

# RECLAMATION

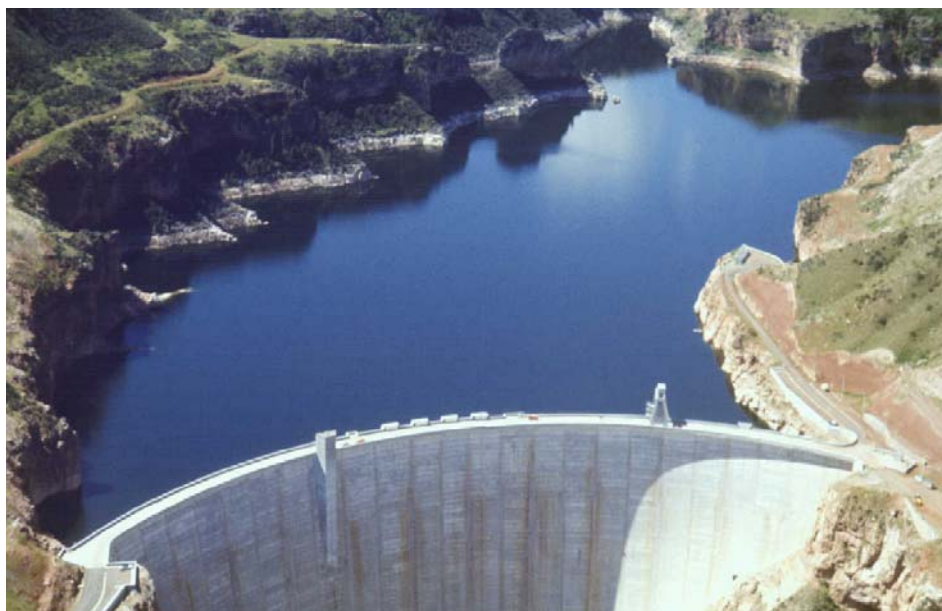
*Managing Water in the West*

December 4, 2006

Dear Customer:

Attached is the monthly water supply outlook and projected reservoir and river operating plans as prepared on December 4, 2006. Streamflows into Bighorn Lake continue to remain well below normal. Therefore, water users are advised to continue making plans to conserve the limited available water supply. We hope you find the information useful. 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  
 December 1, 2006

**Present Elevations & Storages:**

<u>Reservoir</u>	<u>Storage</u>	<u>Elevation</u>	<u>Percent of Normal</u>
Boysen	480,239	4709.09	---
Buffalo Bill	446,705	5367.01	---
Bighorn Lake	813,128	3611.54	83

**Actual Inflows (1,000 Acre-Feet):**

<u>Month</u>	<u>Inflow</u>	<u>Percent of Normal</u>
January	107.2	76
February	93.8	65
March	126.9	71
April	106.0	61
May	184.0	71
June	163.6	37
July	74.7	23
<b>April-July, 2006</b>	<b>528.2</b>	<b>44</b>
August	82.2	48
September	127.2	71
<b>WY-2006 Total</b>	<b>1,432.9</b>	<b>57</b>
October	125.6	66
November	98.7	61

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

<u>Month</u>	<u>Gains</u>	<u>Percent of Normal</u>
January	44.0	93
February	38.1	66
March	58.9	75
April	28.3	60
May	54.4	63
June	-12.6	---
July	-72.5	---
<b>April-July, 2006</b>	<b>-2.5</b>	<b>---</b>
August	-48.5	---
September	33.4	77
<b>WY-2006 Total</b>	<b>280.6</b>	<b>39</b>
October	73.5	97
November	56.9	88

