

RECLAMATION

Managing Water in the West

October 19, 2010

Dear Customer:

Attached are the monthly water supply outlook and projected reservoir and river operating plans prepared in October. Based on current hydrologic and climatic conditions and the planned releases out of Boysen and Buffalo Bill Reservoirs, the October runoff into Bighorn Lake is estimated to be about 139.2 acre-feet (76% of average). If you have any questions or concerns, please feel free to call me at (406) 247-7318.

Tim H. Felchle
Reservoir and River Operations



U. S. Department of the Interior
Bureau of Reclamation
Montana Area Office
River and Reservoir Operations

YELLOWTAIL RESERVOIR OPERATIONS
 Water Supply Forecasts and Reservoir Operations
 October 1, 2010

Present Elevations & Storages:

<u>Reservoir</u>	<u>Elevation</u>	<u>Storage</u>	<u>Percent of Normal</u>
Boysen	4719.48	639,219	107
Buffalo Bill	5372.44	485,526	111
Bighorn Lake	3630.14	960,869	94

Actual Inflows (1,000 Acre-Feet):

<u>Month</u>	<u>Inflow</u>	<u>Percent of Normal</u>
<i>April-July, 2009</i>	<i>1,656.6</i>	<i>149</i>
<i>WY-2009 Total</i>	<i>2,729.7</i>	<i>116</i>
October	180.7	99
November	141.4	92
December	111.8	81
January	134.4	101
February	120.8	89
March	137.7	81
April	121.4	74
May	340.9	138
June	761.3	184
July	280.8	97
August	122.7	77
September	119.6	70
<i>April-July, 2010</i>	<i>1,504.4</i>	<i>135</i>

Actual Gains Between Boysen and Buffalo Bill to Yellowtail (1,000 Acre-Feet):

<u>Month</u>	<u>Gains</u>	<u>Percent of Normal</u>
<i>April-July, 2009</i>	<i>343.0</i>	<i>119</i>
<i>WY-2009 Total</i>	<i>703.2</i>	<i>104</i>
October	69.0	97
November	61.1	98
December	34.2	79
January	56.9	123
February	53.8	101
March	66.0	89
April	28.3	81
May	47.5	79
June	228.3	215
July	-50.8	---
August	-71.7	---
September	-9.7	---
<i>April-July, 2010</i>	<i>254.2</i>	<i>163</i>

October 1 Runoff Forecast (October Flows - 1,000 Acre-Feet):

<u>Agency</u>	<u>Inflows</u>	<u>Percent of Normal</u>
USBR	139.2	76

Snowpack Conditions:

S N O W - P R E C I P I T A T I O N U P D A T E

Not Available during October

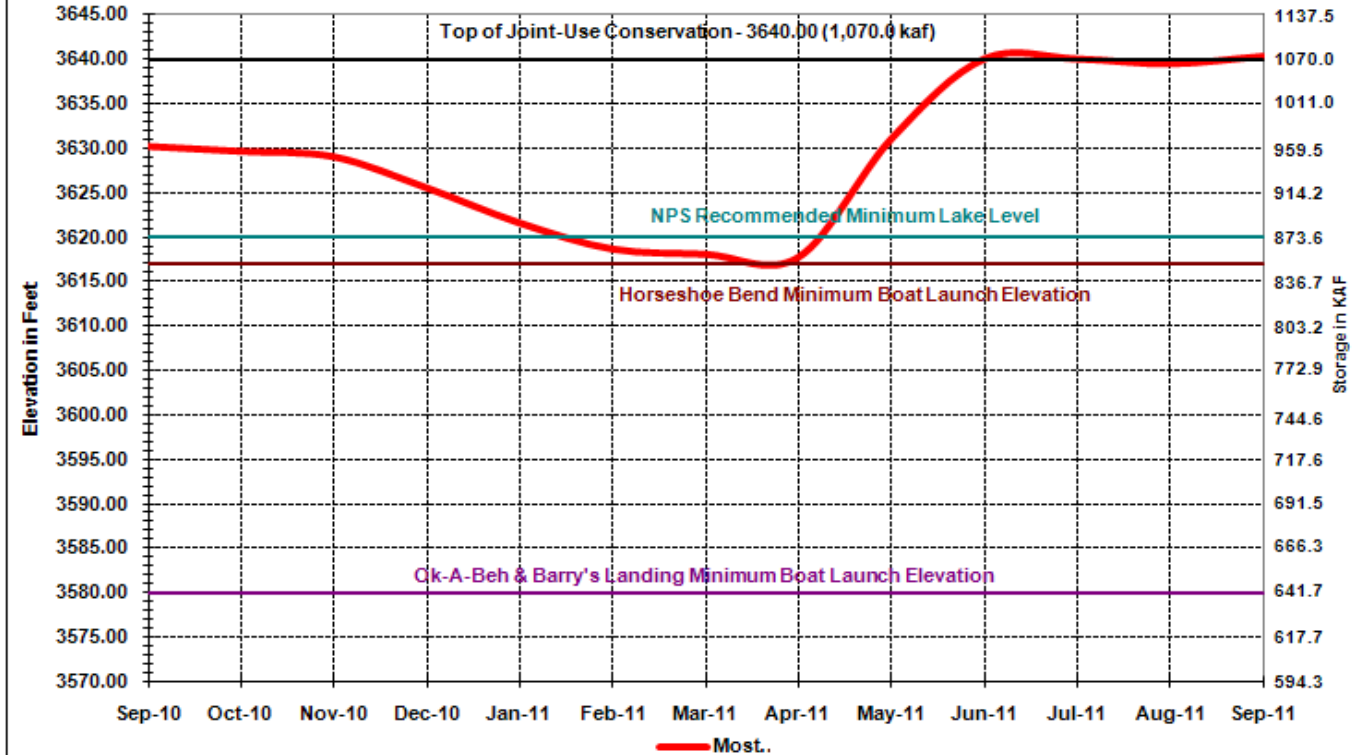
BHXAOP V1.12 Run: 19-Oct-2010 07:51
 Based on Most Probable Inflow Forecast

