Gen		22	24	24	24	23	19	17	19	23	23	22	21	
Ave kwh/af		375	378	375	369	356	349	338	353	366	368	365	362	363
Upstream Generation	gwh	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Generation	gwh	47.888	50.757	52.131	51.250	44.621	41.402	34.766	40.305	47.003	49.314	47.751	44.157	551.345

TABLE MTT17B
BIGHORN LAKE OPERATING PLAN
Based on October 1 2013 Inflow Estimates

2014 MOST Probable Runoff

Bighorn Reservoir		Initial Cont		967.5 kaf Elev	3635.53 ft		Maximum Cont	1278.9 kaf Elev	3657.00 ft		Minimum Cont	469.9 kaf Elev	3547.00 ft	
	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Boysen Release	kaf	31.1	28.3	29.2	29.2	26.4	36.8	53.5	136.3	145.1	123.0	90.4	66.3	795.6
Boysen Release	cfs	506	476	475	475	475	598	899	2217	2438	2000	1470	1114	
Buffalo Bill Release	kaf	36.9	30.6	12.6	12.6	11.4	12.6	51.6	135.8	164.2	174.3	127.8	100.6	871.0
Buffalo Bill Release	cfs	600	514	205	205	205	205	867	2209	2759	2835	2078	1691	
Station Gain	kaf	118.0	69.0	33.8	33.3	38.6	54.6	35.0	49.2	89.5	-63.4	-47.1	12.1	422.6
Monthly Inflow	kaf	186.0	127.9	75.6	75.1	76.4	104.0	140.1	321.3	398.8	233.9	171.1	179.0	2089.2
Monthly Inflow	cfs	3025	2149	1230	1221	1376	1691	2354	5225	6702	3804	2783	3008	
Turbine Release	kaf	127.7	134.4	139.0	139.0	125.5	139.0	140.1	252.7	295.3	193.3	183.0	172.7	2041.7
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	127.7	134.4	139.0	139.0	125.5	139.0	140.1	252.7	295.3	193.3	183.0	172.7	2041.7
Total Release	cfs	2077	2259	2261	2261	2260	2261	2354	4110	4963	3144	2976	2902	
Spring Flow	kaf	4.3	4.2	4.3	4.3	3.9	4.3	4.2	4.3	4.2	4.3	4.3	4.2	50.8
Irrigation Reqmnt	kaf	2.9	0.0	0.0	0.0	0.0	0.0	3.0	11.0	28.6	30.7	27.4	22.2	125.8
Afterbay Rels	kaf	132.0	138.6	143.3	143.3	129.4	143.3	144.3	257.0	299.5	197.6	187.3	176.9	2092.5
Afterbay Rels	cfs	2147	2329	2331	2331	2330	2331	2425	4180	5033	3214	3046	2973	
River Release	kaf	129.1	138.6	143.3	143.3	129.4	143.3	141.3	246.0	270.9	166.9	159.9	154.7	1966.7
River Release	cfs	2100	2329	2331	2331	2330	2331	2375	4001	4553	2714	2601	2600	
Min Release	kaf	129.1	138.6	143.3	143.3	129.4	143.3	141.3	246.0	270.9	166.9	159.9	154.7	1966.7
End-Month Content	kaf	1025.8	1019.3	955.9	892.0	842.9	807.9	807.9	876.5	980.0	1020.6	1008.7	1015.0	
End-Month Elevation	ft	3640.41	3639.90	3634.47	3627.83	3621.82	3617.00	3617.00	3626.02	3636.63	3640.00	3639.05	3639.55	
Net Change Content	kaf	58.3	-6.5	-63.4	-63.9	-49.1	-35.0	0.0	68.6	103.5	40.6	-11.9	6.3	47.5

Yellowtail Power	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	kaf	127.7	134.4	139.0	139.0	125.5	139.0	140.1	252.7	295.3	193.3	183.0	172.7	2041.7
Generation	gwh	47.888	50.853	52.306	51.537	44.997	50.284	50.757	100.859	121.017	77.707	72.870	68.253	789.328
End-Month Power Cap	mw	287.9	287.4	282.3	276.0	270.3	265.7	265.7	274.2	284.3	287.5	286.6	287.1	
% Max Gen		22	25	24	24	23	23	24	47	58	36	34	33	
Ave kwh/af		375	378	376	371	359	362	362	399	410	402	398	395	387
Upstream Generation	gwh	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Generation	gwh	47.888	50.853	52.306	51.537	44.997	50.284	50.757	100.859	121.017	77.707	72.870	68.253	789.328

TABLE MTT17C
BIGHORN LAKE OPERATING PLAN
Based on October 1 2013 Inflow Estimates

2014 MAXIMUM Probable Runoff

Bighorn Reservoir		Initial Cont Elev	967.5 kaf 3635.53 ft			Maximum Cont Elev	1278.9 kaf 3657.00 ft			Minimum Cont Elev	469.9 kaf 3547.00 ft		
	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Boysen Release	kaf	31.1	28.3	29.2	29.2	26.4	97.2	159.0	201.4	246.7	255.0	128.7	80.7	1312.9
Boysen Release	cfs	506	476	475	475	475	1581	2672	3275	4146	4147	2093	1356	
Buffalo Bill Release	kaf	36.9	30.6	12.6	12.6	11.4	12.6	115.0	225.1	244.9	279.4	145.0	110.1	1236.2
Buffalo Bill Release	cfs	600	514	205	205	205	205	1933	3661	4116	4544	2358	1850	
Station Gain	kaf	118.0	79.3	38.9	38.3	44.4	62.9	46.8	103.9	211.1	-22.9	-35.0	29.1	714.8
Monthly Inflow	kaf	186.0	138.2	80.7	80.1	82.2	172.7	320.8	530.4	702.7	511.5	238.7	219.9	3263.9
Monthly Inflow	cfs	3025	2323	1312	1303	1480	2809	5391	8626	11809	8319	3882	3696	
Turbine Release	kaf	127.7	143.4	139.0	139.0	125.5	241.7	382.6	510.9	357.0	368.9	238.7	219.9	2994.3
Bypass/Spill/Waste	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	119.6	96.9	0.0	0.0	216.5
Total Release	kaf	127.7	143.4	139.0	139.0	125.5	241.7	382.6	510.9	476.6	465.8	238.7	219.9	3210.8
Total Release	cfs	2077	2410	2261	2261	2260	3931	6430	8309	8010	7576	3882	3696	
Spring Flow	kaf	4.3	4.2	4.3	4.3	3.9	4.3	4.2	4.3	4.2	4.3	4.3	4.2	50.8
Irrigation Reqmnt	kaf	2.9	0.0	0.0	0.0	0.0	0.0	3.0	11.0	28.6	30.7	27.4	22.2	125.8
Afterbay Rels	kaf	132.0	147.6	143.3	143.3	129.4	246.0	386.8	515.2	480.8	470.1	243.0	224.1	3261.6
Afterbay Rels	cfs	2147	2481	2331	2331	2330	4001	6500	8379	8080	7645	3952	3766	
River Release	kaf	129.1	147.6	143.3	143.3	129.4	246.0	383.8	504.2	452.2	439.4	215.6	201.9	3135.8
River Release	cfs	2100	2481	2331	2331	2330	4001	6450	8200	7599	7146	3506	3393	
Min Release	kaf	129.1	119.0	143.3	143.3	129.4	246.0	383.8	504.2	452.2	107.6	107.6	104.1	2569.6
End-Month Content	kaf	1025.8	1020.6	962.3	903.4	860.1	791.1	729.3	748.8	974.9	1020.6	1020.6	1020.6	
End-Month Elevation	ft	3640.41	3640.00	3635.06	3629.12	3624.01	3614.45	3603.70	3607.32	3636.19	3640.00	3640.00	3640.00	
Net Change Content	kaf	58.3	-5.2	-58.3	-58.9	-43.3	-69.0	-61.8	19.5	226.1	45.7	0.0	0.0	53.1

Yellowtail Power	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	kaf	127.7	143.4	139.0	139.0	125.5	241.7	382.6	510.9	357.0	368.9	238.7	219.9	2994.3
Generation	gwh	47.888	54.943	52.374	51.686	45.221	93.728	143.934	197.209	145.800	150.660	97.970	89.674	1171.087
End-Month Power Cap	mw	287.9	287.5	282.8	277.2	272.3	263.3	253.0	256.5	283.9	287.5	287.5	287.5	
% Max Gen		22	26	24	24	23	44	69	92	70	70	46	43	
Ave kwh/af		375	383	377	372	360	388	376	386	408	408	410	408	391
Upstream Generation	gwh	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Generation	gwh	47.888	54.943	52.374	51.686	45.221	93.728	143.934	197.209	145.800	150.660	97.970	89.674	1171.087

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 734,000,000 and 1,615,000,000 kilowatt-hours as shown in Table MTT18.

Table MTT18

Estimated Energy Generation During WY 2014

(Million Kilowatt-Hours)

Plant	Minimum Probable Runoff	Most Probable Runoff	Maximum Probable Runoff
Canyon Ferry	224	344	425
Yellowtail	510	738	1,190
Total	734	1,082	1,615

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.

Table MTT19
2014 SCHEDULED OUTAGES

YELLOWTAIL RESERVOIR

FACILITY	DESCRIPTION OF WORK	SCHEDULED DATE
Units # 1,2,3,&4	Annual black start requirement from 0800-1200. All 4 units will be unavailable during this time.	Oct 22, 2013
Unit #1	10-day outage for annual electrical and mechanical maintenance. RTU points check.	Jan 06-16, 2014
Unit #2	30-day outage for 4-year electrical and mechanical maintenance. RTU points check. Perform full load (62MW) unbalanced headgate closure test at start of outage.	Jan 21 -Feb19, 2014
Unit #3	10-day outage for annual electrical and mechanical maintenance. RTU points check.	Feb 24 -Mar 05,2014
Unit #4	10-day outage for annual electrical and mechanical maintenance. RTU points check.	Mar 10 -19, 2014
Unit #1, Unit #2, KCA and KCC	4-day outage for 2-year for online relay testing of main and transfer buses followed by instrument transformer testing	Mar 24 -27, 2014
Unit #3, Unit #4, KCB and KCD	4-day outage for 2-year for online relay testing of main and transfer buses followed by instrument transformer testing	Mar 31 -Apr 03,2014
Yellowtail Afterbay	12-day outage for sluice gate maintenance. Maintain Afterbay elevation of 3183 to discharge all releases to the Bighorn River through the radial gates.	Apr 14 -25, 2014
Yellowtail Afterbay	12-day outage for sluice gate maintenance. Maintain Afterbay elevation of 3183 to discharge all releases to the Bighorn River through the radial gates.	Aug 18 -29, 2014
Units # 1,2,3,&4	Annual black start requirement from 0800-1200. All 4 units will be unavailable during this time.	Oct 15, 2014
Yellowtail Afterbay	2 day outage when maximum Afterbay elevation cannot exceed 3187.5 feet as the Fort Smith Government Camp sewage lagoon is drawn down in preparation for winter	Oct 28 -29, 2014

CANYON FERRY RESERVOIR

FACILITY	DESCRIPTION OF WORK	SCHEDULED DATE
Unit #1	25-day outage for 3-year maintenance.	Jan 06- Feb 06, 2014
Unit #1	4-day outage for relay functional test and protective relay output testing	Feb 03 -06, 2014
Unit #2	14-day outage for annual maintenance.	Feb 17–Mar 06,2014
Unit #2	4-day outage for relay functional test.	Mar 03-06, 2014
Unit #3	4-day outage for relay functional test.	Mar 24-27, 2014
Crow Creek	4-day outage for annual maintenance on OCB 412 and transformer KY1A	Mar 31- Apr 03,2014
River Outlet Gates 1, 2, 3 & 4	4-day outage for annual maintenance.	Apr 07-10, 2014
Radial Gates 1, 2, 3 & 4	4-day outage for annual maintenance.	Apr 14-17, 2014
OCB 162	4-day outage for annual maintenance.	May 19-22, 2014
OCB 266	4-day outage for annual maintenance.	May 26-29, 2014
OCB 262	4-day outage for annual maintenance.	June 02-05, 2014
Line A	2-day outage for 6-year relaying CTs.	June 02-03, 2014
Line B	2-day outage for 6-year relaying CTs.	June 04-05, 2014
OCB 366	4-day outage for annual maintenance.	June 16-19, 2014
OCB 362	4-day outage for annual maintenance.	June 23-26, 2014

OUTLOOK

AND OPERATING PLANS

FOR

WATER YEAR 2014

FOR BIGHORN BASIN RESERVOIRS

(BULL LAKE, BOYSEN BUFFALO BILL)

UNDER THE RESPONSIBILITY

OF THE

WYOMING AREA OFFICE

OPERATING PLANS FOR WY 2014

Bull Lake

Three operating plans were prepared for WY 2014 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-June releases are scheduled with the objective of filling the lake to a content of 152,459 AF (AF) at elevation 5805.00 feet during July while eliminating or minimizing any spill.

(2) During April-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 and 45 cubic feet per second (cfs).

(4) The reservoir water surface elevation will be kept below elevation 5794.00 feet 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 feet) to also provide winter fish habitat.

2014 Operating Plans

Storage in Bull Lake at the end of WY 2013 was 89,167 AF at elevation 5783.05 feet, which is 58 percent of capacity and 118 percent of the end of September average. Projected inflows for all months of WY 2014 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 2014 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 2014. 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 2014. 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 of 2009 both units at Pilot Butte Powerplant were placed in "Mothballed" status and are not expected to generate electricity in WY 2014.

