

RECLAMATION

Managing Water in the West

April 1, 2009

Dear Customer:

Attached are the monthly water supply outlook and projected reservoir and river operating plans prepared in April 2009. Storage in Bighorn Lake on April 1 was 112 percent of average and 0.7 feet lower than on March 1. Based on streamflow accretions accompanied by the planned releases out of Boysen and Buffalo Bill Reservoirs and the water supply forecast prepared on April 1, the April-July inflow to Bighorn Lake is expected to be 90 percent 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
 April 1, 2009

Present Elevations & Storages:

<u>Reservoir</u>	<u>Elevation</u>	<u>Storage</u>	<u>Percent of Normal</u>
Boysen	4717.00	597,200	119
Buffalo Bill	5365.10	433,100	108
Bighorn Lake	3627.15	933,006	112

Actual Inflows (1,000 Acre-Feet):

<u>Month</u>	<u>Inflow</u>	<u>Percent of Normal</u>
March	86.1	51
April	80.9	50
May	291.6	118
June	595.1	144
July	330.6	114
August	129.6	81
September	184.6	107
April-July, 2008	1,298.3	117
WY-2008 Total	2,133.2	91
October	151.2	83
November	118.9	78
December	98.0	71
January	112.0	84
February	113.0	84
March	138.6	82

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

<u>Month</u>	<u>Gains</u>	<u>Percent of Normal</u>
March	52.2	68
April	20.7	45
May	120.4	143
June	179.7	118
July	29.4	535
August	-19.1	---
September	63.4	138
April-July, 2008	350.3	122
WY-2008 Total	702.8	100
October	70.3	90
November	51.2	79
December	33.0	71
January	47.2	101
February	54.2	96
March	67.8	88

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

<u>Agency</u>	<u>Gains</u>	<u>Percent of Normal</u>
USBR	297.8	103
	<u>Inflows</u>	
USBR	1,003.1	90