**December Inflow Forecast (1,000 Acre-Feet):**

<u>Agency</u>	<u>Inflows</u>	<u>Percent of Normal</u>
USBR	70.9	48

**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: DECEMBER 1 , 2006

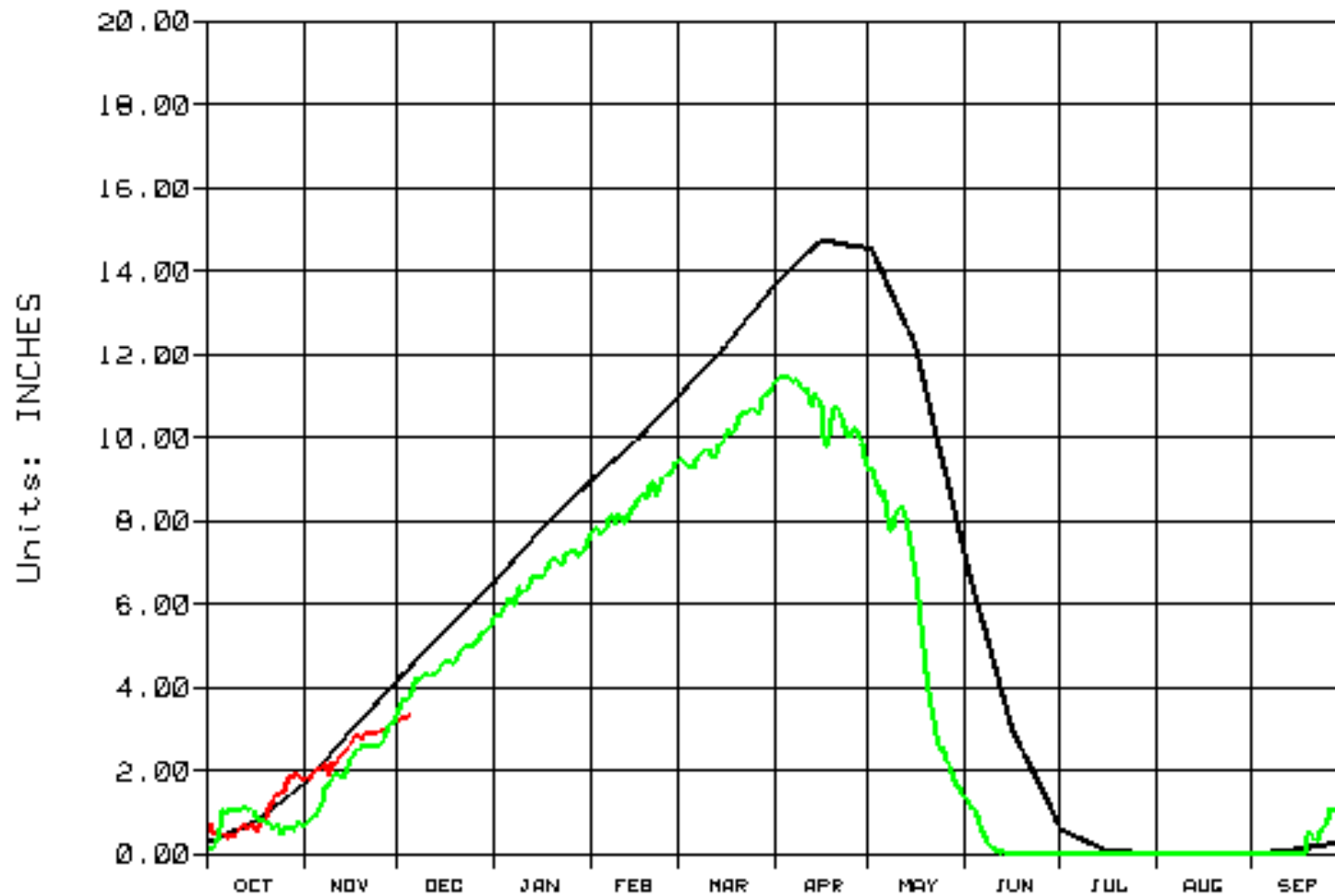
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UPPER YELLOWSTONE RIVER BASIN							
BEARTOOTH LAKE	9275	4.2	7.0	60	5.2	5.9	88
BOX CANYON	6700	1.6	2.2	73	6.7	3.8	176
BRACKETT CREEK	7320	1.9	4.9	39	7.8	7.3	107
BURNT MTN	5880	.2	-M	*	6.1	-M	*

CANYON	8090	2.8	3.2	87	5.8	4.8	121
COLE CREEK	7850	2.3	5.4	43	5.8	5.9	98
EVENING STAR	9200	5.5	8.5	65	-M	8.2	*
FISHER CREEK	9100	8.9	9.1	98	11.4	9.8	116
MONUMENT PEAK	8850	5.4	5.8	93	7.8	6.4	122
NORTHEAST ENTRANCE	7350	1.2	2.5	48	5.6	4.0	140
PARKER PEAK	9400	5.3	6.7	79	6.5	5.5	118
PLACER BASIN	8830	5.0	5.6	89	8.1	6.5	125
PORCUPINE	6500	.0	1.3	0	5.6	4.0	140
SACAJAWEA	6550	1.1	1.9	58	8.5	-M	*
SHOWER FALLS	8100	6.6	6.3	105	9.5	7.7	123
S FORK SHIELDS	8100	1.5	4.5	33	8.0	6.3	127
SYLVAN LAKE	8420	3.8	6.4	59	8.4	7.1	118
SYLVAN ROAD	7120	1.5	3.5	43	6.5	6.6	98
THUMB DIVIDE	7980	2.7	4.0	68	5.2	5.4	96
TWO OCEAN PLATEAU	9240	-M	8.3	*	7.8	8.2	95
WHITE MILL	8700	5.2	6.6	79	8.0	7.7	104
WOLVERINE	7650	2.0	3.0	67	4.0	4.5	89
YOUNTS PEAK	8350	2.3	4.7	49	4.9	5.2	94
Basin wide percent of average				69			113
WIND RIVER BASIN (WYOMING)							
BURROUGHS CREEK	8750	2.5	3.8	66	4.6	4.9	94
COLD SPRINGS	9630	1.4	3.1	45	2.6	4.2	62
DEER PARK	9700	4.2	4.5	93	6.1	7.1	86
HOBBS PARK	10100	3.1	5.3	58	3.4	4.6	74
KIRWIN	9550	2.8	4.2	67	3.8	4.1	93
LITTLE WARM	9370	2.4	3.4	71	3.4	4.6	74
OWL CREEK	8975	2.0	1.9	105	2.6	2.2	118
SOUTH PASS	9040	4.3	4.9	88	5.8	6.0	97
ST. LAWRENCE ALT	8620	1.3	2.7	48	2.7	3.5	77
TOGWOTEE PASS	9580	5.6	7.0	80	7.0	7.3	96
TOWNSEND CREEK	8700	2.1	3.0	70	4.7	4.5	104
YOUNTS PEAK	8350	2.3	4.7	49	4.9	5.2	94
Basin wide percent of average				70			89
SHOSHONE RIVER BASIN (WYOMING)							
BLACKWATER	9780	5.8	7.8	74	6.4	7.2	89
EVENING STAR	9200	5.5	8.5	65	-M	8.2	*
MARQUETTE	8760	.2	3.8	5	3.1	4.1	76
SYLVAN LAKE	8420	3.8	6.4	59	8.4	7.1	118
SYLVAN ROAD	7120	1.5	3.5	43	6.5	6.6	98
YOUNTS PEAK	8350	2.3	4.7	49	4.9	5.2	94
Basin wide percent of average				55			97
BIGHORN RIVER BASIN (WYOMING)							
BALD MTN.	9380	7.1	5.9	120	5.5	5.3	104
BEAR TRAP MEADOW	8200	1.4	1.6	87	2.5	3.4	74
BLACKWATER	9780	5.8	7.8	74	6.4	7.2	89
BONE SPRINGS DIV	9350	6.6	5.3	125	5.0	4.9	102
EVENING STAR	9200	5.5	8.5	65	-M	8.2	*
GRAVE SPRINGS	8550	1.8	2.7	67	2.7	3.6	75
KIRWIN	9550	2.8	4.2	67	3.8	4.1	93
MARQUETTE	8760	.2	3.8	5	3.1	4.1	76
MIDDLE POWDER	7760	3.0	3.5	86	3.6	4.9	73
OWL CREEK	8975	2.0	1.9	105	2.6	2.2	118
POWDER RIVER PASS	9480	3.2	3.3	97	3.8	4.1	93
SHELL CREEK	9580	6.4	5.1	125	4.6	4.5	102
SYLVAN LAKE	8420	3.8	6.4	59	8.4	7.1	118
SYLVAN ROAD	7120	1.5	3.5	43	6.5	6.6	98
TIMBER CREEK	7950	.3	2.3	13	2.8	3.0	93
YOUNTS PEAK	8350	2.3	4.7	49	4.9	5.2	94
Basin wide percent of average				76			94