TABLE WYT10A

RIVERTON PROJECT OPERATING PLAN
Based on October 1 Inflow Estimates
2014 Reasonable Minimum Inflow Estimates

Bull Lake Reservoir Operations		Initial Content 89.2 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	4.4	2.3	1.8	1.6	1.3	1.6	3.2	26.1	40.5	27.2	14.7	7.2	131.9
Total Dam Release	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	8.1	38.8	56.9	50.5	166.2
Total Dam Release	cfs	25.	25.	25.	25.	25.	25.	25.	25.	135.	631.	925.	848.	
Excess Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.6	0.0	0.0	0.0	6.6
End-month Content	kaf	92.1	92.9	93.1	93.2	93.1	93.2	94.9	119.5	151.9	140.3	98.1	54.9	
End-month Elevation	ft	5784.2	5784.5	5784.6	5784.6	5784.6	5784.6	5785.2	5794.1	5804.8	5801.1	5786.4	5768.8	
BLR Net Change	kaf	2.9	0.8	0.3	0.1	-0.1	0.1	1.7	24.6	32.4	-11.6	-42.2	-43.3	-34.3

Wind River		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Flow abv BL Creek	kaf	29.1	21.6	17.4	15.2	13.9	16.7	24.8	74.9	99.4	60.4	36.6	25.4	435.4
Crowheart Gage Flow	kaf	30.6	23.1	18.9	16.7	15.3	18.2	26.3	76.4	107.5	99.2	93.5	75.9	601.6
Flow Below Div Dam	kaf	21.3	23.1	18.9	16.7	15.3	18.2	7.0	21.9	42.6	30.3	24.8	18.3	258.4
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	327.0	388.0	308.0	272.2	275.3	296.6	108.6	70.0	329.4	70.0	70.0	70.0	

Wyoming Canal		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Total Diversion	kaf	9.3	0.0	0.0	0.0	0.0	0.0	19.3	54.6	64.8	68.9	68.7	57.6	343.2
North Canal Flow	kaf	0.0	0.0	0.0	0.0	0.0	0.0	9.8	26.4	31.2	36.5	30.9	27.0	161.8
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 16.0 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	9.3	0.0	0.0	0.0	0.0	0.0	9.5	28.2	33.6	32.4	37.8	30.6	181.4
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	0.0	0.0	0.0	0.0	0.0	0.0	6.7	28.0	33.1	43.9	37.4	33.3	182.4
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	25.1	24.9	24.8	24.7	24.6	24.4	27.0	26.9	27.0	15.0	15.0	12.0	
PBR Net Change	kaf	9.1	-0.2	-0.1	-0.1	-0.1	-0.2	2.6	-0.1	0.1	-12.0	0.0	-3.0	-4.0
End-month Elevation	ft	5454.5	5454.2	5454.1	5454.0	5453.9	5453.6	5456.7	5456.5	5456.7	5441.3	5441.3	5437.5	

TABLE WYT10B
RIVERTON PROJECT OPERATING PLAN
Based on October 1 Inflow Estimates
2014 Most Probable Inflow Estimates

Bull Lake Reservoir Operations		Initial Content 89.2 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	6.0	3.4	2.5	2.6	1.6	1.9	2.7	29.3	63.4	48.5	20.5	10.5	192.9
Total Dam Release	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	47.1	40.0	36.0	40.7	175.9
Total Dam Release	cfs	25.	25.	25.	25.	25.	25.	25.	25.	792.	651.	586.	683.	
Excess Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.1	40.0	0.0	0.0	87.2
End-month Content	kaf	93.7	95.6	96.5	97.6	97.8	98.2	99.4	127.2	143.4	151.9	136.4	106.2	
End-month Elevation	ft	5784.8	5785.5	5785.8	5786.2	5786.3	5786.5	5786.9	5796.7	5802.1	5804.8	5799.8	5789.4	
BLR Net Change	kaf	4.5	1.9	1.0	1.1	0.2	0.4	1.2	27.8	16.3	8.5	-15.5	-30.2	17.0

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	35.3	25.8	19.8	17.6	16.2	18.8	30.0	107.6	216.0	154.7	89.4	74.7	806.1
Flow Below Div Dam	kaf	26.0	25.8	19.8	17.6	16.2	18.8	10.7	52.9	151.3	73.8	29.7	20.1	462.9
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	403.5	433.4	322.6	286.8	291.5	306.4	170.8	575.2	2156.8	777.9	150.0	100.0	

Wyoming Canal		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Total Diversion	kaf	9.3	0.0	0.0	0.0	0.0	0.0	19.3	54.7	64.7	80.9	59.7	54.6	343.2
North Canal Flow	kaf	0.0	0.0	0.0	0.0	0.0	0.0	9.8	26.4	31.2	36.5	30.9	27.0	161.8
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

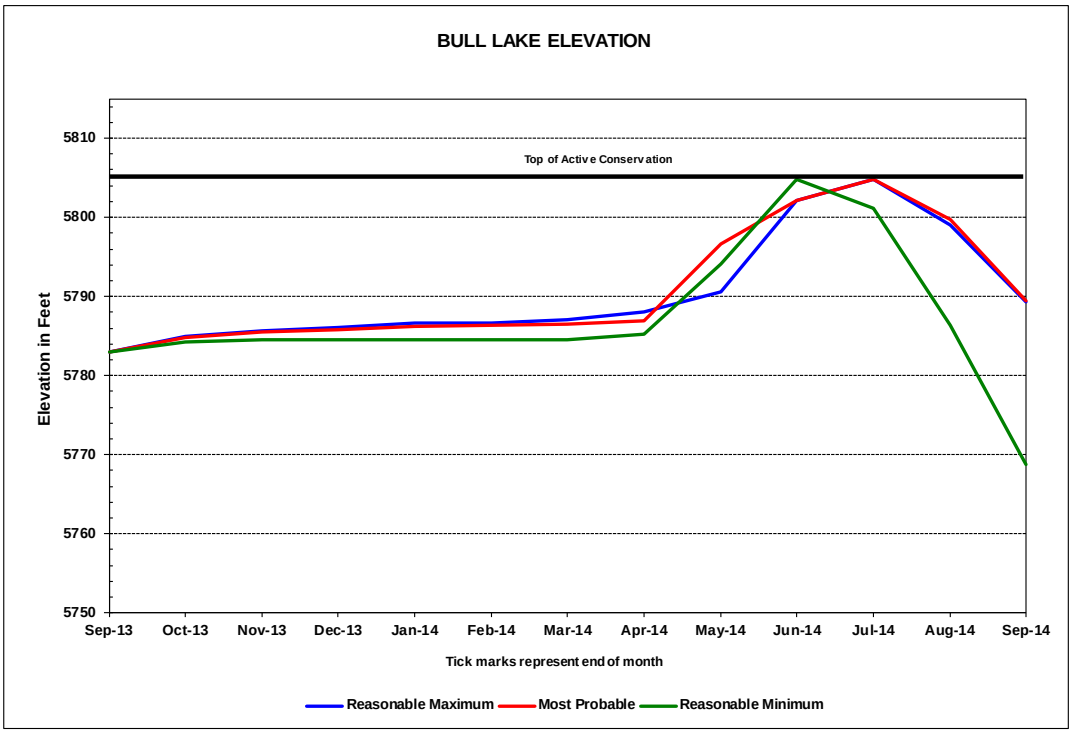
Pilot Butte Reservoir Operations		Initial Content 16.0 Kaf						Operating Limits: Max 29.9 Kaf, 5459.98 Ft. Min 10.0 Kaf, 5433.49 Ft.						
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Reservoir Inflow	kaf	9.3	0.0	0.0	0.0	0.0	0.0	9.5	28.3	33.5	44.4	28.8	27.6	181.4
Power Generated	mwh	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	6.7	28.0	33.1	43.9	37.4	33.3	182.4
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	25.1	24.9	24.8	24.7	24.6	24.4	27.0	27.0	27.0	27.0	18.0	12.0	
PBR Net Change	kaf	9.1	-0.2	-0.1	-0.1	-0.1	-0.2	2.6	0.0	0.0	0.0	-9.0	-6.0	-4.0
End-month Elevation	ft	5454.5	5454.2	5454.1	5454.0	5453.9	5453.6	5456.7	5456.7	5456.7	5456.7	5445.5	5437.5	

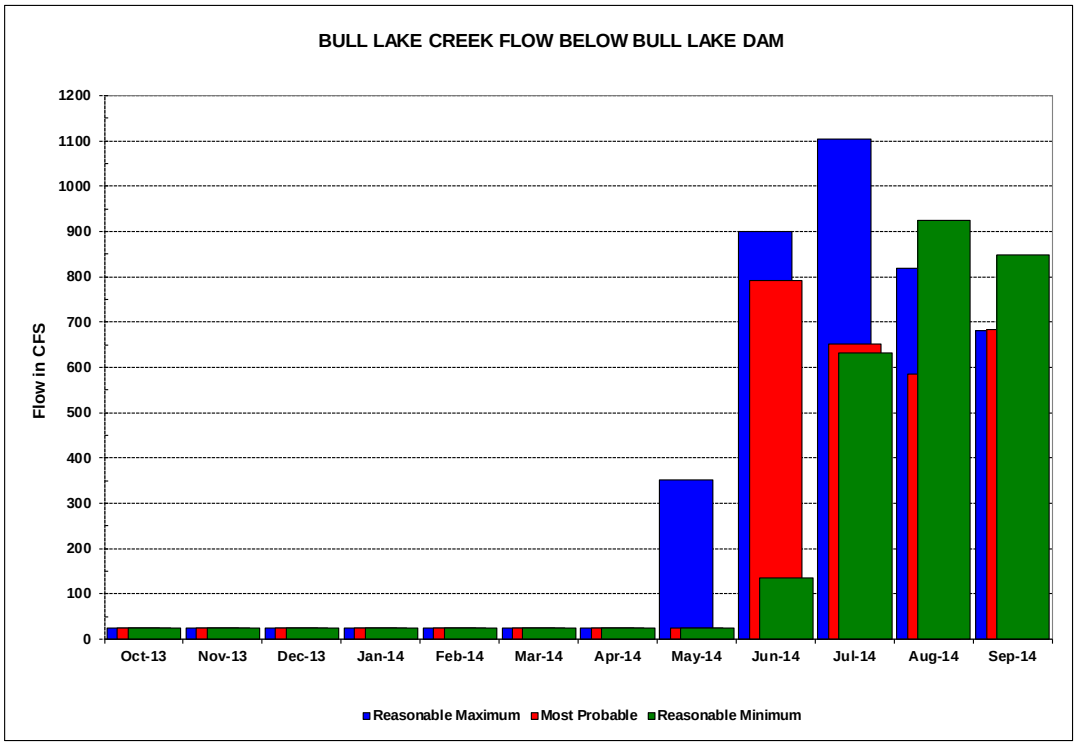
TABLE WYT10C
RIVERTON PROJECT OPERATING PLAN
Based on October 1 Inflow Estimates
2014 Reasonable Maximum Inflow Estimates

Bull Lake Reservoir Operations		Initial Content 89.2 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	6.3	3.6	2.7	2.8	1.8	2.2	4.6	28.4	87.3	76.5	32.6	12.2	261.0
Total Dam Release	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	21.6	53.5	67.9	50.3	40.5	244.3
Total Dam Release	cfs	25.	25.	25.	25.	25.	25.	25.	351.	899.	1105.	818.	680.	
Excess Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.1	53.5	67.9	50.3	0.0	191.8
End-month Content	kaf	94.0	96.1	97.2	98.5	98.9	99.6	102.7	109.5	143.3	151.9	134.2	105.9	
End-month Elevation	ft	5784.9	5785.7	5786.1	5786.6	5786.7	5787.0	5788.1	5790.6	5802.1	5804.8	5799.1	5789.3	
BLR Net Change	kaf	4.8	2.1	1.2	1.3	0.4	0.7	3.1	6.8	33.8	8.6	-17.7	-28.3	16.7
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	35.5	26.1	21.8	19.9	17.4	21.1	26.0	135.3	358.1	264.3	132.4	85.7	1143.7
Flow Below Div Dam	kaf	26.2	26.1	21.8	19.9	17.4	21.1	6.7	80.6	293.4	183.4	72.7	31.1	800.5
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	406.7	438.4	355.1	324.2	313.1	343.8	108.6	1055.8	4583.8	2604.7	883.7	310.0	
Wyoming Canal		**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Total**
Total Diversion	kaf	9.3	0.0	0.0	0.0	0.0	0.0	19.3	54.7	64.7	80.9	59.7	54.6	343.2
North Canal Flow	kaf	0.0	0.0	0.0	0.0	0.0	0.0	9.8	26.4	31.2	36.5	30.9	27.0	161.8
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 16.0 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	9.3	0.0	0.0	0.0	0.0	0.0	9.5	28.3	33.5	44.4	28.8	27.6	181.4
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	0.0	0.0	0.0	0.0	0.0	0.0	6.7	28.0	33.1	43.9	37.4	33.3	182.4
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	25.1	24.9	24.8	24.7	24.6	24.4	27.0	27.0	27.0	27.0	18.0	12.0	
PBR Net Change	kaf	9.1	-0.2	-0.1	-0.1	-0.1	-0.2	2.6	0.0	0.0	0.0	-9.0	-6.0	-4.0
End-month Elevation	ft	5454.5	5454.2	5454.1	5454.0	5453.9	5453.6	5456.7	5456.7	5456.7	5456.7	5445.5	5437.5	

FIGURE WYG6

BULL LAKE RESERVOIR





Boysen Reservoir and Powerplant

Three operating plans were prepared for WY 2014 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 - 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 - 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 - February to reduce the risk of ice jams, which may cause flooding or damage to bridges and other structures.

(2) March - 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 feet (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 feet 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 feet 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 - 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.

2014 Operating Plans

At the beginning of WY 2014, storage was 481,464 AF at elevation 4709.18 feet. This was 82 percent of average and about 32,172 AF less than the reservoir held at the beginning of WY 2013. Projected inflows for all months of WY 2014 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 500 cfs is scheduled for the months of October - 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 feet. 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 2014 the reservoir would reach its maximum level in March, prior to releases for irrigation.

Reasonable minimum condition inflows are estimated to be lower decile flows for all months in WY 2014. 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 2014. 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
2014 Reasonable Minimum Inflow Estimates

Boysen Reservoir		Initial Cont Elev	481.5 kaf 4709.18 ft			Maximum Cont Elev	892.2 kaf 4732.20 ft			Minimum Cont Elev	219.2 kaf 4685.00 ft		
	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	40.0	41.3	35.9	33.4	30.9	47.2	42.7	65.6	70.9	32.9	24.6	29.0	494.4
Monthly Inflow	cfs	651	694	584	543	556	768	718	1067	1192	535	400	487	
Turbine Release	kaf	0.0	0.0	0.0	30.7	27.8	30.7	44.6	67.6	69.9	76.9	64.6	53.6	466.4
Bypass/Spill	kaf	30.7	29.8	30.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.2
Total Release	kaf	30.7	29.8	30.7	30.7	27.8	30.7	44.6	67.6	69.9	76.9	64.6	53.6	557.6
Total Release	cfs	499	501	499	499	501	499	750	1099	1175	1251	1051	901	
End-Month Content	kaf	490.8	502.3	507.5	510.2	513.3	529.8	527.9	525.9	526.9	482.9	442.9	418.3	
End-Month Elevation	ft	4709.86	4710.69	4711.06	4711.25	4711.46	4712.61	4712.48	4712.34	4712.41	4709.28	4706.25	4704.27	
Net Change Content	kaf	9.3	11.5	5.2	2.7	3.1	16.5	-1.9	-2.0	1.0	-44.0	-40.0	-24.6	-63.2
Boysen Power Plant	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	kaf	0.0	0.0	0.0	30.7	27.8	30.7	44.6	67.6	69.9	76.9	64.6	53.6	466.4
Turbine Release	cfs	0	0	0	499	501	499	750	1099	1175	1251	1051	901	
Generation	gwh	0.000	0.000	0.000	2.495	2.264	2.518	3.653	5.493	5.670	6.136	4.952	3.969	37.150
Max Generation	gwh	0.000	0.000	0.000	11.904	10.752	11.904	11.520	11.904	11.520	11.904	11.904	11.520	104.832
% Max Generation	%	0	0	0	21	21	21	32	46	49	52	42	34	
Ave kwh/af					81	81	82	82	81	81	80	77	74	80
End-Month Power Cap	mw	15	15	15	16	16	16	16	15	15	15	14	13	

BOYSEN RESERVOIR OPERATING PLAN - Based on October 1 Inflow Estimates
2014 Most Probable Inflow Estimates