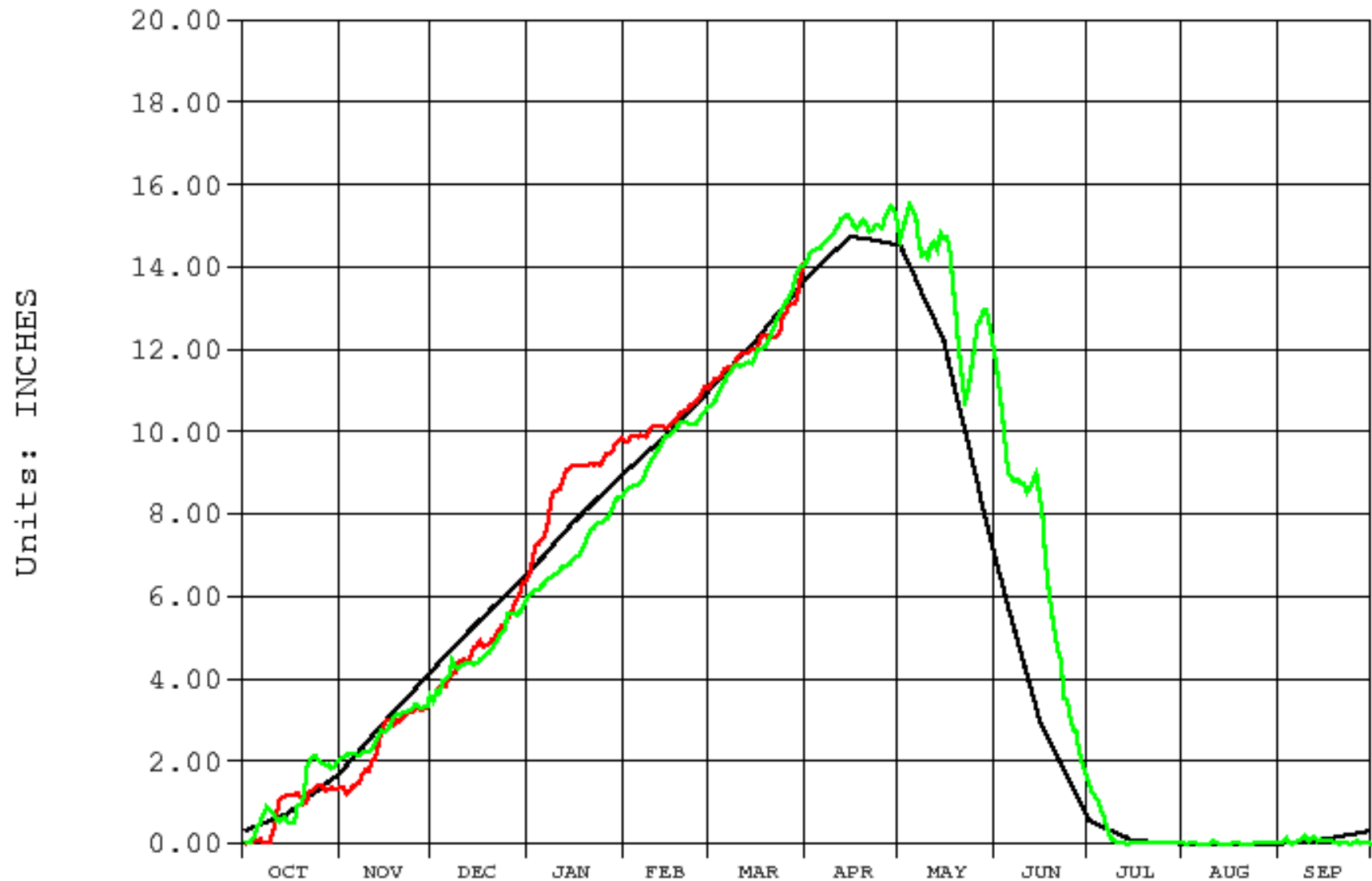
Snowpack Conditions:

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 TUESDAY: MARCH 31, 2009

BASIN Data Site Name	ELEV. (Ft)	SNOW WATER EQUIVALENT			TOTAL PRECIPITATION		
		Current	Average	Avg %	Current	Average	Avg %
UPPER YELLOWSTONE RIVER BASIN							
BEARTOOTH LAKE	9360	23.2	23.4	99	21.1	20.1	105
BOX CANYON	6670	13.7	10.3	133	15.2	12.3	124

