

THE HISTORY
OF THE
KEYHOLE PROJECT

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In the late part of the nineteenth century, it became more and more apparent that without an adequate and reliable water supply, that many parts of the western United States would remain unpopulated and unproductive. Most private enterprises failed in their attempts to construct large scale irrigation projects. It was difficult to prove out a Homestead when crops failed from lack of water. The Carey Act of August 18, 1894, provided for states to get ownership of public lands if they would irrigate them but eight years after it passed only 7,640 acres had been irrigated. The states and territories had trouble financing projects of any size.¹

In order to help populate areas in the arid west and offer land with adequate water to grow crops to support a family, the government felt it had to give a helping hand. Since most farmers did not have the capital to build large expensive irrigation projects to serve large acreages, Congress passed the Reclamation Act of 1902 which created a new governmental agency within the U.S. Geological Survey called the Reclamation Service. Its purpose was to build the large dams and irrigation systems in order to make the land valuable, productive, and attractive to homesteaders. After spending public funds to finance these projects, the increased production of the lands would allow the

¹ Warner, William E., Bureau of Reclamation, Praeger Publishers, Inc., New York, 1973 pp 6-7.

farmers to repay construction and operation costs over a span of 10 years. The repayment money would be recirculated in a Reclamation fund so that other projects could be constructed with the same money. Farm sizes eligible for Reclamation project water were restricted to 160 acres to keep from subsidizing large landowners. This limit was eventually increased to 160 acres for the husband and 160 acres for his wife for a total of 320 acres per family.² The idea was to help the small farmer/homesteader get on his feet with the Homestead Act to get land and the Reclamation Act to water it.

In January 1903, P. P. Vallery of Snoma, South Dakota wrote to the Black Hills District Congressman Eben Martin asking him to see if the Reclamation Service would consider building a dam in Butte County. The Reclamation Service sent out its engineer, Raymond F. Walter, to look at the project area while the U.S. Geological Survey looked for damsites. Walter reported that there was irrigable land, much of which was public land on the north side of the Belle Fourche River. On May 10, 1904, the Belle Fourche Irrigation Project was approved and \$2,100,000 set aside for its construction. It was planned to be the largest earth filled dam in the United States at that time. It was projected to hold 246,000 acre-feet of water to irrigate 90,000 acres through the North and South Canals.³ On August 5, 1904, water rights for the Belle Fourche

² *ibid.*, p. 9.

³ Riley, Marvin P., W.F. Kumlien, and Duane Tucker, 50 Years of Experience on the Belle Fourche Irrigation District, South Dakota State College, Brookings, SD, about 1954. (No date could be found on the booklet showing the exact year of publication. However, one may assume from the annual data given in the book, that it was published around 1954.) pp. 8-9.

Irrigation District were filed, a date that will later on prove to be very important.⁴

Being the first project for the new Reclamation Service, many mistakes and lessons were learned from the construction of Belle Fourche Dam. Well after the start up of the construction of the dam, the lands that the reservoir was intended to supply water to were finally surveyed for irrigability and found to be poor. On the north side of the river the land was made up of Pierre clay, Orman clay, and Pierre clay loams. They were sticky when wetted and took much longer to dry out in order to be worked. When it did dry, the soil cracked so that when water was applied it went deep before the upper layer was moistened. When it was moist it swelled up and became almost impervious so that additional water penetrated very slowly. This type of soil required much less water than looser soils require but was much harder to work, whether for construction or farming. On the south side of the river was Vale fine sandy loam and Vale gravelly sandy loam. This required much more water since when wet it was much more porous and not sticky. However, great amounts of water were lost from seepage in the canal while being delivered. Even though the South canal carried its full capacity of water out of the dam, so much was lost through canal seepage that farmers whose lands lay on the end of the canal seldom got their full allotment of water.⁵ However, the water had been allocated to the

⁴ From a letter written by Donald Driscoll, Chief Engineer of the Department of Natural Resource Development to Preston L. Funkhouser, Jr., Project Manager of the Bureau of Reclamation, Huron, SD dated Nov. 36, 1973, found in 1973 Project History of Keyhole Project, Volume 26.

⁵ Riley, Marvin P., W.F. Kumlien, and Duane Tucker, 50 Years Experience on the Belle Fourche Project, p. 48.

project area and once promised, no one was willing to give up the right to use the water.

Irrigation is more than just running water onto crops and the Belle Fourche Project learned this lesson the hard way. Ralph Milberg, the son of one of the men who worked to get the Project, said, "We got water at the headgate and then we wondered what to do with it."⁶ The Project lands were bought by land speculators who in turn leased the farms out or by homesteaders who lacked the capital for equipment to develop the farms. No one knew how to irrigate land, so fields were not leveled and often too much water was applied causing leaching, erosion, and alkali damage. By 1926, 68% of the Project lands were either idle or leased out by the owners. Financial difficulties caused by falling farm prices after World War I forced many to leave the Project. The repayment contract was renegotiated granting a no-payment development period of two years and extending the term of the contract to 40 years. Also included in the contract was money to build a drainage system to alleviate the alkali problem and water logged areas. The farming economy also improved after the construction of a sugar beet mill in the town of Belle Fourche in 1927.⁷

Even with the improvements to the Project and increased knowledge of effective irrigation methods, there were many years of water shortages. The area was hard hit during the Dust Bowl years with critical shortages of water in 1931 and 1934 through 1937. Crops were damaged by the lack of water at the end of the season. In December

⁶ Ibid., p. 68.

⁷ Ibid., pp. 15-18.

1937, the Belle Fourche Irrigation District had to ask the Bureau of Reclamation for leniency because they were not able to meet their repayment obligations. The crops losses had been so severe that the farmers had no way to pay without abandoning their farms or starving. At this time also, there was a joint liability clause in the repayment contract stating that if one farmer failed to pay his share of Project costs, then the other farmers must make up his payment between the rest of them. There were many who were not able to meet their payments and those who had decent crops were expected to make up for everyone else.⁸

Despite the problems with poor drainage or soil conditions, low farm prices, and water shortages, the Belle Fourche Irrigation Project stabilized the economy in Butte County. What water was available helped produce crops when it might have been impossible to do so without the water storage in Belle Fourche Reservoir. In October 1933, only 41 families were on relief in Butte County, less than any county east of the Missouri River. By 1934, only Lawrence County had fewer on relief than Butte County. The farmers on the project had the highest level of living conditions west of the Missouri River and the least migration of population out of the county.⁹

The areas served by the Inlet Canal and the Johnson Lateral were directly dependent upon the river flow for irrigation water because they lay above the Belle Fourche Reservoir. In the driest years, the farmers

⁸ Ibid., pp. 18, 23.

⁹ Appendixes to the Definite Plan Report, Keyhole Unit, Cheyenne Division, SD, Missouri River Basin Project, Volume I - General Plan, Department of the Interior, Bureau of Reclamation, Region 6, October 1949, Copy No. 70. pp. 29A-31A.

there had no water for their lands. There were times when the water users on Redwater and Spearfish Creeks voluntarily passed limited quantities of water on to aid the Johnson Lateral farmers but this supply could not be relied upon for extensive lengths of time. As early as 1917, the water users petitioned the U.S. Reclamation Service to investigate the possibility of supplemental water storage for these areas. "Report on Storage Possibilities from the Intake Canal and Johnson Lateral" by Pease and Hayden dated May 10, 1918, reported on six reservoir sites within the Redwater Creek drainage but concluded that none were justifiable. The water supply was too limited, construction costs were too high, and there was not enough long-term data to justify this project.¹⁰

The 1930's and the post-World War II years were considered to the golden era of the Bureau of Reclamation. They expanded their work over the sixteen western states while "client groups, for the most part, pointedly overlooked disagreements and contentions over policies in their enthusiasm for new projects that were being authorized and set under way."¹¹ However, at the same time, the Corps of Engineers began to look around for new projects and, although they had previously restricted their work to east of the Mississippi River, they found flood control problems in the West. A dam built for flood control can also supply irrigation water.

In the 1930's both the Bureau of Reclamation and the Corps of Engineers began looking at developing the Missouri River Basin. W.

¹⁰ Ibid., p. 32A.

¹¹ Warne, William E., Bureau of Reclamation, p. 17.

Glenn Sloan, an assistant engineer in the Bureau's Billings, Montana office, began to investigate a basin-wide development program. The Corps of Engineers also undertook a study of the area in 1939 and 1940. They reported in "Report on Survey of the Belle Fourche River of Wyoming, South Dakota, and Montana, with a View to the Control of its Floods" that conditions were unfavorable to any construction of a flood control or multi-purpose project. However, the Bureau's study of the Belle Fourche River concluded in its "Report on Supplemental Storage, Belle Fourche Project, South Dakota" dated March of 1941 that the Keyhole site was the best site for storage of water. From this developed the Keyhole Dam and Reservoir Unit of the Missouri River Basin as presented to the 78th Congress, 2nd Session in Senate Document 191 in April 1944.¹²

Even though the Keyhole site was finally selected, the Bureau had considered many other sites with reservoir capacities from 3,000 acre-feet to 13,000 acre-feet. Most of these were rejected because of uncertain water supply, water right obstacles, and high construction costs. The field was narrowed down to seven mainstem sites: Cabello, 18 miles upstream of Moorcroft, Wyoming; Moorcroft, 10 miles northeast of Moorcroft, Wyoming; Hulett, near the town of Hulett, Wyoming; Colony, investigated by the Corps of Engineers; Kilpatric, an off channel reservoir; State Line, the most favorable alternative but slightly more expensive to build than Keyhole; and Keyhole, named after the ranch on which it was located. The State Line site had a smaller capacity than Keyhole but, being situated closer to the Belle Fourche Project, it did

¹² Ibid., pp. 33A-34A.

not require the larger capacity of Keyhole. Since more water users might be benefitted by a larger capacity and with the lesser of the construction costs, the Keyhole site was selected.¹³

Further investigations continued through the 1940's. The damsite was found to be sound geologically. It was located where the Belle Fourche River valley narrowed as it crossed an outcrop of Dakota-Lakota sandstone strata formation. A county road and Highway 14 would have to be rerouted around the reservoir site. The Bureau of Reclamation offered to pay the Wyoming Highway Commission to relocate the highway over the top of the dam but the Commission refused the offer. However, they told the Bureau if they wanted to put it there that would be fine with them. The reservoir would inundate 9,300 acres. The Bureau would buy rights-of-way in fee-simple procedures by the nearest 10-acre increment for under the reservoir surface and 300 feet horizontal from the normal water surface line. In a 1949 report, no problems were foreseen in acquiring rights-of-way for the reservoir area or for road relocations.¹⁴ However, time would prove this to be very wrong.

The water laws of Wyoming state that water in the State is property of the State.¹⁵ Because the reservoir was located in Wyoming and the water was being held for South Dakota land, an interstate compact for use of the Belle Fourche River was needed. In a letter dated June 24, 1954, W. Glenn Sloan wrote L. C. Bishop, the State

¹³ Appendixes to the Definite Plan Report, Bureau of Reclamation. pp. 1H-9H.

¹⁴ *Ibid.*, pp. 4A, 27J, 30J.

¹⁵ Dunbar, Robert G., Forging New Rights in Western Waters, University of Nebraska Press, Lincoln, 1983. p. 108.

Engineer of Wyoming, about his recollections of the process and his interpretations of the Belle Fourche River Compact:

"Later on in 1943 while assembling data for the overall report on the Missouri River Basin, the Keyhole Reservoir was incorporated in that plan and it was around about that time that negotiations were begun toward negotiating a compact between South Dakota and Wyoming which would permit the construction of Keyhole Reservoir in Wyoming, most of whose stored water would be used in South Dakota. ...Congress had authorized the construction of a reservoir in Wyoming principally for the use of the people in South Dakota, but that since Wyoming laws prohibited such construction and use of water, it was necessary to reach an agreement between the states on the proper and fair apportionment of the water supply of the basin ...that if such an agreement could be reached, the Wyoming Legislature would be asked to authorize the construction of the reservoir."¹⁸

The governor of South Dakota had appointed four men to negotiate with Wyoming for a compact for use of the water of the Belle Fourche River: M. Q. Sharpe, G. W. Morsman, S. G. Mortimer, and W. D. Buchholz. Wyoming appointed the State Engineer L. C. Bishop, Samuel McKean, L. H. Robinson, and Mrs. E. E. McKean as its negotiation team.

Actually, negotiations between the states had begun on September 22, 1942. L. C. Bishop kept a diary during the proceedings and expounded on it in a letter dated March 19, 1954 to Fred Henson, an engineer with the South Dakota Resource Board. Meetings had been held at different times with different people but Buchholz, Bishop, and Sloan were at all of these meetings. Numerous times the negotiating teams requested that Sloan be

¹⁸ Letter from W. G. Sloan, La Mesa, California, to L. C. Bishop, State Engineer of Wyoming, dated June 24, 1954. Copies available at Wyoming State Engineer Office and in private files. Apparently Sloan had been asked for his interpretation of the Compact by Bishop and this was Sloan's reply to that request.

appointed as the Federal Representative but the request was repeatedly denied by Washington because they wanted someone not associated with the Bureau of Reclamation to be the representative.¹⁷

A draft compact was drawn up in Sundance, Wyoming on January 20, 1943. No federal representative was present but Sloan and Paul H. Berg were there for the Bureau of Reclamation. Copies of the draft were sent around for comment and approval. Bureau of Reclamation attorney Howard R. Stinson¹⁸ was appointed as the Federal Representative and arrived in Cheyenne on the 17th of February, 1943. At 3 p.m. that day, the negotiating committee started revising the wording of the Sundance draft to suit Stinson. It was completed in its present form about 3 a.m. the next morning and presented it to the Wyoming House of Representatives at 9 a.m. the morning of the 18th. Under suspension of rules, the House passed the Compact on the 19th and the Senate on the 20th. On March 3, 1943, Bishop received a wire from S. G. Mortimer that the South Dakota Legislature had also ratified the Compact.¹⁹

This compact, approved by the legislatures of both states, was also approved by the U.S. Congress by Public Law 236-78th Congress (H.R. 2580) on February 26, 1944.²⁰ (A copy of this compact can be found in the Appendix

¹⁷ Letter from L. C. Bishop, State Engineer and Interstate Streams Commission to Fred Henson, Engineer, South Dakota Resource Board, dated March 19, 1954. Copies available from Wyoming State Engineer Office and in private files. Bishop seems to have been asked for his assessment and interpretation of the Compact.

¹⁸ Memorandum from Elmer K. Nelson, Senate Committee on Interior and Insular Affairs, to L. C. Bishop, State Engineer, Wyoming, dated January 12, 1954. p. 1.

¹⁹ Letter from L. C. Bishop to Fred Henson, dated March 19, 1954, p. 5, 7.

²⁰ Ibid., p. 8.

of this report.) As Article I states: "The major purposes of this compact are to provide for the most efficient use of the water of the Belle Fourche River Basin...for multiple purposes; to provide for an equitable division of such waters; to remove all causes, present and future, which might lead to controversies;...and to promote joint action by the States and the United States in the efficient use of water and the control of floods."²¹ The hope to avoid all future controversies was not to be; conflicts over the interpretation of the compact plagued the river for years after the compact was enacted.

When three big floods hit the Missouri River in 1943, the Corps of Engineers began to rethink their earlier survey of the area. Their regional office in Omaha had been affected by the floods and its director, Lewis Pick, decided he wanted something done about flood control on the river.²² With the support of the Lower Missouri and Mississippi River valley states, Pick received authorization from the House Committee on Flood Control to restudy the problems of the Missouri River. It took only 90 days to complete his 13-page report detailing plans for dams and reservoirs for flood control, irrigation, power distribution, soil conservation, and reforestation.²³ This report was presented to the House of Representatives in House Document

²¹ Annual Project History for Missouri River Basin Project, Cheyenne Division, Keyhole Unit, Department of Interior, Bureau of Reclamation, Region 6, Volume II, Calendar Year 1949. appendix. This compact is contained in a couple of different project histories and other reports by the Bureau of Reclamation.

²² Reisner, Marc, Cadillac Desert: The American West and Its Disappearing Water, Penguin Books, New York, 1986. p. 191.

