

RECLAMATION

Managing Water in the West

January 6, 2012

Dear Customer:

Attached are the monthly water supply outlook and projected reservoir and river operating plans prepared for Yellowtail. Streamflows into Bighorn Lake during December were 103% of average. Mountain snowpack in the Bighorn Basin is near average. Based on the January 1 water supply forecast and the planned releases out of Boysen and Buffalo Bill Reservoirs, the April-July runoff into Bighorn Lake is expected to equal 1,131,400 acre-feet (99% 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
 January 1, 2012

Present Elevations & Storages:

<u>Reservoir</u>	<u>Elevation</u>	<u>Storage</u>	<u>Percent of Average</u>	<u>Percent Full</u>
Boysen	4721.63	677,701	118	91
Buffalo Bill	5368.09	454,487	108	70
Bighorn Lake	3630.37	914,734	105	90

Actual Inflows (1,000 Acre-Feet):

<u>Month</u>	<u>Inflow</u>	<u>Percent of Average</u>
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
August	279.2	177
September	196.8	115
<i>April-July, 2011</i>	<i>2,572.3</i>	<i>226</i>
<i>WY-2011 Total</i>	<i>3,817.0</i>	<i>163</i>
October	213.6	123
November	142.3	98
December	132.4	103

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

<u>Month</u>	<u>Gains</u>	<u>Percent of Average</u>
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	---
August	-11.6	---
September	8.7	43
<i>April-July, 2011</i>	<i>717.7</i>	<i>460</i>
<i>WY-2011 Total</i>	<i>996.7</i>	<i>207</i>
October	91.7	129
November	64.6	104
December	52.3	121

January 1 Runoff Forecast (April-July Inflows - 1,000 Acre-Feet):

<u>Agency</u>	<u>Inflows</u>	<u>Percent of Average</u>
USBR	1,131.4	99

Snowpack Conditions:

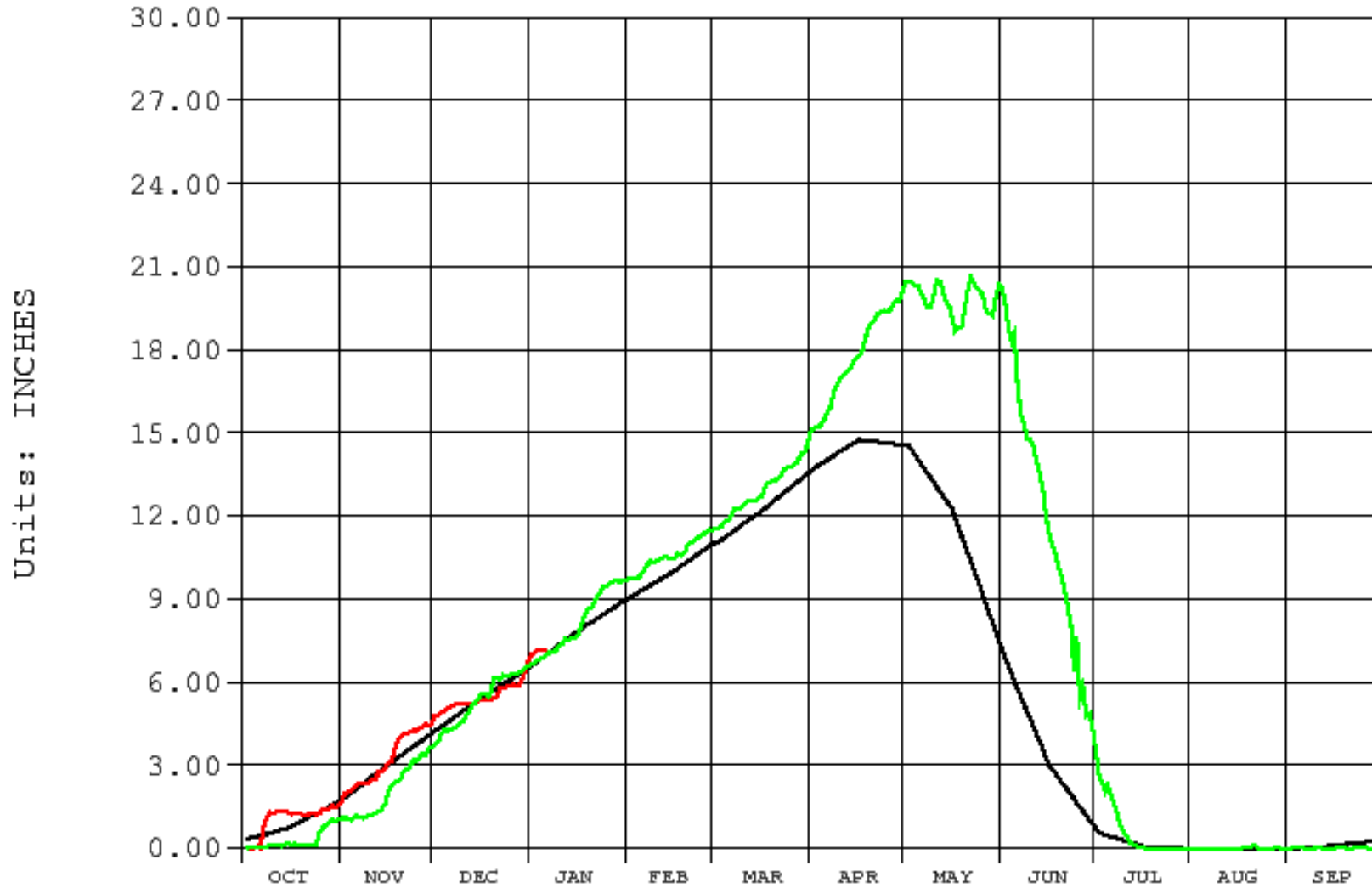
S N O W - P R E C I P I T A T I O N U P D A T E
 Based on Mountain Data from NRCS SNOTEL Sites
 As of SUNDAY: JANUARY 1 , 2012