Data From 1-OCT Through 30-SEP

Plotted 12/04/2006 10:08



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

—SEavg Snow Water Equivalent Average (Inches)  
—SE Snow Water Equivalent (Inches)

2007

2007 2006

BIGHORN LAKE MONTHLY OPERATIONS

Bighorn Reservoir		Initial Cont 813.3 kaf Elev 3611.56 ft					Maximum Cont 1328.4 kaf Elev 3657.00 ft				Minimum Cont 493.6 kaf Elev 3547.00 ft				Total
	2006	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov		
Boysen Release	kaf	30.8	30.8	27.8	30.8	50.6	67.6	121.6	125.6	94.6	68.4	70.7	68.4	787.7	
Boysen Release	cfs	501	501	501	501	850	1099	2044	2043	1539	1150	1150	1150		
Buffalo Bill Riv Flo	kaf	12.3	12.3	11.1	12.3	49.0	84.6	103.4	106.8	78.0	75.5	24.9	20.8	591.0	
Buffalo Bill Riv Flo	cfs	200	200	200	200	823	1376	1738	1737	1269	1269	405	350		
Station Gain	kaf	27.8	27.6	28.4	68.9	37.3	53.2	84.1	-20.0	-8.4	32.8	66.5	55.3	453.5	
Monthly Inflow	kaf	70.9	70.7	67.3	112.0	136.9	205.4	309.1	212.4	164.2	176.7	162.1	144.5	1832.2	
Monthly Inflow	cfs	1153	1150	1212	1822	2301	3341	5195	3454	2670	2970	2636	2428		
Turbine Release	kaf	87.9	87.9	79.4	87.9	85.6	117.6	170.1	211.6	194.8	181.3	167.9	162.5	1634.5	
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	87.9	87.9	79.4	87.9	85.6	117.6	170.1	211.6	194.8	181.3	167.9	162.5	1634.5	
Total Release	cfs	1430	1430	1430	1430	1439	1913	2859	3441	3168	3047	2731	2731		
Spring Flow	kaf	4.3	4.3	3.9	4.3	4.2	4.3	4.2	4.3	4.3	4.2	4.3	4.2	50.8	
Irrigation Reqmnt	kaf	0.0	0.0	0.0	0.0	0.5	11.2	21.8	27.7	26.8	18.8	0.0	0.0	106.8	
Afterbay Rels	kaf	92.2	92.2	83.3	92.2	89.8	121.9	174.3	215.9	199.1	185.5	172.2	166.7	1685.3	
Afterbay Rels	cfs	1499	1499	1500	1499	1509	1983	2929	3511	3238	3117	2801	2801		
River Release	kaf	92.2	92.2	83.3	92.2	89.3	110.7	152.5	188.2	172.3	166.7	172.2	166.7	1578.5	
River Release	cfs	1499	1499	1500	1499	1501	1800	2563	3061	2802	2801	2801	2801		
Min Release	kaf	92.2	92.2	83.3	92.2	89.3	92.2	148.8	153.7	153.7	148.8	153.7	89.3	1389.4	
End-Month Targets	kaf								1070.0					1011.0	
End-Month Content	kaf	796.3	779.1	767.0	791.1	842.4	930.2	1069.2	1070.0	1039.4	1034.8	1029.0	1011.0		
End-Month Elevation	ft	3608.89	3606.06	3603.98	3608.05	3615.80	3626.84	3639.93	3640.00	3637.49	3637.10	3636.59	3635.00		
Net Change Content	kaf	-17.0	-17.2	-12.1	24.1	51.3	87.8	139.0	0.8	-30.6	-4.6	-5.8	-18.0	197.7	
Yellowtail Power	2006	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Total	
Turbine Release	kaf	87.9	87.9	79.4	87.9	85.6	117.6	170.1	211.6	194.8	181.3	167.9	162.5	1634.5	
Generation	gwh	32.971	32.750	29.410	32.637	32.256	45.461	68.279	86.752	79.514	73.616	68.068	65.640	647.354	
End-Month Power Cap	mw	258.0	255.5	253.6	257.3	264.3	274.6	287.4	287.5	285.0	284.6	284.1	282.5		
% Max Gen		15	15	15	15	16	21	33	40	37	36	32	32		
Ave kwh/af		375	373	370	371	377	387	401	410	408	406	405	404	396	
Upstream Generation	gwh	5.553	5.556	4.496	5.588	18.503	28.301	32.859	34.673	31.958	28.734	14.453	11.741	222.415	
Total Generation	gwh	38.524	38.306	33.906	38.225	50.759	73.762	101.138	121.425	111.472	102.350	82.521	77.381	869.769	

