

RECLAMATION

Managing Water in the West

June 9, 2012

Dear Customer:

Attached is the monthly water supply outlook and projected operations for Yellowtail Dam and Powerplant. Streamflows into Bighorn Lake during May declined to 78% of average. Mountain snowpack in the Bighorn Basin above Yellowtail Dam is 55 percent of average. Based on the June 1 water supply forecast and the planned releases out of Boysen and Buffalo Bill Reservoirs, the June-July runoff into Bighorn Lake is expected to equal 336,000 acre-feet (47% 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
 June 1, 2012

Present Elevations & Storages:

<u>Reservoir</u>	<u>Elevation</u>	<u>Storage</u>	<u>Percent of Average</u>	<u>Percent Full</u>
Boysen	4717.38	603,591	110	81
Buffalo Bill	5374.81	502,887	114	78
Bighorn Lake	3623.20	853,642	103	84

Actual Inflows (1,000 Acre-Feet):

<u>Month</u>	<u>Inflow</u>	<u>Percent of Average</u>
<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
January	136.2	108
February	137.5	106
March	177.2	107
April	149.7	93
May	204.7	78

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, 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	56.8	123
February	63.3	119
March	92.1	124
April	35.0	100
May	13.5	23

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

<u>Agency</u>	<u>Inflows</u>	<u>Percent of Average</u>
USBR	336.0	47

Snowpack Conditions:

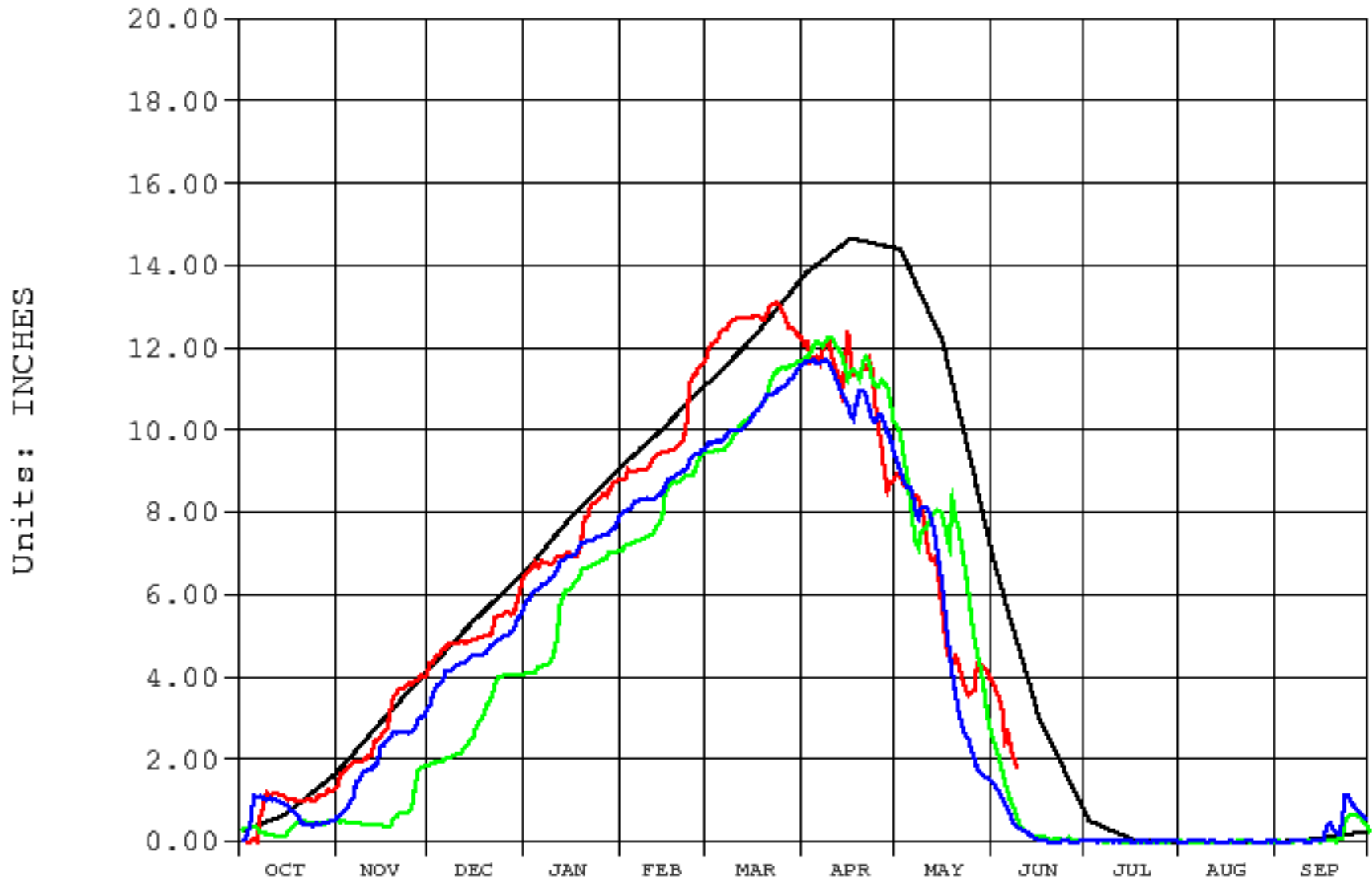
S N O W - P R E C I P I T A T I O N U P D A T E
 Based on Mountain Data from NRCS SNOTEL Sites
 As of FRIDAY: JUNE 1 , 2012

BASIN Data Site Name	ELEV. (Ft)	SNOW WATER EQUIVALENT			TOTAL PRECIPITATION		
		Current	Average	Av ^g	Current	Average	Av ^g
UPPER YELLOWSTONE RIVER BASIN							
BEARTOOTH LAKE	9360	26.4	20.1	131	33.1	27.0	123
BOX CANYON	6670	.0	.0	100*	18.1	18.2	99
BRACKETT CREEK	7320	7.4	5.1	145	39.9	36.8	108
BURNT MTN	5880	.0	.0	100*	17.3	25.3	68
CANYON	7870	.0	1.3	0*	22.5	20.5	110
COLE CREEK	7850	1.8	11.0	16	18.3	27.4	67
EAST BOULDER MINE	6335	.0	-M	*	19.1	-M	*
EVENING STAR	9200	22.4	26.7	84	42.3	34.4	123
FISHER CREEK	9100	39.1	30.1	130	47.6	46.7	102
MONUMENT PEAK	8850	12.5	15.9	79	31.4	29.0	108
NORTHEAST ENTRANCE	7350	.0	.4	0*	20.2	17.6	115

PARKER PEAK	9400	15.1	18.5	82	31.8	23.2	137
PLACER BASIN	8830	10.8	14.6	74	29.7	29.0	102
PORCUPINE	6500	.0	.0	100*	18.8	18.8	100
S FORK SHIELDS	8100	11.1	12.3	90	37.6	31.2	121
SACAJAWEA	6550	1.2	.0	*	37.6	33.1	114
SHOWER FALLS	8100	20.0	20.5	98	38.0	36.8	103
SYLVAN LAKE	8420	.0	11.4	0	33.7	29.0	116
SYLVAN ROAD	7120	.0	.0	100*	24.4	23.3	105
THUMB DIVIDE	7980	.0	1.9	0*	24.6	24.8	99
TWO OCEAN PLATEAU	9240	27.7	25.2	110	35.7	36.3	98
WHITE MILL	8700	20.5	18.0	114	34.3	35.2	97
WOLVERINE	7650	.0	.0	100*	17.6	18.3	96
YOUNTS PEAK	8350	.0	7.0	0	21.7	22.1	98
Basin wide percent of average				90			105
WIND RIVER BASIN							
BURROUGHS CREEK	8750	1.4	3.4	41	19.0	22.6	84
CASTLE CREEK	8400	.0	-M	*	11.5	-M	*
COLD SPRINGS	9630	.0	1.1	0	12.7	17.1	74
DEER PARK	9700	.0	8.0	0	22.1	30.9	72
HOBBS PARK	10100	.0	10.1	0	17.5	21.0	83
KIRWIN	9550	.0	5.5	0	18.7	17.5	107
LITTLE WARM	9370	.0	1.9	0	17.6	20.0	88
OWL CREEK	8975	.0	.5	0*	8.4	11.1	76
SOUTH PASS	9040	.0	6.3	0	15.7	26.0	60
ST. LAWRENCE ALT	8620	.0	.7	0*	11.0	15.2	72
TOGWOTEE PASS	9580	16.5	21.9	75	31.8	32.7	97
