## **YELLOWSTONE RIVER COMPACT COMMISSION**

**WYOMING** 

MONTANA

**NORTH DAKOTA** 



## SIXTY-SECOND ANNUAL REPORT 2013

**Yellowstone River** 

## **Compact Commission**

## **Sixty-Second Annual Report**

2013

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<sup>&</sup>lt;sup>1</sup>Wyoming disagrees with the term "Compact Reservoirs" as used throughout this annual report. Wyoming's acceptance of this annual report should not be construed as Wyoming's acceptance of the use of that term.

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<sup>&</sup>lt;sup>1</sup>Wyoming disagrees with the term "Compact Reservoirs" as used throughout this annual report. Wyoming's acceptance of this annual report should not be construed as Wyoming's acceptance of the use of that term.

## **Conversion Factors**

Multiply	Ву	To obtain
	Length	
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
	Area	
acre	4,047	square meter (m <sup>2</sup> )
acre	0.4047	hectare (ha) <sup>1</sup>
acre	0.4047	square hectometer (hm <sup>2</sup> )
acre	0.004047	square kilometer (km <sup>2</sup> )
square mile (mi <sup>2</sup> )	2.590	square kilometer (km <sup>2</sup> )
	Volume	
cubic foot per second per day (ft3/s)/day)	2,447	cubic meter (m <sup>3</sup> )
cubic foot per second per day (ft3/s)/day)	0.0002447	cubic hectometer (hm <sup>3</sup> )
cubic foot (ft <sup>3</sup> )	0.02832	cubic meter (m <sup>3</sup> )
acre-foot (acre-ft)	1,233	cubic meter (m <sup>3</sup> )
acre-foot (acre-ft)	0.001233	cubic hectometer (hm <sup>3</sup> )
acre-foot (acre-ft)	0.000001233	cubic kilometer (km <sup>3</sup> )
	Flow rate	
acre-foot per year (acre-ft/yr)	1,233	cubic meter per year (m <sup>3</sup> /yr)
acre-foot per year (acre-ft/yr)	0.001233	cubic hectometer per year (hm <sup>3</sup> /yr)
acre-foot per year (acre-ft/yr)	0.000001233	cubic kilometer per year (km3/yr)
cubic foot per second (ft <sup>3</sup> /s)	28.32	liter per second (L/s)
cubic foot per second (ft <sup>3</sup> /s)	28.32	cubic decimeter per second (dm <sup>3</sup> /s)
cubic foot per second (ft <sup>3</sup> /s)	0.02832	cubic meter per second (m <sup>3</sup> /s)
feet per year (ft/yr)	0.3048	meter per year (m/yr)
gallon per minute (gal/min)	0.06309	liter per second (L/s)

<sup>1</sup>The unit hectare is used with the International System of Units (SI), which is in common everyday use throughout the world. See: Taylor, B.E., and Thompson, Ambler, eds., 2008, The International System of Units (SI): U.S. Department of Commerce, NIST Special Publication 330, 92 p., available online at *http://www.nist.gov/pml/pubs/sp330/*.

## YELLOWSTONE RIVER COMPACT COMMISSION 1608 MOUNTAIN VIEW ROAD RAPID CITY, SOUTH DAKOTA 57702

Honorable Matthew Mead Governor of the State of Wyoming Cheyenne, Wyoming 82002

Honorable Steve Bullock Governor of the State of Montana Helena, Montana 59620

Honorable Jack Dalrymple Governor of the State of North Dakota Bismarck, North Dakota 58501

Dear Governors:

Pursuant to Article III of the Yellowstone River Compact, the Commission submits the following sixty-second annual report of activities for the period ending September 30, 2013.

## Minutes of December 5, 2013

Members of the Yellowstone River Compact Commission convened on December 5, 2013 at 8:30 am at the conference room at The Cody in Cody, WY. In attendance were Mr. Mark Anderson, U.S. Geological Survey (USGS), Chairman and Federal Representative; Ms. Sue Lowry, Wyoming State Engineer's Office (WSEO) and Commissioner for Wyoming; and Mr. Tim Davis, Montana Department of Natural Resources and Conservation (DNRC) and Commissioner for Montana. Also in attendance were Mr. Chris Brown, Wyoming Attorney General's Office; Mr. Loren Smith, Mr. Carmine LoGuidice, and Ms. Jodee Pring, WSEO; Mr. Cory Swanson, Montana attorney General's Office; Mr. Chuck Dalby and Ms. Kim Overcast, DNRC; Ms. Amy Steinmetz, Montana Department of Environmental Quality; Mr. Tim Felchle and Mr. Clayton Jordon, Bureau of Reclamation; Mr. Shaun Stump and Mr. Joe Walksalong, Jr., Northern Cheyenne Tribe; Mr. Lowell Anderson, Cody, WY; and Mr. John Kilpatrick and Mr. Wayne Berkas, USGS.

Mr. Anderson started the meeting by reading a letter from Mr. Steve Bullock, Governor of Montana. "Dear Chairman Anderson: I have appointed Tim Davis, administrator of the Water Resources Division of the Montana Department of Natural Resources and Conservation to be Commissioner for the State of Montana, pursuant to Article 3 of the Yellowstone River Compact Commission, effective immediately." The letter was dated June 19, 2013 (Attachment A). Mr. Anderson welcomed Mr. Davis and asked him for comments.

Mr. Davis thanked Mr. Anderson and said he is looking forward to working with the Commissioners and hearing what everyone has to say, especially given that the Montana versus Wyoming trial wrapped up yesterday.

Mr. Anderson called the meeting to order and presented the agenda. He asked if there were any additions or corrections to the agenda. There were none and the agenda was accepted by both Commissioners.

Mr. Anderson asked Mr. Berkas to report on the progress of the 2012 annual report.

Mr. Berkas replied that he is wrapping up a few issues and hopes to get it to the printer in December and published and mailed in January.

Mr. Berkas distributed a handout showing the operational cost for Fiscal Year (FY) 2014 and the estimated budgets for FY2015 through FY2017. The handout shows the cost for each streamgage in FY2014 is \$15,030 and the cost to prepare the annual report is \$36,600. The total cost for FY2014 is \$111,750. The breakout of this cost is:

\$30,625 for WSEO, \$30,625 for DNRC, and \$50,500 for USGS.

The contributions estimated for FY2015 through FY2017 by agency are as follows:

Year	WSE	DNRC	USGS	Total
FY2015	\$31,600	\$31,600	\$52,540	\$115,740
FY2016	\$32,550	\$32,550	\$54,120	\$119,220
FY2017	\$33,600	\$33,600	\$55,100	\$122,300

The estimated cost increases from FY2015 through FY2017 assume an increase of 3 percent each year. The cost for each FY will not exceed those listed, but the cost might be less.

Mr. Davis made a motion to accept the budget and the motion was seconded by Ms. Lowry.

Mr. Anderson asked if representatives from Montana and Wyoming could share with the Commission information and status of the Montana versus Wyoming case that concluded yesterday (December 4, 2013).

Mr. Swanson (Montana Attorney General's Office) replied that the Montana versus Wyoming trial concluded in Billings, MT on December 4, 2014. The trial lasted about 26 days. There were about 51 witnesses and about 200 exhibits. There is a large transcript and a large record of evidence that has to be compiled, and probably completed in January. The States will then have 45 to 60 days to file an initial brief. The two States will file their briefs simultaneously. A reply brief will be provided 20 to 30 days later. There may be an additional hearing to finalize issues, and then the Special Master will prepare a report, probably in mid-summer. There is a lot of work ahead, but the Special Master's recommendations report should come out in 2014.

Mr. Brown (Wyoming Attorney General's Office) added they are hopeful the report from the Special Master could get to the Supreme Court at the beginning of their 2014 term. But if either State takes exception to the report, which is highly likely, it probably will not get to the Supreme Court until the 2015 term.

Mr. Anderson asked if the two attorneys could address the issue of groundwater/surface water interactions and how it is covered in the Compact.

Mr. Brown replied that the Special Master has already decided that there is an element of groundwater covered by the Compact. So the question becomes, to what degree does groundwater have to be connected in order to be governed by the Compact. This question follows fairly closely with the way western States have struggled with the issue and the issue becomes a line-drawing exercise. How much connection is enough connection? For example, in Montana, for most instances, everything is connected and everything has to be considered. Wyoming does not have any set specific connectivity test.

An issue brought up in the trial was that Montana used a 2002 BLM ground-water model, and they claimed the model could accurately predict streamflow depletions in the Tongue River from coal-bed methane (CBM, or coal-bed-natural gas) pumping. Wyoming's position was that that model wasn't designed for that particular purpose, therefore could not accurately predict streamflow depletions in the Tongue River. The issue is if there are depletions, are the depletions large enough to care about. The Special Master has not given a final idea on whether the depletions have to be material, or can it be any depletion. The Doctrine of Appropriation does not speak to this issue directly, and that is the underlying legal principal that would guide whether or not the Compact covers that type of connection.

Mr. Swanson added that while the current discussion deals with groundwater, groundwater had a priority of 3 or 4 in the overall issues raised in the case.

Mr. Anderson asked if the findings of the Special Master would have implications for the discharge of the responsibilities and duties of the Yellowstone River Compact Commission.

Mr. Brown said it would be difficult to speculate. It might come down to case by case inquiries.

Mr. Anderson asked if the ruling would have implications on western water law.

Mr. Brown replied that he felt this case would not have implications on other areas and compacts in the west. This case is very factual and specific to this Compact.

Mr. Swanson added that future Water Masters doing future interstate cases will read these proceedings, as did the Special Master.

Mr. Brown added that policy makers might use the findings to provide guidance to the Yellowstone River Compact Commission.

Ms. Lowry added that Wyoming is involved with the Bear River Compact, and that compact is very detailed. Someone from Wyoming could provide a presentation to the Yellowstone River Technical Committee in the spring describing how that compact works.

Mr. Davis replied that Montana would be interested. After the ruling from the Special Master is out, Montana is open to discussion about how to administer the Compact between the two States. Perhaps amendments to the Rules and Regulations could be made that would help the Commission move to a point where water is being managed. Also, perhaps we could move the Commission meetings to June, during high water, when we are actually managing water.

Mr. LoGuidice asked if there would again be oral arguments in front of the Supreme Court.

Mr. Brown replied that the two states would have oral arguments in front of the Special Master in May in California. The Special Master will give the Supreme Court his final recommendation. One of the States probably will object to his recommendations, thus there will be oral arguments in front of the Supreme Court, most likely in their 2015 term.

Mr. Anderson asked Mr. Berkas to present streamflow and reservoir conditions.

Mr. Berkas continued with a handout and discussion of streamflow and reservoir conditions through the 2013 water year. Streamflow was normal (normal is within 80 and 120 percent of average) at one gage site and below normal at the other three sites monitored by the Commission. Annual streamflow at Clarks Fork Yellow-stone River at Edgar was 81 percent of average, and ranked 15th lowest of 75 years. The annual streamflow at Bighorn River near Bighorn (adjusted for the flow of the Little Bighorn River and change of contents in Bighorn Lake) was 44 percent of average and ranked 9th lowest of 60 years. The annual streamflow at Tongue River at Miles City was 55 percent of average and ranked 12th lowest of 71 years. The annual streamflow at Powder River near Locate was 49 percent of average and ranked 12th lowest of 75 years. Total adjusted streamflow of the four rivers in water year 2013 was 2,440,700 acre-ft, compared to 3,092,600 acre-ft in water year 2012, and 6,853,100 acre-ft in water year 2011.

Reservoir storage, historically monitored and reported for the Commission, decreased in one reservoir (Boysen Reservoir) and increased in the other six reservoirs (Bighorn Lake, Anchor Reservoir, Bull Lake, Pilot Butte Reservoir, Buffalo Bill Reservoir, and Tongue River Reservoir). The contents and the amounts of decrease are listed in the 2013 annual report. The total usable contents of these reservoirs at the end of water year 2013 was 1,993,000 acre-ft, compared to 1,921,000 acre-ft in water year 2012, and 2,303,000 acre-ft in water year 2011. Storage in other reservoirs in the four river basins at the end of water year 2013 was 364,300 acre-ft, compared to 258,600 acre-ft in water year 2012, and 369,300 acre-ft in water year 2011.

Mr. Anderson asked Wyoming to highlight water administration efforts in 2013.

Ms. Lowry replied that conditions were fairly dry in 2013.

Mr. Smith continued by stating that although mountain snowpack was near 100 percent of average in the Bighorn Basin, very little precipitation occurred between the start of snowmelt runoff and September. Administration and accounting occurred on the Bighorn River and regulation was called for on twelve other tributary streams. Gooseberry Creek, Cottonwood Creek and Owl Creek went into regulation by May 2. Administration began on the Greybull River and Meeteetse Creek by the end of May and reached the year 1893 priority. Shell Creek went into regulation in early July, and water from Shell Reservoir and Adelaide Reservoir were used to meet those needs. Medicine Lodgeand Paint Rock Creek, went into regulation at the end of August. Administration reached the 1896 priority date on Medicine Lodge and Paint Rock Creeks. Flow on Owl Creek got so low that only some of the 1868 priority date tribal rights were met. Little Popo Agie River went into regulation in late July, and releases from Christina Reservoir met their needs. While there was no administration on the Little Wind River system, there were some extreme shortages and Washakie Reservoir was depleted. The Little Wind River system was out of water by the end of August.