BIGHORN LAKE MONTHLY OPERATIONS

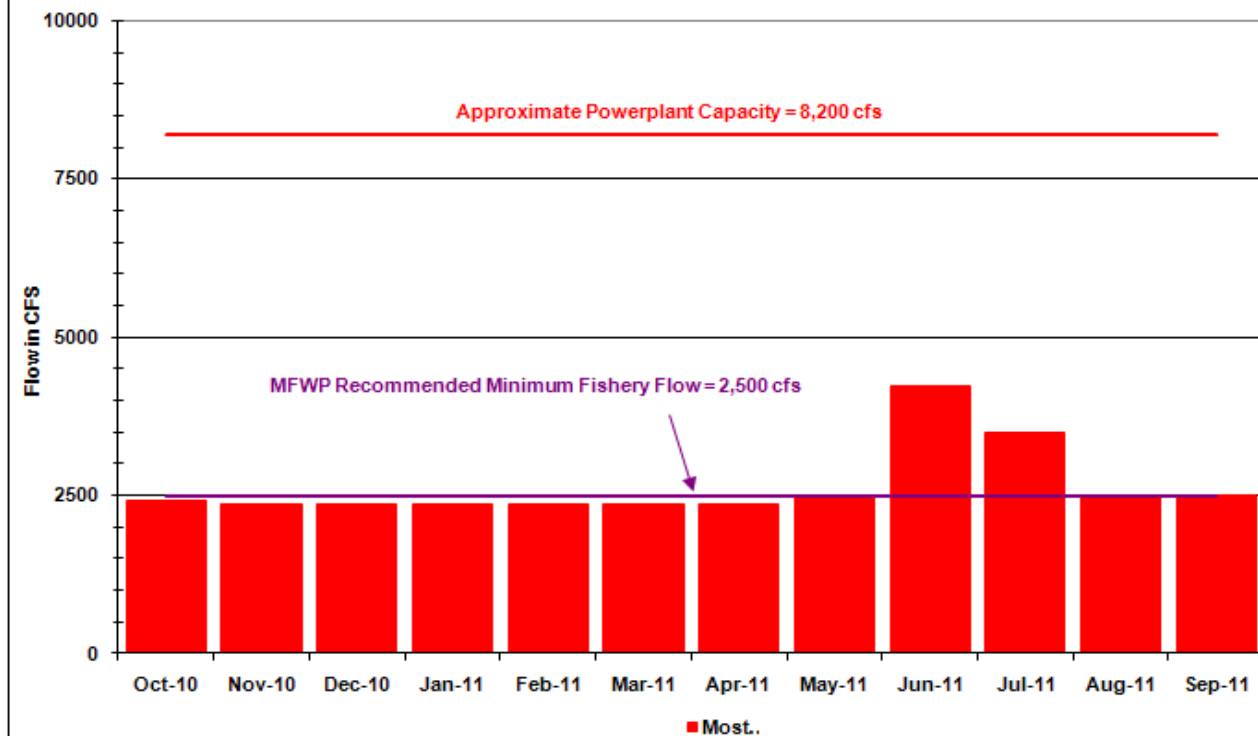
Bighorn Reservoir		Initial Cont 960.9 kaf Elev 3630.14 ft				Maximum Cont 1328.4 kaf Elev 3657.00 ft				Minimum Cont 493.6 kaf Elev 3547.00 ft				Total
	2010	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
Boysen Release	kaf	49.2	47.6	49.2	49.2	44.4	49.2	74.4	138.5	132.4	120.4	96.9	59.5	910.9
Boysen Release	cfs	800	800	800	800	799	800	1250	2252	2225	1958	1576	1000	
Buffalo Bill Riv Flo	kaf	41.7	26.6	21.8	21.8	19.7	21.8	31.7	110.8	168.0	178.1	122.2	98.8	863.0
Buffalo Bill Riv Flo	cfs	678	447	355	355	355	355	533	1802	2823	2897	1987	1660	
Station Gain	kaf	48.3	56.5	38.7	37.6	40.9	65.8	28.6	38.0	74.5	-60.8	-49.8	15.7	334.0
Monthly Inflow	kaf	139.2	130.7	109.7	108.6	105.0	136.8	134.7	287.3	374.9	237.7	169.3	174.0	2107.9
Monthly Inflow	cfs	2264	2196	1784	1766	1891	2225	2264	4672	6300	3866	2753	2924	
Turbine Release	kaf	144.5	136.6	141.2	141.3	127.6	141.2	137.2	174.0	274.2	237.7	176.2	163.4	1995.1
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	144.5	136.6	141.2	141.3	127.6	141.2	137.2	174.0	274.2	237.7	176.2	163.4	1995.1
Total Release	cfs	2350	2296	2296	2298	2298	2296	2306	2830	4608	3866	2866	2746	
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	0.0	0.0	0.0	0.0	0.0	0.0	0.6	24.6	26.8	27.7	26.8	18.8	125.3
Afterbay Rels	kaf	148.8	140.8	145.5	145.6	131.5	145.5	141.4	178.3	278.4	242.0	180.5	167.6	2045.9
