BUREAU OF RECLAMATION

# Boysen Reservoir Operations

## Water Supply Forecasts and Reservoir Operations

## Prepared January 2023

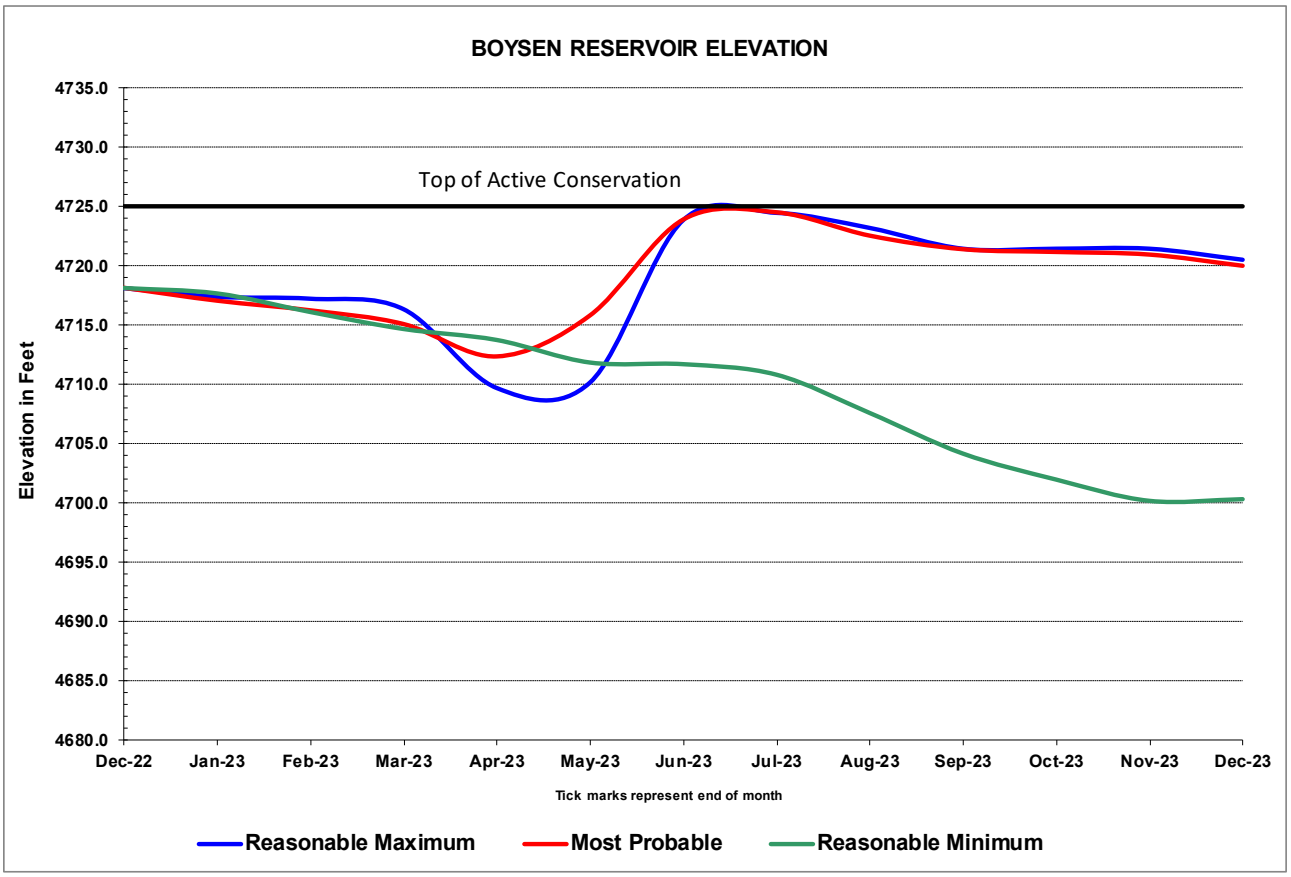
**End of December Elevation and Storage:** 4718.16 FT & 616,590 Acre-Feet