The Middle Fork Popo Agie River area did not go into administration for the second straight year. The folks in that area decided to get along and divvy up the water themselves. That way, they have more flexibility than if the system were to be regulated by the State Engineer's Office.

Mr. LoGuidice discussed the Tongue and Powder Basins. Administration began on Little Goose Creek on July 1, Big Goose Creek on July 16, Little Tongue River on July 22, and Wolf Creek on July 22. These dates are typical for the Tongue River basin. In the Powder River basin, regulation occurred on Clear Creek on July 11, Rock Creek on July 12, French Creek on July 15, and Crazy Woman Creek on July 22. Piney Creek went into regulation on May 9, went out of regulation when the weather cooled, and went back into regulation again in July.

Mr. Brown said that a point of interest during the trial was if the Tongue River went into regulation. Was there a call on the Tongue River in 2013?

Mr. LoGuidice replied there was not a call on the Tongue River this year.

Mr. Anderson asked Montana to highlight administration efforts in 2013.

Mr. Davis replied that one of the main highlights in administration is that Montana has less than 500 water-right claims remaining to be examined in their adjudication effort. Also, Montana added another water judge to help with the adjudication process. There is a real effort to get enforceable decrees on all of the rivers and streams by 2020. Also, the Montana legislature passed Senate Bill 355 that allows for filing of rights for in-stream stock watering and domestic ground-water wells within 90 days of a final decree. This is important because land owners did not have to file for per-1973 in-stream stock watering or domestic wells in the past.

Ms. Lowry asked if there would be new deadlines.

Mr. Davis said that because the filing had to be 90 days prior to when the basin would receive a final decree, the deadlines would vary from basin to basin. When a basin appears to be within one year of final decree, DNRC will announce to the land owners that they will have 90 days prior to the issuance of that final decree to file. The filing will become a claim that DNRC will examine and then it will be included in the final decree.

Also, Montana drafted a Temporary Lease Statute of Water Rights that went through the legislature without any significant amendments. For the first time in Montana, someone can lease up to 180 acre-ft of consumed water for up to 2 out of 10 years without going through the full water-right change process. The application will be submitted to the appropriate Regional Office. The application will go through a public notice and an objection process, and if there is no objection the lessee will proceed with the temporary lease.

Mr. Anderson asked if the Temporary Lease Statute was in response for the need of fracking water for the oil and gas industry.

Mr. Davis replied that initially it was, but as the statute was being developed, the State felt the need to have a statute that could be used for other temporary, short-term applications.

Mr. LoGuidice asked if the Temporary Lease was for a change of use.

Mr. Davis replied that is was.

Mr. Brown asked if only senior water users can object to the temporary lease.

Mr. Davis replied that in Montana anyone can object if they have a valid interest and feel they would be adversely affected. The objector does not have to be a water right holder, but they have to show their interests are adversely affected by other water rights. All objections will be processed through the Hearings Unit within the Water Rights Bureau in Helena.

Mr. Anderson asked the Yellowstone River Technical Committee to provide a summary of their meeting in April 2013.

Ms. Pring replied that there was an attempt to have a meeting in Cody on April 11. Bad weather prevented many from traveling, so the meeting was changed to a cyber-meeting using "Go To Meeting". About 18 people participated in the meeting. The committee discussed streamflow conditions, snowpack conditions and potential runoff, and reservoir operations and storage. CBM activities were discussed and state-wide adjudications. The minutes and links to presentations are posted on the Yellowstone River Compact Commission web page (*http://yrcc.usgs. gov/*). The next meeting is tentatively scheduled for April 10, 2014 in Montana.

Mr. Anderson asked Wyoming to report on coal-bed methane (CBM) development.

Ms. Pring distributed handouts and replied that currently, the Wyoming State Engineer's Office only has 18 applications for permits to construct reservoirs to hold water produced from CBM production. All but one is in the Powder River drainage basin and the other is in the Little Powder River drainage basin. The total number of permitted storage reservoirs is 2,275 with 131 in the Tongue River drainage, 381 in the Little Powder River drainage, and 1,763 in the Powder River drainage. The number of reservoirs has decreased dramatically as the price of natural gas has decreased. Storage reservoirs, for stock use only, cannot exceed 20 acre-ft.

Also, the number of CBM groundwater permits approved each year has decreased over the past 5 years.

Ms. Lowry added that the number of CBM wells permitted by the Wyoming Department of Environmental Quality through the Wyoming Pollution Discharge Elimination System during 2010 was 786 and 445 during 2013. The total number permitted outfalls (from wells) was 5,990 in September 2010 and 3,344 in September 2013.

Mr. Anderson asked Montana to report on CBM development.

Ms. Steinmetz provided a handout and stated that according to Montana Board of Oil and Gas, the number of producing CBM wells in Montana was 880 in 2010, 750 in 2011, 575 in 2012, and 78 in 2013. Currently (2013), of the 1,138 CBM wells, 78 are producing, 703 have been shut in, 332 have been abandoned, and 25 have either been abandoned or the water well released.

Montana has three permits for discharge of CBM produced water to surface water, Fidelity Exploration and Production, Summit Gas Resources, Inc., and James W. Guercio. Of the three permits, Fidelity Exploration and Production is the only company who is discharging water and that water is processed through a treatment facility. From April 2012 through March 2013, the treatment facility has consistently discharged slightly less than 1 million gallons per day.

In 2013, the specific conductance of the water in the Tongue River at the Montana-Wyoming border never exceeded the State standard of 1,000 microsiemens per centimeter at 25 degrees Celsius, with a maximum observed value of about 850. Specific conductance values did exceed the State standard on the Powder River near the Montana-Wyoming border. The specific conductance is commonly exceeded each year on the Powder River. The maximum observed value was about 2,750 microsiemens per centimeter at 25 degrees Celsius

Mr. Anderson asked if the CBM wells could be given to the land owner.

Ms. Steinmetz replied that any transfer would go through Montana's Board of Oil and Gas.

Mr. Brown added in Wyoming there has been some effort to transfer CBM wells over to landowners for use other than CBM production. The Wyoming SEO, Wyoming Board of Oil and Gas, and Wyoming Department of Environmental Quality are cautioning landowners about accepting the CBM wells because of the liability of the well. If the landowner accepts the well they also accept the liability to shut in the well should they decide not to transfer the use to stock or domestic.

Ms. Lowry added that the producers want to shut in the wells or give the wells to landowners so the Board of Oil and Gas will release their bond.

Mr. Swanson asked when a CBM well would be shut in.

Mr. Brown replied that in Wyoming the production of water associated with CBM is a beneficial use. When a well is no longer producing methane, then there is no beneficial use, and permits could be canceled. When the permit is

canceled the well has to be shut in or transferred to another use. Transferring to another use could be very complicated.

Mr. LoGuidice added the transfer process consists of the landowner accepting the well, canceling the CBM permit, refiling the new permit (involves DEQ and Board of Oil and Gas), and plugging the part of the well that produces methane.

Mr. Swanson asked if the wells would be used for a use other than domestic or stock watering.

Mr. Smith replied that these wells typically only produce 3 to 5 gallons per minute and that is not enough for irrigation.

Mr. Swanson asked if the transferred wells would be regulated and if a neighbor can make a call on the well.

Mr. Smith replied that the well would have a priority date.

Mr. Brown added that if there is a well-to-well complaint of the same use (domestic to domestic or stock to stock), then the right is governed by priority date. If it is a well-to-surface water complaint, then an investigation has to be completed to determine if there is a connection. Mr. Tyrrell (Wyoming State Engineer) testified that an investigation has never been attempted in the Powder River structural basin.

Mr. Davis said that in Montana, if a landowner wanted to switch from an oil or gas well to a water well, the well would have to be drilled by a licensed water well contractor. There are different certificates for each type of well. He asked if the user would need to verify that the CBM well was drilled by a licensed water well contractor before it could be switched to a domestic use?

Mr. Brown replied that Wyoming SEO has the authority to determine if the well is constructed properly for the intended use. Wyoming SEO, Wyoming DEQ and Wyoming Board of Oil and Gas are sensitive to the well construction issue.

Mr. Anderson asked Montana to discuss statewide adjudication.

Mr. Davis distributed a map showing drainage basins and the status of the adjudication process. Mr. Davis stated that the Compact between the United States and the Crow Tribe (Crow Compact) was decreed on June 13, 2013 and the objection ends on December 23, 2013. The Shoshone River (43N) was issued a preliminary decree and the objection period ended on December 10, 2013. Currently, there are less than 500 claims left to be examined statewide. The objection period for the Tongue River has ended and the court is dealing with those objections.

Ms. Lowry stated the temporary preliminary decrees appear to stay in that status for some time.

Mr. Davis replied that most of the temporary preliminary decrees are in what are termed verified basins. These basins were examined early and tend to have Federal Reserve Rights. They are all progressing. In the last few years the court has bypassed the temporary preliminary decree going directly to preliminary decrees.

Mr. Brown asked if the Federal Reserve Rights were just tribal rights.

Mr. Davis said that the Federal Reserve Water Rights pertain to all manner of federal rights, such as Bureau of Land Management and U.S. Forest Service. The Federal Reserve Water Rights were adopted by the legislature and now those rights have to go through the Federal process. Most likely, those will just be adopted and not have to go through Congress.

Ms. Lowry asked if the Federal Reserve Water Right Commission is continuing.

Mr. Davis said that the Federal Reserve Water Right Commission still exists, and most of the compacts have been negotiated. Once they are all completed, the staff will be transferred to the Water Resources Division to work on compact implementation.

Mr. Anderson said on an unrelated topic, has Montana weighed in on the issue of the U.S. Army Corps of Engineers charging for water stored in the Missouri River mainstem reservoirs?

Mr. Davis replied that Montana has participated in the Surplus Water Study that took place on Fort Peck Reservoir. They have also voiced their opinion on the reallocations of storage within the mainstem reservoirs.

Mr. Anderson replied that the States of North Dakota and South Dakota have taken the position that they should not have to pay for the natural flows.

Mr. Davis replied that Montana has not taken the exact same position. Montana does not have to rely on the water within the reservoir as much as the other States because the Charles M. Russell Reserve surrounds most of Ft. Peck Reservoir. Thus, there is not a large demand for the water in the reservoir. Montana relies mostly on the free flowing portion of the Missouri River.

Mr. Anderson asked Wyoming to discuss statewide adjudication.

Mr. Smith replied that the Bighorn Basin still does not have a final decree. The groundwork for the final decree was laid in the District Court in Worland in August. Since then, a few water-right owners contested their water duty that was assigned to their reserve right. Hopefully, after January 1, 2014, a resolution will occur and they can move forward to a final decree.

In 2013, 34 surface-water change petitions and 5 groundwater petitions were granted. Ninety-two surface-water permits, 29 stock reservoirs, and 47 ground-water proofs were adjudicated.

Mr. LoGuidice stated that in the Tongue and Powder Basins, there were 62 reservoir, 14 pump and pipeline, two ditch enlargements, and 9 groundwater adjudications. Also, there were 267 stock reservoir endorsements.

Mr. Davis asked what date was assigned to the adjudication that took place this past year.

Mr. LoGuidice replied the assigned water-right date is the date an acceptable application was received by the Wyoming SEO.

Mr. Dalby asked if the ownership of water rights in Lake DeSmet has been resolved.

Mr. LoGuidice replied that for now the ownership has been resolved. Texaco gave their water right to a coalition made up of Campbell, Johnson, and Sheridan Counties. Campbell County dropped out, leaving Johnson and Sheridan Counties. Last year (2013), Sheridan County left the coalition, leaving Johnson County as the principle owner. In addition, the Moore appropriation is 875 acre-ft, the Box Elder appropriation (Piney Creek) is 11,800 acre-ft, and the remaining water right belongs to Sasol. Sasol (a South African company) is a world leader in coal gasification.

Mr. Anderson asked Montana to update the Commission on the Montana/Crow Compact.

Mr. Davis replied that a decree has been issued for the Crow Compact and the objection period runs to December 23, 2013. After the objection period ends, the Water Court will resolve any objections.

Ms. Lowry asked if there was any Federal investment in the Crow Reservation related to the Crow Compact.

Mr. Jordan replied the Bureau of Reclamation will be involved with municipal wells and a rural water system, rehabilitation of the Bureau of Indian Affairs irrigation project, and hydrologic power on the Crow Reservation.

Mr Anderson asked the Bureau of Reclamation to discuss water supply in Bighorn Lake.

Mr. Jordan replied the Bureau of Reclamation released 1,850 ft<sup>3</sup>/s from Yellowtail Dam (Bighorn Lake) throughout the winter and spring. Bighorn Lake filled on July 8, but continued dry weather kept releases constant, with a possibility of 1,750 ft<sup>3</sup>/s released through the fall and winter. Precipitation in September and October caused above average inflow to Bighorn Lake, and releases from Yellowtail Dam increased to 2,230 ft<sup>3</sup>/s. December releases increased to 2,480 ft<sup>3</sup>/s and are expected to stay constant through February.

Based on a 30-year average, Boysen Reservoir is 98 percent of average, Buffalo Bill Reservoir is 112 percent of average, and Bighorn Lake is 118 percent of average. The November inflow to Boysen Reservoir was 118 percent and outflow was 57 percent of average. Inflow to Buffalo Bill Reservoir was 121 percent and outflow was 160 percent of average. Inflow to Bighorn Lake was 105 percent and outflow was 94 percent of average.

Ms. Lowry asked if the Bighorn Lake Long-Term Issues group was still meeting.

Mr. Jordan replied that they were. In November there was a combined Reservoir Operations and Long-Term Issues Group meeting. The Long-Term Issues Group meets twice a year.

Mr. Anderson reported that he was able to scan all of the Yellowstone River Compact Commission documents that he had (as the Chairman for the Yellowstone River Compact Commission). At the last meeting, Mary Sexton made a motion that the Yellowstone River Technical Committee obtain a copy of the scanned documents and each State Attorney would decide what documents would be kept as official documents. The motion was seconded. A compact disc containing the scanned documents has been given to each State.

Mr. Anderson said that after the documents had been reviewed, the question remains as to what would be considered official files in the future. At the Technical Committee meeting, the Committee agreed that the annual report is the official file. But, the Committee was undecided as what to do with hand out material. Mr. Anderson proposed that the official documents (files) consist of what is posted on the Yellowstone River Compact Commission web page (*http://yrcc.usgs.gov/index.html*).

Ms. Lowry and Mr. Davis agreed that the documents posted on the web page become the official documents.

Ms. Lowry asked who would be responsible for updating and maintaining the web page.

Mr. Anderson replied that the USGS Wyoming-Montana Water Science Center is responsible for updating and maintaining the Yellowstone River Compact Commission web page.

Mr. Anderson then announced that the USGS Montana and Wyoming Water Science Centers have reorganized into one Water Science Center. He asked Mr. Kilpatrick to explain the reorganization.

Mr. Kilpatrick replied that over the past year or so, key people in the management of the Wyoming Water Science Center left for various reasons, creating vacancies. The North-West Regional Director (who resides in Seattle) decided to consider combining the Wyoming and Montana Water Science Centers in an effort to reduce managerial staff, thus reducing the cost of running the two centers. His staff evaluated the proposal of combining the two centers and submitted their findings in April. They decided that a significant amount of money could be saved, plus combining the two centers could enhance the quality of USGS research by creating more collaboration between the two States. The Regional Director decided to move forward with merging the two Centers and asked for an implementation plan. The Regional Director wanted to move cautiously and get input from the cooperators from the two States. An implementation team was established to study and evaluate the different ways the two centers could be merged together. The team issued a plan to the Regional Director that was accepted in July. The plan called for a complete integration of the two Centers into one Center. The new Center has a new structure where managers will be supervising employees from both States. The new Center was officially merged on October 1, and the new Center is called the Wyoming-Montana Water Science Center.

The Data Chiefs from the two States (Wayne Berkas and Kirk Miller) will jointly supervise the Data Section of the new Center. So, you should continue to talk to the person you normally talked to. The USGS is hoping that future contacts within the new Center will be easier by providing one contact rather than one for Montana and another for Wyoming. Beginning in fiscal year 2015, data collection costs will be standardized between the two states.

The National Water Information System (NWIS) data base is organized on the State boundary, so regardless of the merger, all data is organized by State. But, the new Center could set up a web page where data are displayed by drainage basin should cooperators want that method of accessing the data.

Mr. LoGuidice stated that people in his unit were having trouble accessing data that they could previously access. Was there a change to the USGS NWIS web page?

Mr. Berkas replied that the web page was re-formatted to be user friendly to smart-phone users. All of the information is still accessible but might require a different sequence of "clicks".

Ms Lowry asked if the merger would affect the money allocated to the center from Headquarters, such as the Cooperative Water Program (CWP) and Nation Streamflow Information Program (NSIP). Would Headquarters now see the new center as one center and reduce the amount of money given to the Center?

Mr. Kilpatrick replied that the short answer is no. Funding will not be reduced because of the merger. Headquarters understands that people are tied to the CWP and NSIP funds, so a reduction in funds would mean a need to reduce people. Other centers have been merged for many years, and their CWP and NSIP funds remained proportionate to funding prior to merging. The advantage of merging is that the center can combine the funds and distribute the funds between the cooperators of both States.

Ms. Lowry said she would like to update the Commission about a monitoring plan to help the Corps of Engineers better manage their reservoirs. The combination of rain and snowmelt in 2011 caused the Corps of Engineers to release a significant amount of water from their dams. The Corps of Engineers asked for an independent scientific review of their operations. One of the recommendations from the review team is having a network to monitor the plains snowpack and determine how much of that snowpack will run off into the streams and rivers. A group of scientists came up with estimates for the network. Senator [John] Barrasso, who sits on the committee which funds the Corps of Engineers, supports this monitoring network. This network is included in the Senate version of the WaterResources Development Act now in conference committee so, hopefully, funds can be appropriated to support this network.

There was considerable discussion about the need for more information, such as snowpack and telemetry (SNOTEL) information in order to forecast potential streamflow and manage reservoirs. The Commission considered the need to provide a letter of support for the proposed network and the (SNOTEL) program.

Mr. Davis made a motion that the Commission prepare a letter to support additional funding for NRCS to gather more SNOTEL data and for USGS to add streamgages to gather more streamflow data. Ms. Lowry seconded the motion.

Mr. Anderson asked if there were any comments from the public.

Mr. Lowell Anderson commented that he was from Cody and has been interested in water as long as he could remember. He was interested in the Yellowstone River Compact Commissions discussions.

Ms. Lowry thanked him for attending.

Mr. Walksalong announced that the Northern Cheyenne Tribe received approval from EPA for their water-quality standards in March (2013).

Mr. Davis asked if there was a possibility that the annual Commission meeting could be held about a month after the Yellowstone Commission's Technical Committee meeting when the two States would have a better understanding of the snowpack and potential runoff. A meeting during the active water year would help the Commission move forward with allocating water under the Compact. Currently, the meeting is held after all of the water has left the basin. Also, weather conditions in November and December sometimes make travel difficult. The Rules and Regulations for Administration of the Yellowstone River Compact states that an annual meeting shall be held in November at a mutually agreeable point within the basin. There is nothing in the Compact that would prohibit the Commission from making an amendment to meet at a different time.

Ms. Lowry replied that the Commission met twice a year for a few years. An amendment probably is not necessary. Maintaining a meeting at the end of the year is necessary. Mr. Smith and Mr. LoGuidice are also concerned that a late spring or early summer meeting could possibly conflict with their field administration duties. Until we get better definition from the Special Master and the Supreme Court, planning a meeting in June would be premature.

The Commissioners agreed to have the year-end meeting on December 4, 2014 in Montana.

The Commissioners tentatively set a meeting date on June 5, 2014.

The meeting was adjourned at 12:00 pm.

Sue Lowry Commisioner for Wyoming

Timothy K. Davis Commissioner for Montana

Mark T. Anderson Chairman and Federal Representative

## **General Report**

## **Operation and Budget**

Work funded by the Yellowstone River Compact Commission, that to date has been primarily concerned with the collection of required hydrologic data, has been financed through cooperative arrangements whereby Montana and Wyoming each bear one-fourth of the cost, and the remaining one-half is borne by the United States. Salaries and necessary expenses of the State and U.S. Geological Survey representatives to the Commission and the cost to other agencies of collecting hydrologic data are not considered as expenses of the Commission.

The expenses of the Commission during Federal fiscal year 2013 were \$110,350, in accordance with the budget adopted for the year.

Estimated budgets for Federal fiscal years 2014, 2015, 2016, and 2017 were tentatively adopted subject to the availability of appropriations. The budgets for the four fiscal years are summarized as follows:

Year	Wyoming State Engineer	Montana Department of Natural Resources and Conservation	U.S. Geological Survey	Total
FY2014	\$30,625	\$30,625	\$50,500	\$111,750
FY2015	\$31,600	\$31,600	\$52,540	\$115,740
FY2016	\$32,550	\$32,550	\$54,120	\$119,220
FY2017	\$33,600	\$33,600	\$55,100	\$122,300

## **Streamflow-Gaging Station Operation**

Operation of five streamflow-gaging stations at the measuring sites specified in the Yellowstone River Compact continued in water year 2013 with satisfactory records collected at each station. Locations of streamflow-gaging stations, along with reservoir-content stations, are shown on a map of the Yellowstone River Basin at the end of this report.

The Commission is primarily interested in the streamflow near the mouths of the Clarks Fork Yellowstone River, Bighorn River, Tongue River, and Powder River. Even though the Little Bighorn River is not covered by the Yellowstone River Compact, the compact covers the water in the Bighorn River minus the Little Bighorn River. Thus, the streamflow from the Little Bighorn River is subtracted from the streamflow of the Bighorn River. In addition, the Bighorn River streamflow is adjusted monthly with change in storage of Bighorn Lake. During water year 2013, annual streamflow was normal<sup>2</sup> at one streamflow-gaging station and below normal at the other three streamflow-gaging stations. The rank of the annual streamflow, with the lowest annual streamflow having a rank of 1, is displayed in the following table:

		Percent of	Rank of annua	al streamflow	Year of lowest	Number of years of annual record	
Station number	Streamflow-gaging station	average stream- flow for water year 2013 <sup>1</sup>	2013 water year	2012 water year	annual streamflow (rank equals 1)		
06208500	Clarks Fork Yellowstone River at Edgar, Mont., minus diversions to White Horse Canal	81	15	49	2001	75	
06294500	Bighorn River above Tullock Creek, near Bighorn, Mont., minus Little Bighorn River near Hardin, Mont. (06294000), adjusted for change in contents in Bighorn Lake	44	9	19	2002	60	
06308500	Tongue River at Miles City, Mont.	55	12	24	1961	71	
06326500	Powder River near Locate, Mont.	49	12	18	2004	75	

<sup>1</sup>Average is based on period of record at each station.

<sup>2</sup>The "normal" range defined in this report is 80 to 120 percent of average.

Tabulation of streamflow records for water year 2013 (tables 1–5) and graphical comparisons of statistical distribution of monthly and annual streamflow, and annual departures from mean annual streamflow (figures 1–4) are provided in the section "Summary of Discharge for Yellowstone River Compact Streamflow-Gaging Stations." The tabulated streamflow records do not account for depletions for irrigation and other uses unless otherwise noted.

## **Diversions**

No diversions were regulated by the Commission during water year 2013.

## **Reservoir Contents**

## Reservoirs Completed After January 1, 1950

As a matter of record and general information, month-end usable contents data (tables 6–8) and descriptions of these reservoirs are given in the section "Month-end Contents for Yellowstone River Compact Reservoirs Completed after January 1, 1950." Boysen Reservoir, located on the Wind River and operated by the Bureau of Reclamation, began the water year with 473,600 acre-ft in usable contents and ended the water year with 441,400 acre-ft. Anchor Reservoir, located on South Fork Owl Creek and operated by the Bureau of Reclamation, began the water year with an estimated 299 acre-ft in usable contents (as reported on September 19, 2012) and ended the water year with 354 acre-ft. Bighorn Lake, a Bureau of Reclamation storage project on the Bighorn River that is the largest in the Yellowstone River Basin, contained 877,300 acre-ft of usable contents at the beginning of the water year and 951,500 acre-ft at the end of the water year.

## Reservoirs Existing on January 1, 1950

As a matter of record and general information, month-end usable contents data for the four reservoirs in existence on January 1, 1950, upstream from the points of measurement, are given in table 9 in the section "Month-End Contents for Yellowstone River Compact Reservoirs Existing on January 1, 1950." The reservoirs are Bull Lake, Pilot Butte Reservoir, Buffalo Bill Reservoir, operated by the Bureau of Reclamation; and Tongue River Reservoir, operated under the supervision of the Water Resources Division of the Montana Department of Natural Resources and Conservation. These data are pertinent to allocation under Article V, Section C, Item 3 of the Compact.

## Annual Contents of Reservoirs

Information on reservoir contents at the end of the current (2013) and previous water years for the 7 reservoirs listed above plus 38 additional reservoirs that have usable contents greater than 1,000 acre-ft was compiled at the request of the Commission. The information is provided in table 10 in the section "Water-Year-End Contents for Yellowstone River Compact Reservoirs or Lakes."

# Summary of Discharge for Yellowstone River Compact Streamflow-Gaging Stations

## 06208500 Clarks Fork Yellowstone River at Edgar, Mont.

LOCATION.--Lat 45°27′58″, long 108°50′35″ referenced to North American Datum of 1927, in SE ¼ SE ¼ SE ¼ Se 23, T.4 S., R.23 E., Carbon County, Hydrologic Unit 10070006, on right bank 400 ft downstream from county bridge, 0.5 mi east of Edgar, 6 mi upstream from Rock Creek, and at river mile 22.1.

DRAINAGE AREA .-- 2,022 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1921 to September 1969, October 1986 to present.

REVISED RECORDS. -- Water Supply Paper (WSP) 1509: 1924; 1932, maximum discharge. WSP 1729: Drainage area. Water Data Report MT-04-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,460 ft, referenced to the National Geodetic Vertical Datum of 1929. Prior to August 31, 1953, nonrecording gage located at same site and elevation.

REMARKS.--Records are good except for estimated daily discharges, which are poor. Diversions for irrigation include about 41,500 acres, of which about 840 acres lie downstream from the station. In addition, about 6,300 acres of land upstream from the station are irrigated by diversions from the adjoining Rock Creek Basin. U.S. Geological Survey satellite telemeter is located at the station. Several unpublished observations of water temperature and specific conductance were made during the year. **Discharge values and summary statistics given herein have the diversions to White Horse Canal subtracted.**  **Table 1.**Daily mean discharge for Clarks Fork Yellowstone River at Edgar, Mont. (06208500), minus diversions to White Horse Canal,October 2012 through September 2013.

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	302	555	509	e420	e310	330	324	468	2,140	2,280	319	134
2	303	565	505	e420	e320	347	334	414	1,850	2,060	322	140
3	324	545	508	e420	e330	358	366	397	1,970	1,900	355	137
4	351	545	506	e420	e330	353	394	398	2,530	1,700	323	137
5	378	533	500	e420	e330	339	412	406	2,320	1,940	301	142
6	394	529	504	e420	e320	315	421	414	2,170	2,260	282	143
7	433	507	517	e430	e330	330	442	444	2,570	2,120	261	153
8	456	509	519	e430	e330	346	416	782	3,430	1,860	229	168
9	447	516	e450	e430	e330	336	401	1,090	4,330	1,620	209	263
10	450	541	e410	e420	e310	330	378	1,250	5,000	1,420	214	194
11	435	e530	e430	e420	e310	329	348	1,360	5,660	1,180	223	184
12	445	e520	e470	e400	e310	324	375	1,640	5,660	1,030	218	181
13	443	503	e500	e370	e290	330	372	2,380	5,310	896	198	202
14	424	546	e500	e330	e310	326	381	3,630	5,070	839	187	326
15	426	570	e500	e300	e330	335	388	4,740	4,170	788	186	630
16	430	548	e500	e300	e330	338	363	4,700	3,040	673	172	1,150
17	435	531	e500	e300	e330	352	353	4,480	2,570	675	171	735
18	492	527	e500	e320	e340	352	349	4,460	2,550	725	157	744
19	500	530	e480	e320	e350	343	332	4,000	2,720	694	143	1,110
20	464	522	e420	e320	355	321	327	3,520	2,750	682	138	1,070
21	454	511	e460	e330	357	328	327	2,900	2,520	620	130	984
22	462	510	e470	e330	357	323	329	2,580	2,100	530	129	881
23	489	508	e470	e330	345	326	331	2,770	1,760	445	126	797
24	494	491	e460	e330	342	306	319	3,590	1,530	365	121	732
25	497	493	e400	e330	343	294	306	3,910	1,460	287	124	704
26	498	533	e400	e330	328	291	316	3,460	1,660	245	130	738
27	475	507	e420	e330	335	307	313	3,110	2,280	223	130	766
28	484	462	e430	e330	336	313	337	2,780	2,620	231	119	747
29	501	505	e440	e330		309	475	2,820	2,680	245	116	714
30	499	505	e430	e330		312	503	3,150	2,550	251	112	678
31	532		e420	e320		316		2,590		240	116	
Total	13,717	15,697	14,528	11,230	9,238	10,159	11,032	74,633	88,970	31,024	5,961	15,684
Mean	442	523	469	362	330	328	368	2,408	2,966	1,001	192	523
Max	532	570	519	430	357	358	503	4,740	5,660	2,280	355	1,150
Min	302	462	400	300	290	291	306	397	1,460	223	112	134
Acre-ft	27,210	31,140	28,820	22,270	18,320	20,150	21,880	148,000	176,500	61,540	11,820	31,110

[Discharge is in cubic feet per second. Abbreviations: e, estimated; Max, maximum; Min, minimum; acre-ft, acre-feet. Symbol: ---, no data]

	SUMMARY STATISTICS	
	Water year 2013	Water years 1921–2013*
Annual total	301,873	
Annual mean	827	1,025
Annual runoff (acre-ft)	598,800	742,500

\*During periods of operation (water years 1921-69, 1987 to current year).



**Figure 1.** Streamflow data for Clarks Fork Yellowstone River at Edgar, Mont. (06208500), minus diversions to White Horse Canal, water years 1921–2013. *A*, Statistical distribution of monthly and annual streamflow. *B*, Annual departure from the mean annual streamflow.

## 06294000 Little Bighorn River near Hardin, Mont.

LOCATION.--Lat 45°44'09", long 107°33'24" referenced to North American Datum of 1927, in SE <sup>1</sup>/<sub>4</sub> NE <sup>1</sup>/<sub>4</sub> NE <sup>1</sup>/<sub>4</sub> sec.19, T.1 S., R.34 E., Big Horn County, Hydrologic Unit 10080016, on left bank 50 ft downstream from bridge on Sarpy Road, 0.2 mi upstream from terminal wasteway of Agency Canal, 0.6 mi upstream from mouth, and 2.3 mi east of Hardin.

DRAINAGE AREA .-- 1,294 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1953 to present.

REVISED RECORDS.--Water Data Report MT-86-1: 1978.

GAGE.--Water-stage recorder. Elevation of gage is 2,882.29 ft, referenced to the National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to October 7, 1953, nonrecording gage located at site 0.4 mi downstream. October 7, 1953 to May 6, 1963, water-stage recorder located at site 0.3 mi downstream. May 6, 1963 to November 6, 1963, nonrecording gage located at site 0.4 mi downstream. All locations had different elevations. November 7, 1963 to August 15, 1976, water-stage recorder located at site 35 ft downstream at present elevation. August 15, 1976 to September 30, 1979, water-stage recorders were located on each bank downstream from Sarpy Road Bridge and were used depending on control conditions.

REMARKS.--Records are good except for estimated daily discharges, which are poor. Streamflow partly regulated by Willow Creek Reservoir (capacity 23,000 acre-ft). Diversions for irrigation include 20,980 acres upstream from station. **Discharge values and summary statistics given herein include the streamflow of terminal wasteway of Agency Canal.** U.S. Geological Survey satellite telemeter is located at the station. Several unpublished observations of water temperature and specific conductance were made during the year.

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep
1	68	134	143	e90	e130	150	184	160	2,160	149	41	40
2	70	134	142	e100	e150	144	191	159	1,750	131	50	45
3	70	129	139	e110	e160	150	181	153	970	109	64	39
4	94	132	141	e110	e170	153	165	142	759	116	74	40
5	123	133	138	e110	e170	e150	155	137	716	120	72	43
6	115	133	135	e110	e170	e130	154	135	657	111	62	40
7	109	133	135	e110	e170	143	158	123	608	112	61	51
8	111	128	134	e110	e170	151	169	104	576	126	63	70
9	116	131	116	e110	e170	153	167	64	577	138	76	86
10	119	138	e100	e110	e160	168	158	94	585	126	64	85
11	121	142	e120	e110	e170	167	146	96	569	106	61	83
12	126	117	e130	e110	e170	167	137	92	579	99	69	78
13	124	114	e130	e90	e180	173	148	78	636	92	72	59
14	123	139	e130	e90	e170	179	170	64	613	91	56	65
15	123	151	e130	e100	e170	199	180	69	561	90	59	70
16	121	144	e130	e100	e170	229	178	114	509	79	62	68
17	123	145	e130	e110	e170	251	166	189	460	71	62	79
18	125	145	e130	e100	e160	241	153	235	424	61	61	93
19	136	142	e120	e100	e160	198	140	304	391	70	58	94
20	129	142	e120	e100	e160	176	138	362	363	43	46	87
21	128	140	e130	e110	e160	155	144	649	342	47	41	94
22	130	140	e120	e110	e150	161	153	938	322	53	48	90
23	135	139	e110	e100	e160	151	159	629	323	35	45	90
24	135	139	e110	e120	e150	148	166	510	305	32	32	83
25	138	136	e100	e120	e160	131	165	502	275	26	29	84
26	141	140	e90	e130	e150	125	193	486	252	28	30	103
27	135	e140	e90	e130	e150	120	211	462	225	30	28	99
28	131	e130	e100	e120	148	131	192	455	213	30	28	110
29	133	e130	e100	e110		140	179	469	199	29	31	117
30	136	e140	e100	e110		153	169	521	168	30	32	111
31	137		e100	e120		168		851		41	33	
Total	3,725	4,080	3,743	3,360	4,528	5,055	4,969	9,346	17,087	2,421	1,610	2,296
Mean	120	136	121	108	162	163	166	301	570	78.1	51.9	76.5
Max	141	151	143	130	180	251	211	938	2,160	149	76	117
Min	68	114	90	90	130	120	137	64	168	26	28	39
Acre-ft	7,390	8,090	7,420	6,660	8,980	10,030	9,860	18,540	33,890	4,800	3,190	4,550

 Table 2.
 Daily mean discharge for Little Bighorn River near Hardin, Mont. (06294000), October 2012 through September 2013.

[Discharge is in cubic feet per second. Abbreviations: e, estimated; Max, maximum; Min, minimum; acre-ft, acre-feet. Symbol: ---, no data]

	201ALIARA 2141121102	
	Water year 2013	Water years 1954–2013
Annual total	62,220	
Annual mean	170	274
Annual runoff (acre-ft)	123,400	198,600

## 06294500 Bighorn River above Tullock Creek, near Bighorn, Mont.

LOCATION.--Lat 46°07′29″, long 107°28′06″ referenced to North American Datum of 1927, in SE ¼ SE ¼ NE ¼ sec.3, T.4 N., R.34 E., Treasure County, Hydrologic Unit 10080015, on right bank 1.9 mi upstream from Tullock Creek, 3.6 mi southwest of Bighorn, 4.5 mi southeast of Custer, and at river mile 3.0.

DRAINAGE AREA.--22,414 mi<sup>2</sup>. Area at site used October 7, 1955 to September 30, 1981, 22,885 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1981 to present. Previously published as "06294700 Bighorn River at Bighorn, MT" from 1956–81, and as "06294700 Bighorn River near Custer" from 1945–55. Flows are equivalent at all sites.

GAGE.--Water-stage recorder. Elevation of gage is 2,700 ft, referenced to the National Geodetic Vertical Datum of 1929. May 11, 1945 to December 6, 1945, nonrecording gage, and December 7, 1945 to October 6, 1955, water-stage recorder located 1.7 mi upstream at different elevation. October 7, 1955 to September 30, 1981, located at site 2.3 mi downstream at different elevation.

REMARKS.--Records are good except for estimated daily discharges, which are poor. After November 1965, streamflow has been regulated by Bighorn Lake (usable contents, 1,312,000 acre-ft). Major regulation prior to November 1965 occurred from 14 reservoirs in Wyoming and 1 in Montana with combined usable contents of about 1,400,000 acre-ft. Diversion for irrigation of about 445,200 acres occurs upstream from the station. U.S. Geological Survey satellite telemeter is located at the station. Several unpublished observations of water temperature and specific conductance were made during the year.

Table 3.Daily mean discharge for Bighorn River above Tullock Creek, near Bighorn, Mont. (06294500), October 2012 through<br/>September 2013.

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep
1	1,730	1,760	2,130	e2,000	e2,000	2,070	2,050	1,840	4,360	2,130	1,860	2,130
2	1,740	1,760	2,140	e2,000	2,050	2,080	2,070	1,820	4,540	2,070	2,030	2,120
3	1,720	1,760	2,160	e2,000	2,040	2,130	2,070	1,900	3,560	2,000	2,250	2,140
4	1,750	1,760	2,090	e2,000	2,050	2,140	2,050	1,920	3,020	1,960	2,280	2,090
5	1,880	1,770	1,960	e2,000	2,050	2,090	2,040	1,890	2,880	2,040	2,290	2,090
6	1,910	1,760	1,980	e2,000	2,050	2,090	2,040	1,880	2,770	2,070	2,250	2,140
7	1,880	1,760	2,000	e2,000	2,060	2,080	2,040	1,930	2,700	2,040	2,210	2,180
8	1,880	1,760	2,030	e2,000	2,070	2,080	2,120	1,880	2,620	2,170	2,210	2,310
9	1,890	1,760	2,050	e2,000	2,060	2,090	2,070	1,840	2,560	2,160	2,240	2,350
10	1,860	1,800	2,050	e2,000	2,070	2,090	2,050	1,880	2,550	2,130	2,460	2,320
11	1,790	1,790	2,070	e2,000	2,050	2,120	2,040	1,880	2,510	2,110	2,400	2,320
12	1,750	1,760	2,150	e2,000	2,050	2,100	2,040	1,870	2,570	2,200	2,380	2,310
13	1,740	1,740	2,180	e2,000	2,050	2,110	2,040	1,870	2,690	2,110	2,310	2,260
14	1,790	1,810	2,050	e2,000	2,050	2,120	2,100	1,800	2,960	2,110	2,280	2,440
15	1,740	1,900	1,970	e2,000	2,030	2,130	2,100	1,750	2,900	2,110	2,290	2,440
16	1,730	1,900	2,000	e2,000	2,050	2,170	2,100	1,750	2,780	1,990	2,290	2,380
17	1,740	1,910	1,980	2,010	2,070	2,190	2,100	1,910	2,730	1,980	2,250	2,380
18	1,780	1,930	2,000	2,010	2,080	2,200	2,100	2,000	2,600	2,020	2,250	2,370
19	1,780	1,940	2,000	2,020	2,070	2,150	2,080	2,340	2,480	1,990	2,220	2,270
20	1,780	1,940	e2,000	2,030	2,070	2,080	2,080	2,850	2,400	2,010	2,120	2,230
21	1,770	1,950	e2,000	2,040	2,050	2,070	2,080	3,010	2,370	2,000	2,030	2,210
22	1,760	1,950	2,020	e2,000	2,030	2,070	2,090	3,190	2,350	2,030	2,040	2,190
23	1,790	1,950	2,000	2,050	2,050	2,050	2,050	3,050	2,410	1,990	2,060	2,170
24	1,760	1,970	e2,000	2,050	2,070	2,040	2,060	2,770	2,370	1,980	2,040	2,180
25	1,750	2,000	e2,000	2,050	2,050	2,020	2,010	2,650	2,260	2,040	2,070	2,300
26	1,750	2,010	e2,000	2,050	2,060	2,010	2,070	2,630	2,210	2,070	2,080	2,480
27	1,740	2,010	e2,000	2,060	2,060	2,010	2,040	2,570	2,170	2,080	2,040	2,390
28	1,740	2,040	e2,000	2,080	2,060	2,010	1,980	2,560	2,150	2,120	2,050	2,460
29	1,750	2,060	e2,000	2,040		2,020	1,930	2,550	2,150	2,110	2,080	2,370
30	1,760	2,090	e2,000	e2,000		2,030	1,890	2,960	2,140	2,060	2,080	2,300
31	1,760		e2,000	e2,000		2,040		3,640		2,010	2,130	
Total	55,190	56,300	63,010	62,490	57,500	64,680	61,580	70,380	80,760	63,890	67,570	68,320
Mean	1,780	1,877	2,033	2,016	2,054	2,086	2,053	2,270	2,692	2,061	2,180	2,277
Max	1,910	2,090	2,180	2,080	2,080	2,200	2,120	3,640	4,540	2,200	2,460	2,480
Min	1,720	1,740	1,960	2,000	2,000	2,010	1,890	1,750	2,140	1,960	1,860	2,090
Acre-ft	109,500	111,700	125,000	123,900	114,100	128,300	122,100	139,600	160,200	126,700	134,000	135,500

SUMMARY STATISTICS							
	Water year 2013	Water years 1945–2013					
Annual total	771,670						
Annual mean	2,114	3,655					
Annual runoff (acre-ft)	1,531,000	2,648,000					



**Figure 2.** Streamflow data for Bighorn River above Tullock Creek, near Bighorn, Mont. (06294500), minus Little Bighorn River near Hardin, Mont. (06294000); adjusted for change in contents in Bighorn Lake, water years 1954–2013. *A*, Statistical distribution of monthly and annual streamflow. *B*, Annual departure from the mean annual streamflow.

## 06308500 Tongue River at Miles City, Mont.

LOCATION.--Lat 46°23′05″, long 105°50′41″ referenced to North American Datum of 1927, in SE ¼ SE ¼ SE ¼ Se .4, T.7 N., R.47 E., Custer County, Hydrologic Unit 10090102, on right bank 1.5 mi south of Miles City and at river mile 2.3.

DRAINAGE AREA.--5,397 mi<sup>2</sup>. Area at site used prior to October 4, 1995, 5,379 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1938 to April 1942, April 1946 to present. Published as "near Miles City" April 1938 to April 1942. Not equivalent to records published as "near Miles City" May 1929 to October 1932. April 1946 to October 4, 1995, at site 2.5 mi upstream from present site. Streamflows at present site are equivalent with streamflows at site operated from 1946. Monthly discharge only for some periods, published in Water Supply Paper (WSP) 1309.

REVISED RECORDS. -- WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,360 ft, referenced to the National Geodetic Vertical Datum of 1929. April 1938 to April 1942, nonrecording gage located at site 8 mi upstream from present site at different elevation. April 1946 to September 30, 1963, located at elevation 1.00 ft higher than present site. October 4, 1995, gage was moved 2.5 mi downstream.

REMARKS.--Records are good except for estimated daily discharges, which are poor. Streamlow is regulated by Tongue River Reservoir (station 06307000) with usable contents of 79,070 acre-ft, and many small reservoirs in Wyoming with combined capacity about 15,000 acre-ft. Diversions for irrigation include about 100,800 acres upstream from station. U.S. Geological Survey satellite telemeter is located at the station.

Table 4.	Daily mean	discharge	for Tong	ue River	at Miles Cit	/, Mont.	(06308500)	, Octobe	r 2012 throug	ih Se	ptember	2013.
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[Discharge is in cubic feet per second. Abbreviations: e, estimated; Max, maximum; Min, minimum; acre-ft, acre-feet. Symbol: ---, no data]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep
1	27	170	e130	e120	e100	e180	142	131	2,820	335	137	50
2	50	171	e140	e120	e110	e180	141	129	1,560	299	156	72
3	58	169	e150	e110	e120	e200	138	127	1,330	276	185	110
4	70	169	e150	e110	e120	e170	136	125	1,420	252	304	122
5	90	168	e140	e120	e130	e90	134	124	1,290	232	308	108
6	140	168	e140	e110	e130	e140	137	123	1,130	221	241	114
7	145	167	e130	e120	e140	e170	136	120	1,080	193	219	105
8	60	167	e100	e120	e140	e230	144	119	1,060	197	187	128
9	43	166	e60	e120	e140	e260	154	119	979	339	154	238
10	51	e150	e100	e120	e130	e210	150	115	914	240	177	307
11	59	e120	e110	e110	e130	e230	149	113	877	175	231	239
12	56	e110	e110	e100	e130	195	157	108	1,010	150	186	189
13	57	e120	e130	e100	e140	188	164	103	1,120	136	196	168
14	58	e140	e140	e100	e130	185	171	80	1,260	122	168	159
15	55	e150	e140	e110	e130	175	184	14	1,340	123	143	151
16	66	e160	e130	e120	e140	175	196	9.5	1,300	96	130	148
17	104	e170	e130	e120	e150	176	194	16	1,250	83	119	135
18	130	e190	e130	e130	e150	e170	175	28	1,030	64	115	131
19	133	e200	e120	e130	e140	186	176	29	904	49	110	129
20	138	202	e120	e120	e130	166	180	110	794	44	95	144
21	146	211	e120	e110	e130	162	176	290	710	45	72	133
22	183	180	e120	e110	e140	166	168	235	658	47	52	115
23	186	e140	e120	e110	e150	162	155	152	675	35	55	111
24	177	e150	e110	e110	e160	158	146	118	604	41	46	105
25	174	e170	e100	e120	e170	149	142	118	490	67	53	105
26	174	e160	e90	e130	e190	165	140	143	443	101	88	113
27	174	e150	e90	e130	e200	151	137	289	420	65	66	113
28	171	e150	e100	e130	e200	145	131	234	403	83	52	107
29	171	e140	e100	e120		149	130	288	378	105	56	112
30	173	e130	e110	e110		149	132	1,040	345	124	38	122
31	171		e110	e100		144		4,440		146	30	
Total	3,490	4,808	3,670	3,590	3,970	5,376	4,615	9,189.5	29,594	4,485	4,169	4,083
Mean	113	160	118	116	142	173	154	296	986	145	134	136
Max	186	211	150	130	200	260	196	4,440	2,820	339	308	307
Min	27	110	60	100	100	90	130	9.5	345	35	30	50
Acre-ft	6,920	9,540	7,280	7,120	7,870	10,660	9,150	18,230	58,700	8,900	8,270	8,100

	SUMMARY STATISTICS	
	Water year 2013	Water years 1938–2013*
Annual total	81,039.5	
Annual mean	222	405
Annual runoff (acre-ft)	160,700	293,200

\*During periods of operation (April 1938 to April 1942, April 1946 to water year 2013).



**Figure 3.** Streamflow data for Tongue River at Miles City, Mont. (06308500), water years 1938–2013. *A*, Statistical distribution of monthly and annual streamflow. *B*, Annual departure from the mean annual streamflow.

## 06326500 Powder River near Locate, Mont.

LOCATION.--Lat 46°25′48″, long 105°18′34″ referenced to North American Datum of 1927, in SW ¼ SW ¼ SE ¼ sec.23, T.8 N., R.51 E., Custer County, Hydrologic Unit 10090209, on left bank at downstream side of bridge on U.S. Highway 12, 0.1 mi west of Locate, and 25 mi east of Miles City, and at river mile 29.4.

DRAINAGE AREA .-- 13,068 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1938 to present.

REVISED RECORDS. -- Water Supply Paper (WSP) 926: 1939. WSP 1309: 1938–39, maximum discharge. WSP 1729: Drainage area. Water Data Report MT-04-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,384.79 ft, referenced to the National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to July 11, 1947, nonrecording gage located at bridge 1.5 mi upstream, and July 11, 1947 to September 30, 1965, water-stage recorder located at site near upstream bridge at different elevation. October 1, 1965 to October 4, 1966, nonrecording gage, and October 5, 1966 to March 21, 1978, water-stage recorder located at present site and elevation. March 22, 1978 to April 23, 1981, water-stage recorder located 1.5 mi upstream at different elevation, and August 21, 1981 to September 30, 1981, water-stage recorder located at site near elevation. October 1, 1981 to April 5, 1995 water-stage recorder located at site at different elevation. October 1, 1981 to April 5, 1995 water-stage recorder located at site near upstream at different elevation. April 7, 1995 to present, water-stage recorders located on each bank and used depending on control conditions.

REMARKS.--Records are fair except for estimated daily discharges, which are poor. Some regulation occurs by three reservoirs in Wyoming with combined usable contents of 36,800 acre-ft. Diversions for irrigation include about 101,800 acres upstream from station. U.S. Geological Survey satellite telemeter is located at the station.

Dav	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Mav	Jun	Jul	Aug	Sep
1	19	110	245	e120	e130	e290	325	272	2,510	385	59	72
2	20	103	223	e110	e140	e300	312	261	2,030	314	48	68
3	23	107	203	e100	e150	e320	294	265	1,660	263	58	64
4	26	110	217	e110	e160	e290	292	270	1,520	221	518	60
5	24	108	224	e120	e170	e230	290	261	1,270	191	231	57
6	23	107	245	e110	e190	e280	287	251	1,100	163	148	56
7	22	105	253	e120	e210	e320	285	229	912	138	218	57
8	22	98	e220	e130	e220	e330	280	203	834	120	486	70
9	24	105	e70	e130	e230	e360	281	209	719	192	388	232
10	28	116	e80	e130	e230	e380	283	192	622	139	305	182
11	30	69	e110	e120	e230	e400	301	182	542	130	264	96
12	32	74	e120	e110	e240	401	311	173	513	419	269	82
13	35	87	e120	e110	e250	528	314	162	466	509	241	69
14	35	137	e150	e110	e250	489	313	144	432	408	236	64
15	38	166	e170	e110	e250	510	307	127	505	326	212	69
16	49	211	e180	e120	e260	522	291	104	777	274	182	68
17	59	219	e180	e130	e270	554	313	93	883	238	148	95
18	52	240	e180	e130	e260	557	364	86	883	193	110	214
19	53	210	e180	e120	e250	586	349	95	804	137	170	188
20	55	206	e180	e120	e250	463	357	224	715	100	146	129
21	60	317	e190	e120	e250	445	363	505	662	66	113	102
22	71	271	e170	e120	e250	417	345	634	695	45	95	103
23	71	280	e150	e120	e260	401	312	522	789	40	83	120
24	77	259	e120	e120	e260	392	277	549	636	33	98	121
25	81	243	e100	e130	e270	386	277	686	550	29	101	116
26	91	250	e90	e140	e270	376	285	1,470	471	28	92	127
27	99	249	e100	e150	e270	359	278	871	443	23	95	169
28	98	239	e110	e160	e270	351	271	1,060	481	26	85	187
29	98	242	e110	e150		340	278	730	575	27	95	197
30	102	244	e120	e140		330	259	2,420	477	42	99	201
31	109		e120	e130		335		4,420		74	e70	
Total	1,626	5,282	4,930	3,840	6,440	12,242	9,094	17,670	25,476	5,293	5,463	3,435
Mean	52.5	176	159	124	230	395	303	570	849	171	176	114
Max	109	317	253	160	270	586	364	4,420	2,510	509	518	232
Min	19	69	70	100	130	230	259	86	432	23	48	56
Acre-ft	3,230	10,480	9,780	7,620	12,770	24,280	18,040	35,050	50,530	10,500	10,840	6,810

Table 5.	Daily mean	discharge fo	or Powder Rive	er near Locate	, Mont. (06326500	), October 2012 through :	September 2013.
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[Discharge is in cubic feet per second. Abbreviations: e, estimated; Max, maximum; Min, minimum; acre-ft, acre-feet. Symbol: ---, no data]

SUMMARY STATISTICS	
Water year 2013	Water years 1938–2013
100,791	
276	563
199,900	407,700
	SUMMARY STATISTICS           Water year 2013           100,791           276           199,900



**Figure 4.** Streamflow data for Powder River near Locate, Mont. (06326500), water years 1938–2013. *A*, Statistical distribution of monthly and annual streamflow. *B*, Annual departure from the mean annual streamflow.

# Month-End Contents for Yellowstone River Compact Reservoirs<sup>1</sup> Completed after January 1, 1950

## 06258900 Boysen Reservoir, Wyo.

LOCATION.--Lat 43°25′00″, long 108°10′37″ referenced to North American Datum of 1927, in  $NW^{1/4}NW^{1/4}$  sec. 16, T.5 N., R.6 E., Fremont County, Hydrologic Unit 10080005, at dam on Wind River and 13 mi north of Shoshoni, Wyo.

DRAINAGE AREA .-- 7,700 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1951 to present (month-end contents only).

GAGE.--Water-stage recorder. Datum of gage is referenced to the National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by rock-fill dam completed in October 1951. Storage began October 11, 1951. Usable contents are 701,500 acre-ft between elevation 4,657.00 ft, invert of penstock pipe, and 4,725.00 ft, top of spillway gate. Dead storage is 40,080 acre-ft below elevation 4,657.00 ft. Prior to January 1, 1966, usable contents were 757,900 acre-ft and dead storage was 62,000 acre-ft at same elevations. Between January 1966 and October 1996, usable contents were 742,100 acre-ft and dead storage was 59,880 acre-ft, at same elevations. Crest of dam is at elevation 4,758.00 ft. Water used for irrigation, flood control, and power generation.

COOPERATION .-- Elevations and contents table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 862,500 acre-ft, July 6, 7, 1967, elevation, 4,730.83 ft; minimum daily contents since normal use of water started, 191,900 acre-ft, March 18, 19, 1956, elevation, 4,684.18 ft, capacity table then in use.

EXTREMES FOR WATER YEAR 2013.--Maximum daily contents, 516,400 acre-ft, June 15, 16, elevation, 4,714.40 ft; minimum daily contents, 414,000 acre-ft, Sept. 14, elevation, 4,707.12 ft.

 Table 6.
 Month-end contents for Boysen Reservoir, Wyo.

[Symbol: --, no data]

Date	Water-surface elevation, in feet	Usable contents, in acre-feet	Change in usable contents, in acre-feet
September 30, 2012	4,711.49	466,200	
October 31	4,710.97	477,700	-7,400
November 30	4,711.78	478,600	11,500
December 31	4,711.84	477,400	900
January 31, 2013	4,711.76	478,900	-1,200
February 28	4,711.86	488,000	1,500
March 31	4,712.49	487,700	9,100
April 30	4,712.47	505,000	-300
May 31	4,713.64	497,700	17,300
June 30	4,713.15	461,500	-7,300
July 31	4,710.64	423,400	-36,200
August 31	4,707.84	441,400	-38,100
September 30, 2013	4,709.18	-177,900	18,000
2013 water year			-32,200

<sup>1</sup>Wyoming disagrees with the term "Compact Reservoirs" as used throughout this annual report. Wyoming's acceptance of this annual report should not be construed as Wyoming's acceptance of the use of that term.

## 06260300 Anchor Reservoir, Wyo.

LOCATION.--Lat 43°39'50", long 108°49'27" referenced to North American Datum of 1927, in sec. 26, T.43 N., R.100 W., Hot Springs County, Hydrologic Unit 10080007, at dam on South Fork Owl Creek, 2 mi downstream from Middle Fork, 3 mi southeast of Anchor, and 32 mi west of Thermopolis, Wyo.

DRAINAGE AREA.--131 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1960 to present (month-end contents only).

GAGE.--Water-stage recorder. Datum of gage is referenced to the National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark).

REMARKS.--Reservoir is formed by concrete-arch dam completed in 1960. Usable contents are 17,410 acre-ft (revised) between elevation 6,343.75 ft, invert of river outlet, and 6,441.00 ft, spillway crest, including 68 acre-ft below elevation 6,343.75 ft. Prior to October 1, 1971, usable contents were 17,280 acre-ft, including 149 acre-ft below the invert. Water is used for irrigation of land in Owl Creek Basin.

COOPERATION.--Elevations and contents table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 9,250 acre-ft, July 4, 1967, elevation, 6,418.52 ft; no usable contents on many days some years.

EXTREMES FOR WATER YEAR 2013.--Maximum daily contents, 628 acre-ft, Mar. 31, Apr. 1, 2, elevation, 6,365.00 ft; minimum daily content, 211 acre-ft, May 3, elevation, 6,352.94 ft.

Table 7.	Month-end	contents	for Anchor	Reservoir,	Wyo.
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Date	Water-surface elevation, in feet	Usable contents, in acre-feet	Change in usable contents, in acre-feet
September 19, 2012	6,356.52	6,356.52	
October 31	6,357.00	6,357.00	15e
November 30	6,357.00	6,357.00	0
December 31	6,357.00	6,357.00	0
January 31, 2013	6,357.00	6,357.00	0
February 28	6,358.00	6,358.00	31
March 31	6,365.00	6,365.00	283
April 30	6,354.90	6,354.90	-376
May 31	6,357.15	6,357.15	67
June 30	6,357.17	6,357.17	0
July 31	6,353.84	6,353.84	-89
August 31	6,354.28	6,354.28	9
September 30, 2013	6,358.27	6,358.27	
2013 water year			55e

[Abbreviation: e, estimated. Symbol: --, no data]

## 06286400 Bighorn Lake near St. Xavier, Mont.

LOCATION.--Lat 45°18′27″, long 107°57′26″ referenced to North American Datum of 1927, in SW ¼ SE ¼ sec.18, T.6 S., R.30 E., Big Horn County, Hydrologic Unit 10080010, in block 13 of Yellowtail Dam on Bighorn River, 1.3 mi upstream from Grapevine Creek, 15.5 mi southwest of St. Xavier, and at river mile 86.6.

DRAINAGE AREA .-- 19,626 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1965 to present (month-end contents only). Prior to October 1969, published as "Yellowtail Reservoir." Records of daily elevations and contents on file at the U.S. Geological Survey, Montana Water Science Center in Helena, Mont.

GAGE.--Water-stage recorder located in powerhouse control room. Elevation of gage is 3,296.5 ft, referenced to the National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

COOPERATION .-- Elevations and contents table furnished by Bureau of Reclamation.

REMARKS.--Reservoir is formed by thin concrete-arch dam; construction began in 1961 and was completed in 1967. Storage began November 3, 1965. Usable contents are 1,312,000 acre-ft, between elevation 3,296.50 ft, river outlet invert, and 3,657.00 ft, top of flood control. Elevation of spillway crest is 3,593.00 ft. Normal maximum operating level is 1,097,000 acre-ft, between elevations, 3,640.00 ft and 3,657.00 ft. Minimum operating level is 483,400 acre-ft, elevation, 3,547.00 ft. Dead storage is 16,010 acre-ft, below elevation 3,296.50 ft. All elevations are referenced to the National Geodetic Vertical Datum of 1929. Figures given herein represent usable contents. Water is used for power production, flood control, irrigation, and recreation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,346,000 acre-ft, July 6, 1967, elevation, 3,656.43 ft; minimum since first filling, 519,400 acre-ft, March 11, 2003, elevation 3,572.81 ft.

EXTREMES FOR WATER YEAR 2013.--Maximum contents, 1,006,000 acre-ft, July 10, elevation, 3,624.67 ft; minimum, 849,400 acre-ft, May 15, elevation, 3,640,13 ft.

Table 8.	Month-end	contents for	Bighorn	Lake, Mont.
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[Symbol: --, no data]

Date	Water-surface elevation, in feet	Usable contents, in acre-feet	Change in usable contents, in acre-feet
September 30, 2012	3,627.98	877,300	
October 31	3,630.85	903,200	25,900
November 30	3,631.78	912,200	9,000
December 31	3,630.07	896,000	-16,200
January 31, 2013	3,627.93	876,800	-19,200
February 28	3,626.63	865,600	-11,200
March 31	3,626.72	866,400	800
April 30	3,625.95	859,900	-6,500
May 31	3,631.55	909,900	50,000
June 30	3,638.74	988,900	79,000
July 31	3,637.41	973,000	-15,900
August 31	3,633.10	925,400	-47,600
September 30, 2013	3,635.53	951,500	26,100
2013 water year			74,200

## Month-End Contents for Yellowstone River Compact Reservoirs<sup>1</sup> Existing on January 1, 1950

The extent, if any, to which the use of reservoirs in this section may be subject to Compact allocations was not determined. As a matter of hydrologic interest, the month-end usable contents in acre-ft of four reservoirs are given in table 9. Three of the reservoirs (Bull Lake, Pilot Butte Reservoir, and Buffalo Bill Reservoir) are in the Bighorn River Basin, Wyoming, and data on contents were furnished by the Bureau of Reclamation. The usable contents of Buffalo Bill Reservoir was increased in 1992 from 456,600 acre-ft to 644,500 acre-ft (listed as 646,565 acre-ft by Bureau of Reclamation). The Tongue River Reservoir in Montana is operated under the supervision of the Water Resources Division of the Montana Department of Natural Resources and Conservation, who furnished the water-level data and the reservoir-contents table. The usable contents of Tongue River Reservoir increased from 68,000 acre-ft to 79,070 acre-ft in 1999.

		Usable contents, in acre-feet <sup>2</sup>					
Date	06224500 Bull Lake	Pilot Butte Reservoir	06281500 Buffalo Bill Reservoir	06307000 Tongue River Reservoir			
September 30, 2012	72,500	10,770	448,900	37,940			
October 31	74,510	24,810	423,800	39,560			
November 30	75,830	24,570	430,100	41,990			
December 31	76,680	24,410	430,800	43,950			
January 31, 2013	77,270	24,340	430,200	45,560			
February 29	77,590	24,260	430,000	47,700			
March 31	77,440	24,060	429,800	53,110			
April 30	78,710	23,610	420,500	57,490			
May 31	105,600	26,450	528,200	79,920			
June 30	142,900	22,990	635,500	77,990			
July 31	142,200	15,800	591,000	62,410			
August 31	95,670	13,110	507,500	48,090			
September 30, 2013	88,450	16,700	466,400	47,640			
Change in contents during water year	15,950	5,930	17,500	9,700			

 Table 9.
 Month-end contents for Yellowstone River Compact reservoirs<sup>1</sup> existing on January 1, 1950.

<sup>1</sup>Wyoming disagrees with the term "Compact Reservoirs" as used throughout this annual report. Wyoming's acceptance of this annual report should not be construed as Wyoming's acceptance of the use of that term.

<sup>2</sup> Pre-Compact water rights and post-Compact water rights for these reservoirs are presented in the table, "Water-yearend contents for Yellowstone River Compact reservoirs or lakes."

## Water-Year-End Contents for Yellowstone River Compact Reservoirs<sup>1</sup> or Lakes

Month-end usable contents for additional reservoirs of interest to the Yellowstone River Compact are listed in table 10. Anchor Reservoir was built to have a usable contents of 17,410 acre-ft, but sinkholes within the area contained by the dam prevent filling the reservoir to the designed volume, and at present, only 9,250 acre-ft has been adjudicated with an extension to December 31, 2013, for the remaining 8,150 acre-ft.

 Table 10.
 Water-year-end contents for Yellowstone River Compact reservoirs<sup>1</sup> or lakes.

[Contents are in acre-feet. Reservoirs or lakes are listed in alphabetical order by drainage basin. Abbreviation: e, estimated. Symbol: --, no data or not available]

Reservoir or lake name	Pre-compact 1950 water right	Post-compact 1950 water right	Usable contents	Usable contents on Sept. 30, 2013	Usable contents on Sept. 30, 2012	Change in usable contents <sup>2</sup>				
Clarks Fork Yellowstone River Basin										
Cooney Reservoir <sup>3</sup>	17,480	10,880	6,600							
Glacier Lake <sup>3</sup>	4,200	0	4,200							
		Bighorn River	<sup>-</sup> Basin							
(Lake) Adelaide Reservoir <sup>4</sup>	1,450	3,320	4,770	753	1,330	-577				
Anchor Reservoir <sup>5</sup>	0	9,250	17,410	354	299e	55e				
Bighorn Lake <sup>5</sup>	0	1,312,000	1,312,000	951,500	877,300	74,200				
Boysen Reservoir <sup>5</sup>	757,900	0	701,500	441,400	473,600	-32,200				
Buffalo Bill Reservoir <sup>5</sup>	456,600	187,900	644,500	466,400	448,900	17,500				
Bull Lake <sup>5</sup>	77,040	0	77,040	88,450	72,500	15,950				
Christina Reservoir <sup>4</sup>	3,860	0	3,860	400	0	400				
Corral Reservoir <sup>4</sup>	0	1,030	1,030	528	397	131				
Diamond Creek Dike Reservoir <sup>4</sup>	0	18,380	18,380	310	330	-20				
Enterprise Reservoir <sup>4</sup>	1,490	204	1,700	700	0	700				
Fairview Extension Reservoir <sup>4</sup>	791	620	1,410	1,190	350	840				
Greybull Valley Reservoir <sup>4</sup>	0	33,170	33,170	5,610	328	5,282				
Harrington Reservoir <sup>4</sup>	315	887	1,200	400	300	100				
Lake Cameahwait Reservoir <sup>4</sup>	0	6,690	6,680	6,680	4,770	1,910				
Lake Creek Reservoir <sup>4</sup>	1,370	0	1,370	655	600	55				
Lower Sunshine Reservoir <sup>4</sup>	0	58,750	58,750	4,650	7,500	-2,850				
Newton Reservoir <sup>4</sup>	4,520	0	4,520	543	715	-172				
Perkins and Kinney Reservoir <sup>4</sup>	1,200	0	1,200	1,200	844	356				
Pilot Butte Reservoir <sup>5</sup>	34,600	0	34,600	16,700	10,770	5,930				
Sage Creek Reservoir <sup>4</sup>	440	2,340	2,780	2,370	2,080	290				
Shell Reservoir <sup>4</sup>	1,950	0	1,950	658	64	594				
Shoshone Lake Reservoir <sup>4</sup>	39,740	0	9,740	1,250	0	1,250				
Sunshine Reservoir <sup>4</sup>	52,990	0	52,990	8,490	12,050	-3,560				
Teapot Reservoir <sup>4</sup>	1,580	0	1,580	0	0	0				
Tensleep Reservoir <sup>4</sup>	3,510	0	3,510	3,510	3,510	0				
Wiley Reservoir <sup>4</sup>	689	331	1,020	1,020	887	133				
Worthen Meadow Reservoir <sup>4</sup>	0	1,500	1,500	1,070	920	150				

#### Table 10. Water-year-end contents for Yellowstone River Compact reservoirs' or lakes.—Continued

[Contents are in acre-feet. Reservoirs or lakes are listed in alphabetical order by drainage basin. Abbreviation: e, estimated. Symbol: --, no data or not available]

Reservoir or lake name	Pre-compact 1950 water right	Post-compact 1950 water right	Usable contents	Usable contents on Sept. 30, 2012	Usable contents on Sept. 30, 2011	Change in usable contents <sup>2</sup>
		Powde	r River Basin			
Cloud Peak Reservoir <sup>4</sup>	3,400	172	3,570	178	456	-278
Dull Knife Reservoir <sup>4</sup>		4,320	4,350	872	1,080	-208
Healy Reservoir <sup>4</sup>		5,140	5,140	3,250	2,840	410
Kearney Reservoir <sup>4</sup>	1,850	4,470	6,320	3,300	2,000	1,300
Lake DeSmet <sup>4</sup>	37,520	197,500	235,000	199,100	192,600	6,500
Muddy Guard Reservoir <sup>4</sup>		2,340	2,340	593	546	47
Posy No. 1 Reservoir <sup>4</sup>		1,540	1,540	0	1,540	-1,540
Tie Hack Reservoir <sup>4</sup>	1,650	788	2,440	2,370	2,020	350
Willow Park Reservoir <sup>4</sup>	4,460		4,460	3,470	1,620	1,850
		Tongue	River Basin			
Bighorn Reservoir <sup>4</sup>	2,750	1,880	4,630	573	232	341
Dome Reservoir <sup>4,6</sup>	1,840	188	2,030	1,610	609	1,001
Park Reservoir <sup>4</sup>	7,350	3,020	10,360	0	2,800	-2,800
Sawmill Lakes Reservoir <sup>4</sup>		1,280	1,280	371	0	371
Tongue River Reservoir <sup>3</sup>	79,070		79,070	47,640	37,940	9,700
Twin Lakes Reservoir <sup>4,7</sup> 1,180         2,220         3,		3,400	2,800	2,380	420	
Willow Creek Reservoir <sup>3</sup>		22,900	22,900	3,840		

<sup>1</sup>Wyoming disagrees with the term "Compact Reservoirs" as used throughout this annual report. Wyoming's acceptance of this annual report should not be construed as Wyoming's acceptance of the use of that term.

<sup>2</sup>Change in usable contents is derived from subtracting the 2011 usable contents from the 2012 usable contents.

<sup>3</sup>Reservoir managed by the State of Montana.

<sup>4</sup>Private reservoirs permitted and accounted for by the State of Wyoming.

5Reservoirs managed by Bureau of Reclamation.

<sup>6</sup>Data are combined contents of Dome Lake and Dome Lake Reservoir.

<sup>7</sup>Data are combined contents of Twin Lakes Number 1 and Twin Lakes Number 2.

## RULES AND REGULATIONS FOR ADMINISTRATION OF THE YELLOWSTONE RIVER COMPACT

A compact, known as the Yellowstone River Compact, between the States of Wyoming, Montana, and North Dakota, having become effective on October 30, 1951, upon approval of the Congress of the United States, which apportions the waters of certain interstate tributaries of the Yellowstone River which are available after the appropriative rights existing in the States of Wyoming and Montana on January 1, 1950 are supplied, and after appropriative rights to the use of necessary supplemental water are also supplied as specified in the Compact, is administered under the following rules and regulations subject to the provisions for amendment revision or abrogation as provided herein.

Article I. Collection of Water Records

- A. It shall be the joint and equal responsibility of the members of the States of Wyoming and Montana to collect, cause to be collected, or otherwise furnish records of tributary streamflow at the points of measurement specified in Article V (B) of the Compact, or as near thereto as is physically or economically feasible or justified.
  - 1. Clarks Fork

The gaging station known as Clarks Fork near Silesia, Montana and located in NW1/4 SE1/4 sec. 1, T. 4 S., R. 23 E., shall be the point of measurement for the Clarks Fork.

2. Bighorn River (exclusive of Little Bighorn River)

The gaging station known as the Bighorn River above Tullock Creek, near Bighorn, Montana, and located in SE1/4 SE1/4 NE1/4 sec. 3, T. 4 N., R. 34 E., shall temporarily be the designated point of measurement on that stream. The flow of the Little Bighorn River as measured at the gaging station near Hardin, Montana, and located in SE1/4 NE1/4 NE1/4 sec. 19, T. 1 S., R. 34 E., shall be considered the point of measurement for that stream, except that if or when satisfactory records are not available, the records for the nearest upstream station with practical corrections for intervening inflow or diversion shall be used.

3. Tongue River

The gaging station known as the Tongue River at Miles City, Montana, and located in NE1/4 NE1/4 SE1/4 sec. 23, T. 7 N., R. 47 E., shall temporarily be the point of measurement for that stream. 4. Powder River

The gaging station known as the Powder River near Locate, Montana, and located in NW1/4 SW1/4 sec. 14, T. 8 N., R. 51 E., shall temporarily be the designated point of measurement for that stream.

- B. Records of total annual diversion in acre-feet above the points of measurement designated in the Compact for irrigation, municipal, and industrial uses developed after January 1, 1950, shall be furnished by the members of the Commission for their respective States, at such time as the Commission deems necessary for interstate administration as provided by the terms of the Compact. Providing that if it be acceptable to the Commission, reasonable estimates thereof may be substituted.
- C. Annual records of the net change in storage in all reservoirs, not excluded under Article V (E) of the Compact, above the point of measurement specified in the Compact and completed after January 1, 1950, and the annual net change in reservoirs existing prior to January 1, 1950, which is used for irrigation, municipal, and industrial purposes developed after January 1, 1950, shall be the primary responsibility of the member of the Commission in whose State such works are located; providing such data are not furnished by Federal agencies under the provisions of Article III (D) of the Compact, or collected by the Commission.

Article II. Office and Officers

- A. The office of the Commission shall be located at the office of the Chairman of the Commission.
- B. The Chairman of the Commission shall be the Federal representative as provided in the Compact.
- C. The Secretary of the Commission shall be as provided for in Article III of these rules.
- D. The credentials of each member of the Commission shall be placed on file in the office of the Commission.

### Article III. Secretary

A. The Commission, subject to the approval of the Director of the United States Geological Survey, shall enter into cooperative agreements with the U.S. Geological Survey for such engineering and clerical services as may reasonably be necessary for the administration of the Compact. Said agreements shall provide that the Geological Survey shall:

- Maintain and operate gaging stations at or near the points of measurement specified in Article V (A) of the Compact.
- Assemble factual information on stream flow, diversion, and reservoir storage for the preparation of an annual report to the Governors of the signatory States.
- 3. Make such investigations and reports as may be requested by the Commission in aid of its administration of the Compact.
- B. The Geological Survey shall act as Secretary to the Commission.

#### Article IV. Budget

- A. At the annual meeting of each even-numbered year or prior thereto, the Commission shall adopt a budget for operation during the ensuing biennium beginning July first. Such budget shall set forth the total cost of construction, maintenance and operation of gaging stations, the cost of engineering and clerical aid, and other necessary expenses excepting the salaries and personal expenses of the Commissioners. On odd-numbered years revisions of the budget shall be considered.
- B. It shall be the obligation of the Commissioners of the States of Montana and Wyoming to endeavor to secure from the Legislature of their respective States sufficient funds with which to meet the obligations of this Compact, except insofar as provided by the Federal government.

Article V. Meetings

An annual meeting of the Commission shall be held each November at some mutually agreeable point in the Yellowstone River Basin for consideration of the annual report for the water year ending the preceding September 30th, and for the transaction of such other business consistent with its authorrity; provided that by unanimous consent of the Commission the date and place of the annual meeting may be changed. Other meetings as may be deemed necessary shall be held at a time and place set by mutual agreement, for the transaction of any business consistent with its authority. No action of the Commission shall be effective until approval by the Commissioners for the States of Wyoming and Montana.

Article VI. Amendments, Revisions and Abrogations.

The Rules and Regulations of the Commission may be amended or revised by a unanimous vote at any meeting of the Commission.

Gary Fritz

Commissioner for Montana

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George L. Christopulos Commissioner for Wyoming

ATTESTED:

L. Grady Moore

Federal Representative

Adopted November 17, 1953 Amended December 16, 1986

## RULES FOR THE RESOLUTION OF DISPUTES OVER THE ADMINISTRATION OF THE YELLOWSTONE RIVER COMPACT

December 19, 1995

## Section I. General Framework

According to Article III(F) of the Yellowstone River Compact.

"In case of the failure of the representatives of Wyoming and Montana to unanimously agree on any matter necessary to the proper administration of this compact. then the member selected by the director of the United States Geological Survey shall have the right to vote upon the matters in disagreement and such points of disagreement shall then be decided by a majority vote of the representatives of the states of Wyoming and Montana and said member selected by the director of the United States geological survey, each being entitled to one vote."

## Section II. Purpose and Goal

- A. The purpose of these rules is to clarify and more fully develop the dispute resolution process outlined in Section I.
- B. The goal of the dispute resolution process outlined in these rules is to encourage joint problem solving and consensus building. It consists of three phases -- unassisted negotiation, facilitation, and voting.
- C. Any agreement reached through this process is binding on Montana, Wyoming, and the United States Geological Survey (USGS).
- D. Either state can initiate the dispute resolution process defined in Sections IV, V, and VI, and the other state is obligated to participate in good faith. The states agree that the issues pursued under this dispute resolution process shall be both substantive and require timely resolution.

## Section III. Consensus

- A. In the process of administering the Yellowstone River Compact, the representatives from Montana and Wyoming agree to seek consensus.
- B. For purposes of this rule, consensus is defined as an agreement that is reached by identifying the interests of Montana and Wyoming and then building an integrative solution that maximizes the satisfaction of as many of the interests as possible. The process of seeking consensus does not involve voting, but a synthesis and blending of alternative solutions.

## Section IV. Unassisted Negotiation

- A. In all situations, the representatives from Montana and Wyoming shall first attempt to seek consensus through unassisted negotiation. The federal representative will not serve as chairperson in the unassisted negotiation process.
- B. During a negotiation process, the representatives from Montana and Wyoming shall identify issues about which they differ, educate each other about their needs and interests, generate possible resolution options, and collaboratively seek a mutually acceptable solution.
- C. To help facilitate negotiations, the representatives from Montana and Wyoming in cooperation with the USGS agree to share technical information and develop joint data bases. Other data sources may also be used.
- D. The USGS shall serve as technical advisor in the two-state negotiations.

## Section V. Facilitation

- A. If the representatives from Montana and Wyoming are not able to reach consensus through unassisted negotiation, they shall each identify, articulate, and exchange, in writing, the unresolved issues.
- B. The representatives from Montana and Wyoming shall then jointly appoint a facilitator to assist in resolving the outstanding dispute. If the representatives from Montana and Wyoming cannot identify a mutually acceptable facilitator, the representative appointed by the USGS shall appoint a facilitator.
- C. A facilitator, for purposes of this rule, is defined as a neutral third party that shall help the representatives from Montana and Wyoming communicate, negotiate, and reach agreements voluntarily. The facilitator is not empowered to vote or render a decision.
- D. The facilitator shall assist the representatives from Montana and Wyoming in developing appropriate ground rules for each facilitated session including establishing a deadline for completion of the facilitation process, setting an appropriate agenda, identifying issues, collecting and analyzing technical information, developing options, packaging agreements, and preparing a written agreement. The facilitator reserves the right to meet privately with each representative during the facilitation process.

## Section VI. Voting

- A. If, and only if, the representatives from Montana and Wyoming are unable to reach consensus with the assistance of a facilitator, then a dispute may be settled by voting.
- B. The representatives from Montana and Wyoming, along with the representative appointed by the director of the USGS, are each entitled to one vote.
- C. If the USGS representative does not vote in accordance with Article III, then the director of the USGS will select, with concurrence from Wyoming and Montana, a neutral third party to vote.

D. If the representative appointed by the director of the USGS is not involved in the steps outlined in Sections IV and V, each state shall have the opportunity to present appropriate information to that representative. This information may be presented through both oral presentations and written documents. All information will be shared with the other state.

The representative of the USGS may also consult the facilitator referenced in Section V in an attempt to resolve any disputes.

- E. The USGS shall pay the expenses of the representative appointed by the director of the USGS.
- F. Points of disagreement shall be resolved by a majority vote.

### Section VII. Funding

A. The USGS will pay one-half and the states of Montana and Wyoming shall each pay one-quarter of the expenses of the facilitator, which shall not exceed \$10,000, unless agreed to by both states and the USGS.

### Section VIII. Amendments

A. These rules may be amended or revised by a unanimous vote of the Commission.

### Section IX. Execution

These rules for the resolution of disputes over the administration of the Yellowstone River Compact are hereby executed on the date indicated below.

Commissioner for Montana

Gordon W. Fassett

Commissioner for Wyoming

William F. Horak Federal Representative

July 22, 1996 Date

#### **RULES FOR ADJUDICATING WATER RIGHTS ON INTERSTATE DITCHES**

Article I. Purpose

The purpose of this rule is to determine and adjudicate, in accordance with the laws of Montana and Wyoming, those pre-Compact (January 1, 1950) water rights diverting from the Powder, Tongue, Bighorn and Clarks Fork Rivers and their tributaries where the point of diversion is in one State and the place of use is in the other State which have not yet been adjudicated.

Article II. Authority

In accordance with the Yellowstone River Compact, the State of Montana and the State of Wyoming, being moved by consideration of interstate comity, desire to remove all causes of present and future controversy between the States and between persons in one State and persons in another State with respect to these interstate ditches. Article III (E) of the Compact provides the Yellowstone River Compact Commission with the authority "...to formulate rules and regulations and to perform any act which they may find necessary to carry out the provisions of this Compact...."

Article III. Definitions

The terms defined in the Yellowstone River Compact apply as well as the following definitions:

- 1. "Acre-feet" means the volume of water that would cover 1 acre of land to a depth of 1 foot.
- "Cfs" means a flow of water equivalent to a volume of l cubic foot that passes a point in l second of time and is equal to 40 miners inches in Montana.
- 3. "Interstate Ditches" shall include ditches and canals which convey waters of the Bighorn, Tongue, Powder, and Clarks Fork Rivers and their tributaries across the Wyoming-Montana State line where the water is diverted in one State and the place of use is in the other State.
- 4. "Department of Natural Resources and Conservation," hereafter called the "Department," means the administrative agency and Department of the Executive Branch of the Government of Montana created under Title II, Chapter 15, MCA which has the responsibility for water administration in that State.

- 5. "Water Court" means a Montana District Court presided over by a water judge, as provided for in Title III, Chapter 7, MCA.
- 6. "State Engineer" shall be the current holder of the position created by the Wyoming Constitution as Chief Water Administration Official for the State of Wyoming.
- 7. "Board of Control," hereinafter called the "Board," is defined as the constitutionally created water management agency in Wyoming composed of the four Water Division Superintendents and the State Engineer.
- 8. "Superintendent" is the member of the Board who is the water administration official for the Water Division where the interstate ditch is located. (The two Water Divisions in the Yellowstone River drainage are Water Division Numbers Two and Three.)
- 9. "Date of Priority" shall mean the earliest date of actual beneficial use of water, unless evidence and circumstances pertaining to a particular claim establish an earlier date.
- 10. "Point of Diversion" is defined to be the legal land description by legal subdivision, section, township, and range of the location of the diversion structure for an interstate ditch from a natural stream channel.
- 11. "Place of Use" is defined to be the legal land description (legal subdivision, section, township, and range) of the lands irrigated by an interstate ditch.
- 12. "Person" is defined as an individual, a partnership, a corporation, a municipality or any other legal entity, public or private.
- 13. "Claimant" is defined as any person claiming the use of water from an interstate ditch as herein defined.

Article IV. Procedures

The procedures for determining and adjudicating water rights associated with interstate ditches shall be categorized as follows: (A) Where the point of diversion is in Wyoming and place of use in Montana, and (B) Where the point of diversion is in Montana and place of use in Wyoming.

#### A. Wyoming Procedure

- 1. The Yellowstone River Compact Commission will provide a claim form to be completed by the claimant that will describe the location and point of diversion and land being irrigated, the priority date claimed, method of irrigation and such other information required to describe the claim. (A sample form for this purpose is attached.)
- 2. The Yellowstone River Compact Commission will send the claim form to water users on the interstate ditches.
- 3. Water users will complete the claim form and file it with the Yellowstone Compact Commission, which, when found to be correct and complete, will be forwarded to the Board for verification.
- 4. Upon receipt of the form, the Board shall forward it to the appropriate Superintendent, who, in cooperation with the Department, will validate the information including the use that has been made of the water, the number of acres and location of lands being irrigated, the priority date, and all other relevant information. The Superintendent and the Department will utilize aerial photography and other information to have prepared a reproducible map showing the location of the ditch system, lands irrigated, point of diversion, etc., of the claim.
- After the validation procedure, the Superintendent 5. will hold a hearing, after appropriate notice and advertisement, at which time the claimant shall describe, in detail, the use that has been made of the water and the lands that are being irrigated, establish a priority date, etc. Costs incurred in advertising shall be paid by the claimant. If a single hearing is held to consider several claims, the costs of advertising shall be shared equally among the claimants. Anyone who opposes the claim shall appear and state the reasons, if any, for opposition to the claim. If there is no opposition to the claim, cost incurred in holding the hearing shall be paid by the claimant. If protestants do appear and oppose the claim, hearing costs will be paid 50 percent by the claimant and 50 percent by the protestant, or if there is more than one protestant, the remaining 50 percent shall be shared equally among the protestants.
- 6. At the conclusion of the hearing, the Superintendent shall forward the record to the Yellowstone River Compact Commission with his findings and recommendations. The Yellowstone River Compact Commission will make the

determination of the amount of the right, the location, and the priority date, and then send the record to the Board.

- 7. The Board shall review the record and integrate it into its water rights system. Upon entry of the record by the Board, the information shall be forwarded to the Department and the Chairman of the Yellowstone River Compact Commission.
- 8. Upon the entry of the right into the Board's records, it will have the following attributes:
  - a. The right will be a Wyoming water right with a priority date as established by this procedure.
  - b. The amount of the right will be determined as provided by Wyoming law.

#### B. Montana Procedure

- 1. The Yellowstone River Compact Commission will provide a claim form to be completed by the claimant that will describe the location and point of diversion and land being irrigated, the priority date claimed, method of irrigation and such other information required to describe the claim.
- 2. The Commission will send the claim form to water users on the interstate ditches.
- 3. Water users will complete the claim form and file it with the Yellowstone River Compact Commission, which, when found to be correct and complete, will be forwarded to the Department for verification.
- 4. Upon receipt of the form, the Department, in cooperation with the Wyoming State Engineer's Office, will validate the information, including the use that has been made of the water, the number of acres and location of lands being irrigated, the priority date, and all other relevant information. The appropriate Superintendent and the Department will utilize aerial photographs and other information to have prepared a reproducible map showing the location of the ditch system, land irrigated, point of diversion, etc., of the claim.

- 5. The Department will then forward the record to the Yellowstone River Compact Commission with its findings and recommendations. Upon approval by the Commission, the record shall be submitted to the Montana Water Court for adjudication. A duplicate record will be forwarded to the Wyoming State Engineer's Office, the Board, and the Chairman of the Yellowstone River Compact Commission upon adjudication.
- 6. Upon adjudication of the right by the Montana Water Court, it will have the following attributes:
  - a) The right will be a Montana water right with a priority date as established by this procedure.
  - b) The amount of the right will be determined as provided by Montana law.

Article V. Exclusions

- A. These rules recognize the limitation in Article VI of the Yellowstone River Compact regarding Indian water rights.
- B. These rules shall not be construed to determine or interpret the rights of the States of Wyoming and Montana to the waters of the Little Bighorn River.

Article VI. Claim Form Submission Period

All claims must be submitted to the Yellowstone River Compact Commission, c/o District Chief, United States Geological Survey, 821 E. Interstate, Bismarck, ND 58501, within 90 calendar days after the claimant has received the claim form from the Commission. The blank claim form will be sent certified mail to the water user and the submission period of 90 calendar days will begin with the next day following receipt of the form, as evidenced by the certified mail receipt card. For good cause shown in writing, an extension of time beyond the 90 days for submittal may be obtained from the Commission.

## YELLOWSTONE RIVER COMPACT COMMISSION

### WYOMING

GORDON W. FASSETT STATE ENGINEER HERSCHLER BUILDING 4TH FLOOR EAST CHEYENNE, WYOMING 82002 (307) 77773354

## UNITED STATES

WILLIAM F. HORAK CHAIRMAN U.S. GEOLOGICAL SURVEY 821 E. INTERSTATE AVENUE BISMARCK, NORTH DAKOTA 58501

GARY FRITZ ADMINISTRATOR, WATER RESOURCES DIVISION DEPT. OF NATURAL RESOURCES & CONSERVATION 1520 EAST SIXTH AVENUE HELENA, MONTANA 59620 (406) 444-6603

MONTANA

### YELLOWSTONE RIVER COMPACT COMMISSION

(701) 250-4601

CLAIM FORM FOR INTERSTATE DITCHES

1.	Name of ditch or canal:
2.	Source of water supply:
	Tributary of
3.	Name of claimant:
	Address
	City StateZip Code
	Home Phone No Business Phone No
4.	Person completing form:
	Address
	City StateZip Code
	Home Phone No Business Phone No
5.	Method of irrigation:
6.	Point of diversion: County State
	Headgate located in the $\frac{1}{4}$ , Section $\frac{1}{4}$ , T. R.
	(a) Description of headgate: (Briefly describe the materials
	and general features, date constructed or last known
	work, general condition.)

(b	) Describe	water	measuring	device:
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(c) If the point of diversion is in Montana:

1. What flow rate has been claimed?

\_\_\_\_\_ **D** cubic feet per second

gallons per minute

miner's inches

2. What volume of water has been claimed?

acre-feet

7. Dimensions of ditch at headgate: Width at top (at waterline) \_\_\_\_\_\_ feet; width at bottom \_\_\_\_\_\_ feet; side slopes (vertical:horizontal) \_\_\_\_\_; depth of water \_\_\_\_\_ feet; grade \_\_\_\_\_ feet per mile.

8. Place of use and acres irrigated: County\_\_\_\_\_ State \_\_\_\_\_ Give legal subdivisions of land owned by you on which water is being used (acres claimed): An example field is shown in the first line.

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- 9. Describe any additional uses of water claimed from the ditch:
- 10. Date of first beneficial use of water (priority date) on lands described above for \_\_\_\_\_\_ Ditch is \_\_\_\_\_\_ (mo/day/yr) and shall be the same for all lands claimed on this form.
- 12. Attach documentary evidence or affidavits showing your ownership or control of the above lands, as well as the historic use of water on these lands.
- 13. What permit or claim numbers have been assigned to known records filed with either the Wyoming State Engineer's Office or the Montana Department (DNRC) for irrigating the above lands?
- 14. Have personnel in the Wyoming State Engineer's Office or the Montana Department (DNRC) been contacted to obtain the information given in No. 13? ( ) Yes ( ) No
- 15. Describe any flumes or pipelines in the ditch conveyance system:\_\_\_\_\_

16. Describe ordinary annual period of use: \_\_\_\_\_\_ to \_\_\_\_\_ (mo/day) (mo/day)

17. Attach copies of aerial photographs, U. S. Geological Survey maps or other such documents showing the ditch and lands irrigated that give evidence to this claim and may be useful to the Commission.

\* \* \* \* \* \* \* \* \* \*

State of \_\_\_\_\_ ) SS State of \_\_\_\_\_ )

I, \_\_\_\_\_\_, having been duly sworn, depose and say that I, being of legal age and being the claimant of this claim for a water right, and the person whose name is signed to it as the claimant, know the contents of this claim and the matters and things stated there are correct.

Subscribed and sworn before me, this \_\_\_\_\_day of \_\_\_\_\_, 19\_\_\_.

Notary Public

Residing at:		
My commission exr	nires.	
my commission exp	JII CD.	