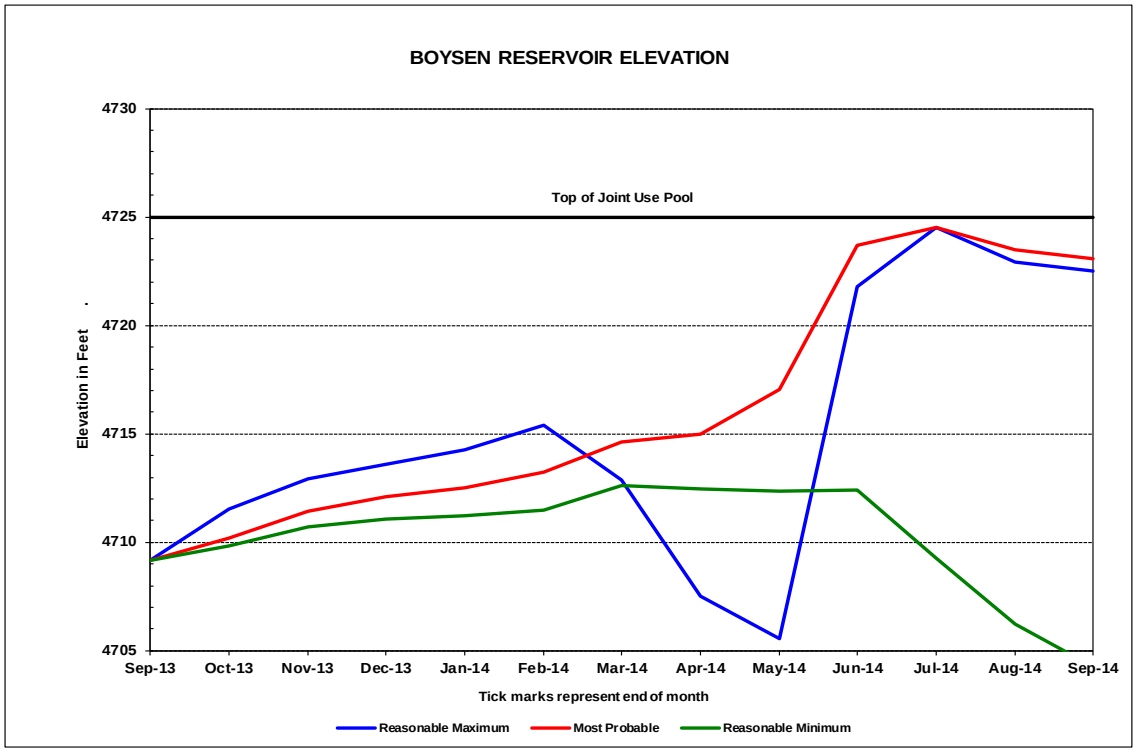
Boysen Reservoir		Initial Cont Elev	481.5 kaf 4709.18 ft			Maximum Cont Elev	892.2 kaf 4732.20 ft			Minimum Cont Elev	219.2 kaf 4685.00 ft		
	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	45.0	47.0	40.2	36.5	38.2	52.2	50.3	155.8	250.1	127.7	69.9	57.1	970.0
Monthly Inflow	cfs	732	790	654	594	688	849	845	2534	4203	2077	1137	960	
Turbine Release	kaf	0.0	0.0	0.0	30.7	27.8	30.7	44.6	123.9	131.9	111.9	89.1	65.5	656.1
Bypass/Spill	kaf	30.7	29.8	30.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.2
Total Release	kaf	30.7	29.8	30.7	30.7	27.8	30.7	44.6	123.9	131.9	111.9	89.1	65.5	747.3
Total Release	cfs	499	501	499	499	501	499	750	2015	2217	1820	1449	1101	
End-Month Content	kaf	495.8	513.0	522.5	528.3	538.7	560.2	565.9	597.8	716.0	731.8	712.6	704.2	
End-Month Elevation	ft	4710.22	4711.44	4712.11	4712.50	4713.21	4714.64	4715.01	4717.03	4723.68	4724.50	4723.50	4723.06	
Net Change Content	kaf	14.3	17.2	9.5	5.8	10.4	21.5	5.7	31.9	118.2	15.8	-19.2	-8.4	222.7
Boysen Power Plant	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	kaf	0.0	0.0	0.0	30.7	27.8	30.7	44.6	123.9	131.9	111.9	89.1	65.5	656.1
Turbine Release	cfs	0	0	0	499	501	499	750	2015	2217	1820	1449	1101	
Generation	gwh	0.000	0.000	0.000	2.524	2.298	2.565	3.737	10.304	11.425	10.067	8.046	5.906	56.872
Max Generation	gwh	0.000	0.000	0.000	11.904	10.752	11.904	11.520	11.904	11.520	11.904	11.904	11.520	104.832
% Max Generation	%	0	0	0	21	21	22	32	87	99	85	68	51	
Ave kwh/af					82	83	84	84	83	87	90	90	90	87
End-Month Power Cap	mw	15	16	16	16	16	16	16	16	16	16	16	16	

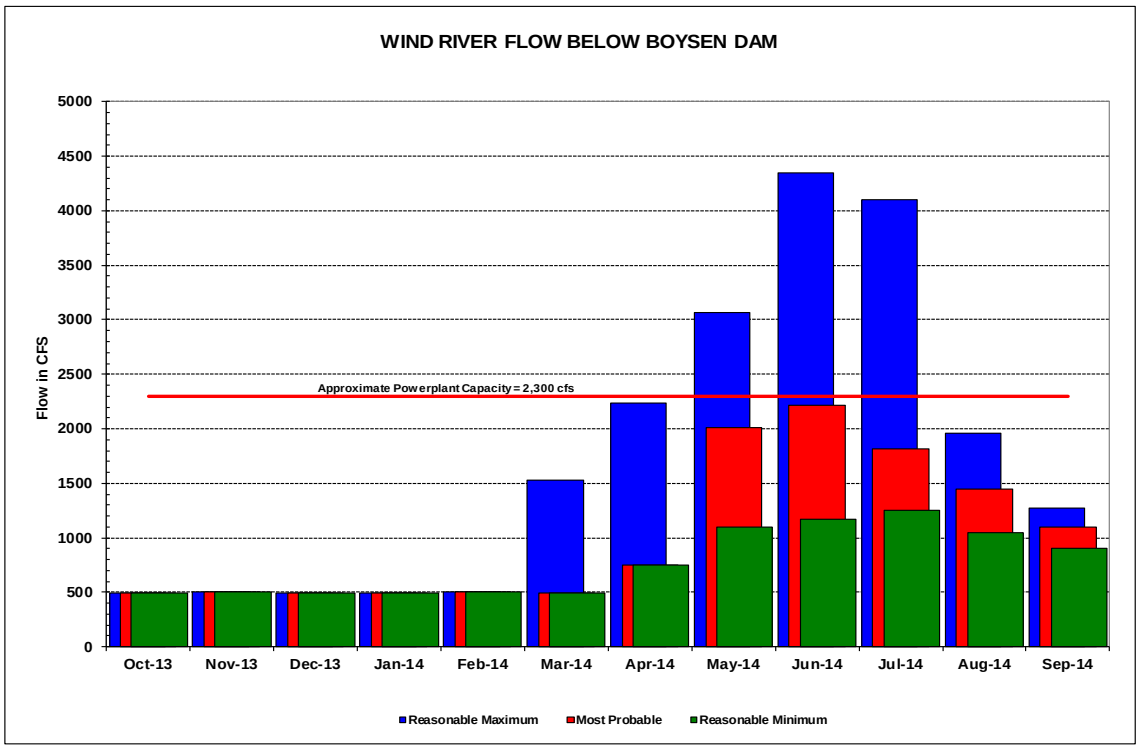
BOYSEN RESERVOIR OPERATING PLAN - Based on October 1 Inflow Estimates
2014 Reasonable Maximum Inflow Estimates

Boysen Reservoir		Initial Cont Elev	481.5 kaf 4709.18 ft			Maximum Cont Elev	892.2 kaf 4732.20 ft			Minimum Cont Elev	219.2 kaf 4685.00 ft		
	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	63.3	50.5	40.7	40.1	45.6	55.7	58.7	163.3	505.2	302.9	89.8	68.4	1484.2
Monthly Inflow	cfs	1029	849	662	652	821	906	986	2656	8490	4926	1460	1150	
Turbine Release	kaf	0.0	0.0	0.0	30.7	27.8	93.8	133.0	136.0	136.4	136.2	120.2	75.5	889.6
Bypass/Spill	kaf	30.7	29.8	30.7	0.0	0.0	0.0	0.0	52.5	122.2	115.8	0.0	0.0	381.7
Total Release	kaf	30.7	29.8	30.7	30.7	27.8	93.8	133.0	188.5	258.6	252.0	120.2	75.5	1271.3
Total Release	cfs	499	501	499	499	501	1526	2235	3066	4346	4098	1955	1269	
End-Month Content	kaf	514.1	534.8	544.8	554.2	572.0	533.9	459.6	434.4	681.0	731.9	701.5	694.4	
End-Month Elevation	ft	4711.52	4712.95	4713.62	4714.25	4715.40	4712.89	4707.54	4705.57	4721.81	4724.50	4722.91	4722.53	
Net Change Content	kaf	32.6	20.7	10.0	9.4	17.8	-38.1	-74.3	-25.2	246.6	50.9	-30.4	-7.1	212.9
Boysen Power Plant	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	kaf	0.0	0.0	0.0	30.7	27.8	93.8	133.0	136.0	136.4	136.2	120.2	75.5	889.6
Turbine Release	cfs	0	0	0	499	501	1526	2235	2212	2292	2215	1955	1269	
Generation	gwh	0.000	0.000	0.000	2.565	2.343	7.706	10.330	9.843	10.927	11.903	10.760	6.756	73.133
Max Generation	gwh	0.000	0.000	0.000	11.904	10.752	11.904	11.520	11.904	11.520	11.904	11.904	11.520	104.832
% Max Generation	%	0	0	0	22	22	65	90	83	95	100	90	59	
Ave kwh/af					84	84	82	78	72	80	87	90	89	82
End-Month Power Cap	mw	16	16	16	16	16	15	14	13	16	16	16	16	

FIGURE WYG7

BOYSEN RESERVOIR





Buffalo Bill Reservoir and Powerplants

Three operating plans were prepared for WY 2014 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 feet (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.

2014 Operating Plans

Projected flows for all months of WY 2014 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 2014. 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 2014 under reasonable maximum conditions.

At the beginning of WY 2014, storage in Buffalo Bill Reservoir was 466,421 AF at elevation 5369.75 feet. This was about 17,560 AF more water than the reservoir held at the beginning of WY 2013. 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 200 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 2014. 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 144,710,000 kilowatt hours (kWh). Total generation with reasonable minimum inflows is expected to be 120,407,000 kWh while generation is expected to total 154,874,000 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.

TABLE WYT12A
BUFFALO BILL RESERVOIR OPERATING PLAN
Based on October 1 Inflow Estimates
2014 Reasonable Minimum Inflow Estimates

Buffalo Bill Reservoir		Initial Cont	463.0 kaf		Maximum Cont	643.1 kaf		Minimum Cont	41.8 kaf			
		Elev	5369.87 ft		Elev	5393.50 ft		Elev	5259.64 ft			
2013		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	24.0	20.0	14.3	12.7	11.7	13.0	38.2	146.6	200.4	72.3	25.6	20.4	599.2
Shoshone Release	kaf	6.1	6.0	6.1	6.1	4.8	4.8	6.0	6.1	6.0	6.2	6.2	6.0	70.4
Non-Power Release	kaf	0.0	0.0	0.0	0.0	0.8	1.3	0.0	0.0	0.0	0.0	0.0	0.0	2.1
Total Flow Below Dam	kaf	6.1	6.0	6.1	6.1	5.6	6.1	6.0	6.1	6.0	6.2	6.2	6.0	72.5
Buffalo Bill Release	kaf	10.2	8.5	6.2	6.2	5.5	6.2	14.8	51.6	48.8	50.3	46.1	34.7	289.1
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	7.2	7.9	13.9	10.7	9.3	56.3
Heart Mtn Delivery	kaf	8.0	0.0	0.0	0.0	0.0	0.0	7.0	36.0	42.0	48.0	46.0	32.0	219.0
Total Outflow	kaf	28.3	14.8	12.6	12.6	11.4	12.6	31.7	101.2	105.0	118.7	109.3	82.3	640.5
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	458.7	463.9	465.6	465.7	466.0	466.4	472.9	518.3	613.7	567.3	483.6	421.7	
Est Total Storage	kaf	462.1	467.3	469.0	469.1	469.4	469.8	476.3	521.7	617.1	570.7	487.0	425.1	
End-Month Elevation	ft	5369.27	5370.00	5370.24	5370.25	5370.29	5370.35	5371.26	5377.47	5389.93	5383.96	5372.74	5363.93	
Net Change Content	kaf	-4.3	5.2	1.7	0.1	0.3	0.4	6.5	45.4	95.4	-46.4	-83.7	-61.9	-41.3
Flow Below BB Pwr	kaf	16.3	14.5	12.3	12.3	11.1	12.3	20.8	57.7	54.8	56.5	52.3	40.7	361.6
Flow Below BB Pwr	cfs	265	244	200	200	200	200	350	938	921	919	851	684	
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	23.7	18.1	16.0	16.0	14.4	16.0	28.0	68.6	66.3	74.1	66.7	53.6	461.5
Passing Cody Gage	cfs	385	304	260	260	259	260	471	1116	1114	1205	1085	901	

Shoshone Power	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Shoshone Release	kaf	6.1	6.0	6.1	6.1	4.8	4.8	6.0	6.1	6.0	6.2	6.2	6.0	70.4
Generation	gwh	1.122	1.104	1.125	1.125	0.885	0.886	1.109	1.145	1.169	1.223	1.183	1.098	13.174
Max Generation	gwh	2.232	2.160	2.232	2.232	0.887	0.893	2.160	2.232	2.160	2.232	2.232	2.160	23.812
% Max Generation		50	51	50	50	100	99	51	51	54	55	53	51	
Ave kwh/af		184	184	184	184	184	185	185	188	195	197	191	183	187
End-Month Power Cap	mw	3	3	3	3	1	1	3	3	3	3	3	3	

Buffalo Bill Power	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Buffalo Bill Release	kaf	10.2	8.5	6.2	6.2	5.5	6.2	14.8	51.6	48.8	50.3	46.1	34.7	289.1
Generation	gwh	2.792	2.335	1.708	1.708	1.516	1.709	4.054	13.244	12.787	13.088	11.864	8.979	75.784
Max Generation	gwh	13.392	12.960	13.392	13.392	12.096	13.392	12.960	13.392	12.960	13.392	12.053	9.072	152.453
% Max Generation		21	18	13	13	13	13	31	99	99	98	98	99	
Ave kwh/af		274	275	275	275	276	276	274	257	262	260	257	259	262
End-Month Power Cap	mw	18	18	18	18	18	18	18	18	18	18	16	13	