BIGHORN LAKE MONTHLY OPERATIONS

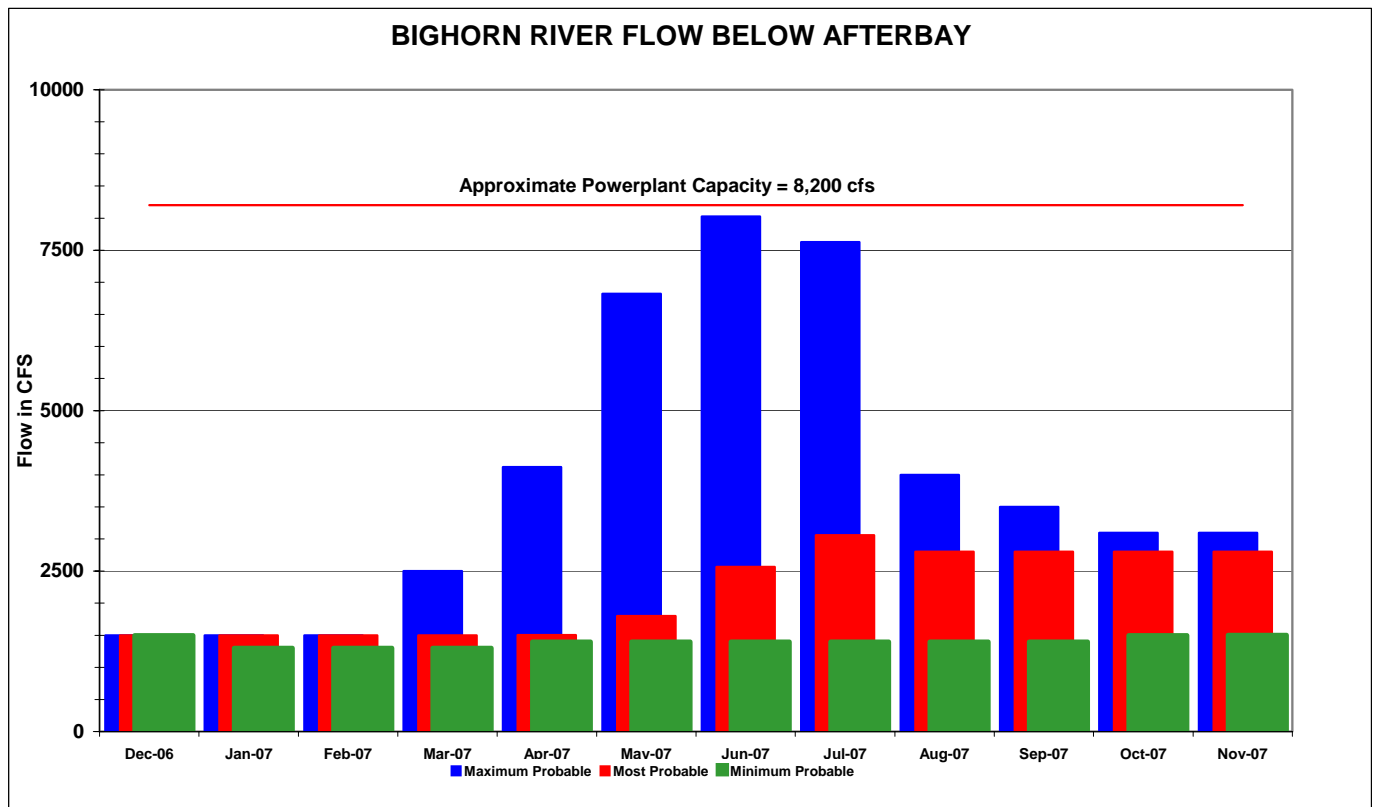
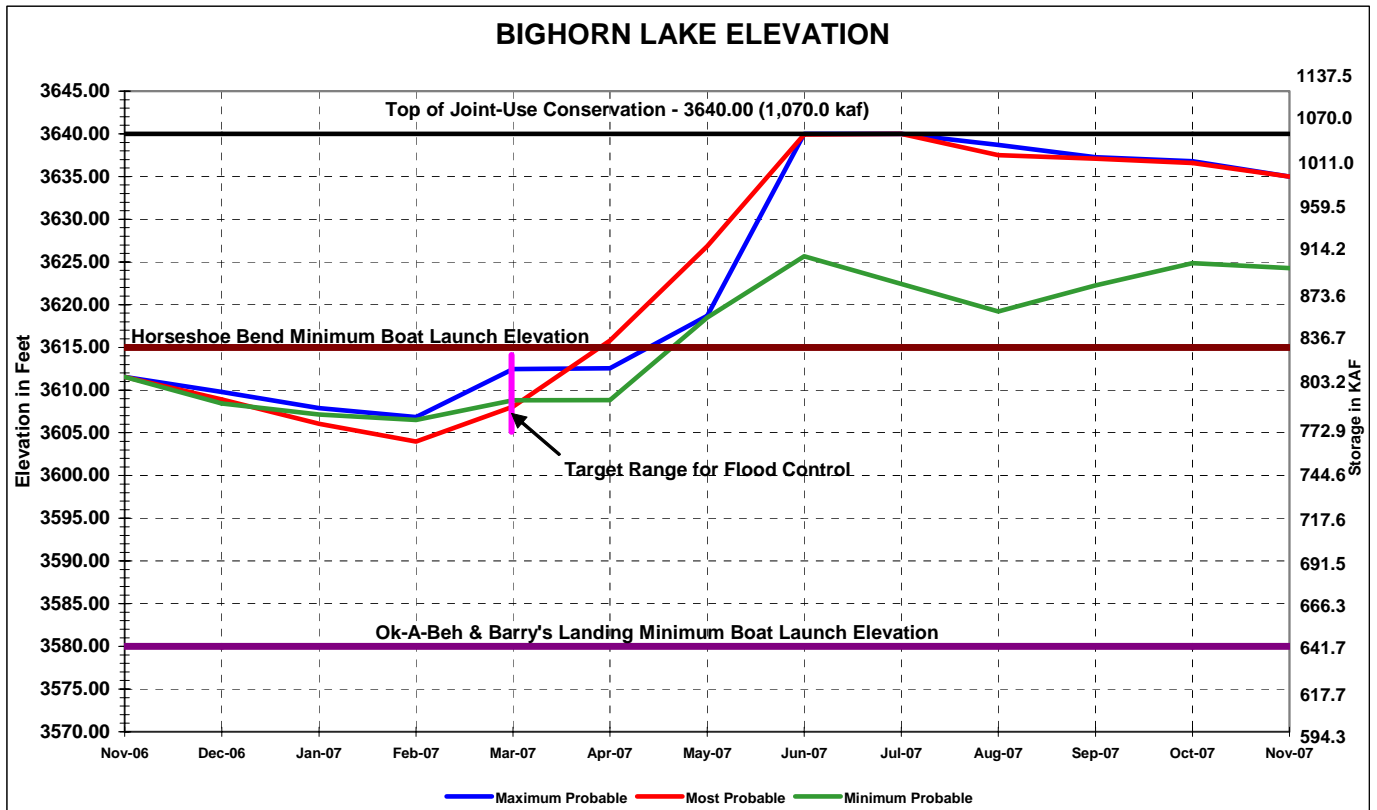
Bighorn Reservoir		Initial Cont Elev 3611.56 ft				Maximum Cont Elev 3657.00 ft				Minimum Cont Elev 3547.00 ft				Total
	2006	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
Boysen Release	kaf	30.7	30.7	27.8	30.7	38.7	60.0	68.4	68.9	60.3	44.6	30.7	29.8	521.3
Boysen Release	cfs	499	499	501	499	650	976	1150	1121	981	750	499	501	
Buffalo Bill Riv Flo	kaf	12.3	12.3	11.1	12.3	24.4	64.9	62.7	70.4	63.0	50.0	18.4	8.9	410.7
Buffalo Bill Riv Flo	cfs	200	200	200	200	410	1055	1054	1145	1025	840	299	150	
Station Gain	kaf	25.0	24.8	25.6	46.5	16.7	34.5	27.5	-57.1	-39.9	27.3	60.1	41.8	232.8
Monthly Inflow	kaf	68.0	67.8	64.5	89.5	79.8	159.4	158.6	82.2	83.4	121.9	109.2	80.5	1164.8
Monthly Inflow	cfs	1106	1103	1161	1456	1341	2592	2665	1337	1356	2049	1776	1353	
Turbine Release	kaf	87.9	75.6	68.3	75.6	79.6	93.0	100.9	109.5	108.6	97.9	87.9	85.1	1069.9