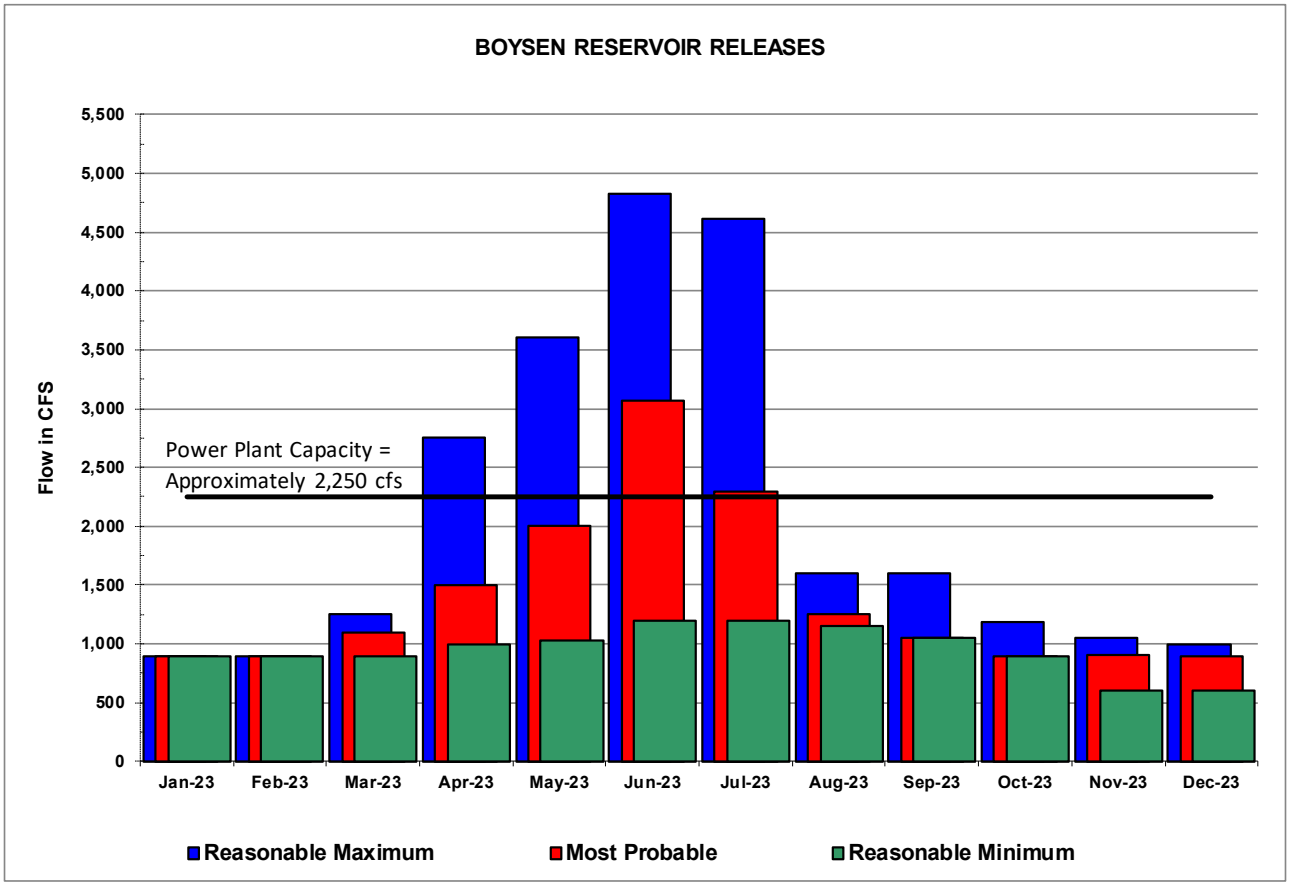
**Actual Inflows (1,000 Acre-Feet):**

| Month | Inflow | Percent of Normal |
|---|---|---|
| January 22 | 38.2 | 101 |
| February 22 | 32.1 | 84 |
| March 22 | 47.7 | 89 |
| April 22 | 37.4 | 74 |
| May 22 | 88.1 | 63 |
| June 22 | 285.6 | 102 |
| July 22 | 77.3 | 58 |
| August 22 | 43.9 | 89 |
| September 22 | 41.7 | 91 |
| October 22 | 53.3 | 96 |
| November 22 | 45.6 | 93 |
| December 22 | 39.6 | 101 |

Bureau of Reclamation
Missouri Basin Region
Wyoming Area Office
Mills, Wyoming

# BOYSEN RESERVOIR



BOYAOP V1.48 Run: 06-Jan-2023 10:39
Based on Expected April-July inflow of 700 af

BOYSEN RESERVOIR MONTHLY OPERATIONS

| Boysen Reservoir | | Initial Cont | 616.6 kaf | | Maximum Cont | 892.2 kaf | | Minimum Cont | 219.2 kaf | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Elev | 4718.16 ft | | Elev | 4732.20 ft | | Elev | 4685.00 ft | | | |
| | 2023 | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
| Monthly Inflow | kaf | 37.4 | 37.0 | 49.5 | 48.5 | 175.0 | 323.4 | 153.2 | 39.5 | 41.6 | 51.1 | 49.6 | 38.5 | 1044.3 |
| Monthly Inflow | cfs | 608 | 666 | 805 | 815 | 2846 | 5435 | 2492 | 642 | 699 | 831 | 834 | 626 | |
| Turbine Release | kaf | 55.3 | 50.0 | 67.6 | 89.3 | 123.0 | 134.6 | 132.9 | 76.9 | 62.5 | 55.3 | 39.0 | 55.3 | 941.7 |
| Bypass/Spill/Waste | kaf | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 47.6 | 8.4 | 0.0 | 0.0 | 0.0 | 14.6 | 0.0 | 70.6 |
