

RECLAMATION

Managing Water in the West

August 10, 2011

Dear Customer:

Attached are the monthly water supply outlook and projected reservoir and river operating plans prepared for Yellowtail. Streamflows into Bighorn Lake during July were 275% of average, the 2nd highest July inflow of record. Based on current hydrologic and climatic conditions and the planned releases out of Boysen and Buffalo Bill Reservoirs, the forecasted August runoff into Bighorn Lake is estimated to be about 267,700 acre-feet (169% 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

August 1, 2011

Present Elevations & Storages:

<u>Reservoir</u>	<u>Elevation</u>	<u>Storage</u>	<u>Percent of Average</u>	<u>Percent Full</u>
Boysen	4725.81	757,595	115	101
Buffalo Bill	5390.23	620,237	109	96
Bighorn Lake	3652.86	1,209,252	122	118

Actual Inflows (1,000 Acre-Feet):

<u>Month</u>	<u>Inflow</u>	<u>Percent of Average</u>
<i>April-July, 2010</i>	<i>1,504.4</i>	<i>135</i>
<i>WY-2010 Total</i>	<i>2,573.5</i>	<i>109</i>
October	122.2	70
November	122.6	84
December	122.7	96
January	121.8	96
February	111.9	86
March	167.4	101
April	245.8	153
May	529.4	201
June	1,004.2	235
July	792.9	275
<i>April-July, 2011</i>	<i>2,572.3</i>	<i>226</i>

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

<u>Month</u>	<u>Gains</u>	<u>Percent of Average</u>
<i>April-July, 2010</i>	<i>254.2</i>	<i>163</i>
<i>WY-2010 Total</i>	<i>513.9</i>	<i>107</i>
October	28.7	40
November	54.2	89
December	52.1	121
January	50.9	110
February	47.9	90
March	95.6	128
April	47.7	137
May	168.3	280
June	391	369
July	88.4	---
<i>April-July, 2011</i>	<i>717.7</i>	<i>460</i>

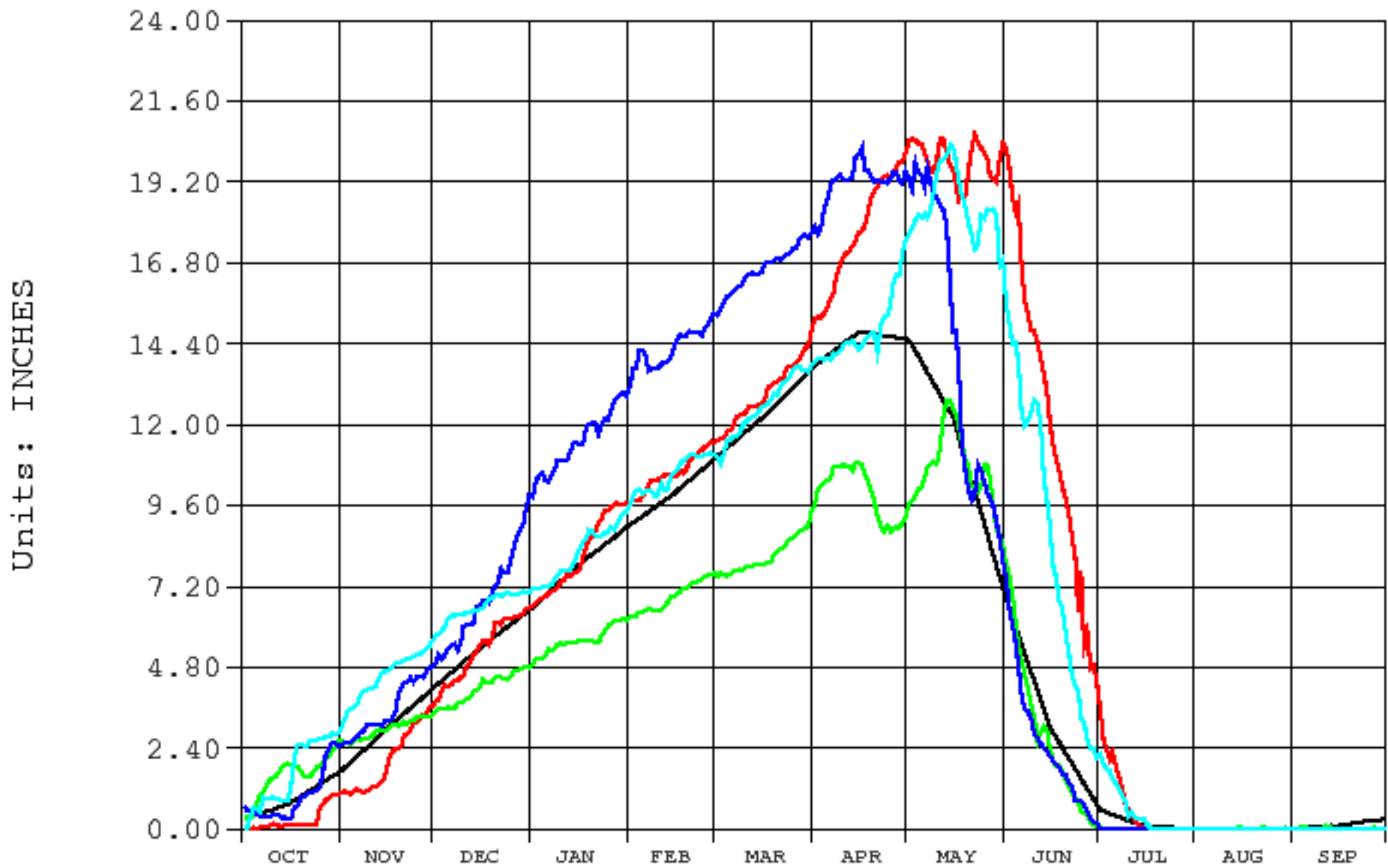
August 1 Runoff Forecast (August Inflows - 1,000 Acre-Feet):