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	87.9	75.6	68.3	75.6	79.6	93.0	100.9	109.5	108.6	97.9	87.9	85.1	1069.9
Total Release	cfs	1430	1230	1230	1230	1338	1513	1696	1781	1766	1645	1430	1430	
Spring Flow	kaf	4.3	4.3	3.9	4.3	4.2	4.3	4.2	4.3	4.3	4.2	4.3	4.2	50.8
Irrigation Reqmnt	kaf	0.0	0.0	0.0	0.0	0.5	11.2	21.8	27.7	26.8	18.8	0.0	0.0	106.8
Afterbay Rels	kaf	92.2	79.9	72.2	79.9	83.8	97.3	105.1	113.8	112.9	102.1	92.2	89.3	1120.7
Afterbay Rels	cfs	1499	1299	1300	1299	1408	1582	1766	1851	1836	1716	1499	1501	
River Release	kaf	92.2	79.9	72.2	79.9	83.3	86.1	83.3	86.1	86.1	83.3	92.2	89.3	1013.9
River Release	cfs	1499	1299	1300	1299	1400	1400	1400	1400	1400	1400	1499	1501	
Min Release	kaf	92.2	79.9	72.2	79.9	83.3	86.1	83.3	86.1	86.1	83.3	92.2	89.3	1013.9
End-Month Targets	kaf								1070.0					
End-Month Content	kaf	793.4	785.6	781.8	795.7	795.9	862.3	920.0	892.7	867.5	891.5	912.8	908.2	