Afterbay Rels	cfs	2420	2366	2366	2368	2368	2366	2376	2900	4679	3936	2936	2817	
River Release	kaf	148.8	140.8	145.5	145.6	131.5	145.5	140.8	153.7	251.6	214.3	153.7	148.8	1920.6
River Release	cfs	2420	2366	2366	2368	2368	2366	2366	2500	4228	3485	2500	2501	
Min Release	kaf	148.8	139.8	144.5	144.5	130.5	144.5	140.8	153.7	148.8	153.7	153.7	148.8	1752.1
End-Month Targets	kaf	1070.0					858.5			1070.0	1070.0			
End-Month Content	kaf	955.6	949.7	918.2	885.5	862.9	858.5	856.0	969.3	1070.0	1070.0	1063.1	1073.7	
End-Month Elevation	ft	3629.59	3628.97	3625.47	3621.52	3618.59	3618.01	3617.67	3631.00	3640.00	3640.00	3639.44	3640.29	
Net Change Content	kaf	-5.3	-5.9	-31.5	-32.7	-22.6	-4.4	-2.5	113.3	100.7	0.0	-6.9	10.6	112.8
Yellowtail Power	2010	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	kaf	144.5	136.6	141.2	141.3	127.6	141.2	137.2	174.0	274.2	237.7	176.2	163.4	1995.1
Generation	gwh	57.240	54.012	55.486	54.921	49.116	54.087	52.489	67.883	110.748	97.463	72.174	66.967	792.586
End-Month Power Cap	mw	277.2	276.6	273.3	269.6	266.9	266.4	266.1	278.6	287.5	287.5	287.0	287.8	
% Max Gen		27	26	26	26	25	25	25	32	53	45	34	32	
Ave kwh/af		396	395	393	389	385	383	383	390	404	410	410	410	397
Upstream Generation	gwh	13.745	11.316	10.066	10.026	8.456	9.965	13.778	33.167	33.877	34.216	32.064	25.839	236.515
Total Generation	gwh	70.985	65.328	65.552	64.947	57.572	64.052	66.267	101.050	144.625	131.679	104.238	92.806	1029.101