BASIN	ELEV.	SNOW WATER EQUIVALENT		TOTAL PRECIPITATION			
Data Site Name	(Ft)	Current	Average	Avg	Current	Average	Avg
		%			%		

UPPER YELLOWSTONE RIVER BASIN							
BEARTOOTH LAKE	9360	11.1	11.5	97	11.1	10.0	111
BOX CANYON	6670	3.9	4.5	87	4.8	6.2	77
BRACKETT CREEK	7320	4.7	8.9	53	7.9	11.5	69
BURNT MTN	5880	4.4	2.7	163	7.5	7.4	101
CANYON	7870	5.5	6.1	90	7.0	7.8	90
COLE CREEK	7850	9.5	7.5	127	7.8	8.1	96
EAST BOULDER MINE	6335	3.3	-M	*	8.9	-M	*
EVENING STAR	9200	12.9	13.7	94	15.5	13.0	119
FISHER CREEK	9100	15.7	16.3	96	16.5	17.1	96
MONUMENT PEAK	8850	7.0	9.9	71	8.8	10.6	83
NORTHEAST ENTRANCE	7350	3.6	5.0	72	5.9	6.4	92
PARKER PEAK	9400	10.7	10.6	101	12.1	8.2	148
PLACER BASIN	8830	7.9	8.7	91	10.6	9.6	110
PORCUPINE	6500	2.4	2.8	86	4.3	5.9	73
SACAJAWEA	6550	3.9	5.1	76	8.9	10.4	86
SHOWER FALLS	8100	10.0	10.1	99	13.6	11.5	118
S FORK SHIELDS	8100	3.7	7.5	49	10.7	9.5	113
SYLVAN LAKE	8420	8.6	10.5	82	13.1	11.0	119
SYLVAN ROAD	7120	6.7	6.2	108	9.9	10.1	98
THUMB DIVIDE	7980	6.9	7.6	91	9.3	9.1	102
TWO OCEAN PLATEAU	9240	15.6	13.5	116	14.0	13.5	104
WHITE MILL	8700	9.1	11.1	82	11.0	12.8	86
WOLVERINE	7650	6.4	5.8	110	7.2	7.0	103
YOUNTS PEAK	8350	7.0	7.9	89	7.8	8.2	95
Basin wide percent of average				92			100
WIND RIVER BASIN (WYOMING)							
BURROUGHS CREEK	8750	5.7	6.7	85	6.3	8.0	79
CASTLE CREEK	8400	3.1	-M	*	4.1	-M	*
COLD SPRINGS	9630	4.2	4.6	91	5.3	5.7	93
DEER PARK	9700	5.1	6.7	76	8.5	10.9	78
HOBBS PARK	10100	8.1	7.6	107	8.1	6.4	127
KIRWIN	9550	7.2	5.9	122	8.6	5.9	146
LITTLE WARM	9370	3.8	5.3	72	5.8	6.7	87
OWL CREEK	8975	2.7	2.7	100	3.5	2.9	121
SOUTH PASS	9040	6.1	8.2	74	6.9	9.2	75
ST. LAWRENCE ALT	8620	3.2	3.8	84	4.4	4.6	96
TOGWOTEE PASS	9580	9.2	11.7	79	10.9	12.0	91
TOWNSEND CREEK	8700	4.9	4.4	111	7.3	6.0	122
YOUNTS PEAK	8350	7.0	7.9	89	7.8	8.2	95
Basin wide percent of average				89			96
SHOSHONE RIVER BASIN (WYOMING)							
BLACKWATER	9780	13.1	12.0	109	12.6	10.8	117
EVENING STAR	9200	12.9	13.7	94	15.5	13.0	119
MARQUETTE	8760	4.4	-M	*	8.8	5.3	166
SYLVAN LAKE	8420	8.6	10.5	82	13.1	11.0	119
SYLVAN ROAD	7120	6.7	6.2	108	9.9	10.1	98
YOUNTS PEAK	8350	7.0	7.9	89	7.8	8.2	95
Basin wide percent of average				96			116
BIGHORN RIVER BASIN (WYOMING)							
BALD MTN.	9380	9.7	9.7	100	8.1	8.5	95
BEAR TRAP MEADOW	8200	3.2	2.6	123	4.9	4.5	109
BLACKWATER	9780	13.1	12.0	109	12.6	10.8	117
BONE SPRINGS DIV	9350	10.3	7.8	132	9.2	7.3	126
EVENING STAR	9200	12.9	13.7	94	15.5	13.0	119
GRAVE SPRINGS	8550	3.7	4.0	92	5.6	4.9	114
KIRWIN	9550	7.2	5.9	122	8.6	5.9	146
MARQUETTE	8760	4.4	-M	*	8.8	5.3	166
MIDDLE POWDER	7760	4.9	5.5	89	7.5	6.8	110
OWL CREEK	8975	2.7	2.7	100	3.5	2.9	121
POWDER RIVER PASS	9480	5.3	5.3	100	6.9	6.0	115
SHELL CREEK	9580	8.9	7.3	122	7.9	6.7	118
SYLVAN LAKE	8420	8.6	10.5	82	13.1	11.0	119
SYLVAN ROAD	7120	6.7	6.2	108	9.9	10.1	98
TIMBER CREEK	7950	3.4	3.0	113	6.7	3.7	181
YOUNTS PEAK	8350	7.0	7.9	89	7.8	8.2	95
Basin wide percent of average				103			118

Archive Data From 1-OCT Through 30-SEP

Plotted 01/06/2012 09:05 (Provisional Data Subject to Revision)



BHR Bighorn Lake (Yellowtail), Bighorn River near Fort Smith, MT

SE_AVG Snow Water Equivalent Average (inches)

2012

SE Snow Water Equivalent (inches)