²³ Terral, Rufus, The Missouri Valley, Land of Drouth, Flood, and Promise, Yale University Press, New Haven, 1947. pp. 89-91.

475 in 1944.²⁴

W. Glenn Sloan had been working on his development plan for five years and the Corps had beaten him to Congress with a plan. The Bureau hurriedly finished their plan in two months and presented it to the Senate under Senate Document 191. The two plans differed drastically in that Pick's plan had 22 dams and 1,500 miles of levees where they did the most good for flood control and navigation. Since most irrigable lands were too distant for water delivery, irrigation was only a small consideration. With Sloan's plan, flood control and navigation were secondary to irrigation and hydroelectric power. Sloan included 90 dams to irrigate 4,700,000 acres of land. Needless to say, both agencies strongly opposed the other's plan.²⁵

The two agencies fought head to head trying to push its own plan through Congress. The dry upper Missouri River states and organizations pushed for Sloan's plan since it dealt with irrigation. The lower Missouri River states supported Pick's plan since it developed the navigability of the Mississippi River on which their economies thrived. The fight pitted states against each other, organizations sided with the plan that would most benefit them, and there seemed to be no room for compromise. The fight quickly cooled when Senator James E. Murray of Montana introduced a bill to organize a Missouri Valley Authority that would have fashioned a government-owned enterprise to develop the Missouri River Basin. The Missouri Valley Authority was strongly supported by President Franklin Roosevelt and many others who were tired of the fighting. When the Corps and the Bureau realized they were both about to be knocked out of the competition, it took them just four weeks to come up

²⁴ Warne, William E., Bureau of Reclamation, p. 162.

²⁵ Terral, Rufus, The Missouri Valley, pp. 194-195.

with a compromise plan.²⁶

The compromise, the Pick-Sloan plan, was passed through Congress and Roosevelt signed it on December 22, 1944 with reservations: "My approval of this bill is given with the distinct understanding that it is not be interpreted as jeopardizing in any way the creation of a Missouri Valley Authority, the establishment of which should receive the early consideration of the next Congress." After Roosevelt died on April 12, 1945, the Missouri Valley Authority bill was reintroduced to Congress but nothing ever became of it.²⁷

The authorization of the Keyhole Project came with the Flood Control Act of 1944 (Public Law 534, 78th Congress) which approved the general comprehensive plans, collectively called the Pick-Sloan Plan, put forth by Senate Document 191 and House Document 475.²⁸ Keyhole Reservoir is mentioned twice in Senate Document 191, once in a chart listing proposed reservoirs. The other describes the situation in two sentences: "The Belle Fourche project was originally planned for approximately 80,000 acres, but run-off during the past 12 years has proved to be an inadequate supply for so large an acreage. By the construction of the Keyhole Reservoir of 276,000 acre-feet capacity, the water supply for the Belle Fourche project will be so stabilized as to permit its final acreage to be maintained at approximately

²⁶ Ibid., pp. 201, 209-210, 228-229.

²⁷ Warne, William E., Bureau of Reclamation, p. 164-165.

²⁸ Appendixes to the Definite Plan Report, Bureau of Reclamation, p. 1A.

45,000 acres."²⁸

Preliminary work on the dam began in 1949. Roads were graded and power was installed to the site. The government camp that would house the workers began to take shape. Hydrologic studies to determine reservoir capacity, spillway requirements, tail water conditions, silt storage requirements, and diversion capacities were finalized. The Definite Plan Report was completed and submitted on December 12, 1949. The Bureau began procedures to acquire the damsite, borrow areas, camp site, access roads, and riprap sources.³⁰

In January and February of 1950, negotiations for a repayment contract between the Bureau of Reclamation and the Belle Fourche Irrigation District began. The District's Board of Directors adopted a resolution that approved a proposed 40-year water service contract with water service charges of \$26,200. They also urged the water users to approve the contract through an election process. This action was considered a firm commitment by the District, it met with the Commissioner's requirements, and cleared the way for construction to begin.³¹

Not all Wyoming residents were happy to give their land up to the benefit of the South Dakota irrigation district. In February, several reservoir landowners had posted no entry signs on their land; the signs were

²⁸ Missouri River Basin: Conservation, Control, and Use of Water Resources of the Missouri River Basin in Montana, Wyoming, Colorado, North Dakota, South Dakota, Nebraska, Kansas, Iowa, and Missouri. 78th Congress, 2nd Session, May 5 (legislative day, April 12, 1944), p. 76.

³⁰ Annual Project History for Missouri Basin Project, Cheyenne Division, Keyhole Unit, Department of Interior, Bureau of Reclamation, Region 6, Volume II, Calendar Year 1949. p. 6-7, 11.

³¹ Ibid., p. 25.

taken down on March 28.³² The State Engineer of Wyoming held a meeting near Keyhole on May 18, 1950. It had been suggested that the Bureau should look at reducing the sediment storage and irrigation space which in turn would require a lower dam, less road relocations, and thus reduce the amount of land to be inundated. It was decided that such a project would not be worth building. Besides, nearly \$2,500,000 had already been spent on the project for design work, local hearings, appropriation proceedings, and many other processes necessary for a project this size. The State Engineer issued the permit for sediment storage of 70,000 acre-feet, 130,000 acre-feet of irrigation storage, and 140,000 acre-feet of flood control space, totaling 340,000 acre-feet.³³

The Wyoming residents were not going to give up easily. They protested enough that they and the President and Secretary of the Belle Fourche Irrigation District had to appear before a Senate Subcommittee on Appropriations in Washington, D.C. The Wyoming group contended that there was not an adequate water supply for the project and that it should not be built. The District stressed the need for supplemental water and assured the Subcommittee that they were willing to negotiate a repayment contract for its share of the construction costs. The District's argument held and construction continued on the dam. According to the Keyhole Annual Project History of 1950, opposition to proposed repayment contracts by the District's water users was blamed on "Wyoming agitants" as negotiations drug on.³⁴

³² Ibid., p. 4.

³³ Memo to Senator Francis Case and Senator Joseph O'Mahoney from Elmer K. Nelson, Consulting Engineer of the Senate Committee on Interior and Insular Affairs dated April 30, 1951. E.Y. Berry Files, Case Historical Library, Black Hills State University, File #534.

³⁴ Annual Project History, Bureau of Reclamation, Volume III, Calendar Year 1950. p. 25.

Actual construction of the dam began in 1950. On June 8 of that year, the construction contract for the dam was awarded to the Knisely-Moore Company of Douglas, Wyoming. Work began on July 6 with the outlet tunnel which was "holed through" on September 6 and began to divert the water around the site. The site was stripped of overburden and the first placement of Zone 1 material was put down.³⁵

In 1951, the relocations of Highway 14 and a county road were delayed by right-of-way difficulties. Most of the rights-of-way had been obtained by declaration of taking but condemnation proceedings had begun on 10,065 acres of land owned by Bertha Waymire, most of which would be inundated by the reservoir.³⁶ The next year Bertha Waymire, et al was awarded \$643,255 from a 3-man Commissioner's Court for right-of-way claims. This was \$348,776 more than the amount deposited by the government in its condemnation action.³⁷ All land acquisitions were finally completed in 1953 and some lands were leased back out. People who sold their land through purchase contracts were allowed to lease land back from the government. Those who sold their land through the condemnation process were not allowed to lease any land.³⁸

Construction during 1951 included grouting, hauling of materials for the

³⁵ Annual Project History, Missouri River Basin, Cheyenne Division, South Dakota, Keyhole Unit, Department of Interior, Bureau of Reclamation, Region 6, Volume III, Calendar Year 1950. pp. 4, 11.

³⁶ Annual Project History, Missouri River Basin, Cheyenne Division, South Dakota, Keyhole Unit, Department of Interior, Bureau of Reclamation, Region 6, Volume IV, Calendar Year 1951., pp. 6-7.

³⁷ Annual Project History, Missouri River Basin, Cheyenne Division, South Dakota, Keyhole Unit, Department of Interior, Bureau of Reclamation, Region 6, Volume V, Calendar Year 1952. p. 44.

³⁸ Annual Project History, Missouri River Basin, Cheyenne Division, South Dakota, Keyhole Unit, Department of Interior, Bureau of Reclamation, Region 6, Volume VI, 1953. p. 21.

dam itself, and concrete placement on the outlet tunnel and spillway. Concrete was hauled in from Rapid City and the riprap material was brought in from Missouri Buttes, to the north of the damsite. The reservoir site was cleared and the usable timber was cut into lumber at a nearby sawmill.³⁹

An archeological survey of the area was conducted in the summer of 1951 by William Mulloy of the University of Wyoming and Richard P. Wheeler of the Smithsonian Institute. The Institute issued a report in December 1951 called "Appraisal of the Archeological and Paleontological Resources of the Keyhole Reservoir, Crook County, Belle Fourche River, Wyoming".⁴⁰ They also came out the next summer and reported finding skeletal remains of an early reptile and a skull of an American bison about 4,000 years old. Also found were artifacts like stone weapons, parts of an early skull, and fire pots.⁴¹

The spring runoff in 1952 looked very promising so the decision was made to begin storing the water. On February 12, 1952, a temporary bulkhead was placed over the inlet structure. When the permanent bulkhead was installed on March 26 that year, there were already 2,500 acre-feet in storage. As the reservoir began to fill, leaks were found in the outlet tunnel. One drain hole in the outlet tunnel flowed at nearly 50 gallons per minute and apparently was causing some piping of the abutment materials. This, along with the weep holes in the tunnel, had a combined flow estimated at 105 gallons per minute. Additional grouting was done in the downstream portions of the tunnel and the high-discharge drain holes. This reduced the flow to an

³⁹ Annual Project History, Bureau of Reclamation, Volume IV, Calendar Year 1951. pp. 7 - 14.

⁴⁰ Ibid., p. 29.

⁴¹ Annual Project History, Bureau of Reclamation, Volume V, Calendar Year 1952. p. 44.

acceptable amount and stopped the piping of abutment material. The dam was completed and accepted by the Bureau of Reclamation on October 25, 1952.⁴²

The first water release to the Belle Fourche Irrigation District was made on August 1, 1952 under a one-year water service contract at a rate of \$2.50 per acre-foot measured at Keyhole. The District ordered 1,612 acre-feet in their first season with supplemental water at Keyhole Reservoir.⁴³

As stated previously, the Belle Fourche Irrigation District had made a resolution to approve a 40-year repayment contract for Keyhole Reservoir storage through a water user election. The draft of the contract, approved by resolution on May 29, 1950, was based on the charge of \$26,200. The election was postponed because of strong opposition from the water users. The District's Board of Directors passed out a ballot asking for expression of sentiment from the water users which resulted in the following opinions:

Question No. 1 - Disregarding the controversy over costs, do you believe that supplemental water storage, such as would be provided by Keyhole Dam, is necessary to provide a dependable water supply through future years?

Yes - 155

No - 169

Question No. 2 - The proposed repayment contract on Keyhole Dam calls for an average payment of 41 cents per acre for construction repayment, plus about 9 cents per acre average for operation and maintenance, and would, if approved by a later election, become effective 5 years after the dam is filled. Are you favorable to such a contract?

Yes - 94

No - 223⁴⁴

Since the ballot was discouraging, the Board pursued other terms to the

⁴² Ibid., pp. 7, 14-15, 18-19.

⁴³ Annual Project History, Missouri River Basin, Cheyenne Division, South Dakota, Keyhole Unit, Department of Interior, Bureau of Reclamation, Region 6, Volume V, Calendar Year 1952. pp. 7, 36.

⁴⁴ Ibid., p. 38.

repayment agreement than had been proposed. Throughout 1951 and 1952, they proposed lower charges for construction and operation and maintenance costs with no success. The Board agreed to attempt to educate the water users about how much the water meant to the District and the need for a long-term contract while the Bureau of Reclamation would store the 1952 runoff in the new reservoir. In a resolution dated July 29, 1952, the bargain was made that in return for releases from Keyhole Reservoir under the one-year water service contract, the Board would present a long term contract based on the charge of \$22,000 to the water users in an election. The Board held five educational meetings in October. The election to ratify the contract was held on October 28, when 414 out of 515 eligible voters elected to reject the contract with 179 to 235 against it.⁴⁵

Part of the concern with the repayment contract was the water loss in the river from Keyhole Reservoir to the Diversion Dam at Belle Fourche. Water in the river winds through 146 miles and takes 6 days to get from the reservoir to the diversion dam. Along the river were farmers who pumped out of the river for livestock water and irrigation purposes. Losses of water to seepage, evaporation, pumpers, livestock, and vegetation along the river ran very high. In 1952, the U.S. Geological Survey, who operated all water gauging stations, noted that of the 3,486 acre-feet released at Keyhole, only 1,400 acre-feet or 40% of the water made it to the diversion dam.⁴⁶ Stockponds were also a concern of the water users. It was estimated that in 1950, there were 9,320 stockponds in the Keyhole drainage area, holding

⁴⁵ Ibid., pp. 39 - 41.

⁴⁶ Annual Project History, Bureau of Reclamation, Volume V, Calendar Year 1952. p. 37.

approximately 60,395 acre-feet of water. This was enough to significantly reduce the natural river flow; however, it would not affect reservoir releases.⁴⁷

A larger controversy existed between the State Engineers of South Dakota and Wyoming. Both interpreted the Belle Fourche River Compact in different ways. The argument stemmed from Article V, Section B of the Compact: "Rights to the use of the waters of the Belle Fourche River, whether based on direct diversion or storage, are hereby recognized as of the date of this compact to the extent these rights are valid under the law of the State in which the use is made, and shall remain unimpaired hereby..."

L. C. Bishop wrote that he and South Dakota State Engineer Dean Loucks met on January 23, 1953, went over the compact, and seemed to be in complete agreement on its interpretation. On March 17, he received a message through the Bureau of Reclamation that "the South Dakota group insisted that Wyoming could only have 10% of what was left after the Belle Fourche appropriation had been satisfied. I told him [Guy Thatcher of the Bureau of Reclamation] I was sure the South Dakota compact commissioners did not understand it that way. ...this year of plentiful water supply on that drainage area that Wyoming could only have diverted 21 acre-feet of water if the formula had been used as interpreted by the South Dakota State Engineer. ... At the time of the compact the plan was to eventually store all the water and that the reservoirs, except privately owned reservoirs, be operated by the Bureau of Reclamation whereby S. Dakota would receive 90% and Wyoming 10%. Now with

⁴⁷ Report on the Cheyenne Division, Wyoming-South Dakota, Missouri River Basin Project, submitted to the Commissioner of the Bureau of Reclamation from the Regional Director, Billings, Montana, January 1963. p. 24.

only one reservoir and neither state having a storage right therein the Bureau is attempting to operate it on a state priority basis, which is not in accord with the letter or intent of the pact."⁴⁸

Dean Loucks had been in touch with the Bureau of Reclamation asking for the release of all Belle Fourche Irrigation District water stored in Keyhole. He stated that "since division refers only to unappropriated waters and the compact recognizes appropriated rights, it is clearly the intention and wording of the Compact that appropriated waters and appropriated rights shall be satisfied before any allocations are made through the Compact...We...direct that in addition to the release of Belle Fourche stored water, that you have all inflows into Keyhole Reservoir released at all times when the water in the Reservoir is at elevation 4051 or more and except when all South Dakota rights in effect at the time of the Compact are satisfied...I am informed that at the time of this writing there remains approximately 3,000 acre-feet of Belle Fourche water yet to be released..."⁴⁹ Rejecting the Bureau's offer to negotiate peace between the states over the Compact, Loucks contended that the problem was with "the defiant position taken by Wyoming" and the "condoning attitude of the Billings office of the Bureau of Reclamation". He felt that South Dakota was fighting for the survival of the Belle Fourche Project.⁵⁰ Loucks further stated that no negotiations about the interpretation were

⁴⁸ Letter from L. C. Bishop to Fred Henson dated March 19, 1954. p. 8 - 10.

⁴⁹ Letter from Dean W. Loucks, South Dakota State Engineer, to K. F. Vernon, Regional Director, Billings, Montana dated June 17, 1953. E.Y. Berry Collection, File #534, Black Hills State University, Spearfish, SD.