<u>Agency</u>	<u>Inflows</u>	<u>Percent of Average</u>
USBR	267.7	169

Snowpack Conditions:

SNOW DATA UNAVAILABLE DURING AUGUST-OCTOBER

Archive Data From 1-OCT Through 30-SEP
 Plotted 08/03/2011 15:31



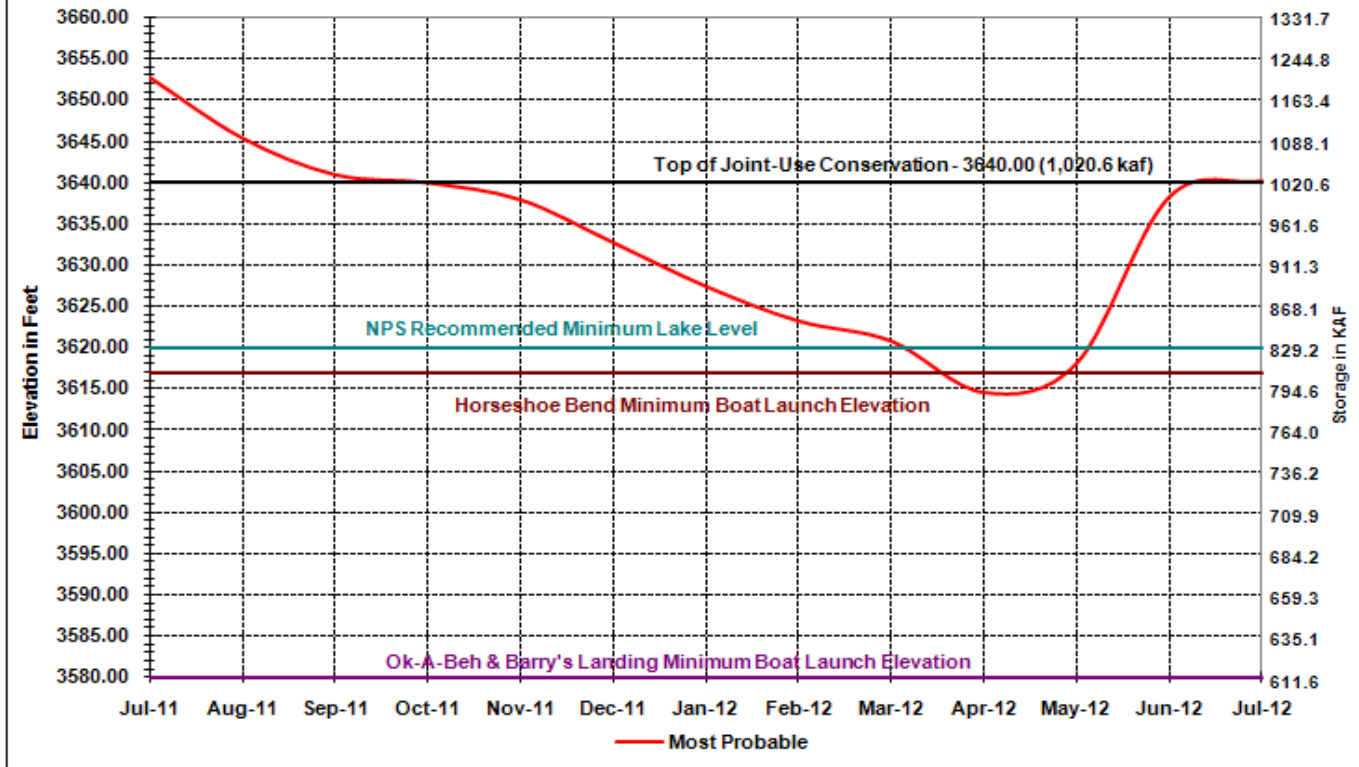
BHR Bighorn Lake (Yellowtail), Bighorn River near Fort Smith, MT
 SE_AVG Snow Water Equivalent Average (inches) 2011
 SE Snow Water Equivalent (inches) 2011 2010 1997
 1995