BIGHORN LAKE

BIGHORN LAKE ELEVATION



BIGHORN RIVER FLOW BELOW AFTERBAY



WATER YEAR 2011

Supplemental Information

BHXAOP V1.12 Run: 19-Oct-2010 08:00
 Based on Minimum Probable Inflow Forecast

BIGHORN LAKE MONTHLY OPERATIONS

Bighorn Reservoir		Initial Cont 960.9 kaf Elev 3630.14 ft				Maximum Cont 1328.4 kaf Elev 3657.00 ft				Minimum Cont 300.0 kaf Elev 3547.00 ft				Total
		2010	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
Boysen Release	kaf	49.2	47.7	49.2	49.2	44.5	49.2	47.7	67.6	69.9	76.9	69.2	59.5	679.8
Boysen Release	cfs	800	802	800	800	801	800	802	1099	1175	1251	1125	1000	
Buffalo Bill Riv Flo	kaf	37.2	28.2	21.8	21.8	19.7	21.8	31.7	101.2	105.0	118.7	104.3	82.3	693.7
Buffalo Bill Riv Flo	cfs	605	474	355	355	355	355	533	1646	1765	1930	1696	1383	
Station Gain	kaf	38.4	51.1	33.3	32.2	35.5	60.2	21.4	17.5	-3.4	-99.3	-70.0	5.1	122.0
Monthly Inflow	kaf	124.8	127.0	104.3	103.2	99.7	131.2	100.8	186.3	171.5	96.3	103.5	146.9	1495.5
Monthly Inflow	cfs	2030	2134	1696	1678	1795	2134	1694	3030	2882	1566	1683	2469	
Turbine Release	kaf	141.4	129.3	133.7	133.7	120.8	133.7	100.5	127.9	126.7	131.0	130.1	118.7	1527.5
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	141.4	129.3	133.7	133.7	120.8	133.7	100.5	127.9	126.7	131.0	130.1	118.7	1527.5
Total Release	cfs	2300	2173	2174	2174	2175	2174	1689	2080	2129	2131	2116	1995	
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	0.0	0.0	0.0	0.0	0.0	0.0	0.6	24.6	26.8	27.7	26.8	18.8	125.3
Afterbay Rels	kaf	145.7	133.5	138.0	138.0	124.7	138.0	104.7	132.2	130.9	135.3	134.4	122.9	1578.3
Afterbay Rels	cfs	2370	2244	2244	2244	2245	2244	1760	2150	2200	2200	2186	2065	
River Release	kaf	145.7	133.5	138.0	138.0	124.7	138.0	104.1	107.6	104.1	107.6	107.6	104.1	1453.0
River Release	cfs	2370	2244	2244	2244	2245	2244	1749	1750	1749	1750	1750	1749	
Min Release	kaf	145.7	119.0	123.0	123.0	111.1	123.0	104.1	107.6	104.1	107.6	107.6	104.1	1379.9
End-Month Targets	kaf	1070.0					858.5				1070.0			
End-Month Content	kaf	944.3	942.0	912.6	882.1	861.0	858.5	858.8	917.2	962.0	927.3	900.7	928.9	
End-Month Elevation	ft	3628.38	3628.14	3624.81	3621.09	3618.34	3618.01	3618.05	3625.35	3630.25	3626.51	3623.39	3626.69	
Net Change Content	kaf	-16.6	-2.3	-29.4	-30.5	-21.1	-2.5	0.3	58.4	44.8	-34.7	-26.6	28.2	-32.0
Yellowtail Power	2010	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	kaf	141.4	129.3	133.7	133.7	120.8	133.7	100.5	127.9	126.7	131.0	130.1	118.7	1527.5
Generation	gwh	55.909	50.965	52.421	51.886	46.454	51.196	38.468	49.473	49.882	51.661	50.780	46.343	595.438
End-Month Power Cap	mw	276.1	275.9	272.7	269.2	266.7	266.4	266.4	273.2	277.9	274.3	271.4	274.5	
% Max Gen		26	25	24	24	24	24	19	23	24	24	24	22	
Ave kwh/af		395	394	392	388	385	383	383	387	394	394	390	390	390
Upstream Generation	gwh	12.479	11.760	10.021	9.961	8.390	9.860	11.449	25.316	25.322	27.680	25.017	20.540	197.795
Total Generation	gwh	68.388	62.725	62.442	61.847	54.844	61.056	49.917	74.789	75.204	79.341	75.797	66.883	793.233