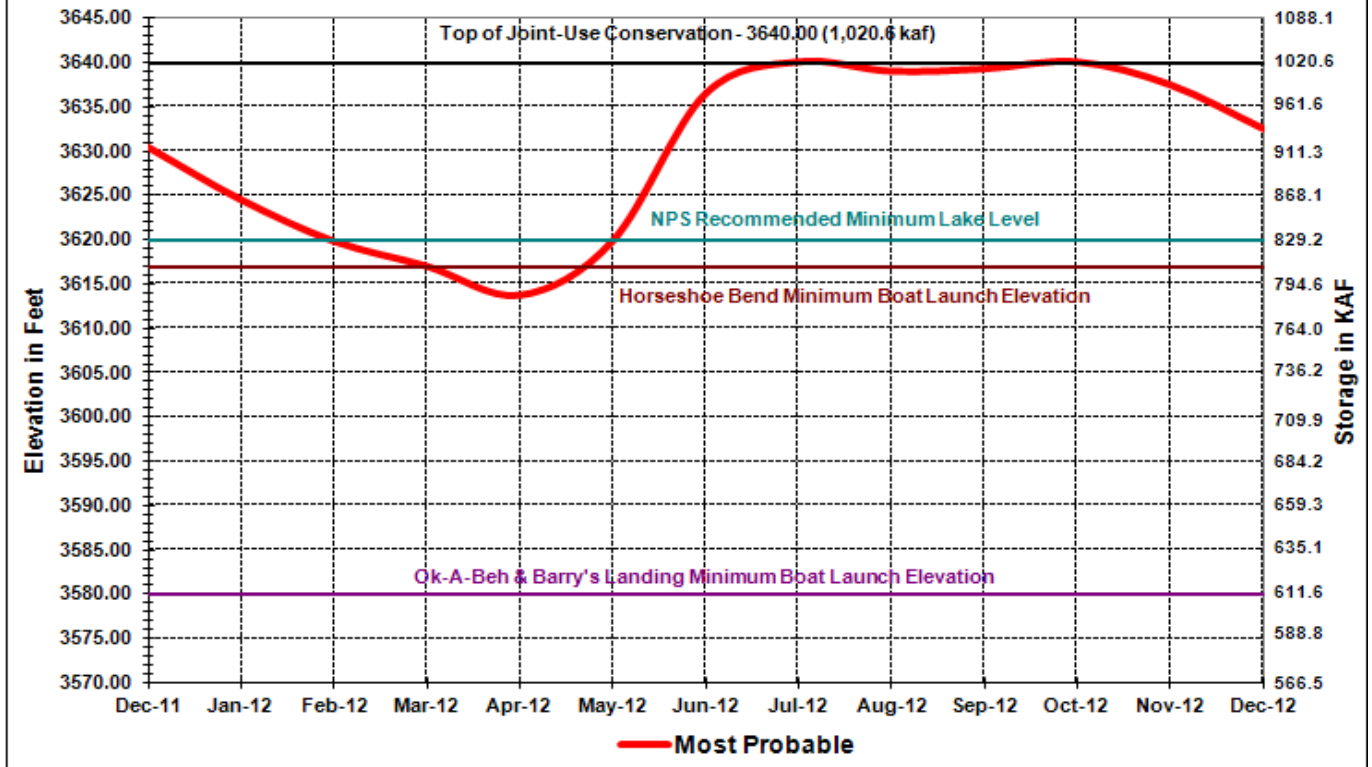
2012 2011

BIGHORN LAKE MONTHLY OPERATIONS

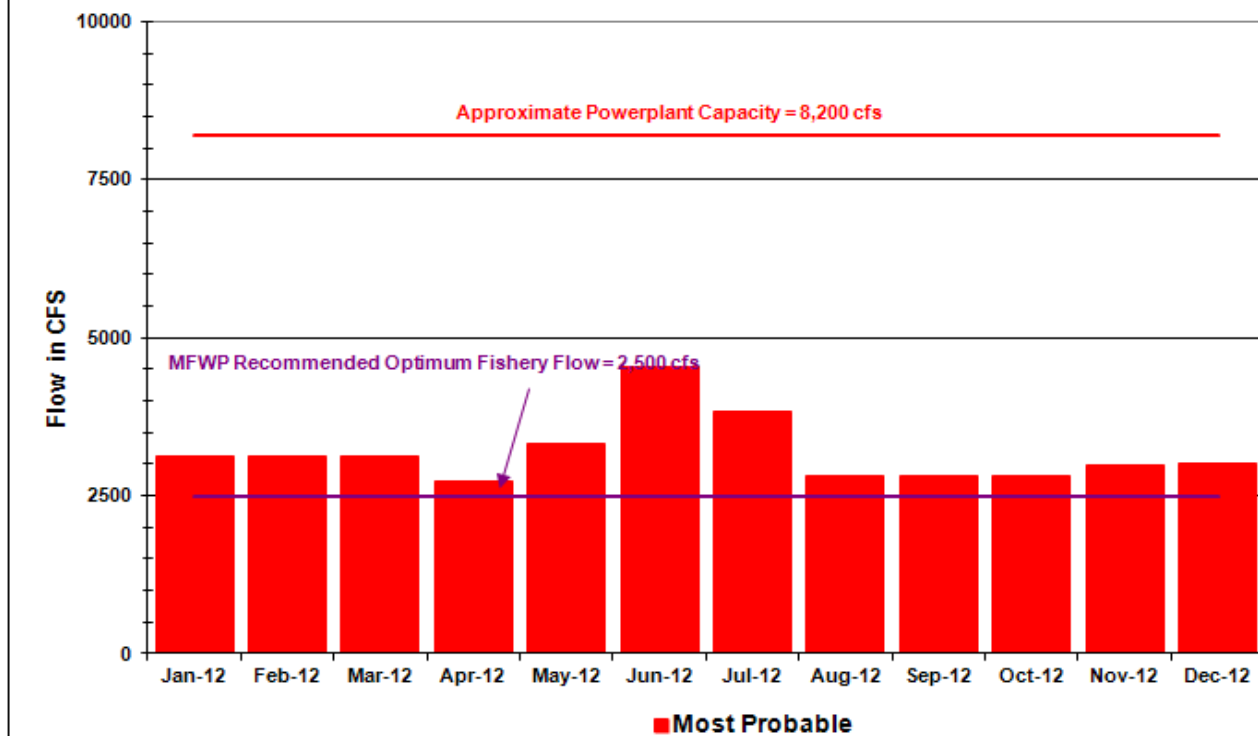
Bighorn Reservoir		Initial Cont Elev 914.7 kaf 3630.36 ft				Maximum Cont Elev 1278.9 kaf 3657.00 ft				Minimum Cont Elev 469.9 kaf 3547.00 ft				Total
	2012	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Boysen Release	kaf	58.4	54.7	58.4	62.2	131.1	142.7	115.2	100.3	66.0	58.4	56.5	58.4	962.3
Boysen Release	cfs	950	951	950	1045	2132	2398	1874	1631	1109	950	950	950	
Buffalo Bill Release	kaf	21.8	20.4	21.8	31.7	121.6	173.4	178.5	121.9	102.8	45.5	21.1	21.8	882.3
Buffalo Bill Release	cfs	355	355	355	533	1978	2914	2903	1983	1728	740	355	355	
Station Gain	kaf	56.9	64.8	88.1	44.5	0.0	121.7	8.8	-39.1	16.8	74.7	65.2	45.9	548.3
Monthly Inflow	kaf	137.1	139.9	168.3	138.4	252.7	437.8	302.5	183.1	185.6	178.6	142.8	126.1	2392.9
Monthly Inflow	cfs	2230	2432	2737	2326	4110	7357	4920	2978	3119	2905	2400	2051	
Turbine Release	kaf	188.2	176.0	188.2	159.8	211.1	288.3	259.2	196.3	182.2	168.8	174.2	180.1	2372.4