BRACKETT CREEK	7320	21.7	21.3	102	28.0	25.0	112
BURNT MTN	5880	7.0	6.1	115	14.4	15.1	95
CANYON	7870	13.3	13.8	96	14.5	15.4	94
COLE CREEK	7850	15.8	16.0	99	13.3	16.4	81
EAST BOULDER MINE	6335	6.8	-M	*	13.4	-M	*
EVENING STAR	9200	29.8	29.8	100	30.7	25.2	122
FISHER CREEK	9100	36.5	35.1	104	35.4	36.4	97
MONUMENT PEAK	8850	24.7	20.7	119	26.7	21.1	127
NORTHEAST ENTRANCE	7350	11.0	11.3	97	13.5	12.7	106
PARKER PEAK	9400	25.9	21.7	119	19.4	16.2	120
PLACER BASIN	8830	21.0	17.6	119	22.9	18.8	122
PORCUPINE	6500	7.4	6.9	107	12.6	11.7	108
SACAJAWEA	6550	13.6	14.6	93	26.7	22.5	119
SHOWER FALLS	8100	24.0	22.4	107	26.0	24.2	107
S FORK SHIELDS	8100	18.6	17.5	106	21.8	20.0	109
SYLVAN LAKE	8420	19.9	22.6	88	22.1	20.9	106
SYLVAN ROAD	7120	13.8	13.0	106	18.6	17.7	105
THUMB DIVIDE	7980	18.8	19.1	98	19.7	18.9	104
TWO OCEAN PLATEAU	9240	37.5	28.1	133	29.1	27.7	105
WHITE MILL	8700	24.5	24.4	100	24.0	27.0	89
WOLVERINE	7650	11.7	11.5	102	11.9	12.8	93
YOUNTS PEAK	8350	18.0	17.2	105	15.6	16.1	97
Basin wide percent of average				106			106
WIND RIVER BASIN (WYOMING)							
BURROUGHS CREEK	8750	15.4	14.7	105	16.1	16.2	99
COLD SPRINGS	9630	7.6	8.9	85	10.1	10.5	96
DEER PARK	9700	10.7	16.9	63	15.4	21.8	71
HOBBS PARK	10100	12.5	14.8	84	12.5	12.7	98
KIRWIN	9550	12.6	11.3	112	13.9	11.1	125
LITTLE WARM	9370	11.9	11.9	100	14.6	13.3	110
OWL CREEK	8975	5.4	5.5	98	5.4	5.8	93
SOUTH PASS	9040	11.7	16.7	70	14.0	18.3	77
ST. LAWRENCE ALT	8620	5.5	7.3	75	8.9	8.7	102
TOGWOTEE PASS	9580	26.7	24.9	107	28.9	24.6	117
TOWNSEND CREEK	8700	8.2	8.7	94	10.8	11.5	94
YOUNTS PEAK	8350	18.0	17.2	105	15.6	16.1	97
Basin wide percent of average				92			97
SHOSHONE RIVER BASIN (WYOMING)							
BLACKWATER	9780	24.7	24.6	100	22.2	20.5	108
EVENING STAR	9200	29.8	29.8	100	30.7	25.2	122
MARQUETTE	8760	6.5	8.9	73	8.4	9.6	88
SYLVAN LAKE	8420	19.9	22.6	88	22.1	20.9	106
SYLVAN ROAD	7120	13.8	13.0	106	18.6	17.7	105
YOUNTS PEAK	8350	18.0	17.2	105	15.6	16.1	97
Basin wide percent of average				97			107
BIGHORN RIVER BASIN (WYOMING)							
BALD MTN.	9380	18.8	19.6	96	15.0	17.2	87
BEAR TRAP MEADOW	8200	9.3	5.2	179	9.8	8.1	121
BLACKWATER	9780	24.7	24.6	100	22.2	20.5	108
BONE SPRINGS DIV	9350	17.5	16.2	108	14.2	14.5	98
EVENING STAR	9200	29.8	29.8	100	30.7	25.2	122
GRAVE SPRINGS	8550	9.4	9.4	100	10.2	9.6	106
KIRWIN	9550	12.6	11.3	112	13.9	11.1	125
MARQUETTE	8760	6.5	8.9	73	8.4	9.6	88
MIDDLE POWDER	7760	11.5	11.7	98	10.1	12.2	83
OWL CREEK	8975	5.4	5.5	98	5.4	5.8	93
POWDER RIVER PASS	9480	12.5	10.8	116	14.5	12.2	119
SHELL CREEK	9580	16.8	14.7	114	16.0	13.2	121
SYLVAN LAKE	8420	19.9	22.6	88	22.1	20.9	106
SYLVAN ROAD	7120	13.8	13.0	106	18.6	17.7	105
TIMBER CREEK	7950	4.6	5.8	79	8.3	7.2	115
YOUNTS PEAK	8350	18.0	17.2	105	15.6	16.1	97
Basin wide percent of average				102			106

Archive Data From 1-OCT Through 30-SEP
Plotted 03/31/2009 09:56



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

SE_AVG Snow Water Equivalent Average (inches)

SE Snow Water Equivalent (inches)