⁵⁰ Letter from Dean W. Loucks to K. F. Vernon, Regional Director, Bureau of Reclamation, Billings, Montana dated July 7, 1953. E.Y. Berry Collection, File #534, Black Hills State University, Spearfish, SD.

needed since the wording was clear and no one was to make any further attempt to get South Dakota to agree otherwise. Only when Wyoming accepted it would South Dakota discuss operational procedures at Keyhole Reservoir.⁵¹

The Bureau of Reclamation appeared to be caught in the middle of the fight. On one hand, the states involved could not agree on how to administer the water contained in Keyhole Reservoir. Then on the other hand, there was the lack of a long-term repayment contract with the Belle Fourche Irrigation District. None of the stored water was under contract to anyone in either state. Until there was a solution, the Bureau would continue to release Belle Fourche Project water and natural flows and otherwise operate Keyhole Reservoir with the best interests of the government in mind.⁵²

The conflict smoldered on through the next several years. As stated earlier, L. C. Bishop wrote in 1954 that it was South Dakota that insisted that Wyoming could only have 10% of what was left after the Belle Fourche appropriation had been satisfied and that Wyoming wanted to divide the flow into the reservoir into the 90% and 10% portions. In a newspaper article dated November 2, 1961, in E.Y. Berry's files, it states that Wyoming held that South Dakota was entitled to 90% of the unappropriated water flow but South Dakota said it was entitled to 90% of all the water flow.⁵³ This

⁵¹ Letter from Dean W. Loucks to K. F. Vernon, Regional Director, Bureau of Reclamation, Billings, Montana dated September 8, 1953. E.Y. Berry Collection, Black Hills State University, Spearfish, SD.

⁵² Letter from K. F. Vernon, Regional Director, Bureau of Reclamation, Billings, Montana to Dean W. Loucks, South Dakota State Engineer, Pierre, SD dated June 29, 1953. E.Y. Berry Collection, File #534, Black Hills State University, Spearfish, SD.

⁵³ The newspaper article has no name or place on it and the dated is hand written on it. E.Y. Berry Collection, File # 523, Black Hills State University, Spearfish, SD.

alleged interpretation of Wyoming's was seen by the Bureau as an attempt to move the date of the District's water claim from 1904 to 1943 with the signing of the Compact.⁵⁴

It is unclear how the reversal of positions by the states came about, whether through the long controversy each side forgot where they started or if somehow each changed but went too far in the opposite direction. However, the fact remained that no agreement was reached. In 1958, the Bureau of Reclamation sent the Belle Fourche Irrigation District a contract for the purchase of 10,000 acre-feet of storage in Keyhole Reservoir. However, the Board wanted a meeting between the states to work out interpretation differences before they would consider signing any contract.⁵⁵ Finally in 1960, the Wyoming and South Dakota State Engineers agreed to meet and try to work out their differences but no progress was apparent at the end of the year.⁵⁶ In the meantime, the District continued to sign one-year water service contracts. During the years 1952 to 1960, they had seven contracts and four of those years they had not ordered water, even though there was no

⁵⁴ Letter from Floyd E. Dominy, Commissioner, Bureau of Reclamation, Washington, D.C. to Victor N. Norlin, Project Manager, Belle Fourche Irrigation District, Newell, SD dated December 19, 1961. E.Y. Berry Collection, File #523, Black Hills State University, Spearfish, SD.

⁵⁵ Annual Project History, Missouri River Basin, Cheyenne Division, South Dakota, Keyhole Unit, Department of Interior, Bureau of Reclamation, Region 6, Volume XI, Calendar Year 1958. p. 7.

⁵⁶ Annual Project History, Missouri River Basin, Cheyenne Division, South Dakota, Keyhole Unit, Department of Interior, Bureau of Reclamation, Region 6, Volume XIII, Calendar Year 1960. p. 7

standby charge made to them.⁵⁷ One-year water service contracts were also made with several Wyoming residents along the Belle Fourche River.⁵⁸

The Bureau of Reclamation had finally had enough of the bickering. In a letter dated December 15, 1961, the Regional Director in Billings, Bruce Johnson, advised Earl Lloyd, the Wyoming State Engineer, and J. W. Grimes, the Executive Officer of the South Dakota Water Resources Committee, that the outlet gates would be opened fully to release the water in Keyhole Reservoir.

"In view of the lack of progress which has been made toward reaching agreement on a satisfactory plan of operation for Keyhole Reservoir on the Belle Fourche River in Wyoming, it has decided to restore, as nearly as possible, the original stream flow conditions until such a time as we have contractors for the use of Keyhole storage water or inflows occur large enough to justify flood control or storage operations. Effective January 1, 1962, the low-level outlet will be closed and the outlet gates placed in the fully open position."⁵⁹

While the Bureau had every intention of keeping its word, Mother Nature softened the threat of draining Keyhole Reservoir. The outlet was closed on January 23, but the opening of the gates was delayed until the temperature moderated and the reservoir level gage pipe would not freeze. Unseasonably warm weather in February caused an increased flow from snowmelt so the opening was again delayed to avoid any flood damage and hardship. A controlled

⁵⁷ Letter from Floyd E. Dominy, Commissioner, Bureau of Reclamation, Washington, D.C. to Senator Francis Case, dated April 25, 1961. E.Y. Berry Collection, File #523, Black Hills State University, Spearfish, SD.

⁵⁸ Annual Project History, Missouri River Basin, Cheyenne Division, South Dakota, Keyhole Unit, Department of Interior, Bureau of Reclamation, Region 6, Volume XIV, Calendar Year 1961. p. 7.

⁵⁹ Annual Project History, Bureau of Reclamation, Volume XIV, Calendar Year 1961. Appendix, Letter from Bruce Johnson, Regional Director, Billings, MT to Earl Lloyd, State Engineer of Wyoming, and J.W. Grimes, Chief Executive Officer of South Dakota Water Resources Committee dated January 15, 1961.

release was started on February 15 to lower the water level so that no undue inconveniences would be caused downstream. On March 6, the Wyoming State Engineer requested stopping the releases due to flooding and ice jams downstream. The controlled releases were continued on March 24 when the gates were placed in full open position on April 7. Heavy rains hit the area that spring which increased the river flow beyond the Inlet Canal capacity and the gates were closed on June 14 for the rest of the year. The river had enough water to fill Belle Fourche Reservoir so the additional water was stored in Keyhole.⁶⁰

Even though Keyhole Reservoir had not been drained, the action of the Bureau caused quite a stir in the Belle Fourche Irrigation District. Negotiations began in earnest between the Bureau and the District for a long-term contract for 10,000 acre-feet of storage with an option to purchase additional stored water. In a special election on November 13, 1962 the water users of the District voted favorably for the contract.⁶¹

The "Second Amendatory Contract Between the United States of America and the Belle Fourche Irrigation District, South Dakota" was executed on January 2, 1963. (The first amendatory contract dealt with repayment of the Belle Fourche Project.) It granted the District storage rights in Keyhole Reservoir equal to 7.7% of the total active storage which was approximately 10,000 acre-feet. The construction costs charged to the District was \$60,000, in addition to its repayment obligation for the Belle Fourche Project, to be made in 40 annual payments of \$1,500. The District also had to pay for 7.7% of the

⁶⁰ Annual Project History, Missouri River Basin, Cheyenne Division, South Dakota, Keyhole Unit, Department of Interior, Bureau of Reclamation, Region 6, Volume XV, Calendar Year 1962. pp. 2-3.

⁶¹ Ibid., p. 8.

annual multipurpose costs of operation and maintenance of the dam, reservoir, and associated works that were estimated annually by the Bureau. The contract also provided additional Keyhole water that was available for purchase by the District. This water would cost \$1.25 per acre-foot measured at Keyhole Dam or \$2.00 per acre-foot if measured at the stateline. (A copy of this contract can be found in the Appendix of this report.)⁶²

With a smoother relationship between the Bureau and the District, a tentative operating plan was developed covering release amounts and times, accounts crediting for stored water, and adjustments in accounting. All water flowing into the reservoir was divided 10% for Wyoming and 90% for South Dakota storage. Out of South Dakota's portion, the senior water right of the Belle Fourche Irrigation District had to be met before the water was further divided among the other South Dakota accounts.⁶³ The Bureau turned its attention to negotiating with downstream Wyoming irrigators for a possible long-term contract but no progress was made at that time.⁶⁴

In 1973, the Bureau of Reclamation began negotiations for a water purchase contract with Belle Fourche-Wyoming Water Users Association. On March 11, 1974, a 10-year water service contract for 13,000 acre-feet in Keyhole Reservoir. This amounted to Wyoming's full 10% share of Keyhole water

⁶² Annual Project History, Missouri River Basin, Cheyenne Division, South Dakota, Keyhole Unit, Department of Interior, Bureau of Reclamation, Region 6, Volume XVI, Calendar Year 1963. Appendix.

⁶³ This information is from Craig Kjar, Chief of the Operations and Maintenance Branch of the Bureau of Reclamation in Newell, SD. As of the date of this report (April 1992), only about 12% of South Dakota's share of the reservoir is under contract.

⁶⁴ Annual Project History, Missouri River Basin, Cheyenne Division, South Dakota, Keyhole Unit, Department of Interior, Bureau of Reclamation, Region 6, Volume XVIII, Calendar Year 1964. p. 6.

storage. The cost of the water would be \$2,600 per year plus operation and maintenance costs to be estimated by the Bureau on an annual basis. This amount of water was later shared with the Shattuck Hills Homeowners Association, giving the Homeowners 500 acre-feet and leaving the rest for the Water Users Association.⁶⁵ There was some disagreement over what portion of the reservoir Wyoming's 10% entailed: was it 10% of the total storage or 10% of the conservation pool? Some argued that since the Compact mentioned only South Dakota and Wyoming, that the Bureau had no interest or holdings in the stored water. This issue is still being discussed at the present time.⁶⁶

As the 10-year contract was coming to an end, there was a move in South Dakota to pipe water from Oahe Reservoir in the middle of the state west to Keyhole Reservoir. The pipeline would supply municipal water to several small towns and the rest would be stored in Keyhole for use in a coal slurry to transport the coal to its final destination. The Wyoming water users realized that this project might threaten their irrigation water supply so they reorganized to form the Crook County Irrigation District.⁶⁷ This District signed a long-term repayment contract with the Bureau of Reclamation on October 2, 1984 for Wyoming's 10% of Keyhole Reservoir. The construction costs to be repaid was \$186,720 in 40 annual payments of \$4,668. They were required to pay 7.5% of the multipurpose operation and maintenance costs as

⁶⁵ Bureau of Reclamation files, Newell, SD.

⁶⁶ Taped conversation between George B. Waters, Chairman of the Crook County Irrigation District, and the author on April 17, 1992. Waters now owns the Keyhole Ranch for which the Project was named.

⁶⁷ As per a conversation between Mr. George B. Waters and the author on April 17, 1992.

given by the Bureau.⁶⁸

Below the Belle Fourche Diversion Dam were farmers who pumped out of the Belle Fourche River to irrigate their crops. The Diversion Dam often took most of the river flow during the hot dry months of summer which damaged the pumpers crops. A contract between the Bureau of Reclamation and the Belle River Pumpers Association was executed on June 22, 1983 for 3% of the active conservation storage space in Keyhole Reservoir which amounted to 5,574 acre-feet. The Association was required to pay construction costs of \$111,400 with 40 annual installments of \$2,785 plus 2.4% of the multipurpose operation and maintenance costs. Its water would be delivered with the Belle Fourche Irrigation District water, who acted as their agent in water orders, in order to increase the efficiency of the delivery. Part of the contract called for the installation of a measuring device downstream from the Diversion Dam.⁶⁹

The Bureau had a measuring device installed in the Inlet Canal which returns the Association's allotted water back to the riverbed. There have been problems encountered between the Association, the Bureau, and the Belle Fourche Irrigation District in the past. However, they all are negotiating to find a way to solve them.⁷⁰

From the beginning, it was understood that Keyhole Reservoir was a multi-purpose project. Its main purpose was to supply supplemental water to the Belle Fourche Irrigation District, primarily by keeping river flows high enough to adequately water the lands served by the Inlet Canal and Johnson

⁶⁸ Bureau of Reclamation files, Newell, SD.

⁶⁹ Letter from Regional Director, Billings, MT to R. Thorton Vallery, Secretary for Belle River Pumpers Association dated July 7, 1983. Bureau of Reclamation files, Newell, SD.

⁷⁰ Bureau of Reclamation files, Newell, SD.

Lateral. However, other benefits were derived from it: flood control protection, silt control, fish and wildlife conservation, recreational uses, possible municipal water for the town of Belle Fourche, and pollution abatement.⁷¹

Levees were built at Belle Fourche in 1938 and 1939 for \$39,409.37 to help control floods when they occurred. However, studies by the Corps of Engineers showed a direct average annual benefit of \$104,000 if Keyhole had a flood control capacity of 140,000 acre-feet. In a letter to the Regional Director of the Bureau of Reclamation in Billings, the Corps of Engineers estimated that this would control a peak flood of 44,200 c.f.s. with the volume of 155,000 acre-feet in 6 1/4 days with a maximum release of 3,000 c.f.s. from Keyhole. Minor floods that would severely damage downstream farms would also be controlled.⁷² In 1972, the Corps of Engineers reported that \$10,000 in flood damage had been prevented by Keyhole Reservoir that year giving a total flood control benefit of \$118,000.⁷³ No other Project History of Keyhole Reservoir listed an amount for flood control benefits so it is uncertain upon what events this data was based.

Silt control on the Inlet Canal from the diversion dam on the Belle Fourche River to the reservoir was a problem. Before Keyhole was built, silt reduced the capacity of the Inlet Canal for transporting water from the river to the reservoir and in its use for water storage at times of low river flow. It was estimated that since 45% of the Belle Fourche River's drainage is above

⁷¹ Appendixes to the Definite Plan Report, Bureau of Reclamation, p. 1A.

⁷² Ibid., p. 1E-2E.

⁷³ Annual Project History, Cheyenne Division, South Dakota, Keyhole Unit, Volume 25, Calendar Year 1972. p. 7.

Keyhole Reservoir, it would reduce Belle Fourche Reservoir's silt problem by at least that much, extending the life of that reservoir and reducing costs of maintenance.⁷⁴ Silt in Keyhole Reservoir has not been as much of a problem as originally computed. Since the silt space in the reservoir was not filling as rapidly as expected, the extra storage space was calculated and distributed to the conservation pool. This increased Belle Fourche Irrigation District's allotment to 14,307 acre-feet, Crook County Irrigation District's to 18,580 acre-feet, and Belle River Pumpers Association's to 5,574 acre-feet.⁷⁵

Although Keyhole Reservoir was not built specifically for the purpose of recreation, there can be no denying that it has become a viable industry resulting from Keyhole's construction. The Bureau of Reclamation has a Memorandum of Understanding executed in 1953 granting the State of Wyoming permission to maintain, operate, and administer certain U.S. government-owned lands around the reservoir. The State Game and Fish Commission has planted many thousands of walleye pike and channel catfish in the reservoir to improve the fishing. Improved access roads to the reservoir area and improvements of boating and camping areas have encouraged an increasing number of visitations every year.⁷⁶ The Bureau of Reclamation administers grazing leases around the dam and reservoir. Currently there is a move by the Wyoming recreation interests around Keyhole Reservoir to purchase or establish a recreation pool in the reservoir. In 1966, A.E. Bielefeld, Regional Solicitor

⁷⁴ Appendixes to the Definite Plan Report, Bureau of Reclamation, pp. 8E-10E.

⁷⁵ Bureau of Reclamation Files, Newell, SD.

⁷⁶ Annual Project History, Missouri River Basin, Cheyenne Division, South Dakota, Keyhole Unit, Department of Interior, Bureau of Reclamation, Region 6, Volumes VI - 26, Calendar Years 1953 to 1973.

of the Bureau of Reclamation in Billings, Montana, wrote the Regional Director there that perhaps water could be sold to Wyoming water users on a conditional, temporary basis for a favorable water rate until long-term contracts were executed for the rest of South Dakota's storage in Keyhole.⁷⁷ However, the problems of a Wyoming entity using water in a non-consumptive way that is designated for South Dakota use are boundless at this point in time.

In 1949, the town of Belle Fourche was using surface water from Redwater Creek to supply the water for city residents. It also piped water from springs near Spearfish Creek. At that time, it was suggested that Belle Fourche might need municipal and industrial water from Keyhole Reservoir. The largest consumers of water in the town were the Chicago and Northwestern Railroad, who used 8,276,000 gallons per year, and the Utah and Idaho Sugar Company that used approximately 5,055,000 gallons per year, half of which was during the dry months of September and October. It was not expected that the sugar company would purchase any Keyhole water.⁷⁸ The sugar plant closed in 1964.

The last stated purpose of Keyhole Reservoir was for pollution abatement. In 1949, the town of Belle Fourche and the Utah and Idaho Sugar company both dumped waste products into the river. The town's sewer outlet emptied into the river below Redwater Creek but above the diversion dam to Belle Fourche Reservoir. There were also private sewers that emptied into the river. In dry years with low flow, the river did not have enough water to wash these wastes away and stagnant, unsanitary pools would form in the river.

⁷⁷ Letter from Office of the Regional Solicitor, A.E. Bielefeld to the Regional Director, Billings, MT dated February 16, 1966. Bureau of Reclamation Files.

⁷⁸ Ibid., pp.7F, 12F, 31F.

The sugar mill would also dump industrial wastes, mainly sugar beet mash, into the river. A dike was annually piled on sand bars to try to force the waste downstream instead of into the Inlet Canal. Once a week or so the gates were shut to wash the waste over the dam. In the hot sun, it became quite odoriferous and many people complained of the smell.⁷⁹ With the closing of the sugar mill and the town meeting Department of Health regulations concerning sewage treatment, the pollution abatement problem was solved. The town has drilled two wells that furnish an adequate water supply so that there is no foreseeable need for Keyhole water.⁸⁰

Although not all of its problems have been solved, Keyhole Reservoir has contributed significantly to the people of South Dakota and Wyoming. Daryld Williamson, past Director and President for the Belle Fourche Irrigation District, put it this way: "Keyhole has been like an insurance policy for the Belle Fourche Irrigation District. It's been more than that for the people on the Johnson Lateral and Inlet Canal. It's been their source of water. Keyhole has been a cushion for us in dry years. When you have a series of dry years like we've had now for the past four years, Keyhole becomes a source of water for maintaining Johnson Lateral people."⁸¹ Williamson and George Waters, Chairman of the Crook County Irrigation District both agree, that problems are easier to work out when those who are most affected by them sit down together and work it out. As Waters so succinctly put it, "The closer you can keep the problem to where it originated, the easier it is to solve.

⁷⁹ Ibid., p. 23F.

⁸⁰ Telephone conversation between Sharon Smith, employee of the Town of Belle Fourche, and the author on April 24, 1992.

⁸¹ Taped conversation between Mr. Daryld Williamson and the author on April 13, 1992.

Then you keep the politics out."⁸² Perhaps that's good advise to keep in mind for the future.

ENGINEERING DATA

Keyhole Reservoir	
Total capacity	334,200 acre-feet
Active conservation capacity	185,801 acre-feet
Surface area at El. 4099.3	9,411 acres
Structural height	168 feet
Top width	30 feet
Maximum base width	825 feet
Crest length	3,420 feet
Crest Elevation	4,134.0 feet
Belle Fourche River	
Drainage Area at Keyhole Dam	1.950 square miles
Maximum Discharge (1978)	55,100 acre-feet
Minimum Discharge (1965)	1,300 acre-feet
Average	16,800 acre-feet ⁸³

⁸² Taped conversation between George B. Waters and the author on April 17, 1992.

⁸³ Project Data, Department of Interior, Water and Power Resources Service, U.S. Government Printing Office, 1983. p. 921.

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5. Annual Project History, Missouri River Basin, Cheyenne Division, South Dakota, Keyhole Unit, Department of Interior, Bureau of Reclamation, Volumes I to 26, Calendar Years 1949 to 1973.

Files:

1. E.Y. Berry Collection, Files #523 and #534, Library, Black Hills State University, Spearfish, SD.
2. Numerous and miscellaneous files, Bureau of Reclamation, Newell, SD.

People:

1. Daryld Williamson, past President of the Belle Fourche Irrigation District

2. Skip Waters, Chairman of the Crook County Irrigation District.
3. Jim Nafzioger, Damtender of Pactola and Keyhole Reservoirs.
4. Loren Hindbjorgen, Natural Resources Specialist, Bureau of Reclamation, Newell, SD.
5. Craig Kjar, Acting Chief of Operations and Maintenance Division of Bureau of Reclamation office and long-suffering husband, Newell, SD.
6. Sharon Smith, Employee of the Town of Belle Fourche, Belle Fourche, SD.

APPENDIX

RATIFYING COMPACT BETWEEN WYOMING AND SOUTH DAKOTA

AN ACT Entitled, An Act Ratifying and Approving a Compact Between the States of Wyoming and South Dakota for use of the Waters of the Belle Fourche River, and Declaring an Emergency.

WHEREAS, the Governor of the State of South Dakota did heretofore appoint

M. Q. Sharpe,
G. W. Morsman,
S. G. Mortimer,
W. D. Bucholz;

as commissioners to represent the State of South Dakota in the negotiation of a compact with the State of Wyoming for the purpose of agreeing upon development and use of waters of the Belle Fourche River; and

WHEREAS, the State of Wyoming did thereafter appoint as commissioner for said purpose the State Engineer L. C. Bishop, and as assistant commissioners Samuel McKean, L. H. Robinson, and Mrs. E. E. McKean, who, together with the duly appointed commissioners of the State of South Dakota and Howard R. Stinson, the representative of the United States of America negotiated a compact or agreement now called the "Belle Fourche River Compact", and which was signed on the 18th day of February, 1943 at the city of Cheyenne, in the State of Wyoming; and

WHEREAS, the act of the twenty-sixth Wyoming legislature, pursuant to which said compact was negotiated, further contained the following provision:

"That any such compact or compacts or agreements so entered into by the states of Wyoming and South Dakota and the United States shall not be binding or obligatory upon any of the contracting parties thereto unless and until the same shall have been ratified and approved by the legislature of each of such states and the Congress of the United States";

THEREFORE,

Be It Enacted by the Legislature of the State of South Dakota;

Section 1. That ratification and approval is hereby given to the Belle Fourche River Compact as signed at the City of Cheyenne in the State of Wyoming on the 18th day of February, A.D. 1943, by L. C. Bishop, the State Engineer and Interstate Streams Commissioner of the State of Wyoming, and the above named Assistant Commissioners, under and in accordance with the authority of the Act of the Twenty-sixth Wyoming Legislature approved on the 24th day of February, 1941, entitled "An Act Relating to the Appointment of Interstate Streams Commissioner and Assistant Commissioners to Negotiate Agreements Relative to Interstate Streams and Providing for the Governor of Wyoming to Notify the Governors of Other States as to the Appointment of Said Commissioner, Detailing the Authority of Said Commissioner," which Compact was also signed by the duly authorized Commissioner of the State of South Dakota and approved by the representative of the United States, which Belle Fourche River Compact is in full as follows:

BELLE FOURCHE RIVER COMPACT

The States of South Dakota and Wyoming, parties signatory to this compact (hereinafter referred to as South Dakota and Wyoming, respectively, or individually as a State, or collectively as the States), have resolved to conclude a compact as authorized under the Act of Congress of February 26, 1927, Chapter 216, 44 Stat. 1247, and, after negotiations participated in by the following named State Commissioners,

For South Dakota:

M. Q. Sharpe,
G. W. Morsman,
S. G. Mortimer,
W. D. Bucholz;

For Wyoming:

L. C. Bishop
Samuel McKean
L. H. Robinson
Mrs. E. E. McKean

and by Howard R. Stinson, appointed as the Representative of the United States of America, have agreed upon the following articles, to wit:

ARTICLE I

A. The major purposes of this compact are to provide for the most efficient use of the waters of the Belle Fourche River Basin (hereinafter referred to as the Basin) for multiple purposes; to provide for an equitable division of such waters; to remove all causes, present and future, which might lead to controversies; to promote interstate comity; to recognize that the most efficient utilization of the waters

within the Basin is required for the full development of the Basin; and to promote joint action by the States and the United States in the efficient use of water and the control of floods.

B. The physical and other conditions peculiar to the Basin constitute the basis for this compact; and none of the States hereby, nor the Congress of the United States by its consent, concedes that this compact establishes any general principle or precedent with respect to any other interstate stream.

C. Either State and all others using, claiming or in any manner asserting any right to the use of the waters of the Belle Fourche River under the authority of that State, shall be subject to the terms of this compact.

ARTICLE II

As used in this compact;

A. The term "Belle Fourche River" shall mean and include the Belle Fourche River and all its tributaries originating in Wyoming.

B. The term "Basin" shall mean that area in South Dakota and Wyoming which is naturally drained by the Belle Fourche River, and all its tributaries.

C. The term "beneficial use" is herein defined to be that use by which the water supply of a drainage basin is depleted when usefully employed by the activities of man, and includes water lost by evaporation, and other natural causes from streams, canals, ditches, irrigated areas, and reservoirs.

D. Where the name of State, or the term "State" or "States" is used, these shall be construed to include any person or entity of any

nature whatsoever using, claiming, or in any manner asserting any right to the use of the waters of the Belle Fourche River under the authority of that State.

ARTICLE III

It shall be the duty of the two States to administer this compact through the official in each State who is now or may hereafter be charged with the duty of administering the public water supplies, and to collect and correlate through such officials the data necessary for the proper administration of the provisions of this compact. Such officials may, by unanimous action, adopt rules and regulations consistent with the provisions of this compact.

The United States Geological Survey, or whatever Federal agency may succeed to the functions and duties of that agency, insofar as this compact is concerned, shall collaborate with the officials of the States charged with the administration of this compact in the execution of the duty of such officials in the collection, correlation, and publication of information necessary for the proper administration of this compact.

ARTICLE IV

Each state shall itself or in conjunction with other responsible agencies cause to be established, maintained, and operated such suitable water gaging stations as it finds necessary to administer this compact.

ARTICLE V

A. Wyoming and South Dakota agree that the unappropriated waters of the Belle Fourche River as of the date of this compact shall

be allocated to each State as follows:

90% to South Dakota
10% to Wyoming;

Provided, that allocations to Wyoming shall be exclusive of the use of these waters for domestic and stock use, and Wyoming shall be allowed unrestricted use for these purposes, except that no reservoir for such use shall exceed 20 acre-feet in capacity. For storage of its allocated water, Wyoming shall have the privilege of purchasing at cost not to exceed 10% of the total storage capacity of any reservoir or reservoirs constructed in Wyoming for irrigation of lands in South Dakota, or may construct reservoirs itself for the purpose of utilizing such water. Either state may temporarily divert, or store for beneficial use, any unused part of the above percentages allotted to the other, but no continuing right shall be established thereby.

B. Rights to the use of the waters of the Belle Fourche River, whether based on direct diversion or storage, are hereby recognized as of the date of this compact to the extent these rights are valid under the law of the State in which the use is made, and shall remain unimpaired hereby. These rights, together with the additional allocations made under A of this Article, are agreed to be an equitable apportionment between the States of the waters of the Basin.

C. The waters allocated under A of this Article and the rights recognized under B of this Article are hereinafter referred to collectively as the apportioned water. For the purposes of the administration of this compact and determining the apportioned water at any given date within a given calendar year, there shall be taken the sum of:

(1) The quantity of water in acre-feet that passed the Wyoming-South Dakota State line during the period from January 1 of that year to that given date.

(2) The quantity of water in acre-feet in storage on that date in all reservoirs built in Wyoming on the Belle Fourche River subsequent to the date of this compact.

ARTICLE VI

Any person, entity, or State shall have the right to acquire necessary property rights in another State by purchase or through the exercise of the power of eminent domain for the construction, operation and maintenance of storage reservoirs and of appurtenant works, canals, and conduits required for the enjoyment of the privileges granted by Article V and Article VII A; provided, however, that the grantees of such rights shall apply to the political subdivisions of the State in which such works are located, each and every year during which such rights are enjoyed for such purposes, a sum of money equivalent to the average annual amount of taxes assessed against the lands and improvements thereon during the 10 years preceding the use of such lands in reimbursement for the loss of taxes to said political subdivisions of the State.

ARTICLE VII

A. Either State shall have the right, by compliance with the laws of the other State, to file applications for and receive permits to construct or participate in the construction and use of any dam, storage reservoir, or diversion works in such State for the purpose of

conserving and regulating the apportioned water of the other State; provided, that such right is subject to the rights of the other State to control, regulate, and use water apportioned to it.

B. Each claim hereafter initiated for storage or diversion of water in one State for use in another State shall be filed in the Office of the State Engineer of the State in which the water is to be stored or diverted, and a duplicate copy of the application including a map showing the character and location of the proposed facilities and the lands to be irrigated shall be filed in the Office of the State Engineer of the State in which the water is to be used. If a portion or all the lands proposed to be reclaimed are located in a State other than the one in which the water is to be stored or diverted, then, before approval of the application shall be granted, said application shall be checked against the records of the appropriate office of the State in which the water is to be used, and a notation shall be placed thereon by the officer in charge of such records to the effect that the land description does not indicate a conflict with existing water rights. All endorsements shall be placed on both the original and duplicate copies of all such maps filed to the end that the records in both States may be complete and identical.

C. Appropriations may hereafter be adjudicated in the State in which the water is stored or diverted, and where a portion or all of the lands irrigated are in the other State, such adjudications shall be confirmed in the latter State by the proper authority. Each adjudication is to conform with the laws of the State where the water is stored.

or diverted and shall be recorded in the county and State where the water is used.

ARTICLE VIII

In case any reservoir is constructed in Wyoming, to be used principally for irrigation of lands in South Dakota, sufficient water not to exceed 10 cubic feet per second shall be released at all times for stock water use.

ARTICLE IX

No reservoir hereafter built solely to utilize the water allocated to Wyoming shall have a capacity in excess of 1,000 acre-feet.

ARTICLE X

The provisions of this compact shall remain in full force and effect until amended by action of the Legislature of the States and consented to and approved by the Congress of the United States in the same manner as this compact is required to be ratified to become effective.

ARTICLE XI

This compact may be terminated at any time by unanimous consent of the States, and upon such termination, all rights then established hereunder or recognized hereby shall continue to be recognized as valid by the States notwithstanding the termination of the other provisions of the compact.

ARTICLE XII

Nothing in this compact shall be construed to limit or prevent either State from instituting or maintaining any action or proceeding, legal or equitable, in any Federal court or the United States Supreme

Court for the protection of any right under this compact or the enforcement of any of its provisions.

ARTICLE XIII

Nothing in this compact shall be deemed:

A. To impair or affect any rights or powers of the United States, its agencies, or instrumentalities, in and to the use of the waters of the Belle Fourche River nor its capacity to acquire rights in and to the use of said waters;

B. To subject any property of the United States, its agencies, or instrumentalities to taxation by either State or subdivision thereof, nor to create an obligation on the part of the United States, its agencies, or instrumentalities, by reason of the acquisition, construction or operation of any property or works of whatsoever kind, to make any payments to any State or political subdivision thereof, State Agency, municipality, or entity whatsoever in reimbursement of the loss of taxes;

C. To subject any property of the United States, its agencies, or instrumentalities, to the laws of any State to an extent other than the extent to which these laws would apply without regard to the compact.

ARTICLE XIV

This compact shall become operative when approved by the Legislature of each of the States, and when consented to by the Congress of the United States by legislation providing, among other things, that:

A. Any beneficial uses hereafter made by the United States, or those acting by or under its authority, within a State, of the waters

allocated by this compact, shall be within the allocations hereinabove made for the use in that State and shall be taken into account in determining the extent of use within that State.

B. The United States, or those acting by or under its authority, in the exercise of rights or powers arising from whatever jurisdiction in the United States has in, over and to the waters of the Belle Fourche River and all its tributaries, shall recognize, to the extent consistent with the best utilization of the waters for multiple purposes, that beneficial use of the waters within the Basin is of paramount importance to development of the Basin, and no exercise of such power or right thereby that would interfere with the full beneficial use of the waters shall be made except upon a determination, giving due consideration to the objectives of this compact and after consultation with all interested Federal agencies and the State officials charged with the administration of this compact, that such exercise is in the best interest of the best utilization of such waters for multiple purposes.