Bypass/Spill/Waste	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Release	kaf	188.2	176.0	188.2	159.8	211.1	288.3	259.2	196.3	182.2	168.8	174.2	180.1	2372.4
Total Release	cfs	3061	3060	3061	2686	3433	4845	4215	3193	3062	2745	2928	2929	
Spring Flow	kaf	4.3	4.0	4.3	4.2	4.3	4.2	4.3	4.3	4.2	4.3	4.2	4.3	50.9
Irrigation Reqmnt	kaf	0.0	0.0	0.0	0.9	11.6	23.2	28.2	27.4	18.8	0.0	0.0	0.0	110.1
Afterbay Rels	kaf	192.5	180.0	192.5	164.0	215.4	292.5	263.5	200.6	186.4	173.1	178.4	184.4	2423.3
Afterbay Rels	cfs	3131	3129	3131	2756	3503	4916	4285	3262	3133	2815	2998	2999	
River Release	kaf	192.5	180.0	192.5	163.1	203.8	269.3	235.3	173.2	167.6	173.1	178.4	184.4	2313.2
River Release	cfs	3131	3129	3131	2741	3314	4526	3827	2817	2817	2815	2998	2999	
Min Release	kaf	192.5	180.0	192.5	148.8	153.7	148.8	153.7	153.7	148.8	153.7	148.8	153.7	1928.7
End-Month Targets	kaf			822.0				1020.6			1020.6			
End-Month Content	kaf	863.6	827.5	807.6	786.2	827.8	977.3	1020.6	1007.4	1010.8	1020.6	989.2	935.2	
End-Month Elevation	ft	3624.45	3619.76	3616.95	3613.68	3619.80	3636.40	3640.00	3638.94	3639.21	3640.00	3637.42	3632.48	
Net Change Content	kaf	-51.1	-36.1	-19.9	-21.4	41.6	149.5	43.3	-13.2	3.4	9.8	-31.4	-54.0	20.5
Yellowtail Power	2012	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Turbine Release	kaf	188.2	176.0	188.2	159.8	211.1	288.3	259.2	196.3	182.2	168.8	174.2	180.1	2372.4
Generation	gwh	72.827	67.043	70.940	59.755	79.249	112.085	104.020	79.147	73.351	68.095	70.039	71.434	927.985
End-Month Power Cap	mw	267.0	262.4	259.6	256.5	262.4	279.4	283.4	282.2	282.5	283.4	280.5	275.1	
% Max Gen		34	33	33	29	37	54	49	37	35	32	34	33	
Ave kwh/af		387	381	377	374	375	389	401	403	403	403	402	397	391
Upstream Generation	gwh	5.733	4.397	10.785	12.784	33.892	33.832	33.725	32.362	27.191	16.737	10.599	10.921	232.958
Total Generation	gwh	78.560	71.440	81.725	72.539	113.141	145.917	137.745	111.509	100.542	84.832	80.638	82.355	1160.943

BIGHORN LAKE

BIGHORN LAKE ELEVATION



BIGHORN RIVER FLOW BELOW AFTERBAY



WATER YEAR 2012

Supplemental Information

BIGHORN LAKE MONTHLY OPERATIONS

Bighorn Reservoir		Initial Cont Elev 3630.36 ft				Maximum Cont Elev 3657.00 ft				Minimum Cont Elev 3547.00 ft				Total	
		2012	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Boysen Release	kaf	58.4	54.6	58.4	44.6	67.6	69.9	76.9	69.2	59.5	46.1	44.6	46.1	695.9	
Boysen Release	cfs	950	949	950	750	1099	1175	1251	1125	1000	750	750	750		
Buffalo Bill Release	kaf	21.8	20.4	21.8	31.7	108.9	121.7	118.7	104.3	82.3	28.3	12.2	12.6	684.7	
Buffalo Bill Release	cfs	355	355	355	533	1771	2045	1930	1696	1383	460	205	205		
Station Gain	kaf	48.3	55.0	74.9	44.6	15.4	37.1	-51.7	-41.4	8.7	58.6	49.0	35.6	334.1	
Monthly Inflow	kaf	128.5	130.0	155.1	120.9	191.9	228.7	143.9	132.1	150.5	133.0	105.8	94.3	1714.7	
Monthly Inflow	cfs	2090	2260	2522	2032	3121	3843	2340	2148	2529	2163	1778	1534		
Turbine Release	kaf	188.2	157.1	161.0	115.7	130.3	138.0	146.9	146.1	133.6	118.7	146.3	151.3	1733.2	
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	188.2	157.1	161.0	115.7	130.3	138.0	146.9	146.1	133.6	118.7	146.3	151.3	1733.2	
Total Release	cfs	3061	2731	2618	1944	2119	2319	2389	2376	2245	1930	2459	2461		
Spring Flow	kaf	4.3	4.0	4.3	4.2	4.3	4.2	4.3	4.3	4.2	4.3	4.2	4.3	50.9	
Irrigation Reqmnt	kaf	0.0	0.0	0.0	0.9	11.6	23.2	28.2	27.4	18.8	0.0	0.0	0.0	110.1	
Afterbay Rels	kaf	192.5	161.1	165.3	119.9	134.6	142.2	151.2	150.4	137.8	123.0	150.5	155.6	1784.1	
Afterbay Rels	cfs	3131	2801	2688	2015	2189	2390	2459	2446	2316	2000	2529	2531		
River Release	kaf	192.5	161.1	165.3	119.0	123.0	119.0	123.0	123.0	119.0	123.0	150.5	155.6	1674.0	
River Release	cfs	3131	2801	2688	2000	2000	2000	2000	2000	2000	2000	2529	2531		
Min Release	kaf	192.5	161.1	123.0	119.0	123.0	119.0	123.0	123.0	119.0	123.0	119.0	123.0	1567.6	
End-Month Targets	kaf			822.0				1020.6			1020.6				
End-Month Content	kaf	855.0	827.9	822.0	827.2	888.8	979.5	976.5	962.5	979.4	993.7	953.2	896.2		
End-Month Elevation	ft	3623.37	3619.82	3619.01	3619.72	3627.46	3636.59	3636.33	3635.08	3636.58	3637.80	3634.22	3628.31		
Net Change Content	kaf	-59.7	-27.1	-5.9	5.2	61.6	90.7	-3.0	-14.0	16.9	14.3	-40.5	-57.0	-18.5	
Yellowtail Power	2012	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	
Turbine Release	kaf	188.2	157.1	161.0	115.7	130.3	138.0	146.9	146.1	133.6	118.7	146.3	151.3	1733.2	
Generation	gwh	72.716	59.753	60.858	43.729	49.862	54.232	58.563	58.086	53.141	47.450	58.239	59.270	675.899	
End-Month Power Cap	mw	265.9	262.4	261.6	262.3	270.0	279.6	279.3	277.9	279.6	280.9	277.0	270.9		
% Max Gen		34	30	28	21	23	26	27	27	26	22	28	28		
Ave kwh/af		386	380	378	378	383	393	399	398	398	400	398	392	390	
Upstream Generation	gwh	5.730	4.391	10.730	11.287	27.272	28.726	28.798	26.242	21.540	10.596	6.892	7.123	189.327	
Total Generation	gwh	78.446	64.144	71.588	55.016	77.134	82.958	87.361	84.328	74.681	58.046	65.131	66.393	865.226	