BIGHORN LAKE MONTHLY OPERATIONS

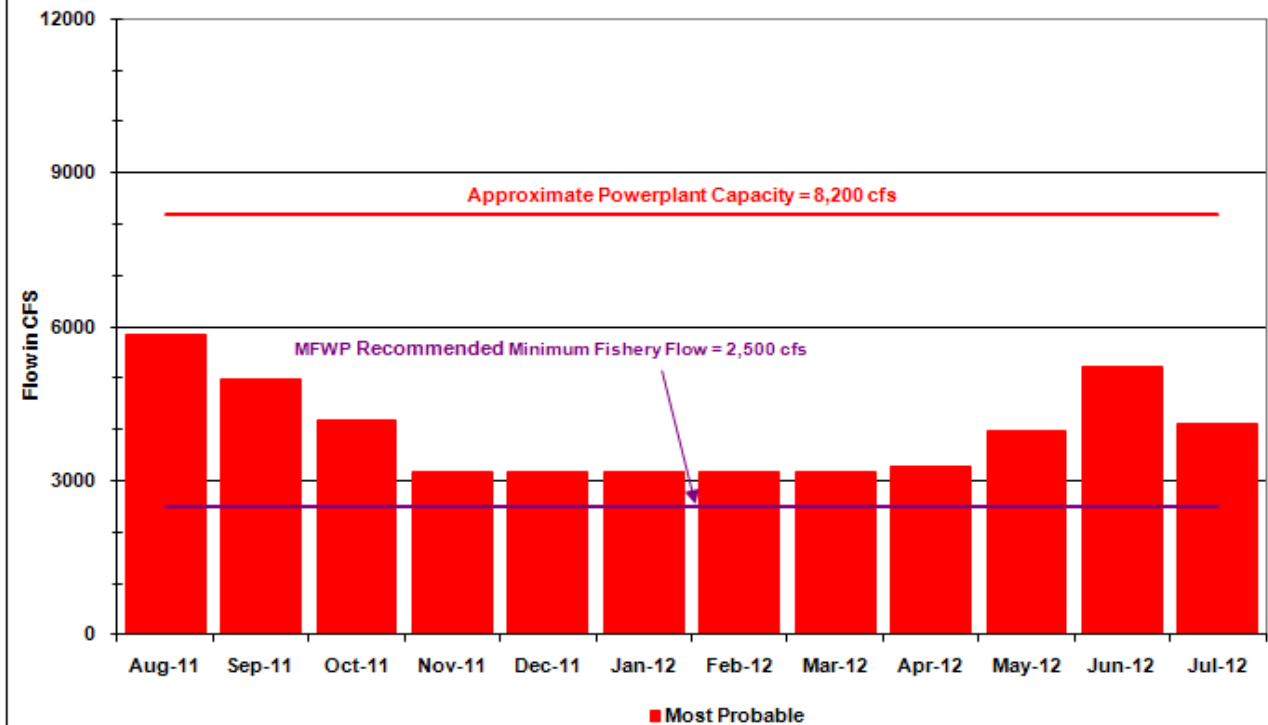
Bighorn Reservoir		Initial Cont Elev 3652.86 ft				Maximum Cont Elev 3657.00 ft				Minimum Cont Elev 3547.00 ft				Total
	2011	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Total
Boysen Release	kaf	142.0	78.7	61.5	59.5	61.5	61.6	57.6	61.5	65.6	135.4	129.7	121.4	1036.0
Boysen Release	cfs	2309	1323	1000	1000	1000	1002	1001	1000	1102	2202	2180	1974	
Buffalo Bill Riv Flo	kaf	140.4	122.9	46.5	24.7	21.8	21.8	20.4	21.8	61.0	108.9	147.3	169.7	907.2
Buffalo Bill Riv Flo	cfs	2283	2065	756	415	355	355	355	355	1025	1771	2475	2760	
Station Gain	kaf	-14.7	47.4	135.9	74.3	49.0	57.0	64.7	87.9	21.7	30.2	237.9	10.2	801.5
Monthly Inflow	kaf	267.7	249.0	243.9	158.5	132.3	140.4	142.7	171.2	148.3	274.5	514.9	301.3	2744.7
Monthly Inflow	cfs	4354	4185	3967	2664	2152	2283	2481	2784	2492	4464	8653	4900	
Turbine Release	kaf	382.0	310.6	256.7	183.7	189.9	189.8	177.6	189.9	191.8	250.7	330.5	277.0	2930.2
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	382.0	310.6	256.7	183.7	189.9	189.8	177.6	189.9	191.8	250.7	330.5	277.0	2930.2
Total Release	cfs	6213	5220	4175	3087	3088	3087	3088	3088	3223	4077	5554	4505	
Spring Flow	kaf	4.3	4.2	4.3	4.2	4.3	4.3	4.0	4.3	4.2	4.3	4.2	4.3	50.9
Irrigation Reqmnt	kaf	27.4	18.8	3.5	0.0	0.0	0.0	0.0	0.0	0.9	11.6	23.2	28.2	113.6
Afterbay Rels	kaf	386.3	314.8	261.0	187.9	194.2	194.1	181.6	194.2	196.0	255.0	334.7	281.3	2981.1