| Total Release | kaf | 55.3 | 50.0 | 67.6 | 89.3 | 123.0 | 182.2 | 141.3 | 76.9 | 62.5 | 55.3 | 53.6 | 55.3 | 1012.3 |
| Total Release | cfs | 899 | 900 | 1099 | 1501 | 2000 | 3062 | 2298 | 1251 | 1050 | 899 | 901 | 899 | |
| End-Month Content | kaf | 598.7 | 585.7 | 567.6 | 526.8 | 578.8 | 720.0 | 731.9 | 694.5 | 673.6 | 669.4 | 665.4 | 648.6 | |
| End-Month Elevation | ft | 4717.08 | 4716.27 | 4715.12 | 4712.40 | 4715.84 | 4723.89 | 4724.50 | 4722.54 | 4721.40 | 4721.17 | 4720.95 | 4720.01 | |
| Net Change Content | kaf | -17.9 | -13.0 | -18.1 | -40.8 | 52.0 | 141.2 | 11.9 | -37.4 | -20.9 | -4.2 | -4.0 | -16.8 | 32.0 |

| Boysen Power Plant | 2023 | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turbine Release | kaf | 55.3 | 50.0 | 67.6 | 89.3 | 123.0 | 134.6 | 132.9 | 76.9 | 62.5 | 55.3 | 39.0 | 55.3 | 941.7 |
| Turbine Release | cfs | 899 | 900 | 1099 | 1501 | 2000 | 2262 | 2161 | 1251 | 1050 | 899 | 655 | 899 | |
| Generation | gwh | 4.746 | 4.253 | 5.675 | 7.311 | 10.041 | 11.517 | 11.906 | 6.934 | 5.573 | 4.913 | 3.457 | 4.876 | 81.202 |
| Max Generation | gwh | 11.904 | 8.817 | 11.904 | 11.520 | 11.904 | 11.520 | 11.904 | 11.904 | 11.520 | 11.904 | 3.456 | 11.904 | 130.161 |
| % Max Generation | % | 40 | 48 | 48 | 63 | 84 | 100 | 100 | 58 | 48 | 41 | 100 | 41 | |
| Ave kwh/af | | 86 | 85 | 84 | 82 | 82 | 86 | 90 | 90 | 89 | 89 | 89 | 88 | 86 |
| End-Month Power Cap | mw | 16 | 16 | 16 | 15 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | |

BOYAOP V1.48 Run: 06-Jan-2023 10:39
Based on reasonable minimum April-July inflow of 300 kaf

BOYSEN RESERVOIR MONTHLY OPERATIONS

| Boysen Reservoir | | Initial Cont | 616.6 kaf | | Maximum Cont | 892.2 kaf | | Minimum Cont | 219.2 kaf | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Elev | 4718.16 ft | | Elev | 4732.20 ft | | Elev | 4685.00 ft | | | |
| | 2023 | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
| Monthly Inflow | kaf | 29.7 | 27.6 | 41.2 | 36.0 | 108.0 | 105.0 | 49.6 | 27.2 | 36.3 | 34.7 | 37.3 | 31.3 | 563.9 |
| Monthly Inflow | cfs | 483 | 497 | 670 | 605 | 1756 | 1765 | 807 | 442 | 610 | 564 | 627 | 509 | |
| Turbine Release | kaf | 55.3 | 50.0 | 55.3 | 59.5 | 63.0 | 71.4 | 73.8 | 70.7 | 62.5 | 55.3 | 35.7 | 36.9 | 689.4 |
| 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 | 55.3 | 50.0 | 55.3 | 59.5 | 63.0 | 71.4 | 73.8 | 70.7 | 62.5 | 55.3 | 35.7 | 36.9 | 689.4 |
| Total Release | cfs | 899 | 900 | 899 | 1000 | 1025 | 1200 | 1200 | 1150 | 1050 | 899 | 600 | 600 | |
| End-Month Content | kaf | 591.0 | 568.6 | 554.5 | 531.0 | 576.0 | 609.6 | 585.4 | 541.9 | 515.7 | 495.1 | 496.7 | 491.1 | |
| End-Month Elevation | ft | 4716.60 | 4715.19 | 4714.27 | 4712.69 | 4715.66 | 4717.74 | 4716.26 | 4713.43 | 4711.63 | 4710.17 | 4710.29 | 4709.88 | |
| Net Change Content | kaf | -25.6 | -22.4 | -14.1 | -23.5 | 45.0 | 33.6 | -24.2 | -43.5 | -26.2 | -20.6 | 1.6 | -5.6 | -125.5 |

| Boysen Power Plant | 2023 | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turbine Release | kaf | 55.3 | 50.0 | 55.3 | 59.5 | 63.0 | 71.4 | 73.8 | 70.7 | 62.5 | 55.3 | 35.7 | 36.9 | 689.4 |
| Turbine Release | cfs | 899 | 900 | 899 | 1000 | 1025 | 1200 | 1200 | 1150 | 1050 | 899 | 600 | 600 | |
| Generation | gwh | 4.736 | 4.221 | 4.615 | 4.896 | 5.218 | 6.044 | 6.265 | 5.882 | 5.089 | 4.442 | 2.867 | 2.959 | 57.234 |
| Max Generation | gwh | 11.904 | 8.817 | 11.904 | 11.520 | 11.904 | 11.520 | 11.904 | 11.904 | 11.520 | 11.904 | 11.520 | 11.904 | 138.225 |
| % Max Generation | % | 40 | 48 | 39 | 43 | 44 | 52 | 53 | 49 | 44 | 37 | 25 | 25 | |
| Ave kwh/af | | 86 | 84 | 83 | 82 | 83 | 85 | 85 | 83 | 81 | 80 | 80 | 80 | 83 |
| End-Month Power Cap | mw | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 15 | 15 | 15 | 15 | |