Spirit Mtn Power	2013	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	1.224	0.000	0.000	0.000	0.000	0.000	1.116	3.098	3.183	3.221	3.105	3.024	17.971
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		73	0	0	0	0	0	69	93	98	96	93	93	
Ave kwh/af		105						105	90	96	94	90	91	94
End-Month Power Cap	mw	2	0	0	0	0	0	2	4	5	4	4	4	

Heart Mtn Power	2013	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	7.2	7.9	13.9	10.7	9.3	56.3
Generation	gwh	0.886	0.000	0.000	0.000	0.000	0.000	0.862	1.724	1.891	3.328	2.561	2.226	13.478
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	39	44	75	57	52	
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	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Total Generation	gwh	6.024	3.439	2.833	2.833	2.401	2.595	7.141	19.211	19.030	20.860	18.713	15.327	120.407
End-month Power Cap	mw	24	21	21	21	19	19	26	31	32	31	29	26	

TABLE WYT12B
BUFFALO BILL RESERVOIR OPERATING PLAN
Based on October 1 Inflow Estimates
2014 Most Probable Inflow Estimates

Buffalo Bill Reservoir		Initial Cont Elev	463.0 kaf 5369.87 ft			Maximum Cont Elev	643.1 kaf 5393.50 ft			Minimum Cont Elev	41.8 kaf 5259.64 ft		
	2013	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	6.0	6.1	6.1	4.8	4.9	6.0	12.2	11.3	11.2	11.3	11.4	97.4
Non-Power Release	kaf	0.0	0.0	0.0	0.0	0.8	1.2	0.0	12.8	39.3	42.6	2.6	2.3	101.6
Total Flow Below Dam	kaf	6.1	6.0	6.1	6.1	5.6	6.1	6.0	25.0	50.6	53.8	13.9	13.7	199.0
Buffalo Bill Release	kaf	6.2	13.5	6.2	6.2	5.5	6.2	29.3	54.3	51.3	51.5	49.0	36.6	315.8
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	8.3	18.6	18.0	18.6	18.6	18.0	108.0
Heart Mtn Delivery	kaf	8.0	0.0	0.0	0.0	0.0	0.0	7.0	36.0	42.0	48.0	46.0	32.0	219.0
Total Outflow	kaf	28.5	19.8	12.6	12.6	11.4	12.6	50.9	134.2	162.2	172.2	127.8	100.6	845.4
Bypass/Spill	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.8	39.3	42.6	2.6	2.3	99.6
End-Month Targets	kaf		463.9								628.0		481.6	
End-Month Content	kaf	461.6	463.9	468.8	471.7	473.8	477.4	462.4	470.0	615.7	628.0	551.9	481.6	
Est Total Storage	kaf	465.0	467.3	472.2	475.1	477.2	480.8	465.8	473.4	619.1	631.4	555.3	485.0	
End-Month Elevation	ft	5369.68	5370.00	5370.69	5371.09	5371.38	5371.88	5369.79	5370.85	5390.18	5391.72	5381.94	5372.46	
Net Change Content	kaf	-1.4	2.3	4.9	2.9	2.1	3.6	-15.0	7.6	145.7	12.3	-76.1	-70.3	18.6
Flow Below BB Pwr	kaf	12.3	19.5	12.3	12.3	11.1	12.3	35.3	79.3	101.9	105.3	62.9	50.3	514.8
Flow Below BB Pwr	cfs	200	328	200	200	200	200	593	1290	1712	1713	1023	845	
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	23.9	23.1	16.0	16.0	14.4	16.0	47.2	101.6	123.5	127.6	85.2	71.9	666.4
Passing Cody Gage	cfs	389	388	260	260	259	260	793	1652	2075	2075	1386	1208	

Shoshone Power	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Shoshone Release	kaf	6.1	6.0	6.1	6.1	4.8	4.9	6.0	12.2	11.3	11.2	11.3	11.4	97.4
Generation	gwh	1.123	1.105	1.126	1.128	0.889	0.909	1.109	2.239	2.157	2.226	2.224	2.159	18.394
Max Generation	gwh	2.232	2.160	2.232	2.232	0.887	0.915	2.160	2.232	2.160	2.232	2.232	2.160	23.834
% Max Generation		50	51	50	51	100	99	51	100	100	100	100	100	
Ave kwh/af		184	184	185	185	185	186	185	184	191	199	197	189	189
End-Month Power Cap	mw	3	3	3	3	1	1	3	3	3	3	3	3	

Buffalo Bill Power	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Buffalo Bill Release	kaf	6.2	13.5	6.2	6.2	5.5	6.2	29.3	54.3	51.3	51.5	49.0	36.6	315.8
Generation	gwh	1.700	3.703	1.709	1.712	1.520	1.716	7.909	13.382	12.951	13.391	12.714	9.600	82.007
Max Generation	gwh	13.392	12.960	13.392	13.392	12.096	13.392	12.960	13.392	12.960	13.392	12.722	9.590	153.640
% Max Generation		13	29	13	13	13	13	61	100	100	100	100	100	
Ave kwh/af		274	274	276	276	276	277	270	246	252	260	259	262	260
End-Month Power Cap	mw	18	18	18	18	18	18	18	18	18	18	17	13	

Spirit Mtn Power	2013	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	15.3	34.4	33.3	34.4	34.4	33.3	201.0
Generation	gwh	1.666	0.000	0.000	0.000	0.000	0.000	1.562	2.749	2.879	3.243	3.195	3.160	18.454
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	96	82	89	97	95	98	
Ave kwh/af		105						102	80	86	94	93	95	92
End-Month Power Cap	mw	2	0	0	0	0	0	2	4	5	5	4	4	

Heart Mtn Power	2013	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	8.3	18.6	18.0	18.6	18.6	18.0	108.0
Generation	gwh	1.891	0.000	0.000	0.000	0.000	0.000	1.987	4.453	4.309	4.453	4.453	4.309	25.855
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	92	100	100	100	100	100	
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	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Total Generation	gwh	6.380	4.808	2.835	2.840	2.409	2.625	12.567	22.823	22.296	23.313	22.586	19.228	144.710
End-month Power Cap	mw	26	21	21	21	19	19	26	31	32	32	30	26	

TABLE WYT12C
BUFFALO BILL RESERVOIR OPERATING PLAN
Based on October 1 Inflow Estimates
2014 Reasonable Maximum Inflow Estimates

Buffalo Bill Reservoir		Initial Cont Elev	463.0 kaf 5369.87 ft			Maximum Cont Elev	643.1 kaf 5393.50 ft			Minimum Cont Elev	41.8 kaf 5259.64 ft		
2013		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Monthly Inflow	kaf	29.0	24.1	19.8	16.5	14.6	20.8	50.2	203.2	444.3	299.9	74.4	34.3	1231.1
Shoshone Release	kaf	6.2	6.0	6.2	6.1	4.6	5.0	11.9	12.7	11.6	11.3	11.4	9.1	102.1
Non-Power Release	kaf	0.0	0.0	0.0	0.0	1.0	1.1	35.8	98.9	118.1	146.6	16.8	0.0	418.3
Total Flow Below Dam	kaf	6.2	6.0	6.2	6.1	5.6	6.1	47.7	111.6	129.7	157.9	28.2	9.1	520.4
Buffalo Bill Release	kaf	8.0	15.4	6.1	6.2	5.5	6.2	49.8	56.4	52.6	51.9	51.9	50.7	360.7
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	8.0	0.0	0.0	0.0	0.0	0.0	9.0	18.6	18.0	18.6	18.6	18.0	108.8
Heart Mtn Delivery	kaf	8.0	0.0	0.0	0.0	0.0	0.0	7.0	36.0	42.0	48.0	46.0	32.0	219.0
Total Outflow	kaf	30.5	21.7	12.6	12.6	11.4	12.6	113.8	222.9	242.6	276.7	145.0	110.1	1212.5
Bypass/Spill	kaf	0.0	0.0	0.0	0.0	0.0	0.0	35.8	98.9	118.1	146.6	16.8	0.0	416.2
End-Month Targets	kaf		463.9								628.0		481.6	
End-Month Content	kaf	461.5	463.9	471.1	475.0	478.2	486.4	422.8	403.1	604.8	628.0	557.4	481.6	
Est Total Storage	kaf	464.9	467.3	474.5	478.4	481.6	489.8	426.2	406.5	608.2	631.4	560.8	485.0	
End-Month Elevation	ft	5369.66	5370.00	5371.01	5371.55	5371.99	5373.13	5364.09	5361.11	5388.80	5391.72	5382.67	5372.46	
Net Change Content	kaf	-1.5	2.4	7.2	3.9	3.2	8.2	-63.6	-19.7	201.7	23.2	-70.6	-75.8	18.6
Flow Below BB Pwr	kaf	14.2	21.4	12.3	12.3	11.1	12.3	97.5	168.0	182.3	209.8	80.1	59.8	881.1
Flow Below BB Pwr	cfs	231	360	200	200	200	200	1639	2732	3064	3412	1303	1005	
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	25.9	25.0	16.0	16.0	14.4	16.0	110.1	190.3	203.9	232.1	102.4	81.4	1033.5
Passing Cody Gage	cfs	421	420	260	260	259	260	1850	3095	3427	3775	1665	1368	

Shoshone Power	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Shoshone Release	kaf	6.2	6.0	6.2	6.1	4.6	5.0	11.9	12.7	11.6	11.3	11.4	9.1	102.1
Generation	gwh	1.141	1.105	1.145	1.130	0.854	0.931	2.162	2.238	2.157	2.226	2.240	1.728	19.057
Max Generation	gwh	2.232	2.160	2.232	2.232	0.847	0.937	2.160	2.232	2.160	2.232	2.232	2.160	23.816
% Max Generation		51	51	51	51	101	99	100	100	100	100	100	80	
Ave kwh/af		184	184	185	185	186	186	182	176	186	197	196	190	187
End-Month Power Cap	mw	3	3	3	3	1	1	3	3	3	3	3	3	

Buffalo Bill Power	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Buffalo Bill Release	kaf	8.0	15.4	6.1	6.2	5.5	6.2	49.8	56.4	52.6	51.9	51.9	50.7	360.7
Generation	gwh	2.191	4.219	1.682	1.714	1.523	1.721	12.963	13.393	12.950	13.396	13.384	12.953	92.089
Max Generation	gwh	13.392	12.960	13.392	13.392	12.096	13.392	12.960	13.392	12.960	13.392	13.392	12.960	157.680
% Max Generation		16	33	13	13	13	13	100	100	100	100	100	100	
Ave kwh/af		274	274	276	276	277	278	260	237	246	258	258	255	255
End-Month Power Cap	mw	18	18	18	18	18	18	18	18	18	18	18	18	

Spirit Mtn Power	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Spirit Mtn Release	kaf	16.0	0.0	0.0	0.0	0.0	0.0	16.0	34.4	33.3	34.4	34.4	33.3	201.8
Generation	gwh	1.673	0.000	0.000	0.000	0.000	0.000	1.512	2.469	2.696	3.215	3.155	2.962	17.682
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	93	74	83	96	94	91	
Ave kwh/af		105						95	72	81	93	92	89	88
End-Month Power Cap	mw	2	0	0	0	0	0	2	4	5	5	4	4	

Heart Mtn Power	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Heart Mtn Release	kaf	8.0	0.0	0.0	0.0	0.0	0.0	9.0	18.6	18.0	18.6	18.6	18.0	108.8
Generation	gwh	1.915	0.000	0.000	0.000	0.000	0.000	2.154	4.453	4.309	4.453	4.453	4.309	26.046
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		86	0	0	0	0	0	100	100	100	100	100	100	
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	

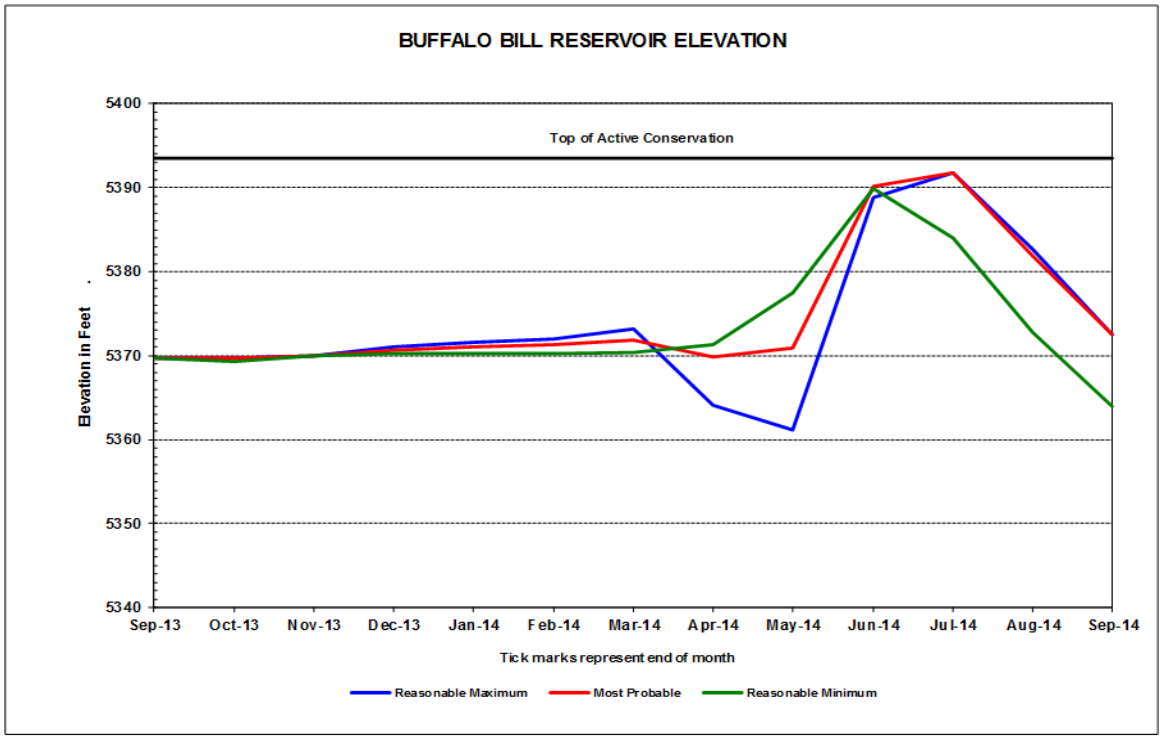
Total Generation	2013	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Total Generation	gwh	6.920	5.324	2.827	2.844	2.377	2.652	18.791	22.553	22.112	23.290	23.232	21.952	154.874
End-month Power Cap	mw	26	21	21	21	19	19	26	31	32	32	31	31	