Afterbay Rels	cfs	6283	5290	4245	3158	3158	3157	3157	3158	3294	4147	5625	4575	
River Release	kaf	358.9	296.0	257.5	187.9	194.2	194.1	181.6	194.2	195.1	243.4	311.5	253.1	2867.5
River Release	cfs	5837	4974	4188	3158	3158	3157	3157	3158	3279	3959	5235	4116	
Min Release	kaf	153.7	148.8	153.7	148.8	153.7	153.7	143.8	153.7	148.8	153.7	148.8	153.7	1814.9
End-Month Targets	kaf	1095.0	1033.4	1020.6					834.8					1023.8
End-Month Content	kaf	1095.0	1033.4	1020.6	995.4	937.8	888.4	853.5	834.8	791.3	815.1	999.5	1023.8	
End-Month Elevation	ft	3645.48	3641.00	3640.00	3637.95	3632.74	3627.42	3623.18	3620.75	3614.48	3618.04	3638.29	3640.25	
Net Change Content	kaf	-114.3	-61.6	-12.8	-25.2	-57.6	-49.4	-34.9	-18.7	-43.5	23.8	184.4	24.3	-185.5
Yellowtail Power	2011	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Total
Turbine Release	kaf	382.0	310.6	256.7	183.7	189.9	189.8	177.6	189.9	191.8	250.7	330.5	277.0	2930.2
Generation	gwh	160.295	127.138	103.913	73.929	75.429	74.059	68.282	72.301	72.172	93.977	128.702	111.603	1161.800
End-Month Power Cap	mw	288.0	284.5	283.4	281.1	275.4	270.0	265.7	263.3	257.3	260.7	281.5	283.6	
% Max Gen		75	61	48	36	35	35	34	34	35	44	62	52	
Ave kwh/af		420	409	405	402	397	390	384	381	376	375	389	403	396
Upstream Generation	gwh	35.295	29.568	11.811	6.614	5.772	5.758	5.359	5.722	21.138	32.175	33.827	34.235	227.274
Total Generation	gwh	195.590	156.706	115.724	80.543	81.201	79.817	73.641	78.023	93.310	126.152	162.529	145.838	1389.074