TOWNSEND CREEK	8700	.0	1.7	0	13.9	18.8	74
YOUNTS PEAK	8350	.0	7.0	0	21.7	22.1	98
Basin wide percent of average				26			82
SHOSHONE BASIN							
BLACKWATER	9780	21.6	24.7	87	32.4	28.9	112
EVENING STAR	9200	22.4	26.7	84	42.3	34.4	123
MARQUETTE	8760	.0	-M	*	15.6	18.0	87
SYLVAN LAKE	8420	.0	11.4	0	33.7	29.0	116
SYLVAN ROAD	7120	.0	.0	100*	24.4	23.3	105
YOUNTS PEAK	8350	.0	7.0	0	21.7	22.1	98
Basin wide percent of average				63			109
BIGHORN BASIN ABOVE YELLOWTAIL DAM							
BALD MTN.	9380	16.8	16.7	101	21.8	25.3	86
BEAR TRAP MEADOW	8200	.0	.0	100*	16.4	14.2	115
BLACKWATER	9780	21.6	24.7	87	32.4	28.9	112
BONE SPRINGS DIV	9350	8.3	8.2	101	22.1	22.3	99
BURROUGHS CREEK	8750	1.4	3.4	41	19.0	22.6	84
CASTLE CREEK	8400	.0	-M	*	11.5	-M	*
COLD SPRINGS	9630	.0	1.1	0	12.7	17.1	74
DEER PARK	9700	.0	8.0	0	22.1	30.9	72
EVENING STAR	9200	22.4	26.7	84	42.3	34.4	123
GRAVE SPRINGS	8550	.0	1.8	0	16.0	16.1	99
KIRWIN	9550	.0	5.5	0	18.7	17.5	107
LITTLE WARM	9370	.0	1.9	0	17.6	20.0	88
MARQUETTE	8760	.0	-M	*	15.6	18.0	87
MIDDLE POWDER	7760	.0	2.6	0	17.9	19.1	94
OWL CREEK	8975	.0	.5	0*	8.4	11.1	76
POWDER RIVER PASS	9480	.0	2.3	0	23.3	19.6	119
SHELL CREEK	9580	15.8	10.4	152	23.2	20.5	113
SOUTH PASS	9040	.0	6.3	0	15.7	26.0	60
ST. LAWRENCE ALT	8620	.0	.7	0*	11.0	15.2	72
SYLVAN LAKE	8420	.0	11.4	0	33.7	29.0	116
SYLVAN ROAD	7120	.0	.0	100*	24.4	23.3	105
TIMBER CREEK	7950	.0	.5	0*	13.4	14.4	93
TOGWOTEE PASS	9580	16.5	21.9	75	31.8	32.7	97
TOWNSEND CREEK	8700	.0	1.7	0	13.9	18.8	74
YOUNTS PEAK	8350	.0	7.0	0	21.7	22.1	98
Basin wide percent of average				63			95

Archive Data From 1-OCT Through 30-SEP

Plotted 06/08/2012 08:16 (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)