BHXAOP V1.12 Run: 19-Oct-2010 09:20
 Based on Maximum Probable Inflow Forecast

BIGHORN LAKE MONTHLY OPERATIONS

Bighorn Reservoir		Initial Cont Elev 3630.14 ft				Maximum Cont Elev 3657.00 ft				Minimum Cont Elev 3547.00 ft				Total
2010		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Boysen Release	kaf	49.2	47.6	49.2	49.2	44.5	49.2	129.1	264.2	275.2	269.1	115.5	74.6	1416.6
Boysen Release	cfs	800	800	800	800	801	800	2170	4297	4625	4376	1878	1254	
Buffalo Bill Riv Flo	kaf	46.7	24.8	21.8	21.8	19.7	21.8	31.7	190.2	312.0	277.2	147.4	100.2	1215.3
Buffalo Bill Riv Flo	cfs	760	417	355	355	355	355	533	3093	5243	4508	2397	1684	
Station Gain	kaf	60.8	62.8	43.0	42.0	45.8	73.1	33.3	52.6	130.1	-14.1	-37.7	23.8	515.5
Monthly Inflow	kaf	156.7	135.2	114.0	113.0	110.0	144.1	194.1	507.0	717.3	532.2	225.2	198.6	3147.4
Monthly Inflow	cfs	2548	2272	1854	1838	1981	2344	3262	8246	12055	8655	3663	3338	
Turbine Release	kaf	149.1	144.3	149.1	149.1	134.7	149.1	249.3	462.1	495.5	521.7	225.1	198.5	3027.6
Bypass/Spill/Waste	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.5	0.0	0.0	10.5
Total Release	kaf	149.1	144.3	149.1	149.1	134.7	149.1	249.3	462.1	495.5	532.2	225.1	198.5	3038.1
Total Release	cfs	2425	2425	2425	2425	2425	2425	4190	7515	8327	8655	3661	3336	
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	0.0	0.0	0.0	0.0	0.0	0.0	0.5	11.2	21.8	27.7	26.8	11.9	99.9
Afterbay Rels	kaf	153.4	148.5	153.4	153.4	138.6	153.4	253.5	466.4	499.7	536.5	229.4	202.7	3088.9
Afterbay Rels	cfs	2495	2496	2495	2495	2496	2495	4260	7585	8398	8725	3731	3406	
River Release	kaf	153.4	148.5	153.4	153.4	138.6	153.4	253.0	455.2	477.9	508.8	202.6	190.8	2989.0
River Release	cfs	2495	2496	2495	2495	2496	2495	4252	7403	8031	8275	3295	3207	
Min Release	kaf	153.4	119.0	123.0	123.0	111.1	123.0	119.0	153.7	148.8	153.7	153.7	148.8	1630.2
End-Month Targets	kaf	1070.0					858.5			1070.0	1070.0			
End-Month Content	kaf	968.5	959.4	924.3	888.2	863.5	858.5	803.3	848.2	1070.0	1070.0	1070.1	1070.2	
End-Month Elevation	ft	3630.92	3629.99	3626.17	3621.86	3618.67	3618.01	3610.01	3616.61	3640.00	3640.00	3640.01	3640.01	
Net Change Content	kaf	7.6	-9.1	-35.1	-36.1	-24.7	-5.0	-55.2	44.9	221.8	0.0	0.1	0.1	109.3
Yellowtail Power	2010	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	kaf	149.1	144.3	149.1	149.1	134.7	149.1	249.3	462.1	495.5	521.7	225.1	198.5	3027.6
Generation	gwh	59.187	57.267	58.745	58.041	51.879	57.119	94.448	174.728	196.335	213.908	92.298	81.394	1195.349
End-Month Power Cap	mw	278.5	277.6	274.0	269.9	267.0	266.4	259.0	265.1	287.5	287.5	287.5	287.5	
% Max Gen		28	28	27	27	27	27	46	82	95	100	43	39	
Ave kwh/af		397	397	394	389	385	383	379	378	396	410	410	410	395
Upstream Generation	gwh	15.129	10.841	10.110	10.086	8.556	10.067	18.475	33.949	33.825	35.260	33.718	27.435	247.451
Total Generation	gwh	74.316	68.108	68.855	68.127	60.435	67.186	112.923	208.677	230.160	249.168	126.016	108.829	1442.800