2009

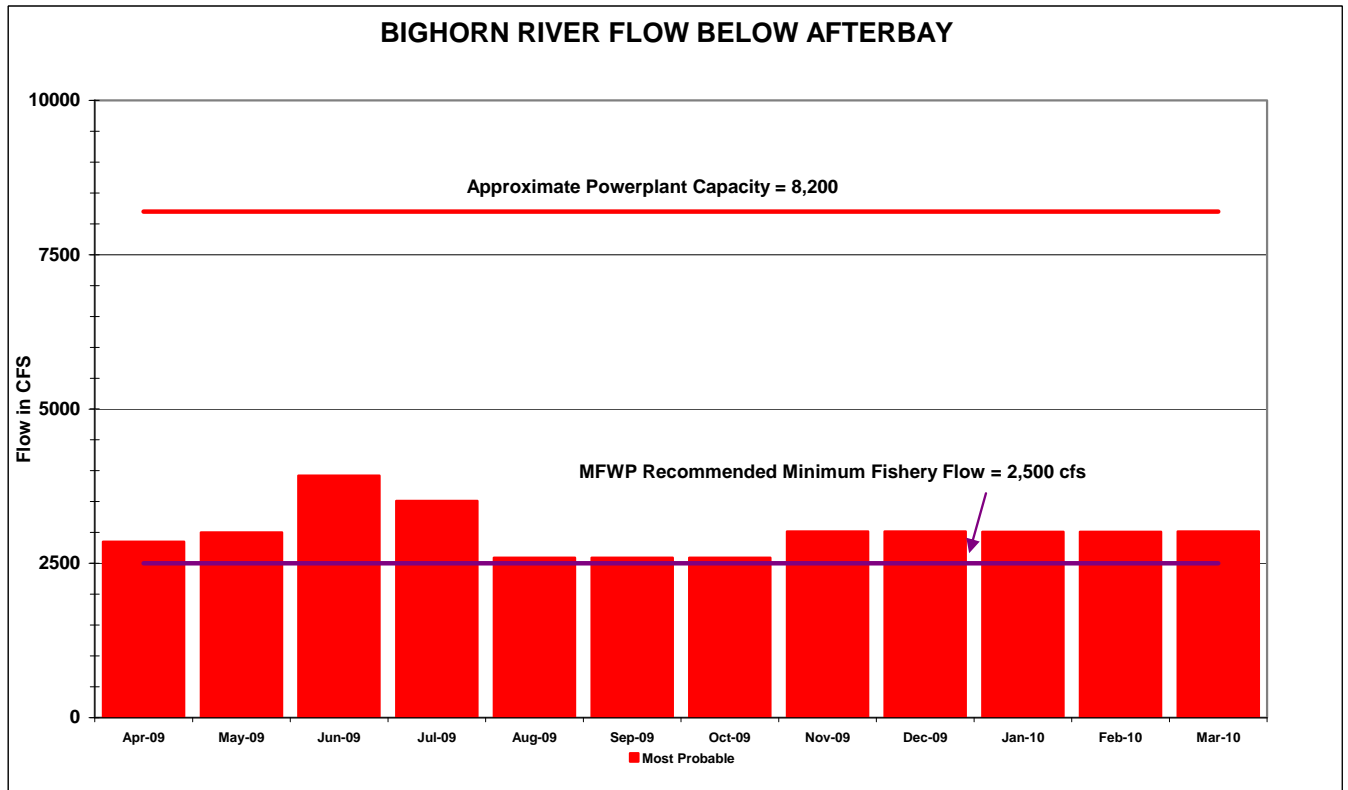