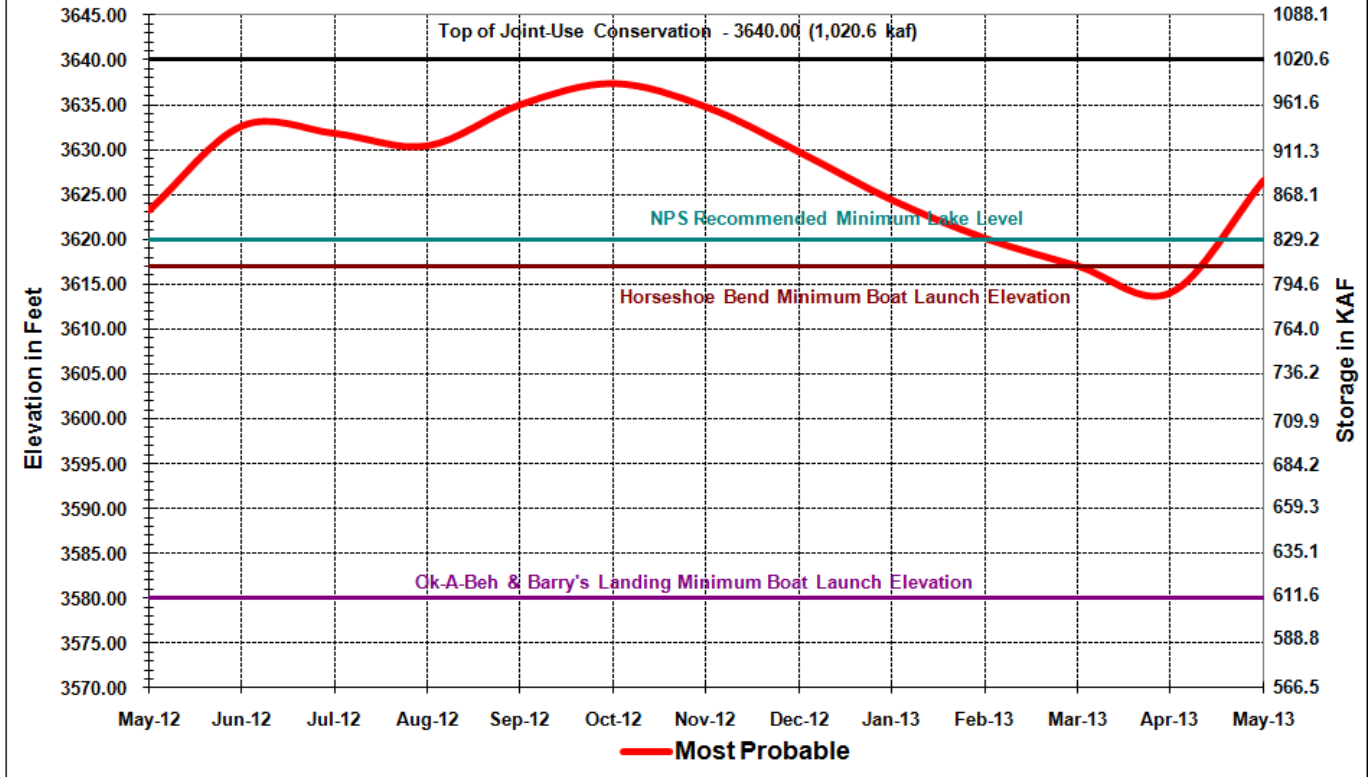
2012 2000 2006

BIGHORN LAKE MONTHLY OPERATIONS

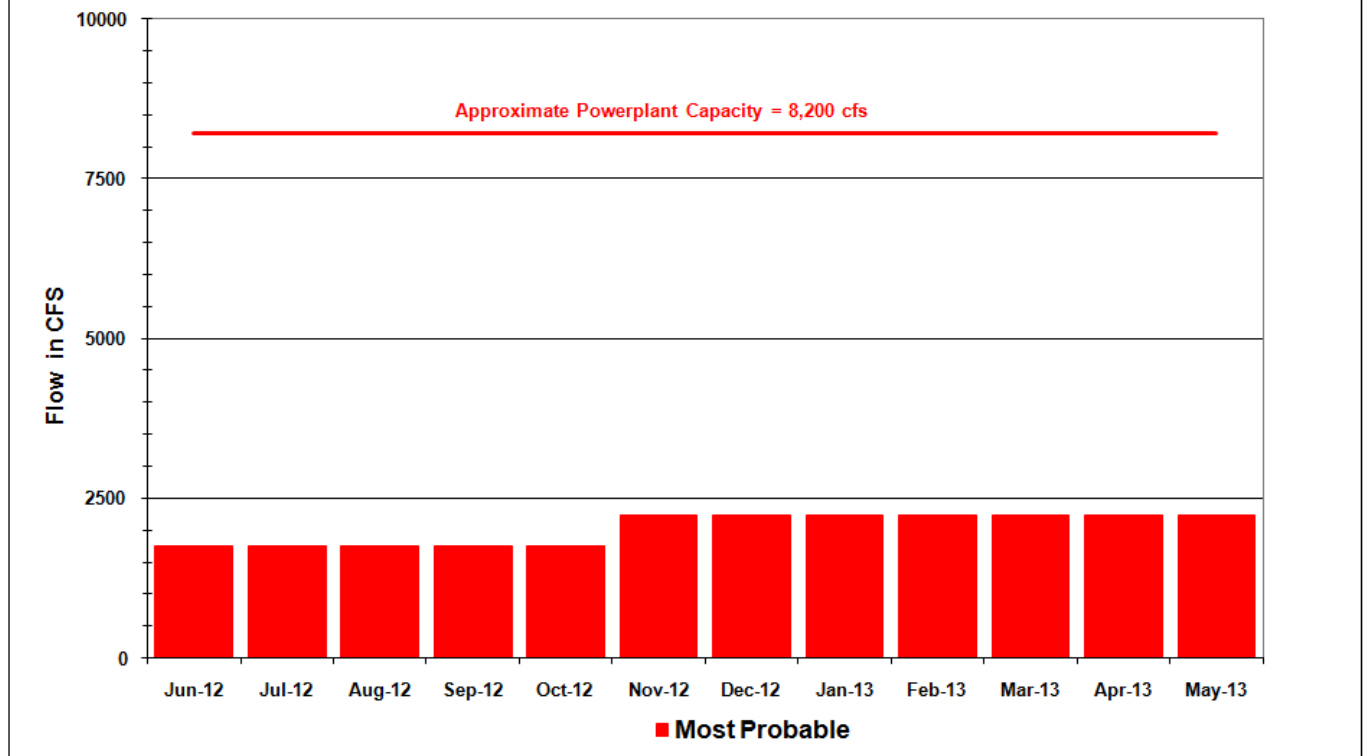
Bighorn Reservoir		Initial Cont 853.6 kaf Elev 3623.19 ft				Maximum Cont 1278.9 kaf Elev 3657.00 ft				Minimum Cont 469.9 kaf Elev 3547.00 ft				Total
	2012	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
Boysen Release	kaf	74.4	79.9	69.2	59.5	46.1	29.8	30.7	30.7	27.8	30.7	50.6	100.9	630.3
Boysen Release	cfs	1250	1299	1125	1000	750	501	499	499	501	499	850	1641	
Buffalo Bill Riv Flo	kaf	140.8	140.6	118.1	106.6	45.5	21.1	21.8	21.8	19.7	21.8	31.7	106.4	795.9
Buffalo Bill Riv Flo	cfs	2366	2287	1921	1791	740	355	355	355	355	355	533	1730	
Station Gain	kaf	-3.7	-96.0	-69.7	-1.1	41.7	48.0	30.4	34.5	39.7	58.3	27.6	29.2	138.9
Monthly Inflow	kaf	211.5	124.5	117.6	165.0	133.3	98.9	82.9	87.0	87.2	110.8	109.9	236.5	1565.1
Monthly Inflow	cfs	3554	2025	1913	2773	2168	1662	1348	1415	1570	1802	1847	3846	
Turbine Release	kaf	128.5	132.8	130.7	118.5	106.5	128.6	132.9	132.9	120.1	132.9	129.4	143.9	1537.7
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	128.5	132.8	130.7	118.5	106.5	128.6	132.9	132.9	120.1	132.9	129.4	143.9	1537.7
Total Release	cfs	2160	2160	2126	1991	1732	2161	2161	2161	2163	2161	2175	2340	
Spring Flow	kaf	4.2	4.3	4.3	4.2	4.3	4.2	4.3	4.3	3.9	4.3	4.2	4.3	50.8
Irrigation Reqmnt	kaf	28.6	29.5	27.4	18.6	3.2	0.0	0.0	0.0	0.0	0.0	0.8	11.0	119.1
Afterbay Rels	kaf	132.7	137.1	135.0	122.7	110.8	132.8	137.2	137.2	124.0	137.2	133.6	148.2	1588.5
Afterbay Rels	cfs	2230	2230	2196	2062	1802	2232	2231	2231	2233	2231	2245	2410	
River Release	kaf	104.1	107.6	107.6	104.1	107.6	132.8	137.2	137.2	124.0	137.2	132.8	137.2	1469.4
River Release	cfs	1749	1750	1750	1749	1750	2232	2231	2231	2233	2231	2232	2231	
Min Release	kaf	104.1	107.6	107.6	104.1	107.6	119.0	123.0	123.0	111.1	123.0	132.8	137.2	1400.1
End-Month Targets	kaf		1020.6			1020.6					807.9			
End-Month Content	kaf	936.6	928.3	915.2	961.7	988.5	958.8	908.8	862.9	830.0	807.9	788.4	881.0	
End-Month Elevation	ft	3632.62	3631.79	3630.42	3635.01	3637.36	3634.74	3629.72	3624.36	3620.10	3617.00	3614.03	3626.55	
Net Change Content	kaf	83.0	-8.3	-13.1	46.5	26.8	-29.7	-50.0	-45.9	-32.9	-22.1	-19.5	92.6	27.4
Yellowtail Power	2012	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
Turbine Release	kaf	128.5	132.8	130.7	118.5	106.5	128.6	132.9	132.9	120.1	132.9	129.4	143.9	1537.7
Generation	gwh	47.427	49.242	48.165	43.258	38.227	47.695	49.059	48.471	42.513	47.663	45.850	53.548	561.118
End-Month Power Cap	mw	280.5	279.7	278.4	282.8	285.0	282.5	277.8	272.7	268.6	265.7	262.9	274.7	
% Max Gen		23	23	22	21	18	23	23	23	22	22	22	25	
Ave kwh/af		369	371	369	365	359	371	369	365	354	359	354	372	365
Upstream Generation	gwh	28.778	30.192	26.573	23.640	15.280	8.040	8.327	8.323	7.510	8.328	11.735	29.252	205.978
Total Generation	gwh	76.205	79.434	74.738	66.898	53.507	55.735	57.386	56.794	50.023	55.991	57.585	82.800	767.096

BIGHORN LAKE

BIGHORN LAKE ELEVATION



BIGHORN RIVER FLOW BELOW AFTERBAY



WATER YEAR 2012

Supplemental Information

BHXAOP V1.14 Run: 08-Jun-2012 08:35
 Based on Minimum Probable Inflow Forecast

BIGHORN LAKE MONTHLY OPERATIONS

Bighorn Reservoir		Initial Cont 853.6 kaf Elev 3623.19 ft				Maximum Cont 1278.9 kaf Elev 3657.00 ft				Minimum Cont 469.9 kaf Elev 3547.00 ft				Total
	2012	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	
Boysen Release	kaf	74.4	79.9	69.2	59.5	46.1	29.8	30.7	30.7	27.8	30.7	44.6	74.4	597.8
Boysen Release	cfs	1250	1299	1125	1000	750	501	499	499	501	499	750	1210	
Buffalo Bill Riv Flo	kaf	111.6	121.5	104.3	82.3	28.3	12.2	12.6	12.6	11.4	12.6	31.7	106.4	647.5
Buffalo Bill Riv Flo	cfs	1876	1976	1696	1383	460	205	205	205	205	205	533	1730	
Station Gain	kaf	-22.2	-109.9	-85.0	-11.6	35.0	41.2	24.5	27.9	31.6	50.7	22.6	16.2	21.0
Monthly Inflow	kaf	163.8	91.5	88.5	130.2	109.4	83.2	67.8	71.2	70.8	94.0	98.9	197.0	1266.3
Monthly Inflow	cfs	2753	1488	1439	2188	1779	1398	1103	1158	1275	1529	1662	3204	
Turbine Release	kaf	118.3	116.1	115.3	103.9	87.9	96.9	100.2	100.2	90.4	100.2	97.9	126.0	1253.3
Bypass/Spill/Waste	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Release	kaf	118.3	116.1	115.3	103.9	87.9	96.9	100.2	100.2	90.4	100.2	97.9	126.0	1253.3
Total Release	cfs	1988	1888	1875	1746	1430	1628	1630	1630	1628	1630	1645	2049	
Spring Flow	kaf	4.2	4.3	4.3	4.2	4.3	4.2	4.3	4.3	3.9	4.3	4.2	4.3	50.8
Irrigation Reqmnt	kaf	25.8	28.2	27.4	18.8	0.0	0.0	0.0	0.0	0.0	0.0	0.9	25.8	126.9
Afterbay Rels	kaf	122.5	120.4	119.6	108.1	92.2	101.1	104.5	104.5	94.3	104.5	102.1	130.3	1304.1
Afterbay Rels	cfs	2059	1958	1945	1817	1499	1699	1700	1700	1698	1700	1716	2119	
River Release	kaf	96.7	92.2	92.2	89.3	92.2	101.1	104.5	104.5	94.3	104.5	101.2	104.5	1177.2
River Release	cfs	1625	1499	1499	1501	1499	1699	1700	1700	1698	1700	1701	1700	
Min Release	kaf	96.7	92.2	92.2	89.3	92.2	89.3	92.2	92.2	83.3	92.2	101.2	104.5	1117.5
End-Month Targets	kaf		1020.6			997.0					794.6			
End-Month Content	kaf	899.1	874.5	847.7	874.0	895.5	881.8	849.4	820.4	800.8	794.6	795.6	866.6	
End-Month Elevation	ft	3628.64	3625.78	3622.44	3625.72	3628.23	3626.64	3622.66	3618.78	3615.94	3615.00	3615.15	3624.82	
Net Change Content	kaf	45.5	-24.6	-26.8	26.3	21.5	-13.7	-32.4	-29.0	-19.6	-6.2	1.0	71.0	13.0
Yellowtail Power	2012	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
Turbine Release	kaf	118.3	116.1	115.3	103.9	87.9	96.9	100.2	100.2	90.4	100.2	97.9	126.0	1253.3
Generation	gwh	42.562	41.344	40.692	36.152	29.699	33.297	34.363	34.060	29.877	33.765	32.841	45.520	434.172
End-Month Power Cap	mw	276.7	274.0	270.8	274.0	276.3	274.8	271.1	267.4	264.7	263.8	263.9	273.1	
% Max Gen		21	19	19	17	14	16	16	16	15	16	16	21	
Ave kwh/af		360	356	353	348	338	344	343	340	330	337	335	361	346
Upstream Generation	gwh	27.366	28.943	25.180	20.740	10.099	5.335	5.542	5.549	5.014	5.573	11.039	26.662	177.042
Total Generation	gwh	69.928	70.287	65.872	56.892	39.798	38.632	39.905	39.609	34.891	39.338	43.880	72.182	611.214

BHXAOP V1.14 Run: 08-Jun-2012 08:36
 Based on Maximum Probable Inflow Forecast

BIGHORN LAKE MONTHLY OPERATIONS

Bighorn Reservoir		Initial Cont 853.6 kaf Elev 3623.19 ft				Maximum Cont 1278.9 kaf Elev 3657.00 ft				Minimum Cont 469.9 kaf Elev 3547.00 ft				Total
2012		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
Boysen Release	kaf	88.8	79.9	79.6	59.5	61.5	59.5	61.5	61.6	55.6	61.5	84.1	116.8	869.9
Boysen Release	cfs	1492	1299	1295	1000	1000	1000	1000	1002	1001	1000	1413	1900	
Buffalo Bill Riv Flo	kaf	208.2	173.2	142.4	97.0	49.9	21.1	21.8	21.8	19.7	21.8	49.3	152.9	979.1
Buffalo Bill Riv Flo	cfs	3499	2817	2316	1630	812	355	355	355	355	355	829	2487	
Station Gain	kaf	30.0	-45.5	-40.4	7.8	55.7	54.8	36.3	41.0	47.8	65.9	32.4	42.2	328.0
Monthly Inflow	kaf	327.0	207.6	181.6	164.3	167.1	135.4	119.6	124.4	123.1	149.2	165.8	311.9	2177.0
Monthly Inflow	cfs	5495	3376	2953	2761	2718	2275	1945	2023	2217	2427	2786	5073	
Turbine Release	kaf	170.4	197.2	184.7	171.0	157.3	168.9	174.6	174.6	157.6	174.6	145.5	175.2	2051.6
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	170.4	197.2	184.7	171.0	157.3	168.9	174.6	174.6	157.6	174.6	145.5	175.2	2051.6
Total Release	cfs	2864	3207	3004	2874	2558	2838	2840	2840	2838	2840	2445	2849	
Spring Flow	kaf	4.2	4.3	4.3	4.2	4.3	4.2	4.3	4.3	3.9	4.3	4.2	4.3	50.8
Irrigation Reqmnt	kaf	25.8	28.2	27.4	18.8	0.0	0.0	0.0	0.0	0.0	0.0	0.9	25.8	126.9
Afterbay Rels	kaf	174.6	201.5	189.0	175.2	161.6	173.1	178.9	178.9	161.5	178.9	149.7	179.5	2102.4
Afterbay Rels	cfs	2934	3277	3074	2944	2628	2909	2910	2910	2908	2910	2516	2919	
River Release	kaf	148.8	173.3	161.6	156.4	161.6	173.1	178.9	178.9	161.5	178.9	148.8	153.7	1975.5
River Release	cfs	2501	2818	2628	2628	2628	2909	2910	2910	2908	2910	2501	2500	
Min Release	kaf	148.8	153.7	153.7	148.8	153.7	148.8	153.7	153.7	138.8	153.7	148.8	153.7	1809.9
End-Month Targets	kaf		1020.6			1020.6					822.0			
End-Month Content	kaf	1010.2	1020.6	1017.5	1010.8	1020.6	987.1	932.1	881.9	847.4	822.0	842.3	979.0	
End-Month Elevation	ft	3639.17	3640.00	3639.75	3639.21	3640.00	3637.24	3632.18	3626.66	3622.40	3619.01	3621.74	3636.54	
Net Change Content	kaf	156.6	10.4	-3.1	-6.7	9.8	-33.5	-55.0	-50.2	-34.5	-25.4	20.3	136.7	125.4
Yellowtail Power	2012	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
Turbine Release	kaf	170.4	197.2	184.7	171.0	157.3	168.9	174.6	174.6	157.6	174.6	145.5	175.2	2051.6
Generation	gwh	67.146	79.475	73.756	67.426	61.280	66.181	68.005	67.169	59.054	66.012	53.667	68.936	798.107
End-Month Power Cap	mw	286.7	287.5	287.3	286.8	287.5	284.9	280.1	274.9	270.8	267.6	270.2	284.2	
% Max Gen		32	37	34	33	29	32	32	31	31	31	26	32	
Ave kwh/af		394	403	399	394	390	392	389	385	375	378	369	393	389
Upstream Generation	gwh	30.172	30.583	30.569	25.457	18.301	10.968	11.300	11.248	10.093	11.151	19.949	33.054	242.845
Total Generation	gwh	97.318	110.058	104.325	92.883	79.581	77.149	79.305	78.417	69.147	77.163	73.616	101.990	1040.952