End-Month Elevation	ft	3608.42	3607.14	3606.51	3608.80	3608.83	3618.51	3625.68	3622.42	3619.20	3622.27	3624.84	3624.29	
Net Change Content	kaf	-19.9	-7.8	-3.8	13.9	0.2	66.4	57.7	-27.3	-25.2	24.0	21.3	-4.6	94.9
Yellowtail Power	2006	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Total
Turbine Release	kaf	87.9	75.6	68.3	75.6	79.6	93.0	100.9	109.5	108.6	97.9	87.9	85.1	1069.9
Generation	gwh	32.952	28.187	25.407	28.179	29.752	35.209	39.072	42.627	41.890	37.755	34.169	33.176	408.375
End-Month Power Cap	mw	257.6	256.4	255.9	257.9	258.0	266.8	273.5	270.5	267.5	270.3	272.7	272.2	
% Max Gen		15	13	13	13	14	16	19	20	20	18	16	16	
Ave kwh/af		375	373	372	373	374	379	387	389	386	386	389	390	382
Upstream Generation	gwh	5.540	5.533	4.473	5.546	10.866	24.534	25.024	26.906	24.229	19.387	8.410	4.437	164.885
Total Generation	gwh	38.492	33.720	29.880	33.725	40.618	59.743	64.096	69.533	66.119	57.142	42.579	37.613	573.260