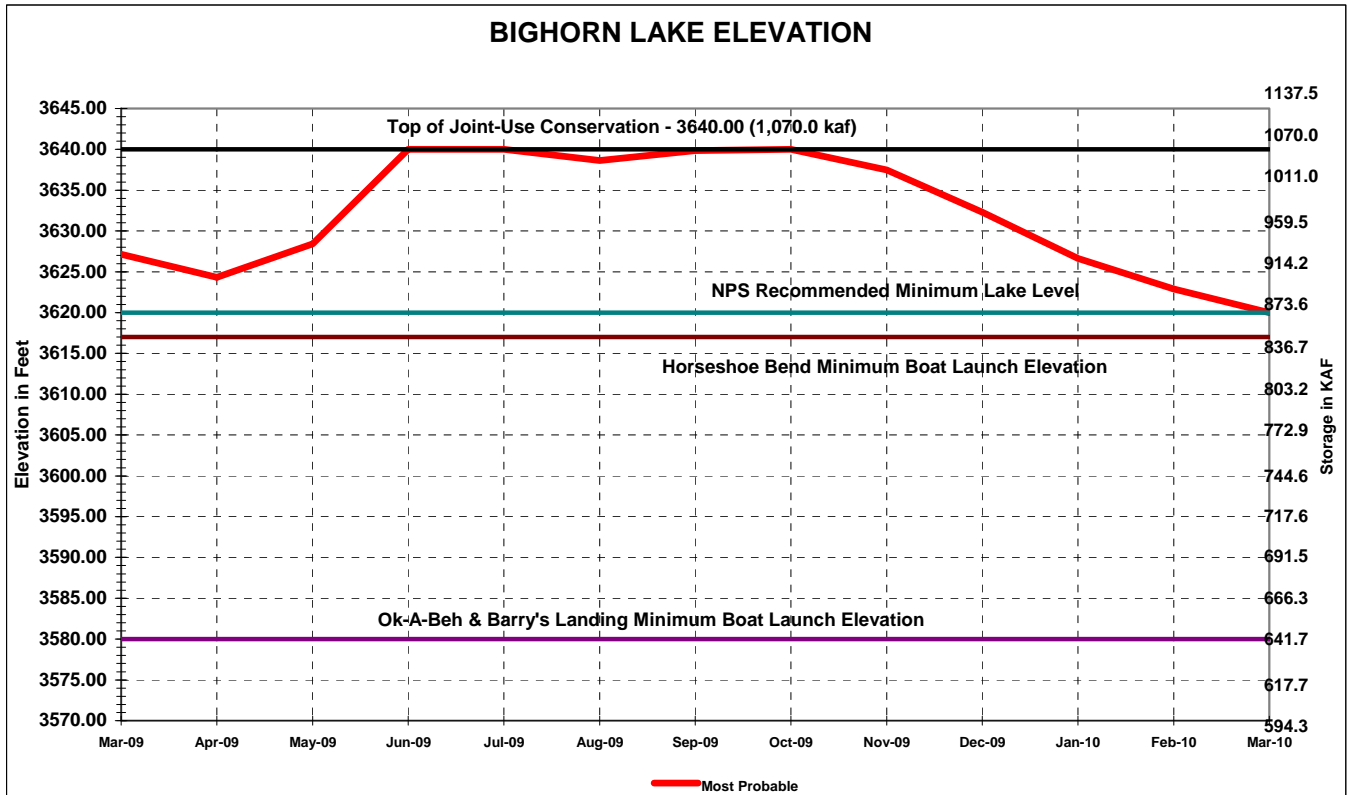
2009 2008