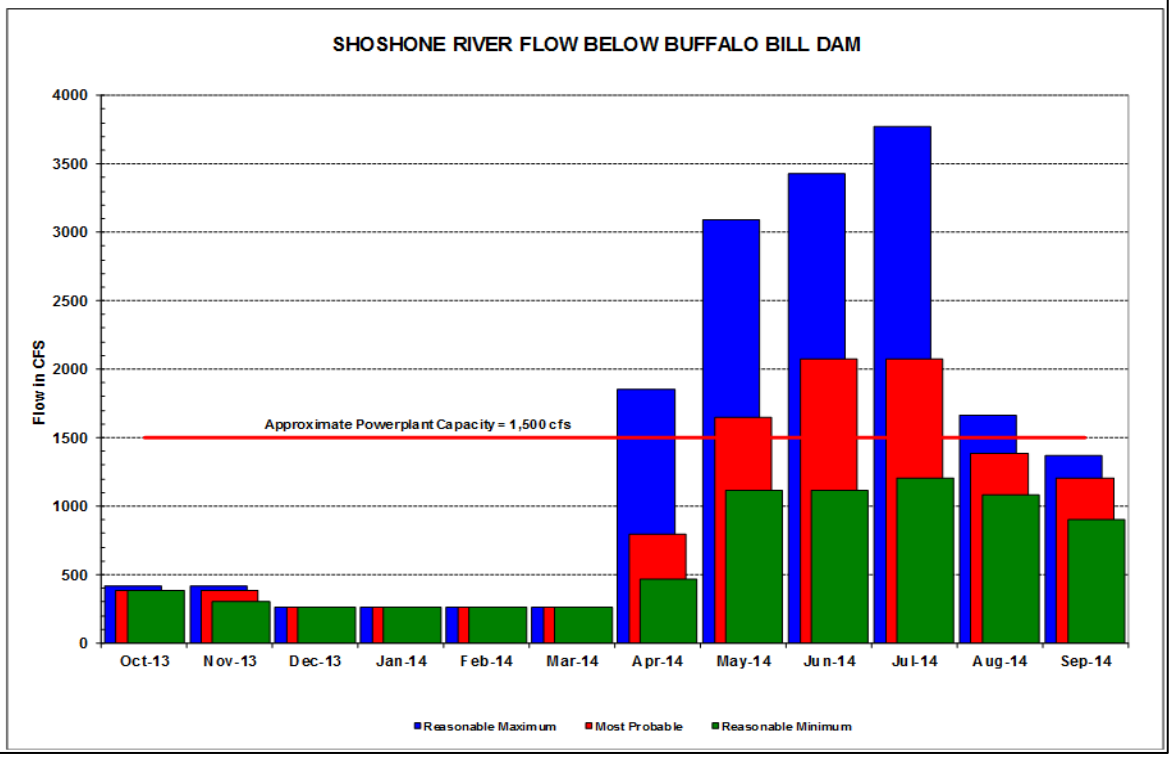
Table WYT13
WATER YEAR 2014 SCHEDULED OUTAGES FOR WYOMING POWERPLANTS

Facilities	Description of Work	Scheduled Dates
BOYSEN		
Unit 1	Clean-up, inspect, test, replace power cables due to flooding of lower level of powerplant	10/01/13 – 12/31/13
Unit 2	Clean-up, inspect, test, replace power cables due to flooding of lower level of powerplant	10/01/13 – 12/31/13
BUFFALO BILL		
Buffalo Bill Powerplant		
Unit 1	Minor Annual Maintenance	11/18/13 - 12/05/13
Unit 2	Major Annual Maintenance	12/09/13 - 01/09/14
Unit 3	Tri-Annual Major Maintenance	01/13/14 - 02/13/14
Shoshone Powerplant		
Unit 3	Minor Annual Maintenance	02/24/14 - 03/06/14
Heart Mountain Powerplant		
Unit 1	Annual Maintenance Transformer KZ1A	10/21/13 – 10/24/13
Unit 1	Minor Annual Maintenance	03/17/14 – 04/03/14
Spirit Mountain Powerplant		
Unit 1	Major Annual Maintenance	10/21/13 - 11/14/13
Unit 1	CT/PT Testing & Microprocessor Relay Testing	01/13/14 - 04/03/14

FIGURE WYG8

BUFFALO BILL RESERVOIR





OUTLOOK

AND OPERATING PLANS

FOR

WATER YEAR 2014

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 2014

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, which is at the top of the active conservation pool (elevation 2,420.00 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, which is 1,737 AF and 0.53 feet below the top of the active conservation pool (elevation 2,064.50 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, 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, which is 3,561 AF and 1.79 feet above the top of the active conservation pool (elevation 1,428.00 at 24,226 AF). Water releases were cut to 13 cfs in mid-December 2013 and will be continued throughout the winter until spring runoff requires additional 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 and 1431 will be used for seasonal multipurpose regulation. For purposes of flood control storage, the reservoir water elevation will be no higher than 1429.8 at the beginning of spring runoff period. That portion of the joint-use pool between elevations 1429.8 and 1431.0 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 at the time inflows cease.

SEASON: SEPTEMBER 1 TO NOVEMBER 1

Make releases necessary to evacuate reservoir to elevation 1429.80 prior to November 1.

SEASON: NOVEMBER 1 TO BEGINNING OF SPRING RUNOFF

Make releases necessary to maintain elevation 1429.80.

Deerfield Reservoir

Deerfield Reservoir started WY2014 at elevation 5,907.00 feet and storage of 15,243 AF (15,588 AF active storage), which is 1.00 foot and 412 AF below the top of conservation. The reservoir winter draw down was at 15,319 AF at December 1, 2013. This is well above our target of 15,000 AF by December 1, 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. The winter release for WY 2013 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 658 AF from Deerfield during the 2013 irrigation season. This water will be replaced to Pactola during the winter months being part of the water released from Deerfield.

A release of around 18 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 2014.

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 2014 at elevation 4,574.27 feet and storage of 51,048 AF (50,031 AF active storage), which is 5.93 feet and 4,924 AF below the top of conservation. 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-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 2014 is approximately 60 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 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 - 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 2014-2015. This may require additional releases from Pactola Reservoir to position the reservoir to limit impacts to the contractor.

Angostura Reservoir

Angostura Reservoir started WY 2014 at elevation 3,174.47 feet and storage of 73,411 AF (31,206 AF active storage), which is 12.73 feet and 49,637 AF below the top of conservation. 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. Excess water is released through the spillway when the reservoir is full or assured of filling. Water may be released from the facility if the reservoir is expected to fill to meet irrigation demands.

Keyhole Reservoir

Keyhole Reservoir started WY 2014 at elevation 4,094.84 feet and storage of 150,023 AF (143,431 AF active storage), which is 4.46 feet and 38,648 AF below the top of conservation. At the beginning of WY 2014, South Dakota storage for the Belle Fourche Irrigation District is 2,101 AF and Wyoming storage for the Crook County Irrigation District is 14,624 AF.

Releases from Keyhole Reservoir are made for either irrigation requirements or flood control. Releases are not anticipated from the reservoir from October - 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 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. Additional water from Keyhole Reservoir to supplement storage in Belle Fourche Reservoir may be necessary. Crook Country Irrigation District also depends entirely on Keyhole Reservoir for the storage and has adequate supplies of water in its account for use this year.

Shadehill Reservoir

Shadehill Reservoir started WY 2014 at elevation 2,270.34 feet and storage of 112,027 AF (68,158 AF active storage), which is 1.66 feet and 8,145 AF below the top of conservation. 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

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. Due to the storm that occurred in early October of 2013 high inflows brought the reservoir elevation to a level that the Inlet Canal was shut off in mid-November. The canal will be shut off all winter and all Belle Fourche River flows will be allowed to flow down the river. The Inlet Canal will be turned on in early spring of 2014. 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 feet 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 feet. 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' 2013 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	Annual Flood Control and Multiple Use	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	1,621	0	117	60	1,798
Fort Randall, SD	1,469	1,532	1,306	986	5,293
Gavins Point, NE	295	0	79	54	428
Totals	17,582	38,536	11,639	4,664	72,416

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
Totals	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 2012-2013, 2011-2012, 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 2013 price levels.

Table CET1:
Main Stem Reservoir System
Comparison of Present and Past Benefits

Use of Regulated Water	Period of Use or Season	2012-2013 Totals	2011-2012 Totals	Long-Term
Navigation[1]	Apr. - Dec.[2]	0.250 million tons (2013)	0.197 million tons (2012)	1.80 million Tons[3]
Flood Damages Prevented	Oct. – Sept.	$228.0 million (2013)	$ 48.6 million (2012)	$ 53.6 billion[4]
Energy	Aug. - Jul.	8.7 billion KWH (Aug. 12-July 13)	10.9 billion KWH (Aug. 11-July 12)	9.4 billion KWH[5]

[1]If sand, gravel, and waterway material are included:
4.000 million tons (2013)
3.906 million tons (2012)
6.82 million tons (1967-2013 average)
[2]End of navigation season extended 0 days in 2012 and 0 days in 2013
[3]1967-2013 average. Peak tonnage shipped in 1977 (3.336 million tons)
[4]Total damages prevented (1938-2013)
[5]1968-2013 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 2013 was 9,024.176 million kilowatt hours, 2,896.760 million kilowatt hours less than in WY 2012. 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
2013	840.209	8304.723	9144.932
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
2004	688.367	7046.084	7734.451

A comparison of 2012 and 2013 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 2013 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 2013

BUREAU PLANTS	INSTALLED CAPACITY (KW)	MILLION KILOWATT-HOURS GENERATED 2012	MILLION KILOWATT-HOURS GENERATED 2013	WATER USED FOR GENERATION IN 2013 1,000 AF	WATER USED FOR GENERATION IN 2013 PERCENT OF TOTAL RELEASE	WATER USED FOR GENERATION IN 2013 KW-HOURS PER AF	RIVER RELEASE 1,000 AF	TOTAL RELEASE 1,000 AF
Canyon Ferry	50,000	342.284	273.374	2,275.516	0.06	120.14	2,470,957.0	3,559,417.0
Pilot Butte[1]	1,600	0.000	0.000	0.000	0.00	N/A	168,560.0	168,560.0
Boysen	15,000	32.277	38.639	498.901	0.07	77.45	749,250.0	749,250.0
Buffalo Bill Reservoir Units								
Shoshone	3,000	17.545	17.581	86.757	0.01	202.65	See below for	total.
Buffalo Bill	18,000	69.983	51.444	168.673	0.02	304.99	See below for	total.
Heart Mountain	6,000	16.347	18.304	228.028	0.03	80.27	See below for	total.
Spirit Mountain [2]	4,500	18.221	17.745	99.459	0.01	178.42	See below for	total.
Total for Buffalo Bill Reservoir[3]	31,500	122.096	105.074	582.917	0.07	180.26	461,447.0	802,076.0
Yellowtail	250,000	645.247	423.122	1,394.520	0.07	303.42	1,352,758.0	1,985,695.0
Subtotal	**348,100**	**1,141.904**	**840.209**	**4,751.854**	**0.07**	**176.82**	**5,202,972.0**	**7,264,998.0**
CORPS PLANTS								
Fort Peck	185,250	1,155.327	1,024.772	6,459.00	100.00	158.66	6,459.0	6,459.0
Garrison	583,300	2,628.029	2,063.814	14,154.00	100.00	145.81	14,154.0	14,154.0
Oahe	786,030	3,381.586	2,075.638	14,620.00	100.00	141.97	14,620.0	14,620.0
Big Bend	494,320	1,646.071	821.328	13,466.00	100.00	60.99	13,466.0	13,466.0
Fort Randall	320,000	1,805.861	1,625.166	14,798.00	99.31	109.82	14,901.0	14,901.0
Gavins Point	132,300	650.714	694.005	15,411.00	94.22	45.03	16,357.0	16,357.0
Subtotal	**2,501,200**	**11,267.588**	**8,304.723**	**78,908.00**	**98.69**	**105.25**	**79,957.0**	**79,957.0**
TOTAL MISSOURI BASIN	**2,849,300**	**12,409.492**	**9,144.932**	**83,659.85**	**1.14**	**109.31**	**5,282,929.0**	**7,344,955.0**

1 River Release and Total Release at Pilot Butte Reservoir is computed inflow to Pilot Butte Reservoir due to the location of the powerplant at inlet of supply canal.

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 2013

	BUREAU OF RECLAMATION PLANTS								
				BUFFALO BILL PLANTS					
MONTH	CANYON FERRY	PILOT BUTTE	BOYSEN	HEART MOUNTAIN	SPIRIT MOUNTAIN	BUFFALO BILL	SHOSHONE	YELLOWTAIL	TOTAL
October	23.968	0.000	2.434	1.636	1.410	1.854	0.717	17.043	**49.062**
November	23.316	0.000	2.142	0.000	0.000	0.542	1.279	29.785	**57.064**
December	25.612	0.000	2.439	0.000	0.000	0.716	1.380	33.153	**63.300**
January	29.356	0.000	2.248	0.000	0.000	0.602	1.328	32.486	**66.020**
February	29.231	0.000	2.237	0.000	0.000	0.109	1.353	29.742	**62.672**
March	26.336	0.000	2.347	0.000	0.000	0.858	0.741	31.964	**62.246**
April	25.304	0.000	2.546	0.850	0.477	3.732	1.227	32.475	**66.611**
May	23.175	0.000	4.684	3.316	2.738	9.515	1.835	40.991	**86.254**
June	16.186	0.000	5.851	2.891	3.207	10.902	1.983	42.655	**83.675**
July	17.058	0.000	5.870	3.188	3.433	10.969	2.088	45.857	**88.463**
August	16.796	0.000	4.776	3.250	3.328	7.683	1.957	45.298	**83.088**
September	17.036	0.000	1.065	3.173	3.152	3.962	1.693	41.673	**71.754**
TOTAL	**273.374**	**0.000**	**38.639**	**18.304**	**17.745**	**51.444**	**17.581**	**423.122**	**840.209**

	CORPS OF ENGINEERS PLANTS							MISSOURI
MONTH	FORT PECK	GARRISON	OAHE	BIG BEND	FORT RANDALL	GAVINS POINT	TOTAL	BASIN TOTAL
October	100.832	180.570	234.477	96.094	205.316	76.946	**894.235**	**943.297**
November	99.850	190.396	216.063	90.629	205.407	73.505	**875.850**	**932.914**
December	107.945	155.687	124.145	50.085	165.954	46.501	**650.317**	**713.617**
January	118.688	187.699	147.849	63.973	73.359	42.590	**634.158**	**700.178**
February	108.916	177.613	122.438	49.967	62.078	36.108	**557.120**	**619.792**
March	63.277	154.610	168.805	67.021	106.749	51.303	**611.765**	**674.011**
April	57.157	162.248	144.909	57.674	96.439	48.625	**567.052**	**633.663**
May	78.385	177.125	140.455	56.999	103.019	52.376	**608.359**	**694.613**
June	73.701	174.483	122.729	45.081	120.901	56.695	**593.590**	**677.265**
July	76.839	178.637	187.049	73.212	144.892	65.028	**725.657**	**814.120**
August	77.470	178.571	216.903	80.015	154.064	67.225	**774.248**	**857.336**
September	61.712	146.175	249.816	90.578	186.988	77.103	**812.372**	**884.126**
TOTAL	**1,024.772**	**2,063.814**	**2,075.638**	**821.328**	**1,625.166**	**694.005**	**8,304.723**	**9,144.932**

TABLE CET4

WATER USED FOR POWER GENERATION (1,000 ACRE-FEET)
WATER YEAR 2013

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	196.409	31.752	0.000	7.862	13.632	8.345	4.322	67.869	619.000	1,214.000	1,670.000	1,550.000	2,117.000	1,834.000
November	190.695	29.419	0.000	0.000	0.000	4.430	7.667	102.621	616.000	1,317.000	1,555.000	1,447.000	1,818.000	1,733.000
December	208.018	30.816	0.000	0.000	0.000	4.434	8.273	111.383	680.000	1,070.000	903.000	795.000	873.000	1,004.000
January	241.627	30.869	0.000	0.000	0.000	4.525	7.961	109.239	755.000	1,319.000	1,067.000	1,025.000	741.000	912.000
February	240.337	27.771	0.000	0.000	0.000	0.714	9.818	97.974	694.000	1,271.000	879.000	801.000	611.000	784.000
March	222.409	29.903	0.000	0.000	0.000	5.976	3.933	108.681	408.000	1,073.000	1,198.000	1,102.000	1,014.000	1,112.000
April	216.113	32.751	0.000	3.940	4.886	17.998	6.513	105.858	356.000	1,136.000	1,031.000	957.000	901.000	1,050.000
May	195.244	57.761	0.000	15.497	26.776	37.644	9.740	130.809	493.000	1,241.000	980.000	941.000	965.000	1,127.000
June	136.093	74.699	0.000	14.101	30.193	42.457	10.526	135.967	473.000	1,181.000	844.000	752.000	1,122.000	1,230.000
July	141.219	72.761	0.000	15.334	32.095	43.144	11.083	148.238	495.000	1,178.000	1,279.000	1,216.000	1,380.000	1,425.000
August	142.030	65.408	0.000	15.227	31.306	37.217	10.507	144.923	491.000	1,182.000	1,486.000	1,351.000	1,455.000	1,484.000
September	145.322	14.991	0.000	14.796	29.785	21.144	9.116	130.958	379.000	972.000	1,728.000	1,529.000	1,801.000	1,716.000
TOTAL	**2,275.516**	**498.901**	**0.000**	**86.757**	**168.673**	**228.028**	**99.459**	**1,394.520**	**6,459.000**	**14,154.000**	**14,620.000**	**13,466.000**	**14,798.000**	**15,411.000**

[1] 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.

TABLE CET5

TOTAL RELEASE (1,000 ACRE-FEET)
WATER YEAR 2013

MONTH	CANYON FERRY	BOYSEN	PILOT BUTTE	BUFFALO BILL	BULL LAKE	ANCHOR	YELLOWTAIL	FORT PECK	GARRISON	OAHE	BIG BEND	FORT RANDALL	GAVINS POINT
October	261.862	58.420	4.769	59.567	5.361	0.314	226.767	619.000	1,214.000	1,670.000	1,550.000	2,220.000	2,315.000
November	292.471	56.611	0.000	21.162	1.495	0.000	184.790	616.000	1,317.000	1,555.000	1,447.000	1,818.000	2,034.000
December	302.352	58.405	0.000	21.698	1.548	0.000	187.063	680.000	1,070.000	903.000	795.000	873.000	1,004.000
January	303.749	57.381	0.000	21.936	1.549	0.000	186.846	755.000	1,319.000	1,067.000	1,025.000	741.000	912.000
February	280.927	53.730	0.000	20.570	1.598	0.000	174.702	694.000	1,271.000	879.000	801.000	611.000	784.000
March	313.354	63.058	0.000	22.102	1.773	0.000	177.968	408.000	1,073.000	1,198.000	1,102.000	1,014.000	1,141.000
April	353.592	64.092	7.583	55.812	2.138	1.100	177.922	356.000	1,136.000	1,031.000	957.000	901.000	1,063.000
May	327.133	74.855	29.854	114.635	13.221	1.803	149.037	493.000	1,241.000	980.000	941.000	965.000	1,127.000
June	403.912	72.299	30.897	145.322	13.518	3.497	128.473	473.000	1,181.000	844.000	752.000	1,122.000	1,230.000
July	272.598	72.674	38.587	122.262	34.617	0.723	135.999	495.000	1,178.000	1,279.000	1,216.000	1,380.000	1,425.000
August	241.097	66.927	36.641	113.242	61.087	0.173	133.748	491.000	1,182.000	1,486.000	1,351.000	1,455.000	1,508.000
September	206.370	50.798	20.229	83.768	33.603	0.131	122.380	379.000	972.000	1,728.000	1,529.000	1,801.000	1,814.000
TOTAL	**3,559.417**	**749.250**	**168.560**	**802.076**	**171.508**	**7.741**	**1,985.695**	**6,459.000**	**14,154.000**	**14,620.000**	**13,466.000**	**14,901.000**	**16,357.000**

TABLE CET6

TOTAL RESERVOIR STORAGE CONTENTS (1,000 ACRE-FEET)
WATER YEARS 2012 AND 2013

BUREAU RESERVOIRS	TOP OF CONSERVATION CAPACITY [3]	DEAD AND INACTIVE CAPACITY	TOTAL STORAGE SEPTEMBER 30		END OF SEPTEMBER PERCENT OF AVERAGE	
			2012	2013	2012	2013
Clark Canyon	174.4	1.1	77.4	48.0	82%	51%
Canyon Ferry	1,891.9	396.0	1,558.7	1,446.3	96%	89%
Helena Valley	10.5	4.6	8.1	8.7	108%	116%
Gibson	96.5	0.0	6.2	7.3	26%	31%
Willow Creek	31.8	1.0	20.8	21.4	103%	106%
Pishkun	46.7	16.0	17.8	22.1	55%	68%
Lake Elwell	925.6	554.3	818.7	833.3	103%	105%
Sherburne	66.1	1.9	23.5	17.7	138%	104%
Fresno	92.9	0.4	49.0	63.5	106%	137%
Nelson	79.0	18.1	65.9	75.2	116%	132%
Bull Lake	152.5	0.7	73.2	89.2	97%	118%
Pilot Butte	33.7	3.8	13.9	19.8	77%	110%
Boysen	741.6	219.2	513.6	481.5	86%	80%
Anchor[1]	17.2	0.1	0.3	0.4	96%	108%
Buffalo Bill[2]	646.6	41.7	448.9	466.4	101%	105%
Bighorn Lake	1,020.6	469.9	893.3	967.5	94%	102%
E. A. Patterson	8.6	0.5	5.8	8.6	93%	138%
Lake Tschida	67.1	5.2	57.0	65.4	100%	115%
Jamestown Reservoir	31.5	0.8	28.0	27.8	97%	97%
Shadehill Reservoir	120.2	43.9	80.4	112.0	76%	106%
Angostura Reservoir	123.0	42.2	71.8	73.4	85%	86%
Deerfield Reservoir	15.7	0.2	15.3	15.2	115%	114%
Pactola Reservoir	56.0	1.0	47.6	51.0	103%	110%
Keyhole Reservoir	188.7	6.6	150.6	150.0	170%	169%
Belle Fourche Reservoir	172.9	3.1	58.2	96.5	79%	130%
Subtotal	**6,811.2**	**1,832.3**	**5,103.9**	**5,168.3**		
CORPS RESERVOIRS						
Fort Peck	17,578.0	4,073.0	14,331.0	12,846.0		
Garrison	22,332.0	4,980.0	16,686.0	16,678.0		
Oahe	22,035.0	5,373.0	15,701.0	16,157.0		
Big Bend	1,738.0	1,621.0	1,669.0	1,670.0		
Fort Randall	4,433.0	1,517.0	3,409.0	3,256.0		
Gavins Point	393.0	307.0	368.0	367.0		
Subtotal	**68,509.0**	**17,871.0**	**52,164.0**	**50,974.0**		
TOTAL UPPER MISSOURI BASIN	**75,320.2**	**19,703.3**	**57,267.9**	**56,142.3**		

[1] Percent of average content of Anchor Reservoir is based on an 22-year average, 1991-2012.

[2] Percent of average content of Buffalo Bill Reservoir is based on an 20-year average, 1993-2012; 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.

[3] Includes joint-use space.

TABLE CET7
WATER YEAR 2013
End-of-Month Reservoir Contents
(1,000 Acre-Feet)

RECLAMATION RESERVOIRS	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
CLARK CANYON RESERVOIR	87.6	99.9	110.3	117.6	125.2	133.8	139.0	122.9	100.5	71.8	52.3	48.0
% of Average	84.7%	89.2%	93.6%	95.7%	98.1%	98.6%	97.4%	89.0%	76.4%	65.0%	55.7%	50.9%
CANYON FERRY RESERVOIR	1,544.4	1,585.0	1,584.0	1,543.5	1,500.6	1,453.2	1,426.8	1,501.9	1,668.4	1,608.3	1,501.9	1,446.3
% of Average	94.4%	95.8%	98.9%	100.5%	100.9%	99.4%	96.1%	91.4%	90.1%	90.1%	89.7%	89.3%
HELENA VALLEY RESERVOIR	7.7	7.5	7.2	6.9	6.6	6.4	10.4	10.0	10.3	7.8	8.9	8.7
% of Average	110.9%	111.3%	111.3%	113.4%	115.6%	112.2%	113.3%	109.2%	114.6%	105.2%	110.4%	115.9%
GIBSON RESERVOIR	7.9	11.9	14.7	16.1	16.8	23.6	39.5	98.2	91.7	30.7	6.1	7.3
% of Average	27.1%	35.8%	40.3%	40.5%	39.0%	49.3%	62.9%	109.4%	101.6%	59.6%	22.6%	30.8%
WILLOW CREEK	23.2	26.1	27.4	27.5	27.7	27.7	28.0	31.0	31.2	25.9	21.6	21.4
% of Average	0.1%	121.1%	125.2%	123.7%	122.1%	118.0%	110.2%	109.0%	107.1%	106.8%	105.8%	106.2%
PISHKUN RESERVOIR	17.8	17.8	17.8	17.8	17.8	17.8	35.5	46.4	41.9	39.8	22.1	22.1
% of Average	0.1%	51.9%	52.2%	52.8%	52.8%	52.1%	89.2%	101.0%	100.1%	107.5%	61.8%	68.3%
LAKE ELWELL (TIBER DAM)	797.8	805.4	794.2	781.7	769.3	763.8	770.2	871.0	913.8	896.2	863.6	833.3
% of Average	104.8%	107.3%	107.7%	108.2%	107.5%	106.2%	104.4%	106.5%	104.1%	104.6%	105.0%	105.1%
SHERBURNE LAKE	31.7	48.3	54.5	56.4	57.7	50.2	36.0	47.8	65.6	55.3	32.8	17.7
% of Average	158.9%	192.3%	195.4%	182.6%	174.4%	174.6%	176.8%	139.1%	116.6%	113.0%	116.8%	104.0%
FRESNO RESERVOIR	49.8	50.4	49.9	48.2	47.6	64.6	92.8	90.1	96.7	73.6	63.4	63.5
% of Average	109.9%	111.5%	114.2%	114.1%	109.0%	109.2%	122.7%	124.3%	127.6%	126.5%	139.0%	137.2%
NELSON RESERVOIR	66.2	64.5	63.1	61.5	60.1	68.3	77.5	73.8	76.3	75.2	74.6	75.2
% of Average	112.5%	111.8%	112.8%	113.2%	113.1%	125.4%	126.2%	121.4%	125.6%	136.4%	137.1%	132.1%
BULL LAKE	75.2	76.6	77.4	78.0	78.3	78.2	79.4	106.3	143.6	142.9	96.4	89.2
% of Average	100.6%	101.5%	102.0%	102.5%	102.9%	102.7%	104.8%	119.5%	113.9%	110.9%	93.5%	117.6%
PILOT BUTTE RESERVOIR	28.0	27.7	27.5	27.5	27.4	27.2	26.7	29.6	26.1	18.9	16.2	19.8
% of Average	105.2%	100.1%	99.4%	98.7%	97.9%	92.3%	87.2%	110.0%	87.8%	74.5%	76.1%	110.1%
BOYSEN RESERVOIR	506.3	517.8	518.6	517.5	518.9	528.1	527.8	545.1	537.8	501.6	463.5	481.5
% of Average	85.0%	87.7%	90.6%	93.0%	95.0%	97.9%	100.3%	99.3%	82.0%	77.3%	75.1%	80.3%
ANCHOR RESERVOIR	0.31	0.31	0.31	0.31	0.35	0.63	0.25	0.32	0.32	0.23	0.24	0.35
% of Average[1]	110.6%	127.6%	132.5%	135.3%	132.2%	172.5%	50.5%	20.8%	9.4%	10.5%	40.2%	107.9%
BUFFALO BILL RESERVOIR	423.8	430.1	430.8	430.2	430.0	429.8	420.5	528.2	635.5	591.0	507.5	466.4
% of Average[2]	100.2%	100.9%	101.5%	101.8%	102.8%	103.8%	106.6%	120.6%	112.0%	102.7%	99.8%	104.8%
BIGHORN LAKE	919.2	928.2	912.0	892.8	881.7	882.4	875.9	925.9	1,005.0	989.0	941.4	967.5
% of Average	95.6%	99.2%	102.7%	106.1%	108.4%	109.9%	111.0%	107.2%	100.6%	100.7%	99.7%	101.9%
E. A. PATTERSON LAKE	5.7	6.0	6.4	6.5	6.6	7.4	8.3	9.4	8.4	8.4	7.7	8.6
% of Average	96.1%	102.4%	109.3%	110.0%	102.8%	94.9%	105.3%	121.4%	109.9%	117.4%	116.0%	138.3%
LAKE TSCHIDA	57.7	58.6	59.4	60.0	61.1	64.3	68.7	76.0	66.6	64.1	62.2	65.4
% of Average	101.0%	102.0%	103.3%	104.4%	102.3%	94.7%	104.3%	116.2%	101.8%	103.4%	106.9%	115.2%
JAMESTOWN RESERVOIR	27.0	27.0	27.2	27.2	27.3	27.4	31.7	73.9	54.5	30.6	29.3	27.8
% of Average	100.2%	102.2%	102.4%	101.9%	101.0%	75.4%	55.9%	162.6%	146.3%	90.1%	89.7%	96.7%
SHADEHILL RESERVOIR	79.3	79.1	78.4	78.7	79.1	80.2	81.3	88.3	98.9	98.1	97.1	112.0
% of Average	77.4%	78.1%	78.5%	79.8%	78.4%	69.6%	69.4%	75.4%	85.3%	86.0%	88.6%	106.2%
ANGOSTURA RESERVOIR	72.5	74.6	76.4	78.3	80.8	83.7	87.2	88.3	85.6	76.8	76.3	73.4
% of Average	83.9%	85.4%	85.7%	85.8%	84.4%	81.7%	82.5%	80.7%	78.8%	77.6%	85.9%	86.5%
DEERFIELD RESERVOIR	15.5	15.4	15.4	15.3	15.3	15.3	15.6	15.6	15.4	15.3	15.3	15.2
% of Average	115.5%	113.9%	111.8%	109.7%	108.2%	106.9%	108.4%	107.5%	107.2%	108.5%	112.5%	114.2%
PACTOLA RESERVOIR	47.7	48.3	48.7	49.4	50.1	51.1	52.9	54.8	55.8	54.2	52.9	51.0
% of Average	102.5%	103.1%	104.5%	106.2%	107.4%	107.8%	108.6%	109.8%	110.6%	111.5%	112.4%	110.0%
KEYHOLE RESERVOIR	148.9	148.3	148.4	148.8	149.2	150.2	151.4	153.8	156.2	153.5	153.1	150.0
% of Average	168.5%	168.5%	168.2%	167.7%	163.5%	154.0%	153.1%	151.3%	153.9%	159.9%	168.8%	169.2%
BELLE FOURCHE RESERVOIR	66.3	77.3	87.6	97.9	107.2	117.5	129.9	150.5	171.1	138.6	115.9	96.5
% of Average	80.5%	83.8%	86.5%	88.6%	89.8%	88.0%	89.9%	97.0%	114.6%	117.3%	134.9%	130.4%
CORPS RESERVOIRS	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
FORT PECK RESERVOIR	13,962.0	13,632.0	13,192.0	12,799.0	12,476.0	12,533.0	12,570.0	12,688.0	13,398.0	13,211.0	13,020.0	12,846.0
GARRISON RESERVOIR	16,343.0	16,013.0	15,762.0	15,430.0	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	15,099.0	14,822.0	14,907.0	15,195.0	15,638.0	15,670.0	15,926.0	16,643.0	17,463.0	17,360.0	16,873.0	16,157.0
BIG BEND RESERVOIR	1,646.0	1,634.0	1,666.0	1,621.0	1,645.0	1,649.0	1,670.0	1,658.0	1,682.0	1,626.0	1,620.0	1,670.0
FORT RANDALL RESERVOIR	2,787.0	2,453.0	2,440.0	2,842.0	3,182.0	3,396.0	3,615.0	3,761.0	3,557.0	3,488.0	3,444.0	3,256.0
LEWIS AND CLARK LAKE	392.0	384.0	384.0	459.9	395.0	338.0	348.0	365.0	353.0	339.0	336.0	367.0

[1] Percent of average content of Anchor Reservoir is based on a 22-year average, 1991-2012; this is due to the availability of data for Anchor Reservoir.

[2] Percent of average content of Buffalo Bill Reservoir is based on an 20-year average, 1993-2012; 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.

TABLE CET8
WATER YEAR 2013
Monthly Inflow Amounts
(1,000 Acre-Feet)

RECLAMATION RESERVOIRS	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
CLARK CANYON RESERVOIR	14.1	15.3	13.5	10.4	10.4	11.7	8.3	7.2	9.2	13.4	10.1	10.8	134.4
% of Average	67.5%	76.5%	80.8%	73.3%	82.3%	71.5%	48.9%	33.7%	29.0%	51.7%	53.5%	60.1%	57.6%
CANYON FERRY RESERVOIR	182.4	231.3	207.1	201.0	206.0	234.0	226.0	314.1	338.8	124.2	77.9	116.5	2,459.2
% of Average	71.6%	87.3%	95.3%	94.1%	99.6%	92.4%	73.8%	63.0%	49.4%	42.2%	50.7%	63.8%	69.6%
HELENA VALLEY RESERVOIR	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	8.4	18.9	12.4	15.1	17.4	15.0	85.6
% of Average	N/A	N/A	N/A	N/A	N/A	N/A	0.2%	0.2%	0.1%	0.1%	0.1%	0.2%	0.1%
GIBSON RESERVOIR	11.9	14.5	12.6	9.7	7.9	11.1	37.5	162.9	118.5	35.4	16.5	12.4	450.7
% of Average	73.6%	87.3%	92.8%	80.5%	73.0%	75.7%	89.3%	110.9%	78.3%	63.0%	69.1%	71.6%	86.5%
WILLOW CREEK	2.4	2.8	1.4	0.1	0.2	0.1	0.2	3.1	0.2	-0.3	0.0	-0.2	9.9
% of Average	0.3%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	N/A	N/A	N/A	0.1%
PISHKUN RESERVOIR	0.0	0.0	0.0	0.0	0.0	0.0	17.8	55.5	67.0	82.5	36.0	0.0	258.8
% of Average	N/A	N/A	N/A	N/A	N/A	N/A	0.3%	0.2%	0.1%	0.1%	0.1%	N/A	0.1%
LAKE ELWELL (TIBER DAM)	11.1	38.6	20.2	18.2	15.3	25.1	36.5	132.5	120.4	27.6	12.6	7.8	465.8
% of Average	66.0%	180.9%	118.8%	114.3%	70.3%	64.9%	69.3%	106.8%	89.6%	65.9%	102.5%	67.7%	91.7%
SHERBURNE LAKE	8.2	16.6	6.2	1.9	1.4	3.1	8.8	37.9	38.7	19.0	9.8	6.7	158.4
% of Average	125.9%	240.0%	181.6%	63.4%	59.1%	88.7%	81.3%	123.2%	104.6%	101.9%	110.8%	110.6%	114.8%
FRESNO RESERVOIR	3.6	3.5	2.3	1.3	1.9	20.1	36.6	35.3	56.2	27.2	31.2	28.5	247.8
% of Average	51.1%	159.6%	270.0%	146.1%	49.6%	84.5%	123.3%	82.1%	115.0%	80.4%	103.6%	137.8%	101.1%
NELSON RESERVOIR	0.9	-1.7	-1.4	-1.6	-1.4	8.2	12.4	5.2	10.8	9.5	13.5	12.8	67.1
% of Average	0.0%	N/A	N/A	N/A	N/A	0.6%	0.2%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%
BULL LAKE	3.6	2.9	2.4	2.1	1.7	1.4	2.8	28.7	41.1	33.7	13.1	20.8	154.3
% of Average	63.9%	91.3%	98.5%	98.6%	106.3%	76.1%	73.5%	102.6%	66.8%	72.9%	63.0%	219.9%	82.7%
PILOT BUTTE RESERVOIR[1]	14.0	-0.2	-0.2	-0.1	-0.1	-0.2	1.8	26.3	31.1	31.4	31.2	24.4	159.4
% of Average	125.7%	N/A	N/A	N/A	N/A	N/A	24.9%	111.8%	83.6%	76.1%	96.3%	104.1%	89.1%
BOYSEN RESERVOIR	24.5	41.0	31.7	29.7	29.2	39.9	32.5	79.8	67.4	36.6	27.3	62.5	502.0
% of Average	41.5%	83.5%	84.2%	81.0%	78.2%	76.7%	66.4%	66.5%	26.3%	27.9%	47.8%	119.6%	53.6%
ANCHOR RESERVOIR	0.12	0.12	0.02	0.00	0.08	0.58	0.13	2.53	4.26	1.60	0.46	1.24	11.15
% of Average[2]	0.0%	0.0%	0.0%	N/A	0.1%	0.2%	0.0%	0.1%	0.1%	0.1%	0.2%	0.2%	0.1%
BUFFALO BILL RESERVOIR	12.8	18.6	13.6	12.3	11.2	12.4	25.7	213.4	243.8	93.6	25.7	34.7	717.7
% of Average	49.9%	86.8%	86.7%	84.3%	85.7%	65.6%	62.8%	134.5%	81.0%	58.3%	57.3%	139.8%	85.4%
BIGHORN LAKE	132.5	111.6	95.2	90.1	86.8	109.4	99.4	180.8	215.1	132.6	97.3	157.0	1,507.8
% of Average	78.9%	86.4%	87.0%	81.6%	77.6%	74.1%	69.9%	70.9%	52.7%	52.2%	64.4%	94.7%	70.0%
E. A. PATTERSON LAKE	0.0	0.3	0.4	0.1	0.1	0.8	0.9	4.1	5.4	0.0	-0.5	4.2	15.6
% of Average	N/A	133.8%	247.0%	44.0%	7.1%	12.1%	26.8%	365.7%	295.7%	N/A	N/A	2556.4%	91.0%
LAKE TSCHIDA	0.7	1.2	1.4	1.2	1.3	3.2	5.7	15.9	42.7	0.4	0.5	5.7	80.0
% of Average	46.8%	82.8%	141.4%	146.9%	26.4%	10.8%	33.6%	291.4%	588.0%	12.2%	34.5%	2163.0%	108.3%
JAMESTOWN RESERVOIR	0.1	0.1	0.2	0.0	0.0	0.2	4.3	92.0	33.7	6.9	2.3	1.4	141.3
% of Average	3.8%	4.8%	33.4%	N/A	9.6%	1.7%	12.0%	995.7%	752.7%	125.1%	47.7%	71.3%	182.2%
SHADEHILL RESERVOIR	-0.2	0.8	0.2	1.2	1.3	2.1	2.0	8.0	11.6	0.2	0.5	19.1	46.8
% of Average	N/A	64.7%	20.6%	134.0%	30.3%	8.1%	10.6%	63.1%	195.1%	5.3%	63.4%	N/A	61.6%
ANGOSTURA RESERVOIR	0.9	2.3	1.9	2.1	2.6	3.1	3.7	1.8	3.9	2.0	7.7	0.7	32.8
% of Average	37.2%	73.9%	97.9%	94.0%	50.9%	27.0%	43.6%	13.7%	24.9%	59.3%	462.2%	67.5%	47.1%
DEERFIELD RESERVOIR	0.8	0.7	0.8	0.8	0.7	0.9	1.2	1.2	0.9	0.7	0.8	0.6	10.1
% of Average	103.3%	108.9%	117.9%	118.3%	119.5%	89.0%	88.4%	75.7%	65.9%	66.5%	99.8%	86.8%	90.3%
PACTOLA RESERVOIR	1.4	1.7	1.6	1.9	1.7	2.2	2.9	3.8	3.6	2.0	2.7	1.8	27.2
% of Average	66.0%	90.2%	103.0%	120.9%	111.4%	77.8%	63.7%	55.1%	52.9%	52.6%	92.0%	83.1%	70.6%
KEYHOLE RESERVOIR	-1.7	-0.6	0.1	0.4	0.5	0.9	1.2	2.4	2.4	-2.8	0.0	-2.7	0.2
% of Average	N/A	N/A	40.0%	79.9%	18.2%	15.2%	55.5%	59.1%	150.2%	N/A	N/A	N/A	1.3%
BELLE FOURCHE RESERVOIR	8.1	11.1	10.3	10.3	9.4	10.3	12.5	23.7	27.3	5.1	9.1	5.5	142.5
% of Average	70.3%	111.8%	114.7%	111.2%	104.2%	72.4%	106.6%	140.0%	265.3%	104.7%	420.5%	115.8%	125.6%

[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 22-year average, 1991-2012, this is due to the availability of data for Anchor Reservoir.