BOYAOP V1.48 Run: 06-Jan-2023 10:39
Based on reasonable maximum April-July inflow of 1100 kaf

BOYSEN RESERVOIR MONTHLY OPERATIONS

| Boysen Reservoir | | Initial Cont | 616.6 kaf | | Maximum Cont | 892.2 kaf | | Minimum Cont | 219.2 kaf | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Elev | 4718.16 ft | | Elev | 4732.20 ft | | Elev | 4685.00 ft | | | |
| | 2023 | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
| Monthly Inflow | kaf | 43.1 | 47.4 | 62.7 | 65.3 | 227.8 | 511.2 | 295.6 | 74.3 | 63.0 | 72.6 | 62.3 | 44.7 | 1570.0 |
| Monthly Inflow | cfs | 701 | 853 | 1020 | 1097 | 3705 | 8591 | 4807 | 1208 | 1059 | 1181 | 1047 | 727 | |
| Turbine Release | kaf | 55.3 | 50.0 | 76.9 | 136.5 | 138.2 | 138.4 | 135.4 | 98.7 | 95.5 | 72.6 | 62.3 | 61.5 | 1121.3 |
| Bypass/Spill/Waste | kaf | 0.0 | 0.0 | 0.0 | 27.1 | 83.2 | 148.5 | 148.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 407.1 |
| Total Release | kaf | 55.3 | 50.0 | 76.9 | 163.6 | 221.4 | 286.9 | 283.7 | 98.7 | 95.5 | 72.6 | 62.3 | 61.5 | 1528.4 |
| Total Release | cfs | 899 | 900 | 1251 | 2749 | 3601 | 4822 | 4614 | 1605 | 1605 | 1181 | 1047 | 1000 | |
| End-Month Content | kaf | 604.4 | 601.8 | 587.6 | 489.3 | 495.7 | 720.0 | 731.9 | 707.5 | 675.0 | 675.0 | 675.0 | 658.2 | |
| End-Month Elevation | ft | 4717.43 | 4717.27 | 4716.39 | 4709.75 | 4710.21 | 4723.89 | 4724.50 | 4723.23 | 4721.48 | 4721.48 | 4721.48 | 4720.55 | |
| Net Change Content | kaf | -12.2 | -2.6 | -14.2 | -98.3 | 6.4 | 224.3 | 11.9 | -24.4 | -32.5 | 0.0 | 0.0 | -16.8 | 41.6 |

| Boysen Power Plant | 2023 | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turbine Release | kaf | 55.3 | 50.0 | 76.9 | 136.5 | 138.2 | 138.4 | 135.4 | 98.7 | 95.5 | 72.6 | 62.3 | 61.5 | 1121.3 |
| Turbine Release | cfs | 899 | 900 | 1251 | 2294 | 2248 | 2326 | 2202 | 1605 | 1605 | 1181 | 1047 | 1000 | |
| Generation | gwh | 4.754 | 4.280 | 6.512 | 10.945 | 10.472 | 11.406 | 11.904 | 8.885 | 8.479 | 6.431 | 5.530 | 5.440 | 95.038 |
| Max Generation | gwh | 5.952 | 8.817 | 11.904 | 11.520 | 11.904 | 11.520 | 11.904 | 11.904 | 11.520 | 11.904 | 11.520 | 11.904 | 132.273 |
| % Max Generation | % | 80 | 49 | 55 | 95 | 88 | 99 | 100 | 75 | 74 | 54 | 48 | 46 | |
| Ave kwh/af | | 86 | 86 | 85 | 80 | 76 | 82 | 88 | 90 | 89 | 89 | 89 | 88 | 85 |
| End-Month Power Cap | mw | 16 | 16 | 16 | 14 | 14 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | |