

RECLAMATION

Managing Water in the West

WIND RIVER BASIN RESERVOIR OPERATIONS

Water Supply Forecasts and Reservoir Operations

Prepared July 2018

Present Storage: Bull Lake: 139,440 acre-feet

Pilot Butte: 29,334 acre-feet

Bull Lake Actual Inflows (1,000 acre-feet):

<u>Month</u>	<u>Inflow</u>	<u>Percent of Normal</u>
July 17	81.2	185
August 17	30.5	162
September 17	18.0	190
October 17	8.3	135
November 17	6.5	201
December 17	4.1	168
January 18	2.9	136
February 18	2.3	138
March 18	2.7	135
April 18	5.6	138
May 18	48.4	169
June 18	77.9	125

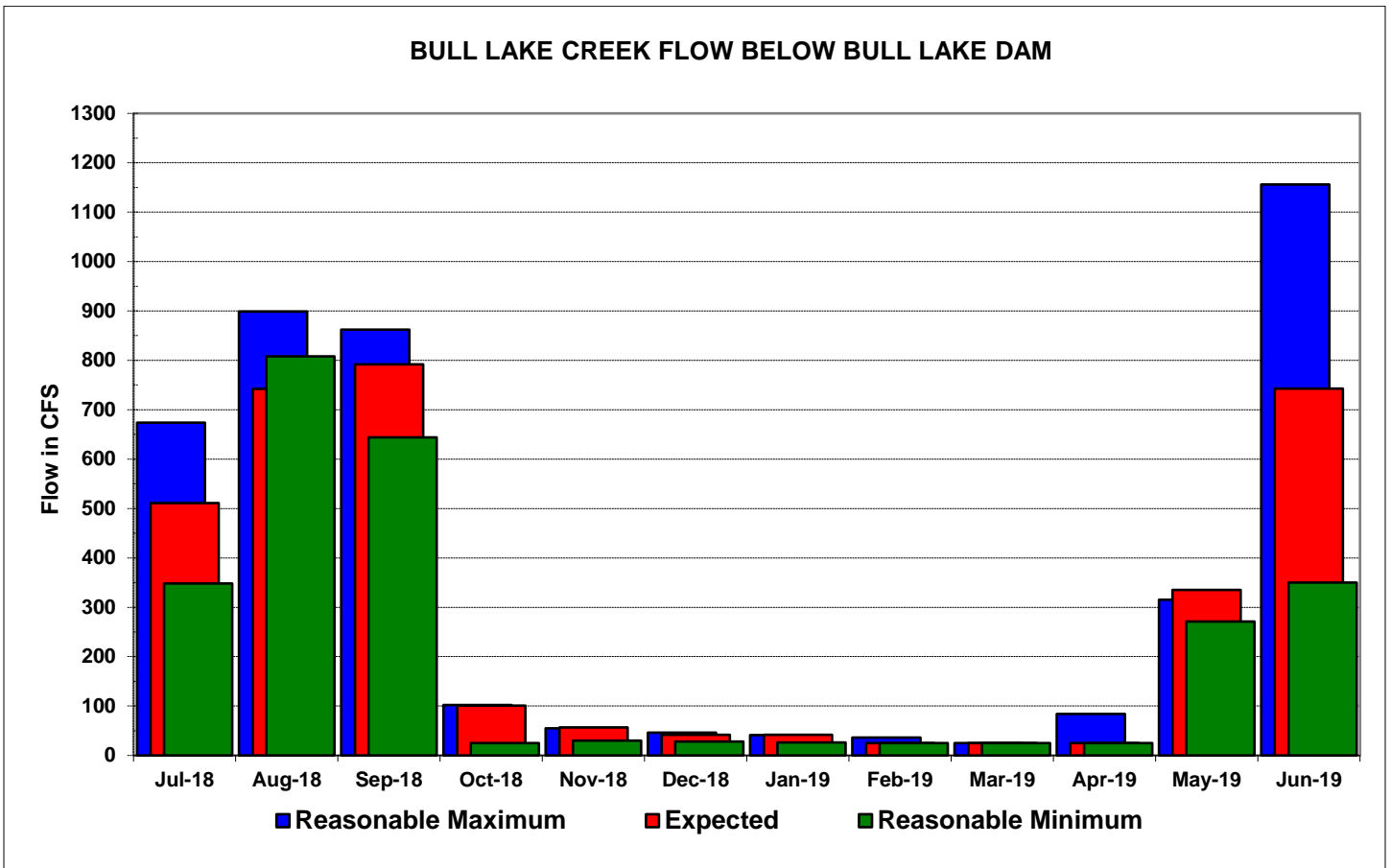
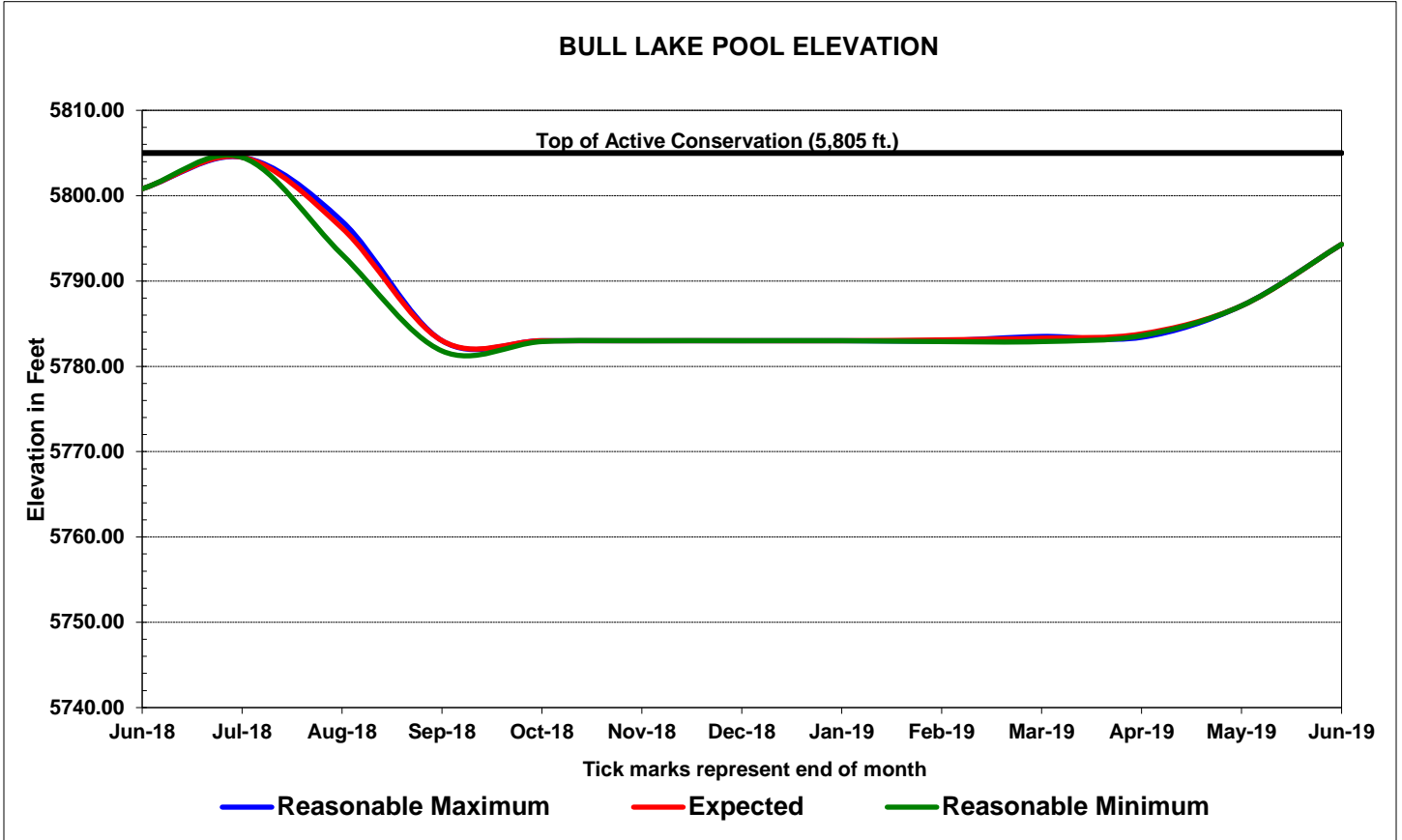
Wind River above Bull Lake Creek Actual Flows (1,000 acre-feet):

<u>Month</u>	<u>Inflow</u>	<u>Percent of Normal</u>
July 17	135.6	122
August 17	28.5	57
September 17	13.8	41
October 17	49.5	154
November 17	36.0	157
December 17	n/a	n/a
January 18	n/a	n/a
February 18	n/a	n/a
March 18	n/a	n/a
April 18	n/a	n/a
May 18	215.6	236
June 18	367.1	199



U.S Department of the Interior
 Bureau of Reclamation
 Great Plains Region
 Wyoming Area Office
 Mills, Wyoming

BULL LAKE RESERVOIR



Based on a expected April-July runoff of: Bull Lake - 175 kaf / Wind River ab Bull Lake Creek - 750 kaf / Riverton - 534 kaf
 This plan assumes an annual demand of 165 KAF for the North Canal and 186 KAF for the Pilot Canal

RIVERTON PROJECT OPERATING PLAN
 Year Beginning Jul 2018

Bull Lake Reservoir Operations		Initial Content 139.4 Kaf						Operating Limits: Max 151.7 Kaf, 5804.76 Ft. Min 20.0 Kaf, 5750.93 Ft.						Total
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Reservoir Inflow	kaf	43.0	20.2	10.5	6.2	3.4	2.6	2.6	1.7	2.0	2.9	29.4	64.2	188.7
Total Dam Release	kaf	31.4	45.6	47.1	6.2	3.4	2.6	2.6	1.4	1.5	1.5	20.6	44.2	208.1
Total Dam Release	cfs	511.	742.	792.	101.	57.	42.	42.	25.	25.	25.	335.	743.	
Excess Release	kaf	29.9	15.9	11.3	4.7	1.9	1.1	1.1	0.0	0.0	0.0	19.0	42.7	127.6
End-month Content	kaf	151.0	125.6	89.0	89.0	89.0	89.0	89.0	89.3	89.8	91.2	100.0	120.0	
End-month Elevation	ft	5804.5	5796.2	5783.0	5783.0	5783.0	5783.0	5783.0	5783.1	5783.3	5783.8	5787.1	5794.3	
BLR Net Change	kaf	11.6	-25.4	-36.6	0.0	0.0	0.0	0.0	0.3	0.5	1.4	8.8	20.0	-19.4
Wind River		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Flow abv BL Creek	kaf	133.1	52.2	36.1	34.8	25.0	18.9	16.4	15.3	17.7	29.1	105.4	175.3	659.3
Crowheart Gage Flow	kaf	164.5	97.8	83.2	41.0	28.4	21.5	19.0	16.7	19.2	30.6	126.0	219.5	867.4
Flow Below Div Dam	kaf	83.3	36.7	26.6	24.0	28.4	21.5	19.0	16.7	19.2	11.6	71.3	154.8	513.1
Gain/Return Flow	kaf	7.4	6.1	5.4	0.0	0.0	0.0	0.0	0.0	0.0	4.8	7.4	7.1	38.2
Indian Irrigation	kaf	6.1	5.5	4.5	1.2	0.0	0.0	0.0	0.0	0.0	1.8	6.1	6.0	31.3
LeClair/Riverton	kaf	27.2	21.1	15.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	18.8	24.2	109.8
LeC/Riv Shortage	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
Riverton Gage Flow	cfs	932.4	263.7	209.9	370.3	477.3	349.7	309.0	300.7	312.9	185.9	873.4	2214.8	
Wyoming Canal		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Total Diversion	kaf	81.2	61.1	56.6	17.0	0.0	0.0	0.0	0.0	0.0	19.0	54.7	64.7	354.3
North Canal Flow	kaf	36.5	30.9	27.0	3.4	0.0	0.0	0.0	0.0	0.0	9.8	26.4	31.2	165.2
North Canal Shortage	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
Pilot Butte Reservoir Operations		Initial Content 29.3 Kaf						Operating Limits: Max 29.9 Kaf, 5459.98 Ft. Min 10.0 Kaf, 5433.49 Ft.						Total
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Reservoir Inflow	kaf	44.7	30.2	29.6	13.6	0.0	0.0	0.0	0.0	0.0	9.2	28.3	33.5	189.1
Power Generated	mwh	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
Pilot Canal Release	kaf	43.9	37.4	33.3	3.4	0.0	0.0	0.0	0.0	0.0	6.7	28.0	33.1	185.8
Pilot Canal Shortage	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
End-month Content	kaf	29.6	22.0	18.0	28.0	27.8	27.7	27.6	27.5	27.3	29.6	29.6	29.6	
PBR Net Change	kaf	0.3	-7.6	-4.0	10.0	-0.2	-0.1	-0.1	-0.1	-0.2	2.3	0.0	0.0	0.3
End-month Elevation	ft	5459.6	5450.7	5445.5	5457.8	5457.6	5457.5	5457.4	5457.3	5457.0	5459.6	5459.6	5459.6	

Based on a reasonable minimum April-July runoff of: Bull Lake - 165 kaf / Wind River ab Bull Lake Creek - 700 kaf / Riverton - 481 kaf
 This plan assumes an annual demand of 165 KAF for the North Canal and 185 KAF for the Pilot Canal

RIVERTON PROJECT OPERATING PLAN
 Year Beginning July 2018

Bull Lake Reservoir Operations		Initial Content 139.4 Kaf						Operating Limits: Max 151.9 Kaf, 5804.82 Ft. Min 20.0 Kaf, 5750.93 Ft.						Total
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Reservoir Inflow	kaf	33.0	15.3	7.5	4.5	2.0	1.7	1.6	1.2	1.6	3.2	26.1	40.8	138.5
Total Dam Release	kaf	21.4	49.7	38.3	1.5	1.8	1.7	1.6	1.4	1.5	1.5	16.7	20.8	157.9
Total Dam Release	cfs	348.	808.	644.	25.	30.	28.	26.	25.	25.	25.	271.	350.	
Excess Release	kaf	4.6	0.0	0.0	0.0	0.3	0.2	0.1	0.0	0.0	0.0	15.1	19.3	39.6
End-month Content	kaf	151.0	116.6	85.8	88.8	89.0	89.0	89.0	88.8	88.9	90.6	100.0	120.0	
End-month Elevation	ft	5804.5	5793.1	5781.8	5782.9	5783.0	5783.0	5783.0	5782.9	5782.9	5783.6	5787.1	5794.3	
BLR Net Change	kaf	11.6	-34.4	-30.8	3.0	0.2	0.0	0.0	-0.2	0.1	1.7	9.4	20.0	-19.4
Wind River		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Flow abv BL Creek	kaf	83.1	36.1	29.2	29.0	21.4	17.2	15.0	13.7	16.5	24.0	74.8	102.8	462.8
Crowheart Gage Flow	kaf	104.5	85.8	67.5	30.5	23.2	18.9	16.6	15.1	18.0	25.5	91.5	123.6	620.7
Flow Below Div Dam	kaf	30.3	21.7	15.6	5.2	23.2	18.9	16.6	15.1	18.0	6.8	36.8	58.9	267.1
Gain/Return Flow	kaf	7.4	6.1	5.4	0.0	0.0	0.0	0.0	0.0	0.0	4.8	7.4	7.1	38.2
Indian Irrigation	kaf	6.1	2.5	1.8	0.9	0.0	0.0	0.0	0.0	0.0	1.8	6.1	6.0	25.2
LeClair/Riverton	kaf	27.2	21.1	15.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	18.8	24.2	109.8
LeC/Riv Shortage	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
Riverton Gage Flow	cfs	70.0	70.0	70.0	70.0	389.5	307.4	270.0	271.7	293.3	105.4	312.5	603.2	
Wyoming Canal		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Total Diversion	kaf	74.2	64.1	51.9	25.3	0.0	0.0	0.0	0.0	0.0	18.7	54.7	64.7	353.6
North Canal Flow	kaf	36.5	30.9	27.0	3.4	0.0	0.0	0.0	0.0	0.0	9.8	26.4	31.2	165.2
North Canal Shortage	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
Pilot Butte Reservoir Operations		Initial Content 29.3 Kaf						Operating Limits: Max 29.9 Kaf, 5459.98 Ft. Min 10.0 Kaf, 5433.49 Ft.						Total
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Reservoir Inflow	kaf	37.7	33.2	24.9	21.9	0.0	0.0	0.0	0.0	0.0	8.9	28.3	33.5	188.4
Power Generated	mwh	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
Pilot Canal Release	kaf	43.9	37.4	32.6	3.4	0.0	0.0	0.0	0.0	0.0	6.7	28.0	33.1	185.1
Pilot Canal Shortage	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
End-month Content	kaf	22.6	18.0	10.0	28.3	28.1	28.0	27.9	27.8	27.6	29.6	29.6	29.6	
PBR Net Change	kaf	-6.7	-4.6	-8.0	18.3	-0.2	-0.1	-0.1	-0.1	-0.2	2.0	0.0	0.0	0.3
End-month Elevation	ft	5451.5	5445.5	5433.5	5458.2	5458.0	5457.9	5457.7	5457.6	5457.4	5459.6	5459.6	5459.6	

Based on a reasonable maximum April-July runoff of: Bull Lake - 185 kaf / Wind River ab Bull Lake Creek - 800 kaf / Riverton - 594 kaf
 This plan assumes an annual demand of 165 KAF for the North Canal and 186 KAF for the Pilot Canal

RIVERTON PROJECT OPERATING PLAN

Year Beginning July 2018

Bull Lake Reservoir Operations		Initial Content		139.4 Kaf		Operating Limits: Max		151.9 Kaf, 5804.82 Ft.		Min		20.0 Kaf, 5750.93 Ft.		
-----		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
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Reservoir Inflow	kaf	53.0	32.2	12.4	6.3	3.3	2.8	2.5	2.0	2.8	4.9	29.2	88.8	240.2
Total Dam Release	kaf	41.4	55.3	51.3	6.3	3.3	2.8	2.5	2.0	1.5	5.0	19.4	68.8	259.6
Total Dam Release	cfs	674.	899.	862.	102.	55.	46.	41.	36.	25.	84.	315.	1156.	
Excess Release	kaf	39.9	40.9	23.8	4.8	1.8	1.3	1.0	0.6	0.0	0.0	14.2	63.8	192.0
End-month Content	kaf	151.0	127.9	89.0	89.0	89.0	89.0	89.0	89.0	90.3	90.2	100.0	120.0	
End-month Elevation	ft	5804.5	5797.0	5783.0	5783.0	5783.0	5783.0	5783.0	5783.0	5783.5	5783.4	5787.1	5794.3	
BLR Net Change	kaf	11.6	-23.1	-38.9	0.0	0.0	0.0	0.0	0.0	1.3	-0.1	9.8	20.0	-19.4
Wind River		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
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Flow abv BL Creek	kaf	183.1	78.6	44.5	36.1	25.2	20.4	18.9	16.1	20.2	26.2	121.5	306.1	896.9
Crowheart Gage Flow	kaf	224.5	133.9	95.8	42.4	28.5	23.2	21.4	18.1	21.7	31.2	140.9	374.9	1156.5
Flow Below Div Dam	kaf	143.3	65.2	46.8	25.4	28.5	23.2	21.4	18.1	21.7	12.2	86.2	310.2	802.2
Gain/Return Flow	kaf	7.4	6.1	5.4	0.0	0.0	0.0	0.0	0.0	0.0	4.8	7.4	7.1	38.2
Indian Irrigation	kaf	6.1	5.5	4.5	1.2	0.0	0.0	0.0	0.0	0.0	1.8	6.1	6.0	31.3
LeClair/Riverton	kaf	27.2	21.1	15.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	18.8	24.2	109.8
LeC/Riv Shortage	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
Riverton Gage Flow	cfs	1908.4	727.2	549.4	393.1	479.0	377.3	348.0	325.9	353.5	196.2	1115.6	4826.4	
Wyoming Canal		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
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Total Diversion	kaf	81.2	68.7	49.0	17.0	0.0	0.0	0.0	0.0	0.0	19.0	54.7	64.7	354.3
North Canal Flow	kaf	36.5	30.9	27.0	3.4	0.0	0.0	0.0	0.0	0.0	9.8	26.4	31.2	165.2
North Canal Shortage	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
Pilot Butte Reservoir Operations		Initial Content		29.3 Kaf		Operating Limits: Max		29.9 Kaf, 5459.98 Ft.		Min		1.0 Kaf, 5413.39 Ft.		
-----		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
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Reservoir Inflow	kaf	44.7	37.8	22.0	13.6	0.0	0.0	0.0	0.0	0.0	9.2	28.3	33.5	189.1
Power Generated	mwh	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
Pilot Canal Release	kaf	43.9	37.4	33.3	3.4	0.0	0.0	0.0	0.0	0.0	6.7	28.0	33.1	185.8
Pilot Canal Shortage	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
End-month Content	kaf	29.6	29.6	18.0	28.0	27.8	27.7	27.6	27.5	27.3	29.6	29.6	29.6	
PBR Net Change	kaf	0.3	0.0	-11.6	10.0	-0.2	-0.1	-0.1	-0.1	-0.2	2.3	0.0	0.0	0.3
End-month Elevation	ft	5459.6	5459.6	5445.5	5457.8	5457.6	5457.5	5457.4	5457.3	5457.0	5459.6	5459.6	5459.6	