FIGURE CEG1

ANNUAL GENERATION AT USBR PLANTS

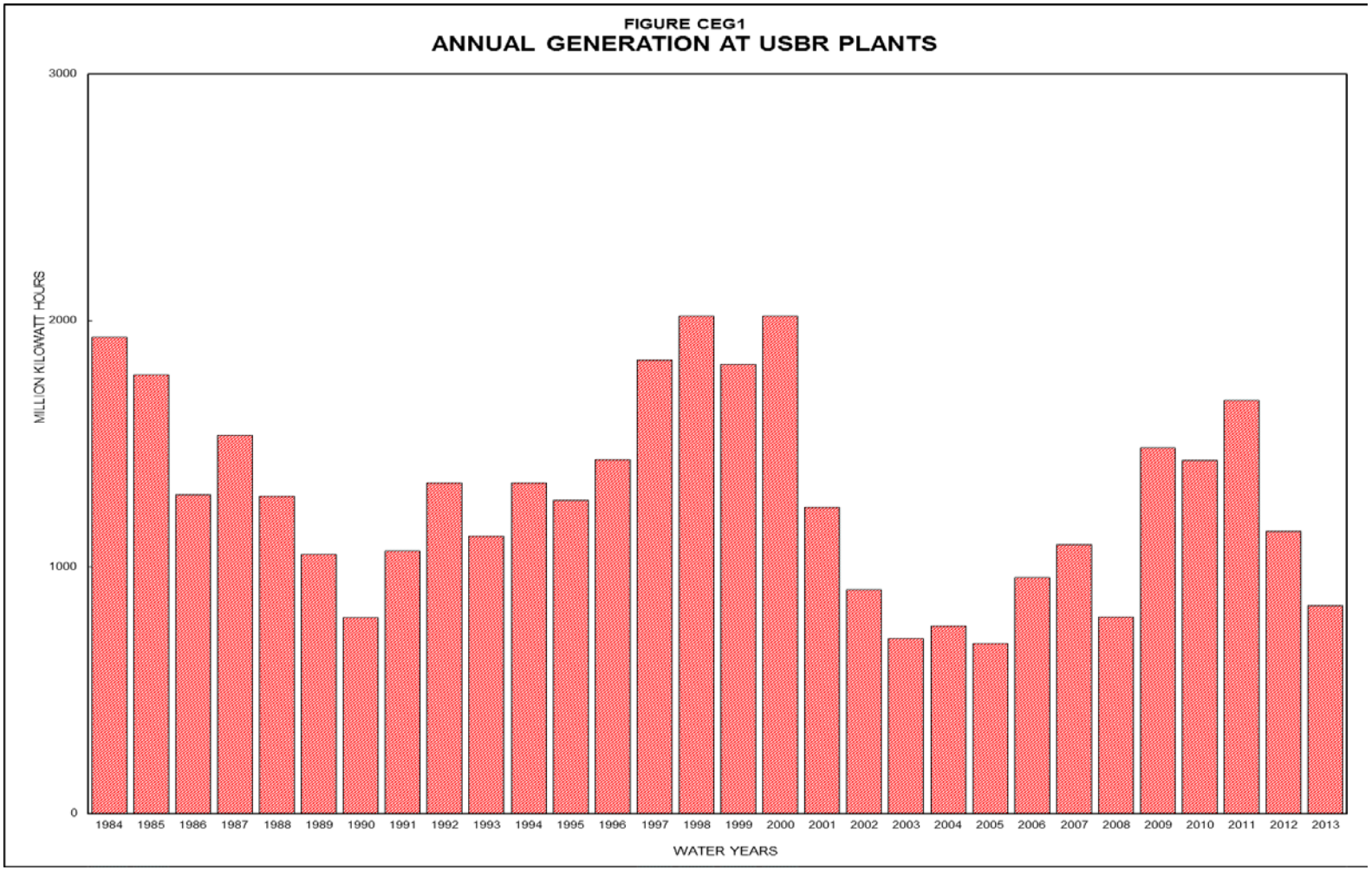


FIGURE CEG2

MONTHLY GENERATION AT USBR PLANTS

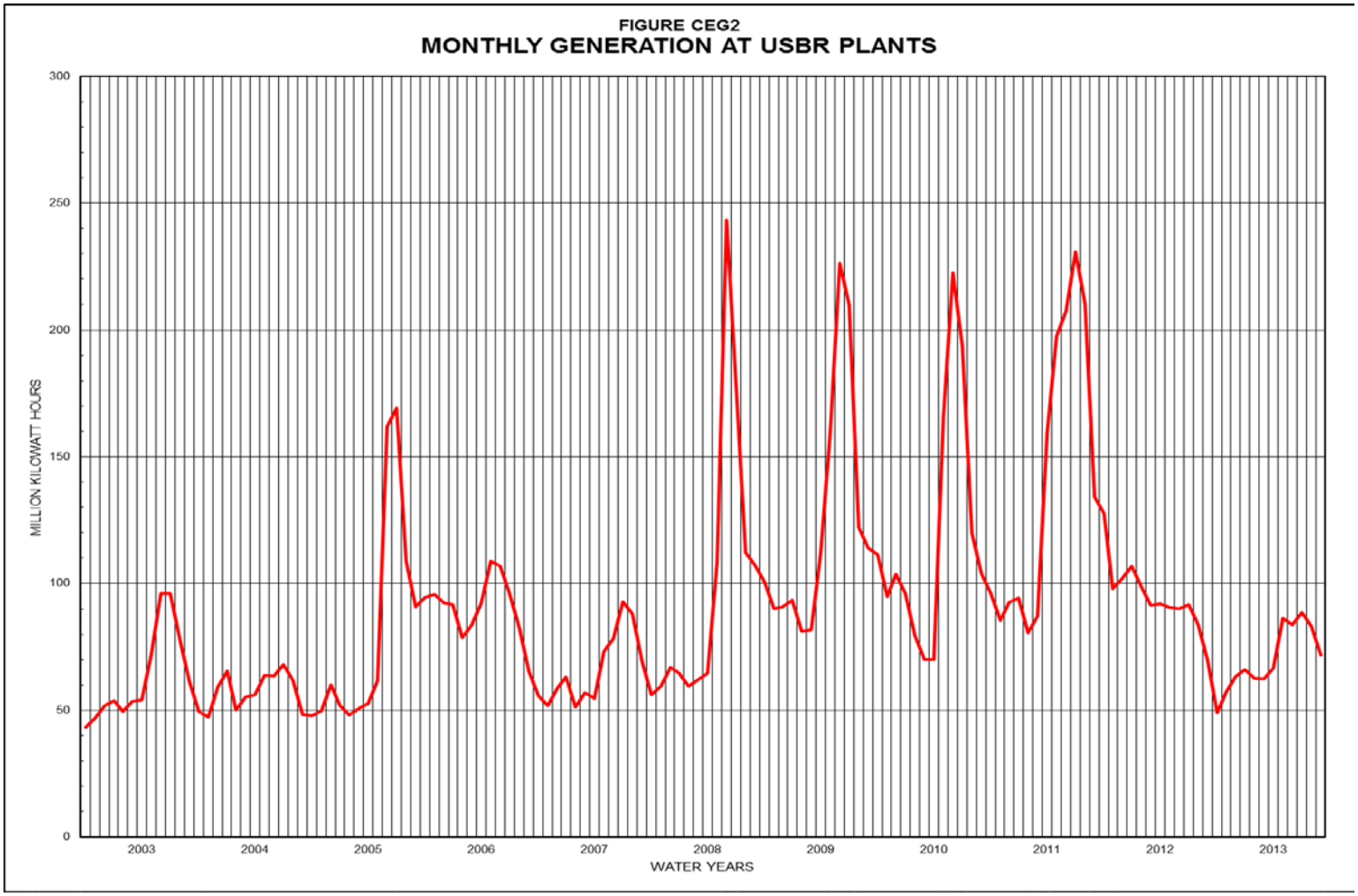


FIGURE CEG3
ANNUAL GENERATION AT COE PLANTS

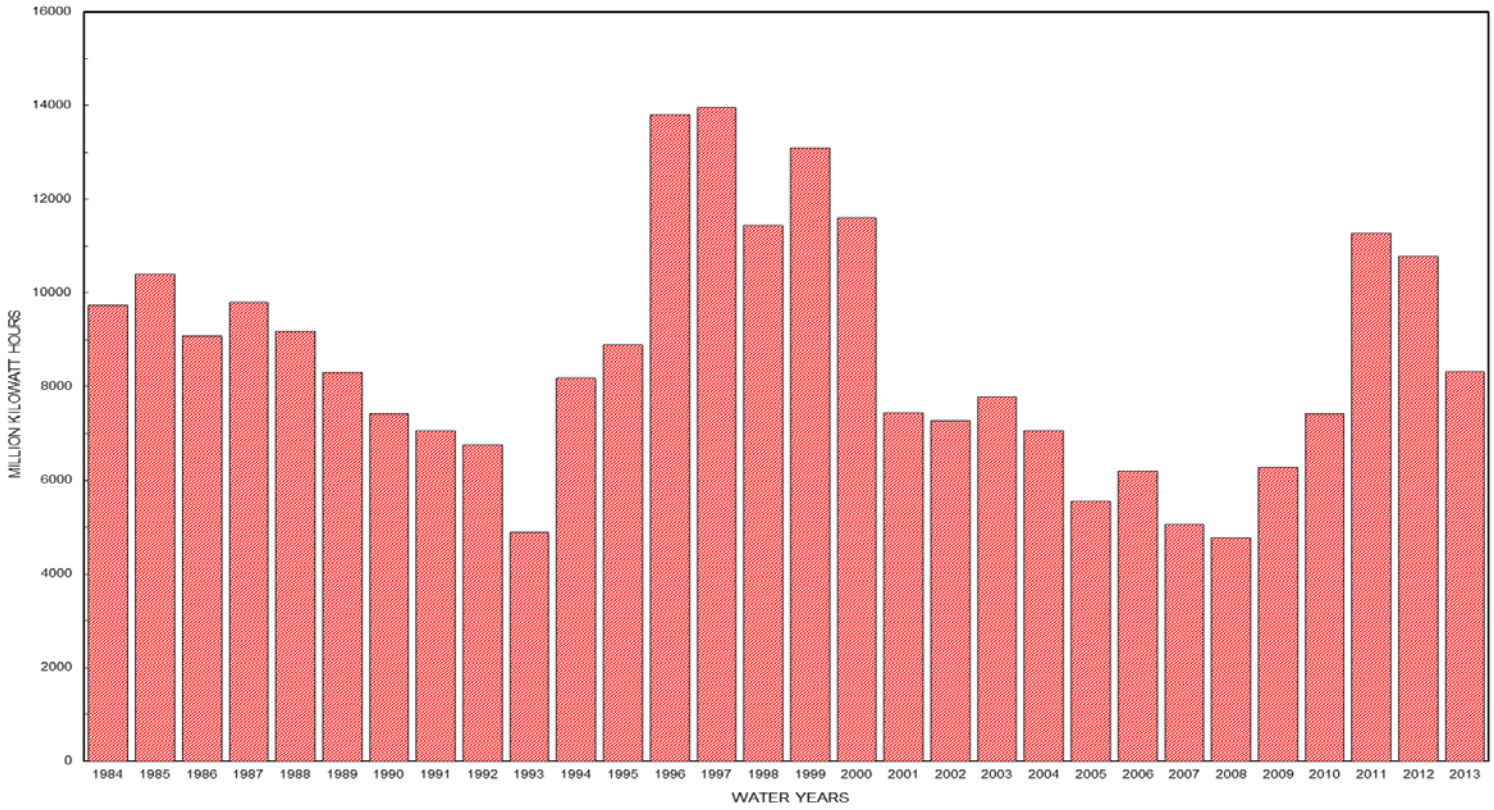


FIGURE CEG4

MONTHLY GENERATION AT COE PLANTS

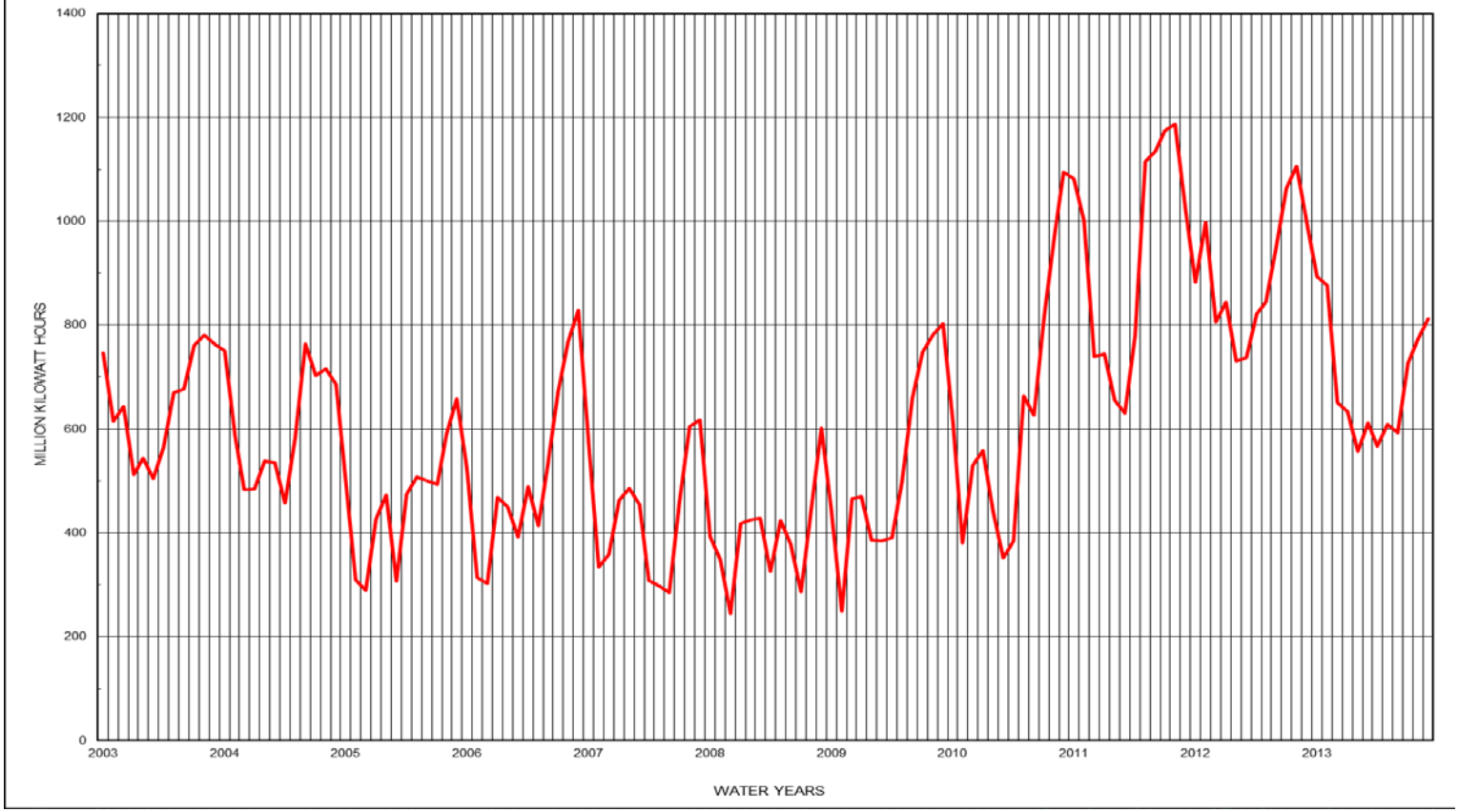


FIGURE CEG5

ANNUAL GENERATION - USBR & COE PLANTS

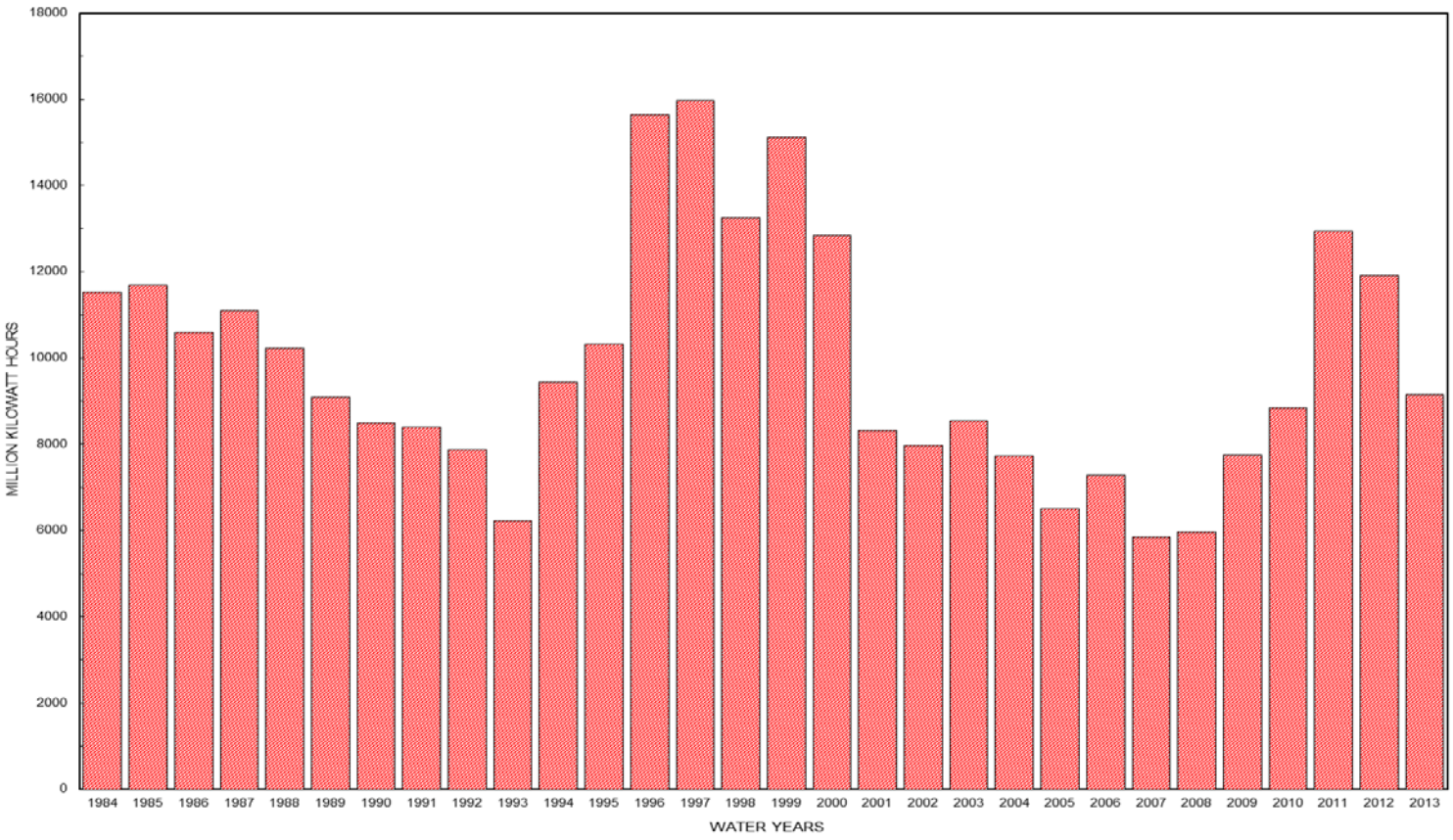


FIGURE CEG6

MONTHLY GENERATION - USBR & COE PLANTS