BHXAOP V1.12 Run: 06-Apr-2009 14:55
 Based on Most Probable Inflow Forecast

BIGHORN LAKE MONTHLY OPERATIONS

Bighorn Reservoir		Initial Cont 933.0 kaf Elev 3627.15 ft				Maximum Cont 1328.4 kaf Elev 3657.00 ft				Minimum Cont 493.6 kaf Elev 3547.00 ft				Total
	2009	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
Boysen Release	kaf	47.6	83.8	113.0	95.8	69.5	56.5	55.4	53.6	55.4	55.4	50.1	55.4	791.5
Boysen Release	cfs	800	1363	1899	1558	1130	950	901	901	901	901	902	901	
Buffalo Bill Riv Flo	kaf	24.4	80.4	131.9	128.4	85.2	78.9	26.2	25.4	21.5	21.5	19.4	21.5	664.7
Buffalo Bill Riv Flo	cfs	410	1308	2217	2088	1386	1326	426	427	350	350	349	350	
Station Gain	kaf	69.4	76.9	136.4	15.1	10.4	48.3	79.7	65.3	47.3	50.1	61.9	81.2	742.0
Monthly Inflow	kaf	141.4	241.1	381.3	239.3	165.1	183.7	161.3	144.3	124.2	127.0	131.4	158.1	2198.2
Monthly Inflow	cfs	2376	3921	6408	3892	2685	3087	2623	2425	2020	2065	2366	2571	
Turbine Release	kaf	166.0	204.8	256.0	239.3	181.9	168.9	159.3	175.1	181.0	180.9	163.4	181.0	2257.6
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	166.0	204.8	256.0	239.3	181.9	168.9	159.3	175.1	181.0	180.9	163.4	181.0	2257.6
Total Release	cfs	2790	3331	4302	3892	2958	2838	2591	2943	2944	2942	2942	2944	
Spring Flow	kaf	4.2	4.3	4.2	4.3	4.3	4.2	4.3	4.2	4.3	4.3	3.9	4.3	50.8
Irrigation Reqmnt	kaf	0.6	24.6	26.8	27.7	26.8	18.8	4.1	0.0	0.0	0.0	0.0	0.0	129.4
Afterbay Rels	kaf	170.2	209.1	260.2	243.6	186.2	173.1	163.6	179.3	185.3	185.2	167.3	185.3	2308.4
Afterbay Rels	cfs	2860	3401	4373	3962	3028	2909	2661	3013	3014	3012	3012	3014	
River Release	kaf	169.6	184.5	233.4	215.9	159.4	154.3	159.5	179.3	185.3	185.2	167.3	185.3	2179.0
River Release	cfs	2850	3001	3922	3511	2592	2593	2594	3013	3014	3012	3012	3014	
Min Release	kaf	169.6	184.5	148.8	153.7	153.7	148.8	153.7	148.8	153.7	153.7	138.8	153.7	1861.5
End-Month Targets	kaf			1070.0				1070.0					873.6	
End-Month Content	kaf	908.4	944.7	1070.0	1070.0	1053.2	1068.0	1070.0	1039.2	982.4	928.5	896.5	873.6	
End-Month Elevation	ft	3624.32	3628.43	3640.00	3640.00	3638.64	3639.84	3640.00	3637.47	3632.30	3626.64	3622.88	3620.00	
Net Change Content	kaf	-24.6	36.3	125.3	0.0	-16.8	14.8	2.0	-30.8	-56.8	-53.9	-32.0	-22.9	-59.4
Yellowtail Power	2009	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Turbine Release	kaf	166.0	204.8	256.0	239.3	181.9	168.9	159.3	175.1	181.0	180.9	163.4	181.0	2257.6
Generation	gwh	64.940	80.278	103.005	98.119	74.400	69.063	65.298	71.471	72.906	71.594	63.745	69.939	904.758
End-Month Power Cap	mw	272.2	276.1	287.5	287.5	286.1	287.4	287.5	285.0	279.9	274.4	270.9	268.2	
% Max Gen		31	37	50	46	35	33	30	34	34	33	33	33	
Ave kwh/af		391	392	402	410	409	409	410	408	403	396	390	386	401
Upstream Generation	gwh	11.466	29.927	32.279	32.025	29.664	27.499	13.197	11.678	10.682	10.624	9.543	10.534	229.118
Total Generation	gwh	76.406	110.205	135.284	130.144	104.064	96.562	78.495	83.149	83.588	82.218	73.288	80.473	1133.876

BIGHORN LAKE



WATER YEAR 2009