BHXAOP V1.12 Run: 04-Dec-2006 08:17  
 Based on Maximum Probable Inflow Forecast

BIGHORN LAKE MONTHLY OPERATIONS

Bighorn Reservoir		Initial Cont 813.3 kaf Elev 3611.56 ft					Maximum Cont 1328.4 kaf Elev 3657.00 ft					Minimum Cont 493.6 kaf Elev 3547.00 ft			Total
	2006	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov		
Boysen Release	kaf	30.8	30.8	27.8	86.7	113.6	186.8	229.0	236.6	130.8	68.4	70.7	68.4	1280.4	
Boysen Release	cfs	501	501	501	1410	1909	3038	3848	3848	2127	1150	1150	1150		
Buffalo Bill Riv Flo	kaf	12.3	12.3	11.1	12.3	68.8	163.1	231.8	210.3	104.9	77.8	24.9	20.8	950.4	
Buffalo Bill Riv Flo	cfs	200	200	200	200	1156	2653	3896	3420	1706	1307	405	350		
Station Gain	kaf	33.4	33.1	34.1	85.7	59.7	120.2	240.6	45.4	16.7	59.6	84.9	70.4	883.8	
Monthly Inflow	kaf	76.5	76.2	73.0	184.7	242.1	470.1	701.4	492.3	252.4	205.8	180.5	159.6	3114.6	
Monthly Inflow	cfs	1244	1239	1314	3004	4069	7645	11787	8006	4105	3459	2936	2682		
Turbine Release	kaf	87.9	87.9	79.4	149.4	241.4	426.2	495.1	492.3	268.5	222.9	186.0	179.9	2916.9	
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	87.9	87.9	79.4	149.4	241.4	426.2	495.1	492.3	268.5	222.9	186.0	179.9	2916.9	
Total Release	cfs	1430	1430	1430	2430	4057	6931	8320	8006	4367	3746	3025	3023		
Spring Flow	kaf	4.3	4.3	3.9	4.3	4.2	4.3	4.2	4.3	4.3	4.2	4.3	4.2	50.8	
Irrigation Reqmnt	kaf	0.0	0.0	0.0	0.0	0.5	11.2	21.8	27.7	26.8	18.8	0.0	0.0	106.8	
Afterbay Rels	kaf	92.2	92.2	83.3	153.7	245.6	430.5	499.3	496.6	272.8	227.1	190.3	184.1	2967.7	
Afterbay Rels	cfs	1499	1499	1500	2500	4127	7001	8391	8076	4437	3817	3095	3094		
River Release	kaf	92.2	92.2	83.3	153.7	245.1	419.3	477.5	468.9	246.0	208.3	190.3	184.1	2860.9	
River Release	cfs	1499	1499	1500	2500	4119	6819	8025	7626	4001	3501	3095	3094		
Min Release	kaf	92.2	92.2	83.3	153.7	148.8	153.7	148.8	153.7	246.0	208.3	178.0	148.8	1807.5	
End-Month Targets	kaf				836.7			1070.0	1070.0					1011.0	
End-Month Content	kaf	801.9	790.2	783.8	819.1	819.8	863.7	1070.0	1070.0	1053.9	1036.8	1031.3	1011.0		
End-Month Elevation	ft	3609.79	3607.90	3606.85	3612.44	3612.54	3618.70	3640.00	3640.00	3638.70	3637.26	3636.79	3635.00		
Net Change Content	kaf	-11.4	-11.7	-6.4	35.3	0.7	43.9	206.3	0.0	-16.1	-17.1	-5.5	-20.3	197.7	
Yellowtail Power	2006	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Total	
Turbine Release	kaf	87.9	87.9	79.4	149.4	241.4	426.2	495.1	492.3	268.5	222.9	186.0	179.9	2916.9	
Generation	gwh	33.006	32.858	29.575	55.966	91.059	162.123	196.671	201.856	109.833	90.731	75.454	72.694	1151.826	
End-Month Power Cap	mw	258.8	257.1	256.2	261.2	261.3	267.0	287.5	287.5	286.2	284.8	284.3	282.5		
% Max Gen		15	15	15	26	44	76	95	94	51	44	35	35		
Ave kwh/af		375	374	372	375	377	380	397	410	409	407	406	404	395	
Upstream Generation	gwh	5.555	5.563	4.513	9.855	27.099	31.886	33.087	35.316	35.084	28.683	14.458	11.767	242.866	
Total Generation	gwh	38.561	38.421	34.088	65.821	118.158	194.009	229.758	237.172	144.917	119.414	89.912	84.461	1394.692	

# BIGHORN LAKE



WATER YEAR 2007