BIGHORN LAKE

BIGHORN LAKE ELEVATION



BIGHORN RIVER FLOW BELOW AFTERBAY



WATER YEAR 2011

Supplemental Information

BHXAOP V1.12 Run: 10-Aug-2011 11:28
 Based on Minimum Probable Inflow Forecast

BIGHORN LAKE MONTHLY OPERATIONS

Bighorn Reservoir		Initial Cont Elev 3652.86 ft					Maximum Cont Elev 3657.00 ft					Minimum Cont Elev 3547.00 ft			Total
2011		Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul		
Boysen Release	kaf	142.0	62.7	61.6	59.6	61.6	61.6	57.6	61.5	56.6	67.6	72.3	76.9	841.6	
Boysen Release	cfs	2309	1054	1002	1002	1002	1002	1001	1000	951	1099	1215	1251		
Buffalo Bill Riv Flo	kaf	137.7	112.6	44.7	23.6	21.8	21.8	20.4	21.8	31.7	101.2	90.8	121.3	749.4	
Buffalo Bill Riv Flo	cfs	2239	1892	727	397	355	355	355	355	533	1646	1526	1973		
Station Gain	kaf	-20.5	42.7	96.3	69.9	46.1	53.6	60.9	82.7	25.3	33.8	76.5	-65.3	502.0	
Monthly Inflow	kaf	259.2	218.0	202.6	153.1	129.5	137.0	138.9	166.0	113.6	202.6	239.6	132.9	2093.0	
Monthly Inflow	cfs	4215	3664	3295	2573	2106	2228	2415	2700	1909	3295	4027	2161		
Turbine Release	kaf	373.5	279.6	215.4	179.6	185.7	185.7	173.7	185.6	145.5	161.0	167.8	177.6	2430.7	
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	373.5	279.6	215.4	179.6	185.7	185.7	173.7	185.6	145.5	161.0	167.8	177.6	2430.7	
Total Release	cfs	6074	4699	3503	3018	3020	3020	3020	3018	2445	2618	2820	2888		
Spring Flow	kaf	4.3	4.2	4.3	4.2	4.3	4.3	4.0	4.3	4.2	4.3	4.2	4.3	50.9	
Irrigation Reqmnt	kaf	27.4	18.8	3.5	0.0	0.0	0.0	0.0	0.0	0.9	11.6	23.2	28.2	113.6	
Afterbay Rels	kaf	377.8	283.8	219.7	183.8	190.0	190.0	177.7	189.9	149.7	165.3	172.0	181.9	2481.6	
Afterbay Rels	cfs	6144	4769	3573	3089	3090	3090	3089	3088	2516	2688	2891	2958		
River Release	kaf	350.4	265.0	216.2	183.8	190.0	190.0	177.7	189.9	148.8	153.7	148.8	153.7	2368.0	
River Release	cfs	5699	4453	3516	3089	3090	3090	3089	3088	2501	2500	2501	2500		
Min Release	kaf	153.7	148.8	153.7	148.8	153.7	153.7	143.8	153.7	148.8	153.7	148.8	153.7	1814.9	
End-Month Targets	kaf	1095.0	1033.4	1020.6					834.8					1008.2	
End-Month Content	kaf	1095.0	1033.4	1020.6	994.1	937.9	889.2	854.4	834.8	802.9	844.5	916.3	871.6		
End-Month Elevation	ft	3645.48	3641.00	3640.00	3637.84	3632.75	3627.51	3623.29	3620.75	3616.26	3622.03	3630.53	3625.43		
Net Change Content	kaf	-114.3	-61.6	-12.8	-26.5	-56.2	-48.7	-34.8	-19.6	-31.9	41.6	71.8	-44.7	-337.7	
Yellowtail Power	2011	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Total	
Turbine Release	kaf	373.5	279.6	215.4	179.6	185.7	185.7	173.7	185.6	145.5	161.0	167.8	177.6	2430.7	
Generation	gwh	156.728	114.449	87.194	72.265	73.746	72.470	66.803	70.676	54.872	60.830	64.732	68.841	963.606	
End-Month Power Cap	mw	288.0	284.5	283.4	281.0	275.4	270.1	265.9	263.3	259.0	264.6	273.1	268.0		
% Max Gen		73	55	41	35	34	34	33	33	26	28	31	32		
Ave kwh/af		420	409	405	402	397	390	385	381	377	378	386	388	396	
Upstream Generation	gwh	35.280	28.112	11.168	6.299	5.768	5.745	5.341	5.700	12.126	25.228	25.928	27.352	194.047	
Total Generation	gwh	192.008	142.561	98.362	78.564	79.514	78.215	72.144	76.376	66.998	86.058	90.660	96.193	1157.653	