BHXAOP V1.12 Run: 06-Jan-2012 08:51
 Based on Maximum Probable Inflow Forecast

BIGHORN LAKE MONTHLY OPERATIONS

Bighorn Reservoir		Initial Cont 914.7 kaf Elev 3630.36 ft				Maximum Cont 1278.9 kaf Elev 3657.00 ft				Minimum Cont 469.9 kaf Elev 3547.00 ft				Total
2012		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Boysen Release	kaf	58.4	54.6	58.4	78.6	197.9	229.8	159.5	120.0	84.0	58.5	56.6	58.5	1214.8
Boysen Release	cfs	950	949	950	1321	3219	3862	2594	1952	1412	951	951	951	
Buffalo Bill Release	kaf	21.8	20.4	21.8	75.0	143.7	228.8	216.3	151.3	102.7	49.9	21.1	21.8	1074.6
Buffalo Bill Release	cfs	355	355	355	1260	2337	3845	3518	2461	1726	812	355	355	
Station Gain	kaf	60.1	68.4	93.1	43.8	-15.2	218.4	105.0	-32.9	37.1	76.2	70.7	46.4	771.1
Monthly Inflow	kaf	140.3	143.4	173.3	197.4	326.4	677.0	480.8	238.4	223.8	184.6	148.4	126.7	3060.5
Monthly Inflow	cfs	2282	2493	2818	3317	5308	11377	7819	3877	3761	3002	2494	2061	
Turbine Release	kaf	188.2	176.0	188.2	252.6	330.3	465.7	431.7	240.3	222.1	184.4	182.0	188.2	3049.7
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	188.2	176.0	188.2	252.6	330.3	465.7	431.7	240.3	222.1	184.4	182.0	188.2	3049.7
Total Release	cfs	3061	3060	3061	4245	5372	7826	7021	3908	3733	2999	3059	3061	
Spring Flow	kaf	4.3	4.0	4.3	4.2	4.3	4.2	4.3	4.3	4.2	4.3	4.2	4.3	50.9
Irrigation Reqmnt	kaf	0.0	0.0	0.0	0.9	11.6	23.2	28.2	27.4	18.8	0.0	0.0	0.0	110.1
Afterbay Rels	kaf	192.5	180.0	192.5	256.8	334.6	469.9	436.0	244.6	226.3	188.7	186.2	192.5	3100.6
Afterbay Rels	cfs	3131	3129	3131	4316	5442	7897	7091	3978	3803	3069	3129	3131	
River Release	kaf	192.5	180.0	192.5	255.9	323.0	446.7	407.8	217.2	207.5	188.7	186.2	192.5	2990.5
River Release	cfs	3131	3129	3131	4301	5253	7507	6632	3532	3487	3069	3129	3131	
Min Release	kaf	192.5	180.0	192.5	148.8	153.7	148.8	153.7	153.7	148.8	153.7	186.2	192.5	2004.9
End-Month Targets	kaf			822.0				1020.6			1020.6			
End-Month Content	kaf	866.8	834.2	819.3	764.1	760.2	971.5	1020.6	1018.7	1020.4	1020.6	987.0	925.5	
End-Month Elevation	ft	3624.84	3620.67	3618.63	3610.02	3609.34	3635.89	3640.00	3639.85	3639.99	3640.00	3637.23	3631.50	
Net Change Content	kaf	-47.9	-32.6	-14.9	-55.2	-3.9	211.3	49.1	-1.9	1.7	0.2	-33.6	-61.5	10.8
Yellowtail Power	2012	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Turbine Release	kaf	188.2	176.0	188.2	252.6	330.3	465.7	431.7	240.3	222.1	184.4	182.0	188.2	3049.7
Generation	gwh	72.868	67.166	71.189	94.263	121.801	178.719	173.089	97.056	89.702	74.497	73.150	74.502	1188.002
End-Month Power Cap	mw	267.4	263.3	261.3	253.2	252.5	278.8	283.4	283.2	283.3	283.4	280.3	274.1	
% Max Gen		34	34	33	45	57	86	81	45	43	35	35	35	
Ave kwh/af		387	382	378	373	369	384	401	404	404	404	402	396	390
Upstream Generation	gwh	5.736	4.403	10.836	25.534	34.556	33.707	35.206	34.104	28.719	17.954	10.641	10.970	252.366
Total Generation	gwh	78.604	71.569	82.025	119.797	156.357	212.426	208.295	131.160	118.421	92.451	83.791	85.472	1440.368