BHXAOP V1.12 Run: 10-Aug-2011 11:28
 Based on Maximum Probable Inflow Forecast

BIGHORN LAKE MONTHLY OPERATIONS

Bighorn Reservoir		Initial Cont Elev 1209.3 kaf 3652.86 ft					Maximum Cont Elev 1278.9 kaf 3657.00 ft					Minimum Cont Elev 469.9 kaf 3547.00 ft			Total
	2011	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul		
Boysen Release	kaf	142.0	94.7	61.5	59.5	61.5	61.5	57.5	61.5	136.4	233.6	292.0	262.3	1524.0	
Boysen Release	cfs	2309	1591	1000	1000	1000	1000	1000	1000	2292	3799	4907	4266		
Buffalo Bill Riv Flo	kaf	159.7	116.5	48.4	26.0	21.8	21.8	20.4	21.8	91.7	198.7	261.8	257.2	1245.8	
Buffalo Bill Riv Flo	cfs	2597	1958	787	437	355	355	355	355	1541	3232	4400	4183		
Station Gain	kaf	23.4	52.1	159.2	79.6	52.5	61.1	69.3	94.2	6.0	-45.2	200.2	-10.3	742.1	
Monthly Inflow	kaf	325.1	263.3	269.1	165.1	135.8	144.4	147.2	177.5	234.1	387.1	754.0	509.2	3511.9	
Monthly Inflow	cfs	5287	4425	4376	2775	2209	2348	2559	2887	3934	6296	12671	8281		
Turbine Release	kaf	439.4	324.9	281.9	188.6	194.9	195.0	182.4	194.9	248.0	423.1	503.2	440.0	3616.3	
Bypass/Spill/Waste	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	2.3	
Total Release	kaf	439.4	324.9	281.9	188.6	194.9	195.0	182.4	194.9	248.0	423.1	505.5	440.0	3618.6	
Total Release	cfs	7146	5460	4585	3170	3170	3171	3171	3170	4168	6881	8495	7156		
Spring Flow	kaf	4.3	4.2	4.3	4.2	4.3	4.3	4.0	4.3	4.2	4.3	4.2	4.3	50.9	
Irrigation Reqmnt	kaf	27.4	18.8	3.5	0.0	0.0	0.0	0.0	0.0	0.9	11.6	23.2	28.2	113.6	
Afterbay Rels	kaf	443.7	329.1	286.2	192.8	199.2	199.3	186.4	199.2	252.2	427.4	509.7	444.3	3669.5	
Afterbay Rels	cfs	7216	5531	4655	3240	3240	3241	3241	3240	4238	6951	8566	7226		
River Release	kaf	416.3	310.3	282.7	192.8	199.2	199.3	186.4	199.2	251.3	415.8	486.5	416.1	3555.9	
River Release	cfs	6770	5215	4598	3240	3240	3241	3241	3240	4223	6762	8176	6767		
Min Release	kaf	153.7	148.8	153.7	148.8	153.7	153.7	136.3	151.0	148.8	153.7	148.8	153.7	1804.7	
End-Month Targets	kaf	1095.0	1033.4	1020.6					834.8					1102.6	
End-Month Content	kaf	1095.0	1033.4	1020.6	997.1	938.0	887.4	852.2	834.8	820.9	784.9	1033.4	1102.6		
End-Month Elevation	ft	3645.48	3641.00	3640.00	3638.09	3632.76	3627.30	3623.02	3620.75	3618.85	3613.47	3641.00	3646.00		
Net Change Content	kaf	-114.3	-61.6	-12.8	-23.5	-59.1	-50.6	-35.2	-17.4	-13.9	-36.0	248.5	69.2	-106.7	
Yellowtail Power	2011	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Total	
Turbine Release	kaf	439.4	324.9	281.9	188.6	194.9	195.0	182.4	194.9	248.0	423.1	503.2	440.0	3616.3	
Generation	gwh	184.381	132.992	114.114	75.921	77.439	76.077	70.098	74.187	93.848	158.584	196.078	180.306	1434.025	
End-Month Power Cap	mw	288.0	284.5	283.4	281.2	275.4	269.9	265.6	263.3	261.5	256.3	284.5	288.0		
% Max Gen		86	64	53	37	36	36	35	35	45	74	95	84		
Ave kwh/af		420	409	405	403	397	390	384	381	378	375	390	410	397	
Upstream Generation	gwh	35.272	30.974	12.328	6.981	5.769	5.765	5.369	5.740	30.165	33.620	33.842	29.467	235.292	
Total Generation	gwh	219.653	163.966	126.442	82.902	83.208	81.842	75.467	79.927	124.013	192.204	229.920	209.773	1669.317	