C. The United States, or those acting by or under its authority, will recognize any established use, for domestic and irrigation purposes, of the apportioned waters which may be impaired by the exercise of Federal jurisdiction in, over, and to such waters; provided, that such use is being exercised beneficially, is valid under the laws of the appropriate State and in conformity with the compact at the time of the impairment thereof, and was validly initiated under State Law prior to the initiation or authorization of the Federal program or project which causes such impairment.

ARTICLE XV

Should a court of competent jurisdiction hold any part of this compact to be contrary to the constitution of any State or of the United States, all other severable provisions shall continue in full force and effect.

In Witness Whereof the Commissioners have signed this compact in triplicate original, one of which shall be filed in the archives of the Department of State of the United States of America and shall be deemed the authoritative original, and of which a duly certified copy shall be forwarded to the Governor of each of the States.

Done at the City of Cheyenne in the State of Wyoming, this 18th day of February, in the year of Our Lord, One Thousand Nine Hundred and Forty-Three.

Commissioners for South Dakota

M. Q. SHARPE

G. W. MORSMAN

S. G. MORTIMER

W. D. BUCHOLZ

Commissioners for Wyoming

L. C. BISHOP

SAMUEL MCKEAN

L. H. ROBINSON

MRS. E. E. MCKEAN

I have participated in the negotiation of this compact and intend to report favorable thereon to the Congress of the United States.

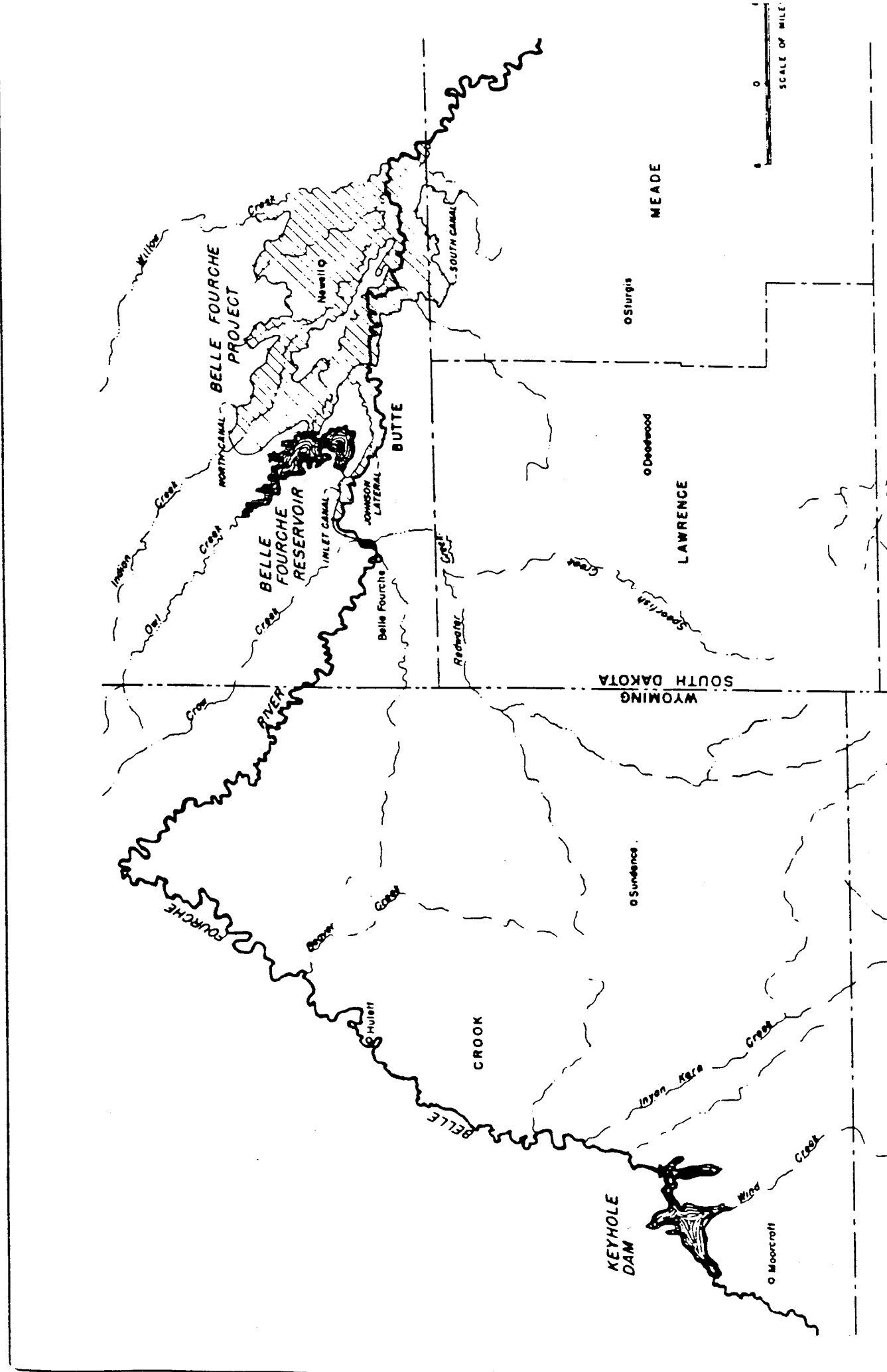
HOWARD R. STINSON, Representative of the United States of America.

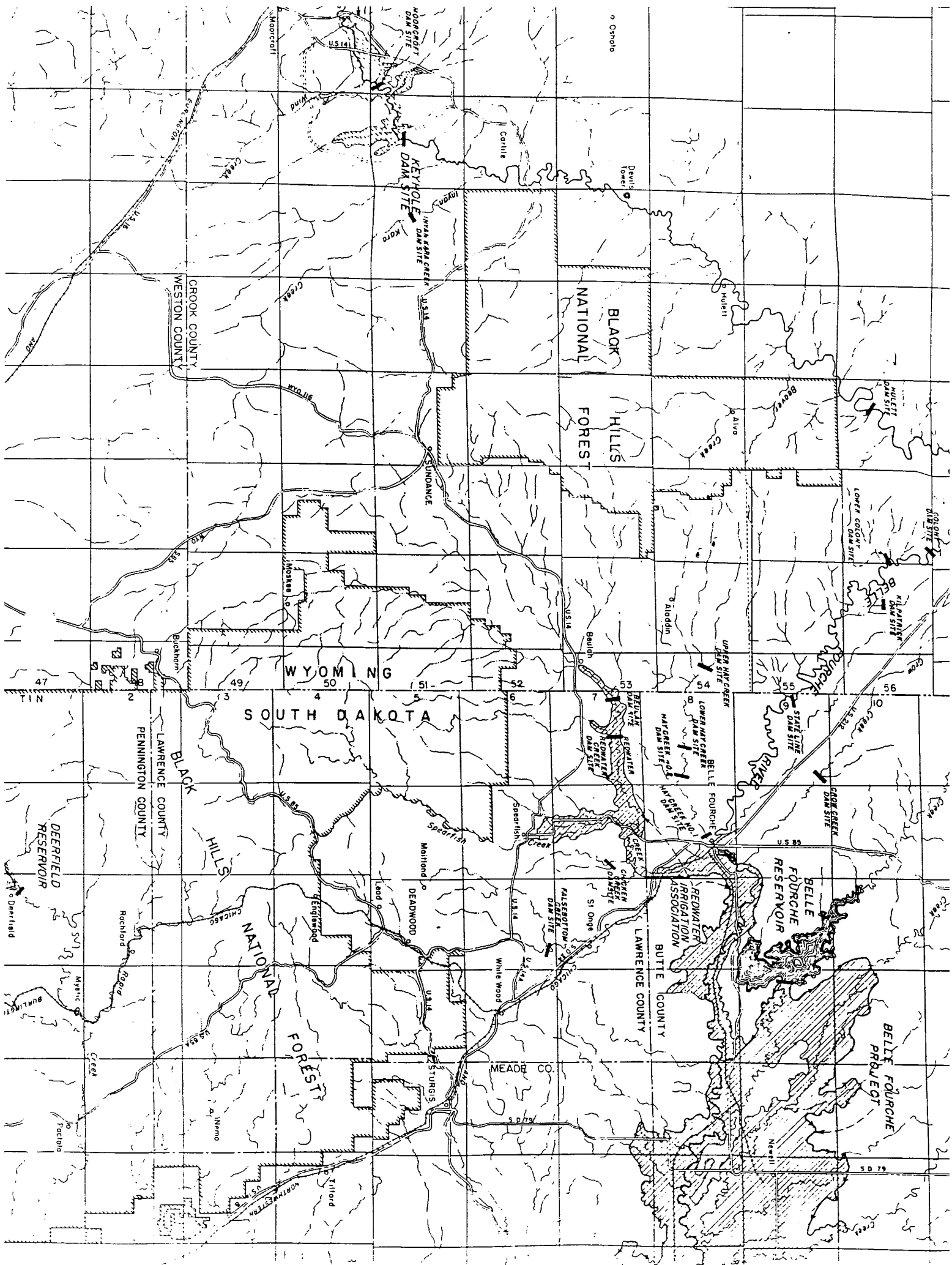
Section 2. That said compact shall not be binding or obligatory upon any of the high contracting parties thereto unless and until the same shall have been ratified by the legislature of each of the said states and approved by the Congress of the United States. The Governor of South Dakota shall give notice of the ratification and approval of said compact by the South Dakota legislature to the governors of each of the said States and to the President of the United States.

Section 3. Whereas, this act is necessary for the support of the state government and its existing institutions, and for the preservation of the public peace, health, and safety, an emergency is hereby declared to exist and this act shall be in full force and effect upon its passage and approval.

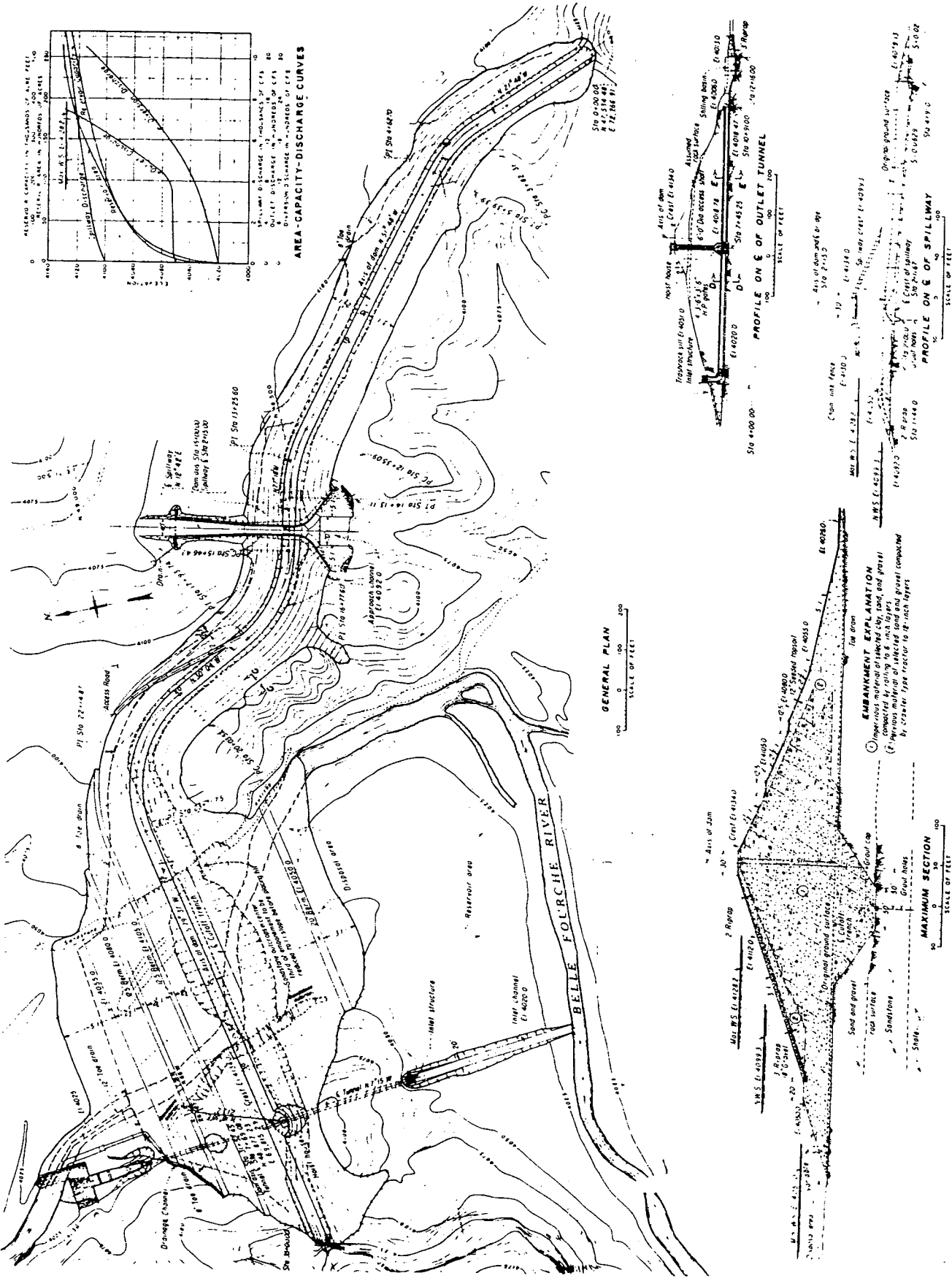
Approved March 4, 1943.

PSMBP, Keyhole Unit

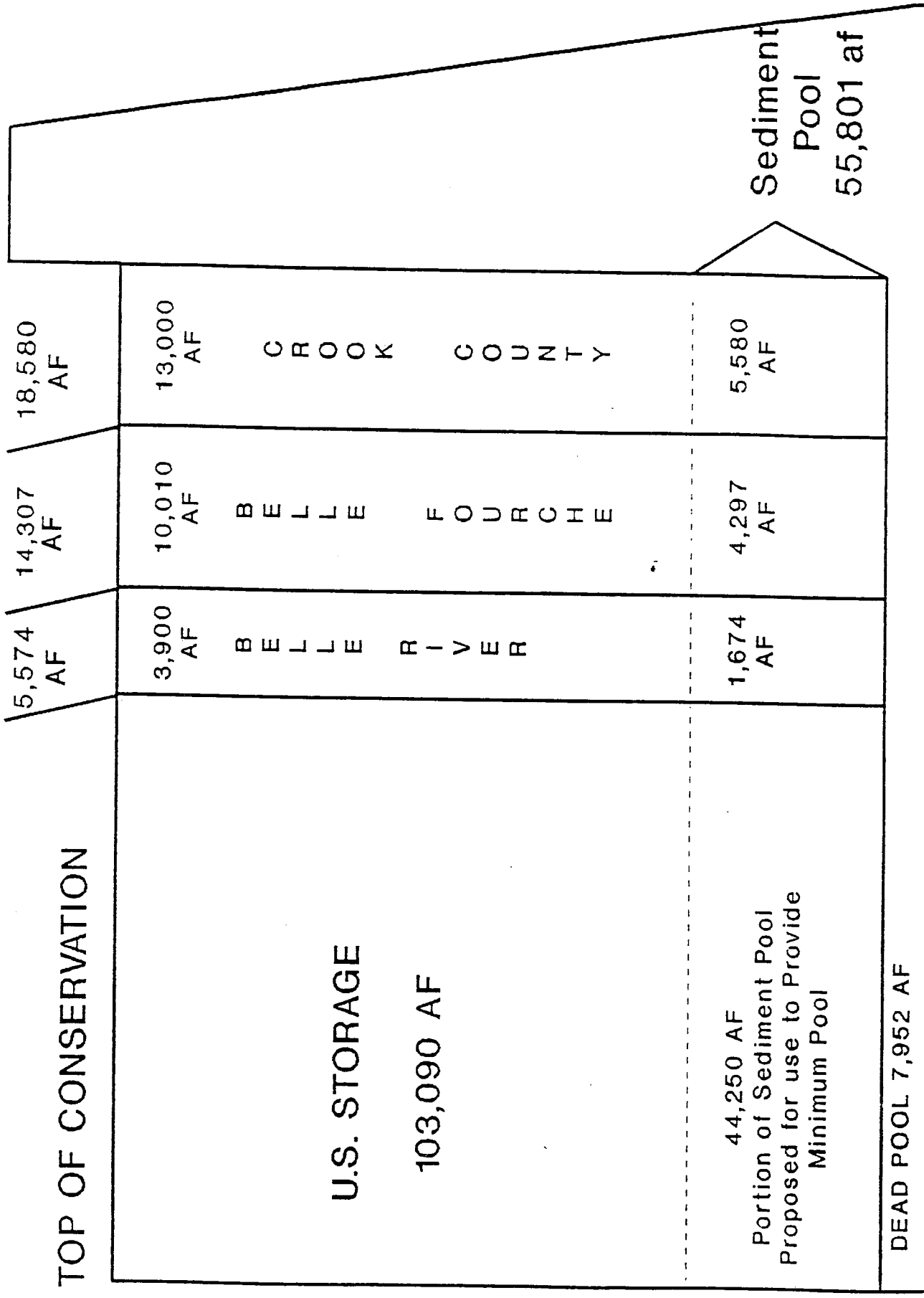




PSMBP, Keyhole Unit



KEYHOLE RESERVOIR



TOP OF CONSERVATION

U.S. STORAGE
103,090 AF

44,250 AF
Portion of Sediment Pool
Proposed for use to Provide
Minimum Pool

DEAD POOL 7,952 AF

5,574 AF | 14,307 AF | 18,580 AF

Sediment Pool
55,801 af

RES070 V2.5C 05-Oct-89

Station KEYR Keyhole Reservoir, Belle Fourche River near Moorcroft, WY
 Parameter AF.EOM Reservoir End-Of Month Content (acre-feet)

Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Mean	Max	Date	Min	Date	
1953	9761	9587	9487	9541	9596	15072	13075	9650	19858	13907	12610	10298	11870	20159	JUN24	7732	JUN13	
1954	10059	10003	9938	9863	9994	7854	9724	9596	10739	8924	8362	7663	9586	11526	JUN24	7963	SEP30	
1955	7343	6817	6490	6278	6103	16315	33449	32432	34355	30875	25583	16993	18586	35617	APR20	6027	MAR09	
1956	16788	16784	19419	19450	20950	22065	17177	16770	15829	13704	13364	12960	17100	25307	MAR23	12960	SEP28	
1957	12599	12666	12599	12521	14124	12321	12926	13871	14417	12365	11422	11184	12751	16603	JUN13	11184	SEP29	
1958	11061	11000	10950	10859	11558	12510	12937	10060	12454	12421	9487	9062	11197	14817	APR14	9062	SEP30	
1959	8813	8788	8763	8738	8780	14393	11112	9816	16755	12113	10184	9900	10680	17825	JUL04	8729	FEB01	
1960	9826	9826	9770	9752	9773	24489	21511	15072	15930	14944	14417	13540	11068	24489	MAR31	9706	FEB10	
1961	13167	13040	13017	12971	13528	12465	12365	12189	9309	8864	8429	8288	11469	14592	MAR17	8288	SEP30	
1962	8207	8174	8117	8117	21829	19249	9947	40435	70930	73449	72884	71444	34399	73855	AUG02	8085	JAN13	
1963	70535	69751	69477	69360	76365	76741	80121	83858	97596	93902	86061	83180	79746	98369	JUN19	69360	JAN11	
1964	81482	80601	80251	80251	80470	82576	86619	91975	135759	135827	127991	125278	99092	139303	JUL05	80251	DEC31	
1965	123180	122048	122550	123243	130026	134458	139022	145534	129366	122801	120924	119808	134376	147146	JUL13	122048	NOV29	
1966	137764	136585	135690	135621	135621	137514	140786	138043	146412	145388	141283	139373	132710	140786	APR29	119685	SEP25	
1967	118702	118396	117365	118581	121429	130745	129486	135475	146866	140606	130016	126572	127853	146866	JUN28	117365	DEC14	
1968	125048	123968	123778	124159	125492	130083	128890	128824	131672	124984	121238	117797	125661	131672	JUN28	117797	SEP30	
1969	117791	116879	116879	117852	117061	125238	130083	136373	131672	136580	127963	122381	125023	138444	JUL25	116879	NOV30	
1970	120984	120413	120413	121365	123588	124445	131275	138859	138375	130281	121018	118763	125784	139964	JUN16	118763	SEP29	
1971	117304	117000	117061	117730	122889	137754	161420	168271	173321	165512	156038	153367	142306	173321	JUN30	117000	NOV29	
1972	157130	156818	156818	157052	176613	179144	178301	180197	183794	180373	176528	170543	171109	195026	MAR07	153142	OCT01	
1973	167540	167216	167297	167297	167459	168514	172646	172815	171465	164781	157754	157286	166859	174165	MAY04	157286	SEP30	
1974	157286	156272	156584	162122	167297	168271	167946	166323	161766	151344	112333	139342	158091	168595	MAR17	139342	SEP30	
1975	136514	137961	137823	137892	137892	144203	151568	156974	158378	151344	141037	136097	144140	158378	JUN27	136097	SEP30	
1976	134508	133610	133818	134094	138030	139688	140606	141325	151643	147297	140821	133749	139699	152767	JUN22	133610	NOV28	
1977	131606	131407	131010	131407	131937	135820	144059	142908	141022	129221	113559	113503	131528	144131	APR20	113445	SEP21	
1978	114143	112049	112223	112281	112689	152093	153142	189922	172731	172140	165187	158768	143947	210222	MAY21	112049	NOV28	
1979	157208	155882	156662	157130	157598	168109	171380	167054	162122	157832	152692	147822	159291	171634	APR22	147822	SEP30	
1980	145355	143772	143484	143196	147597	149096	148871	143700	139549	128029	107769	106044	137205	149770	APR15	106044	SEP30	
1981	102983	101644	102016	102176	102176	106871	94799	74774	62473	55188	47192	42657	82639	105877	OCT01	42657	SEP30	
1982	42062	41662	41608	41688	45345	46687	47162	56759	62621	60573	58828	55935	49911	62843	JUN21	41555	DEC12	
1983	58221	59496	58990	61299	66857	68063	68573	68456	66741	58828	51399	50508	61361	68770	MAY18	50005	SEP10	
1984	51143	51048	51207	51271	53351	65513	66896	79346	90492	85718	82481	80425	74087	91191	JUN21	50571	OCT07	
1985	79346	79391	79391	79302	79257	82434	82481	77489	73386	62954	57487	56003	67407	82851	APR19	56003	SEP29	
1986	55462	55359	55769	55940	58828	64379	67674	74313	70695	68065	62327	63963	62898	75121	JUN11	55188	NOV12	
1987	66088	66513	66552	66513	69091	84445	87741	92604	84274	83741	79442	78639	77635	93014	JUN06	63963	OCT01	
1988	77756	77364	77233	77233	79800	83413	83507	81064	71777	63219	55666	53417	73454	84023	MAY10	53417	SEP29	
1989	52960	52601	52699	52732	53090	50224	59002	61486	57561	48922	41033	40511	52568	61813	MAY17	39540	SEP18	
1990	40071	40096	40380	40667	46103	50132	51435	53385	48492	40458	32950	31510	42773	53550	MAY24	31510	SEP30	
1991	31119	30883	30904	30862	31442	31680	32752	46780	48461	40876	32884	30990	34969	48704	JUN16	30355	SEP23	
																	83990	

80202 87575 88348 82429 81168 80202

Station KEYR Keyhole Reservoir, Belle Fourche River near Moorcroft, WY
 Parameter F3.FDH Reservoir End-Of-Month Forebay Elevation (feet)

Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Mean	Mar Date	Min	Date
1953	4051.05	4050.86	4050.75	4050.81	4050.87	4055.90	4054.25	4050.85	4059.25	4054.96	4053.84	4051.62	4052.92	4059.44	4048.66	JUN13
1954	4051.38	4051.31	4051.24	4051.16	4051.30	4051.15	4051.01	4050.87	4052.07	4050.11	4049.44	4048.95	4050.83	4052.84	4048.95	SEP30
1955	4048.16	4047.46	4047.01	4046.71	4046.46	4056.84	4066.51	4066.04	4066.92	4065.30	4062.59	4057.33	4056.44	4067.48	4046.35	MAR09
1956	4057.14	4057.18	4058.97	4058.99	4059.93	4060.60	4057.46	4057.17	4056.48	4054.79	4051.50	4054.15	4057.28	4062.44	4054.15	SEP28
1957	4053.83	4053.89	4053.83	4053.76	4055.14	4053.58	4054.12	4054.93	4055.38	4053.62	4052.74	4052.51	4053.94	4057.05	4052.51	SEP29
1958	4052.39	4052.33	4052.28	4052.19	4052.87	4053.75	4054.13	4051.37	4053.70	4053.67	4050.75	4050.27	4052.48	4055.70	4050.27	SEP30
1959	4049.98	4049.95	4049.92	4049.89	4049.94	4055.36	4052.44	4051.11	4057.16	4053.39	4051.50	4051.20	4051.82	4057.91	4049.88	FEB01
1960	4051.12	4051.12	4051.06	4051.04	4051.02	4061.99	4060.27	4055.90	4056.56	4055.80	4055.38	4054.65	4054.66	4061.99	4050.99	FEB10
1961	4054.33	4054.22	4054.20	4054.16	4054.64	4053.71	4053.62	4053.46	4050.55	4050.04	4049.52	4049.35	4052.65	4055.52	4049.35	SEP30
1962	4049.25	4049.21	4049.14	4049.14	4060.46	4058.86	4051.25	4069.50	4078.97	4079.60	4079.46	4079.10	4062.83	4079.70	4062.83	AUG02
1963	4078.87	4078.67	4078.60	4078.57	4080.31	4080.40	4081.19	4082.03	4084.87	4084.14	4082.51	4081.88	4081.00	4085.02	4078.57	JAN11
1964	4081.50	4081.30	4081.22	4081.22	4081.27	4081.75	4082.63	4083.75	4091.25	4091.26	4090.09	4089.67	4084.74	4091.76	4081.22	DEC31
1965	4089.34	4089.16	4089.24	4089.35	4090.40	4091.06	4091.72	4092.63	4092.75	4092.61	4092.04	4091.77	4091.01	4092.85	4089.16	NOV29
1966	4091.54	4091.37	4091.24	4091.23	4091.23	4091.79	4091.97	4091.58	4090.30	4089.28	4088.98	4088.80	4090.78	4091.97	4088.78	SEP25
1967	4088.62	4088.57	4088.53	4088.73	4089.19	4090.63	4090.44	4091.33	4092.94	4092.07	4090.52	4090.00	4090.13	4092.94	4088.53	DEC14
1968	4089.76	4089.59	4089.56	4089.62	4089.83	4090.53	4090.35	4090.34	4090.77	4089.75	4089.16	4088.93	4089.85	4090.77	4088.93	SEP30
1969	4088.60	4088.45	4088.45	4088.61	4088.48	4089.79	4090.53	4091.46	4091.29	4091.49	4090.21	4089.34	4089.72	4091.76	4088.45	NOV30
1970	4089.12	4089.03	4089.03	4089.18	4089.53	4089.98	4090.71	4091.82	4091.75	4090.56	4089.13	4088.76	4089.88	4091.98	4088.76	SEP29
1971	4088.52	4088.47	4088.48	4088.59	4089.42	4091.66	4091.85	4095.70	4096.31	4095.36	4094.16	4093.81	4092.11	4096.31	4088.47	NOV29
1972	4094.30	4094.26	4094.26	4094.29	4096.70	4097.00	4096.90	4097.12	4097.53	4097.14	4096.69	4095.98	4096.01	4098.78	4093.78	OCT01
1973	4095.61	4095.57	4095.58	4095.58	4095.60	4095.73	4096.23	4096.25	4096.09	4095.27	4094.38	4094.32	4095.52	4096.41	4094.32	SEP30
1974	4094.32	4094.19	4094.23	4094.94	4095.58	4095.70	4095.66	4095.46	4094.92	4093.54	4092.31	4091.89	4094.39	4095.74	4091.89	SEP30
1975	4091.77	4091.69	4091.67	4091.68	4091.68	4092.57	4093.57	4094.28	4094.46	4093.54	4092.13	4091.42	4092.54	4094.46	4091.42	SEP30
1976	4091.19	4091.06	4091.09	4091.13	4091.70	4091.94	4092.07	4092.17	4093.58	4093.00	4092.10	4091.08	4091.84	4093.73	4091.06	NOV28
1977	4090.76	4090.73	4090.67	4090.73	4090.81	4091.38	4092.55	4092.39	4092.00	4090.40	4088.20	4087.89	4090.71	4092.56	4087.88	SEP21
1978	4088.00	4087.64	4087.67	4087.68	4087.75	4093.64	4093.78	4098.22	4096.24	4096.17	4095.32	4094.51	4092.22	4100.38	4087.64	NOV28
1979	4094.31	4094.14	4094.24	4094.30	4094.36	4095.68	4096.08	4095.55	4094.94	4094.39	4093.72	4093.07	4094.57	4096.11	4093.07	SEP30
1980	4092.73	4092.51	4092.47	4092.43	4093.04	4093.24	4093.21	4092.50	4091.92	4090.22	4086.90	4086.59	4091.48	4093.33	4086.59	SEP30
1981	4086.04	4085.79	4085.86	4085.89	4085.89	4086.15	4084.48	4081.20	4078.08	4076.02	4073.51	4071.92	4081.74	4086.56	4071.92	SEP30
1982	4071.70	4071.55	4071.53	4071.56	4072.88	4073.34	4073.50	4076.46	4078.12	4077.56	4076.50	4076.24	4074.25	4078.18	4071.51	DEC12
1983	4076.90	4077.26	4077.37	4077.78	4079.24	4079.55	4079.68	4079.65	4079.21	4076.50	4074.87	4074.59	4077.72	4079.73	4074.43	SEP10
1984	4074.79	4074.76	4074.81	4074.83	4075.47	4078.89	4079.25	4082.25	4084.61	4083.63	4082.94	4082.49	4079.06	4084.75	4074.41	OCT07
1985	4082.25	4082.26	4082.26	4082.24	4082.23	4082.93	4082.94	4081.83	4080.87	4078.21	4076.69	4076.26	4080.91	4083.02	4076.26	SEP29
1986	4076.10	4076.07	4076.19	4076.24	4076.50	4078.59	4079.45	4081.09	4081.18	4079.55	4078.04	4078.48	4078.12	4081.28	4076.02	NOV12
1987	4079.04	4079.15	4079.16	4079.15	4079.81	4083.36	4084.05	4085.03	4084.56	4083.21	4082.27	4082.09	4081.74	4085.11	1079.15	JAN12
1988	4081.89	4081.80	4081.77	4081.77	4082.35	4083.14	4083.16	4082.63	4080.48	4078.28	4076.16	4075.49	4080.74	4083.27	4075.49	SEP30
1989	4075.35	4075.24	4075.27	4075.28	4075.39	4076.90	4077.12	4077.81	4076.71	4074.08	4071.31	4071.11	4075.13	4077.90	4070.73	SEP18
1990	4070.94	4070.95	4071.06	4071.17	4073.14	4074.47	4074.88	4075.48	4073.94	4071.09	4067.93	4067.27	4071.86	4075.53	4067.27	SEP30
1991	4067.09	4066.98	4066.99	4066.97	4067.24	4067.35	4067.84	4073.37	4073.93	4071.25	4067.90	4067.03	4068.66	4074.01	4066.73	SEP23
Mean	4076.40	4076.30	4076.33	4076.37	4077.17	4078.74	4078.87	4079.55	4080.32	4079.00	4077.60	4076.97	4077.80	4052.84	1079.15	JAN12
Min.	4048.16	4047.46	4047.01	4046.71	4046.46	4051.15	4051.01	4050.85	4050.55	4050.04	4049.44	4048.95	4050.83	4100.38	4048.95	SEP30

RES070 V2.SC 05-Oct-89

Station KEYR Keyhole Reservoir, Belle Fourche River near Moorcroft, WY
 Parameter AF.QRD Monthly River Discharge (acre-feet)

Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total	Max CFS	Date	Min CFS	Date
1953	0.	0.	0.	0.	0.	0.	2332.	4097.	2500.	4991.	4878.	1859.	20657.	273.	AUG05	0.	OCT01
1954	0.	0.	0.	0.	0.	417.	0.	205.	800.	1253.	704.	9.	3588.	84.	AUG01	0.	OCT01
1955	558.	482.	390.	236.	194.	87.	1883.	9209.	7758.	4648.	5477.	7626.	38549.	158.	MAY03	0.	MAR14
1956	0.	0.	0.	0.	0.	3710.	4884.	237.	2030.	1730.	1075.	0.	13666.	420.	MAR29	0.	OCT01
1957	0.	0.	0.	0.	0.	2232.	0.	0.	6948.	4467.	2366.	0.	16014.	300.	MAR28	0.	OCT01
1958	0.	0.	0.	0.	0.	1916.	0.	2299.	0.	4398.	2449.	0.	11063.	101.	APR22	0.	OCT01
1959	0.	0.	0.	0.	0.	3099.	0.	1200.	0.	4698.	2499.	0.	11496.	101.	APR04	0.	OCT01
1960	0.	0.	0.	0.	0.	1999.	0.	5601.	0.	0.	1860.	400.	9860.	202.	MAY03	0.	OCT01
1961	0.	0.	0.	0.	0.	2399.	0.	0.	2123.	0.	0.	0.	4523.	76.	MAR17	0.	OCT01
1962	0.	0.	0.	0.	6014.	8122.	9039.	10076.	1940.	0.	0.	0.	35191.	825.	MAY23	0.	OCT01
1963	0.	0.	0.	0.	0.	0.	0.	0.	0.	645.	4314.	694.	5653.	100.	AUG20	0.	OCT01
1964	0.	0.	0.	0.	0.	0.	0.	0.	254.	1363.	3650.	0.	5256.	125.	JUL27	0.	OCT01
1965	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	OCT01	0.	OCT01
1966	0.	0.	0.	0.	0.	0.	0.	0.	5762.	5462.	363.	0.	11587.	125.	JUL12	0.	OCT01
1967	0.	0.	0.	0.	0.	0.	0.	0.	0.	2739.	6024.	2208.	10971.	150.	JUL25	0.	OCT01
1968	0.	0.	0.	0.	0.	0.	0.	0.	0.	4074.	2856.	0.	6930.	100.	JUL12	0.	OCT01
1969	0.	0.	0.	0.	0.	0.	0.	0.	0.	3449.	4612.	1557.	9618.	100.	JUL15	0.	OCT01
1970	0.	0.	0.	0.	0.	0.	0.	0.	0.	5024.	4656.	0.	9680.	100.	JUL07	0.	OCT01
1971	0.	0.	0.	0.	0.	0.	0.	0.	0.	3478.	5526.	86.	9090.	100.	JUL15	0.	OCT01
1972	0.	0.	0.	0.	0.	26267.	0.	0.	0.	0.	2586.	2380.	31234.	800.	MAR11	0.	OCT01
1973	1190.	0.	0.	0.	0.	0.	0.	0.	0.	3421.	3352.	0.	7964.	240.	OCT01	0.	OCT04
1974	0.	0.	0.	0.	0.	0.	0.	0.	0.	7686.	5903.	294.	14977.	125.	JUN27	0.	OCT01
1975	0.	0.	0.	0.	0.	0.	0.	0.	1115.	3074.	5925.	1264.	10263.	100.	JUL17	0.	OCT01
1976	0.	0.	0.	0.	0.	0.	0.	0.	0.	3264.	3967.	4463.	11691.	100.	JUL16	0.	OCT01
1977	451.	10.	0.	0.	0.	0.	0.	0.	2565.	8929.	12442.	0.	24397.	312.	AUG01	0.	OCT01
1978	0.	0.	0.	0.	0.	0.	0.	27208.	19237.	2281.	4336.	1347.	54409.	1300.	MAY24	0.	OCT01
1979	31.	0.	0.	0.	0.	0.	0.	599.	5447.	4464.	2763.	346.	13649.	117.	MAY30	0.	OCT03
1980	0.	0.	0.	0.	0.	0.	0.	2672.	1533.	10112.	18552.	0.	32869.	430.	AUG02	0.	OCT01
1981	0.	0.	0.	0.	0.	0.	7629.	15308.	11681.	11995.	7581.	3396.	57590.	313.	MAY20	0.	OCT01
1982	218.	0.	0.	0.	0.	0.	0.	0.	0.	4095.	5173.	1252.	10739.	157.	JUN20	0.	OCT01
1983	0.	0.	0.	0.	0.	0.	0.	0.	540.	7974.	4250.	430.	13193.	172.	JUN30	0.	OCT01
1984	0.	0.	0.	0.	0.	0.	0.	0.	0.	2484.	945.	0.	3429.	114.	JUL20	0.	OCT01
1985	0.	0.	0.	0.	0.	0.	0.	4180.	2948.	9276.	3749.	176.	20329.	175.	JUL17	0.	OCT01
1986	0.	0.	0.	0.	0.	0.	0.	0.	0.	4819.	4100.	661.	9581.	124.	JUL12	0.	OCT01
1987	0.	0.	0.	0.	0.	0.	0.	0.	1055.	7865.	2449.	0.	11309.	157.	JUL07	0.	OCT01
1988	0.	0.	0.	0.	11.	0.	0.	1772.	7185.	7857.	6133.	1484.	24466.	152.	JUN29	0.	OCT01
1989	0.	0.	0.	0.	0.	0.	0.	0.	3276.	8394.	6324.	840.	18834.	178.	JUL28	0.	OCT01
1990	0.	0.	0.	0.	0.	0.	0.	0.	3330.	7712.	6879.	484.	18404.	133.	JUL19	0.	OCT01
1991	0.	8.	0.	0.	0.	0.	0.	0.	0.	6850.	6885.	1564.	15306.	142.	JUL26	0.	OCT01
Mean	63.	13.	10.	7.	159.	1109.	841.	2171.	2308.	4485.	4303.	893.	16360.	0.	OCT01	0.	OCT01

Station KE1R Keyhole Reservoir, Belle Fourche River near Moorcroft, WY
 Parameter AF.IN Monthly Computed Inflow (acre-feet)

Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total	Max CFS	Date	Min CFS	Date
1953	-712.	-173.	-99.	54.	55.	5477.	335.	672.	12708.	-860.	3381.	-452.	20486.	1449.	JUN21	-103.	OCT28
1954	-228.	-65.	-64.	-74.	131.	277.	-129.	78.	1943.	-562.	342.	-390.	1258.	697.	JUN22	-27.	JUL12
1955	-63.	-45.	62.	25.	20.	10300.	19018.	8192.	9681.	1168.	185.	-965.	47579.	2003.	APR01	-61.	APR28
1956	-266.	56.	2636.	31.	1560.	4826.	-4.	-171.	1090.	-396.	734.	-404.	9631.	698.	DEC24	-222.	MAR30
1957	-361.	67.	-67.	-78.	1603.	429.	605.	945.	7494.	2415.	1424.	-237.	14240.	372.	JUN23	-212.	MAR30
1958	-123.	-60.	-49.	-90.	699.	952.	2343.	-577.	2394.	4365.	-485.	-425.	8944.	908.	JUL30	-94.	APR23
1959	-249.	-25.	-25.	-25.	42.	5613.	-182.	-96.	6940.	56.	569.	-285.	12335.	2627.	JUN26	-61.	APR08
1960	-74.	0.	-56.	-18.	-19.	14756.	-979.	-839.	858.	-986.	1333.	-478.	13498.	547.	AUG20	-334.	JUL29
1961	-374.	-127.	-23.	-46.	557.	1336.	-100.	-175.	-757.	-446.	-436.	-140.	-732.	138.	MAR16	-97.	MAR30
1962	-80.	-33.	-57.	0.	19725.	5542.	-263.	40565.	32435.	2519.	-554.	-1441.	98349.	3472.	JUN18	-299.	FEB22
1963	-911.	-785.	-275.	-117.	7005.	376.	3380.	3737.	13738.	-3048.	-3527.	-2188.	17385.	1047.	JUN06	-89.	SEP04
1964	-1699.	-882.	-350.	0.	219.	2126.	4023.	5356.	44038.	1431.	-4186.	-2712.	47354.	2781.	JUN24	-125.	AUG06
1965	-2100.	-1133.	502.	693.	6763.	4433.	4564.	6512.	878.	-1023.	-4105.	-1910.	14094.	1003.	MAY14	-74.	JUL17
1966	-1609.	-1179.	-895.	-69.	0.	3893.	1272.	-2744.	-2915.	-1103.	-1514.	-1117.	-7981.	583.	JUL29	-107.	MAY15
1967	-1108.	-306.	-243.	1217.	2848.	9316.	-1260.	5989.	11391.	-3521.	-4566.	-1237.	18520.	1698.	JUN14	-109.	AUG17
1968	-1526.	-1081.	-170.	381.	1333.	4591.	-1194.	-67.	2848.	-2614.	-690.	-1443.	149.	501.	MAR05	-101.	JUL26
1969	-2009.	-913.	0.	973.	-792.	8177.	4844.	6290.	-1174.	4830.	-4006.	-4025.	12194.	1493.	JUL24	-99.	AUG11
1970	-1399.	-572.	0.	952.	2223.	2857.	4830.	7584.	-485.	-3071.	-4578.	-2286.	6057.	940.	MAY15	-120.	AUG17
1971	-1461.	-304.	61.	669.	5159.	14865.	23667.	6852.	5050.	-4332.	-3949.	-2584.	43693.	1504.	MAR29	-128.	JUL08
1972	3763.	-312.	0.	234.	19561.	28798.	-844.	1896.	3596.	-3420.	-1260.	-3606.	48406.	4779.	FEB29	-113.	OCT01
1973	-1812.	-324.	82.	5538.	5175.	1055.	4132.	168.	-1352.	-3262.	-3676.	-468.	-5295.	453.	APR26	-205.	JUL07
1974	0.	-1013.	312.	69.	0.	6311.	-325.	-1622.	-3241.	-2937.	-3108.	-2398.	-2945.	368.	FEB16	-179.	AUG22
1975	-827.	-553.	-138.	276.	3937.	1659.	918.	5406.	1404.	-3951.	-4983.	-3676.	7014.	660.	MAY09	-263.	AUG24
1976	-1590.	-898.	208.	397.	530.	3883.	8239.	719.	10318.	-1082.	-2509.	-2610.	9346.	1624.	JUN17	-113.	JUN26
1977	-1693.	-189.	-397.	58.	407.	39404.	1049.	-1151.	-241.	-1953.	-1430.	-1855.	4149.	766.	APR07	-333.	AUG17
1978	640.	-2093.	174.	58.	468.	10511.	3271.	-3727.	2045.	1670.	-2618.	5073.	100318.	10655.	MAY19	-359.	JUN06
1979	-1529.	-1326.	780.	468.	468.	1499.	-225.	-2499.	515.	173.	-2377.	-4523.	2702.	869.	SEP20	-227.	SEP23
1980	-2467.	-1583.	-288.	-288.	4401.	1419.	-1167.	235.	-2618.	-1408.	-1707.	-1725.	-8908.	472.	FEB28	-145.	JUN14
1981	-3062.	-1338.	372.	160.	0.	1419.	475.	9597.	-620.	4710.	-415.	-1138.	-846.	603.	JUL28	-107.	JUL08
1982	-376.	-400.	-54.	80.	3658.	1341.	475.	9597.	-5862.	2047.	1429.	359.	24018.	818.	MAY21	-60.	SEP09
1983	2285.	1275.	395.	1410.	5559.	1207.	510.	-118.	-1176.	-1939.	-1179.	-460.	7769.	362.	JUL28	-127.	JUL10
1984	634.	-95.	159.	64.	2079.	12162.	1383.	12451.	11146.	-2289.	-2293.	-2057.	33345.	1131.	JUN14	-138.	JUL31
1985	-1080.	45.	0.	-89.	-45.	3178.	47.	-812.	-1156.	-1155.	-1718.	-1307.	-4093.	230.	MAR17	-126.	JUN05
1986	-546.	-103.	409.	171.	888.	7551.	3296.	6639.	382.	-1810.	-1638.	2297.	17535.	1159.	MAY11	-134.	JUN24
1987	2164.	425.	39.	-39.	2578.	15354.	3297.	4863.	-1302.	1300.	-1850.	-804.	26024.	2035.	MAR07	-207.	JUL07
1988	-883.	-392.	-131.	23.	2578.	3613.	94.	-671.	-2102.	-701.	-1420.	-765.	-756.	341.	FEB28	-189.	MAY14
1989	-457.	-360.	98.	33.	359.	5133.	778.	2485.	-650.	-245.	-1565.	318.	5927.	539.	MAR09	-97.	AUG02
1990	-440.	25.	283.	287.	5448.	4029.	1303.	1950.	-1563.	-325.	-630.	-959.	9407.	680.	FEB26	-86.	JUL16
1991	-388.	-229.	21.	-42.	560.	237.	1072.	14028.	1681.	-736.	-1107.	-330.	14768.	1011.	MAY21	-96.	JUL25
Mean	-616.	-436.	82.	341.	2754.	6396.	2550.	5194.	4335.	-579.	-1541.	-1431.	17050.	138.	MAR16	-359.	JUN06

Station KEVR Keyhole Reservoir, Belle Fourche River near Moorcroft, WY
 Parameter AF.00 Monthly Total Discharge (acre-feet)

Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total	Max CFS	Date	Min CFS	Date	
1953	0.	0.	0.	0.	0.	0.	2332.	4097.	2500.	4991.	4878.	1857.	20657.	273.	AUG05	0.	OCT01	
1954	0.	0.	0.	0.	0.	417.	0.	205.	800.	1253.	904.	9.	3588.	84.	AUG01	0.	OCT01	
1955	558.	482.	390.	236.	194.	87.	1883.	9209.	7758.	4648.	5477.	7626.	38549.	158.	MAY03	0.	MAR14	
1956	0.	0.	0.	0.	0.	3710.	4884.	237.	2030.	1730.	1075.	0.	13566.	420.	MAR29	0.	OCT01	
1957	0.	0.	0.	0.	0.	2232.	0.	0.	6948.	4467.	2366.	0.	16014.	300.	MAR28	0.	OCT01	
1958	0.	0.	0.	0.	0.	0.	1916.	2299.	0.	4398.	2449.	0.	11063.	101.	APR22	0.	OCT01	
1959	0.	0.	0.	0.	0.	0.	3099.	1200.	0.	4698.	2497.	0.	11496.	101.	APR04	0.	OCT01	
1960	0.	0.	0.	0.	0.	0.	1999.	5601.	0.	1860.	1860.	400.	9860.	202.	MAY03	0.	OCT01	
1961	0.	0.	0.	0.	0.	2399.	0.	0.	2123.	0.	0.	0.	4523.	76.	MAR17	0.	OCT01	
1962	0.	0.	0.	0.	6014.	8122.	9039.	10076.	1740.	0.	0.	0.	35191.	825.	MAY23	0.	OCT01	
1963	0.	0.	0.	0.	0.	0.	0.	0.	254.	1363.	3650.	0.	5653.	100.	AUG20	0.	OCT01	
1964	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	5266.	125.	JUL27	0.	OCT01	
1965	0.	0.	0.	0.	0.	0.	0.	0.	5762.	5462.	363.	0.	0.	0.	OCT01	0.	OCT01	
1966	0.	0.	0.	0.	0.	0.	0.	0.	0.	2268.	6024.	2268.	10971.	150.	JUL25	0.	OCT01	
1967	0.	0.	0.	0.	0.	0.	0.	0.	0.	4074.	2856.	0.	6930.	100.	JUL12	0.	OCT01	
1968	0.	0.	0.	0.	0.	0.	0.	0.	0.	3449.	4612.	1557.	9618.	100.	JUL15	0.	OCT01	
1969	0.	0.	0.	0.	0.	0.	0.	0.	0.	5024.	4656.	0.	9680.	100.	JUL07	0.	OCT01	
1970	0.	0.	0.	0.	0.	0.	0.	0.	0.	3478.	5526.	86.	9090.	100.	JUL15	0.	OCT01	
1971	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2586.	2380.	31234.	800.	MAR11	0.	OCT01	
1972	0.	0.	0.	0.	0.	26267.	0.	0.	0.	0.	0.	0.	7964.	240.	OCT01	0.	OCT04	
1973	1190.	0.	0.	0.	0.	0.	0.	0.	0.	3421.	3352.	0.	11587.	125.	JUL12	0.	OCT01	
1974	0.	0.	0.	0.	0.	0.	0.	0.	1115.	7686.	5903.	294.	14997.	125.	JUN27	0.	OCT01	
1975	0.	0.	0.	0.	0.	0.	0.	0.	0.	3074.	5925.	1264.	10263.	190.	JUL17	0.	OCT01	
1976	0.	0.	0.	0.	0.	0.	0.	0.	0.	3264.	3767.	463.	11674.	100.	JUL16	0.	OCT01	
1977	451.	10.	0.	0.	0.	0.	0.	0.	2565.	8929.	12442.	0.	2497.	312.	AUG01	0.	OCT01	
1978	0.	0.	0.	0.	0.	0.	0.	27855.	19237.	2281.	4336.	1347.	55055.	1347.	MAY24	0.	OCT01	
1979	31.	0.	0.	0.	0.	0.	0.	599.	5447.	4464.	2763.	316.	13649.	117.	MAY30	0.	OCT03	
1980	0.	0.	0.	0.	0.	0.	0.	2672.	1533.	10112.	18552.	0.	32869.	430.	AUG02	0.	OCT01	
1981	0.	0.	0.	0.	0.	0.	7629.	15308.	11681.	11995.	7581.	3396.	57590.	313.	MAY20	0.	OCT01	
1982	218.	0.	0.	0.	0.	0.	0.	0.	0.	4095.	5173.	1252.	10739.	157.	JUL20	0.	OCT01	
1983	0.	0.	0.	0.	0.	0.	0.	0.	540.	7974.	4250.	430.	13193.	172.	JUN30	0.	OCT01	
1984	0.	0.	0.	0.	0.	0.	0.	0.	0.	2484.	945.	0.	3429.	114.	JUL20	0.	OCT01	
1985	0.	0.	0.	0.	0.	0.	0.	4180.	2948.	9276.	3749.	176.	20329.	175.	JUL17	0.	OCT01	
1986	0.	0.	0.	0.	0.	0.	0.	0.	0.	4819.	4100.	661.	11309.	124.	JUL12	0.	OCT01	
1987	0.	0.	0.	0.	0.	0.	0.	0.	1055.	7805.	2449.	0.	24466.	157.	JUL07	0.	OCT01	
1988	0.	0.	0.	0.	11.	0.	0.	1772.	7185.	7857.	6133.	1484.	18834.	152.	JUN29	0.	OCT01	
1989	0.	0.	0.	23.	0.	0.	0.	0.	3276.	8394.	6324.	840.	18834.	178.	JUL28	0.	OCT01	
1990	0.	0.	0.	0.	0.	0.	0.	0.	3330.	7708.	6879.	484.	18400.	133.	JUL19	0.	OCT01	
1991	0.	8.	0.	0.	0.	0.	0.	0.	0.	6850.	6885.	1564.	15306.	142.	JUL26	0.	OCT01	
Mean	63.	13.	10.	7.	159.	1109.	841.	2187.	2308.	4485.	4303.	893.	16377.	0.	OCT01	0.	OCT01	
Min.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	OCT01	0.	OCT01

RES070 V2.5C 05-Oct-89

Station KEVR Keyhole Reservoir, Belle Fourche River near Moorcroft, WY
 Parameter AF.0R0 Monthly River Discharge (acre-feet)

Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total	Max CFS	Date	Min CFS	Date
1953	0.	0.	0.	0.	0.	0.	2332.	4097.	2500.	4991.	4878.	1859.	20657.	273.	AUG05	0.	OCT01
1954	0.	0.	0.	0.	0.	417.	0.	205.	800.	1253.	904.	9.	3588.	84.	AUG01	0.	OCT01
1955	558.	482.	390.	236.	194.	87.	1883.	9209.	7758.	4648.	5477.	7626.	38549.	158.	MAY03	0.	OCT01
1956	0.	0.	0.	0.	0.	3710.	4884.	237.	2030.	1730.	1075.	0.	13666.	420.	MAR29	0.	OCT01
1957	0.	0.	0.	0.	0.	2232.	0.	0.	6948.	4467.	2366.	0.	16014.	300.	MAR28	0.	OCT01
1958	0.	0.	0.	0.	0.	0.	1916.	2299.	0.	4398.	2449.	0.	11063.	101.	APR22	0.	OCT01
1959	0.	0.	0.	0.	0.	0.	3099.	1200.	0.	4698.	2499.	0.	11496.	101.	APR04	0.	OCT01
1960	0.	0.	0.	0.	0.	0.	1999.	5601.	0.	0.	1860.	400.	9860.	202.	MAY03	0.	OCT01
1961	0.	0.	0.	0.	0.	2399.	0.	2123.	0.	0.	0.	0.	4523.	76.	MAR17	0.	OCT01
1962	0.	0.	0.	0.	6014.	8122.	9039.	10076.	1940.	0.	0.	0.	35191.	825.	MAY23	0.	OCT01
1963	0.	0.	0.	0.	0.	0.	0.	0.	0.	645.	4314.	694.	5653.	100.	AUG20	0.	OCT01
1964	0.	0.	0.	0.	0.	0.	0.	254.	0.	1363.	3650.	0.	5266.	125.	JUL27	0.	OCT01
1965	0.	0.	0.	0.	0.	0.	0.	0.	5762.	0.	0.	0.	0.	0.	OCT01	0.	OCT01
1966	0.	0.	0.	0.	0.	0.	0.	0.	0.	5462.	363.	0.	11587.	125.	JUL12	0.	OCT01
1967	0.	0.	0.	0.	0.	0.	0.	0.	0.	2739.	6024.	2200.	10971.	150.	JUL25	0.	OCT01
1968	0.	0.	0.	0.	0.	0.	0.	0.	0.	4074.	2856.	0.	6930.	100.	JUL12	0.	OCT01
1969	0.	0.	0.	0.	0.	0.	0.	0.	0.	3449.	4612.	1557.	9618.	100.	JUL15	0.	OCT01
1970	0.	0.	0.	0.	0.	0.	0.	0.	0.	5024.	4656.	0.	9680.	100.	JUL07	0.	OCT01
1971	0.	0.	0.	0.	0.	26267.	0.	0.	0.	3478.	5526.	86.	9090.	100.	JUL15	0.	OCT01
1972	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2586.	2380.	31234.	800.	MAR11	0.	OCT01
1973	1190.	0.	0.	0.	0.	0.	0.	0.	1115.	7686.	5903.	294.	14997.	240.	OCT01	0.	OCT01
1974	0.	0.	0.	0.	0.	0.	0.	0.	0.	3074.	5925.	1264.	10263.	100.	JUL17	0.	OCT01
1975	0.	0.	0.	0.	0.	0.	0.	0.	0.	3264.	3967.	4463.	11694.	100.	JUL16	0.	OCT01
1976	0.	0.	0.	0.	0.	0.	0.	0.	2565.	8929.	12442.	0.	24397.	312.	AUG01	0.	OCT01
1977	451.	10.	0.	0.	0.	0.	0.	27208.	19237.	2281.	1336.	1347.	54409.	1300.	MAY24	0.	OCT01
1978	0.	0.	0.	0.	0.	0.	0.	599.	5447.	4464.	2763.	346.	13649.	117.	MAY30	0.	OCT03
1979	31.	0.	0.	0.	0.	0.	0.	2672.	1533.	10112.	18532.	0.	32869.	430.	AUG02	0.	OCT01
1980	0.	0.	0.	0.	0.	0.	7629.	15308.	11995.	11995.	7581.	3396.	57590.	313.	MAY20	0.	OCT01
1981	0.	0.	0.	0.	0.	0.	0.	0.	4095.	0.	5173.	1252.	10739.	157.	JUL20	0.	OCT01
1982	218.	0.	0.	0.	0.	0.	0.	0.	540.	7974.	4250.	430.	13193.	172.	JUN30	0.	OCT01
1983	0.	0.	0.	0.	0.	0.	0.	0.	0.	2484.	945.	0.	3429.	114.	JUL20	0.	OCT01
1984	0.	0.	0.	0.	0.	0.	0.	4180.	2948.	9276.	3749.	176.	20329.	175.	JUL17	0.	OCT01
1985	0.	0.	0.	0.	0.	0.	0.	0.	0.	4819.	4100.	661.	9581.	124.	JUL12	0.	OCT01
1986	0.	0.	0.	0.	0.	0.	0.	0.	0.	7805.	2449.	0.	11309.	157.	JUL07	0.	OCT01
1987	0.	0.	0.	0.	0.	0.	0.	1772.	7185.	7857.	6133.	1484.	24466.	152.	JUN29	0.	OCT01
1988	0.	0.	0.	23.	0.	0.	0.	0.	3276.	8394.	6324.	840.	18834.	178.	JUL28	0.	OCT01
1989	0.	0.	0.	0.	0.	0.	0.	0.	3330.	7712.	8879.	484.	18404.	133.	JUL19	0.	OCT01
1990	0.	0.	0.	0.	0.	0.	0.	0.	0.	6850.	6885.	1564.	15306.	142.	JUL26	0.	OCT01
1991	0.	8.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Year	43	13.	10.	7.	159.	1109.	841.	2171.	2308.	4485.	4303.	893.	16360.	0.	OCT01	0.	OCT01

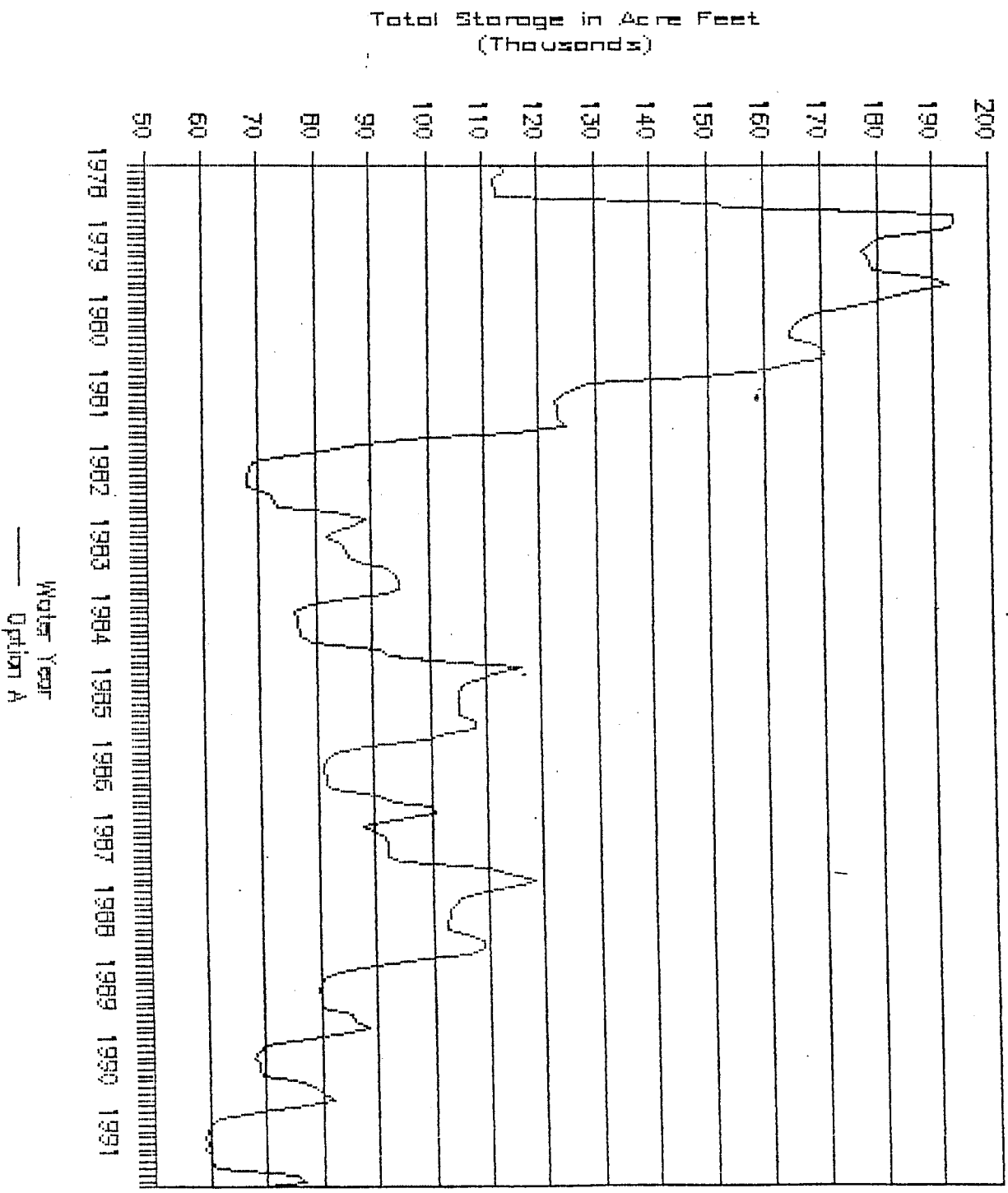
RES070 V2.SC 05-Oct-89

Station KEYR Keyhole Reservoir, Belle Fourche River near Moorcroft, WY
 Parameter AF.QSD Monthly Spillway Discharge (acre-feet)

Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total	Max CFS	Date	Min CFS	Date
1953	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1954	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1955	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1956	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1957	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1958	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1959	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1960	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1961	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1962	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1963	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1964	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1965	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1966	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1967	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1968	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1969	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1970	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1971	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1972	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1973	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1974	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1975	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1976	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1977	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1978	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1979	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1980	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1981	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1982	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1983	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1984	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1985	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1986	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1987	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1988	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1989	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1990	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1991	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Mean	0.	0.	0.	0.	0.	0.	0.	17.	0.	0.	0.	0.	17.	0.	0.	0.	0.

Keyhole Reservoir Operations Study

Option A



CONFIDENTIAL

Approved as to form: 3-8-62

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

Belle Fourche Irrigation Project, South Dakota

SECOND AMENDMENT TO CONTRACT BETWEEN THE UNITED STATES OF AMERICA AND THE BELLE FOURCHE IRRIGATION DISTRICT, SOUTH DAKOTA

THIS SECOND AMENDMENT CONTRACT, made this 2nd day of January, 1961, between the UNITED STATES OF AMERICA (hereinafter called the United States), acting through the Secretary of the Interior (hereinafter called the Secretary), and pursuant to the Federal Reclamation Laws, and the BELLE FOURCHE IRRIGATION DISTRICT (hereinafter called the District), an irrigation district organized and existing under and by virtue of the laws of the State of South Dakota, with its principal place of business and office at Newell, South Dakota;

W I T N E S S E T H :

WHEREAS, the following preliminary statements are made in explanation:

(a) The United States and the District entered into an amendatory payment contract (Iir-1585) on November 29, 1949, which covered the District's payment to the United States of the costs of constructing irrigation works on the District's lands and other purposes. Article 36 of this 1949 contract provided as follows:

"36. Whenever the Secretary shall find that an additional water supply can be made available to the lands of the District, or any part thereof, from the Keyhole dam and reservoir appropriate consideration shall be given to the District water requirements for irrigation purposes and the Secretary shall determine to what extent the terms of this contract shall be modified as a basis for obtaining an additional water supply."

(b) The United States and the District are agreed that an additional water supply can be made available to the District by assigning for the District's use a portion of the capacity of Keyhole reservoir, with the right of the District to store therein water which it is entitled to use under its project water right, to use or make of Keyhole storage water as will be properly allocated to such project and to purchase additional Keyhole water when available and needed by the District.

NOW, THEREFORE, in accordance with the usual practices herein set forth, it is agreed that

1., Where used in this contract, the terms

(a) "Secretary" shall mean the Secretary of the United States Department of the Interior, or his duly authorized representative.

(b) "Federal Reclamation Laws" shall mean the Act of June 17, 1902 (32 Stat. 389), and all acts amendatory thereof and supplementary thereto, including particularly, without limitation of the foregoing, the Reclamation Project Act of 1939 (53 Stat. 1137), as amended.

(c) "Irrigation season" shall mean the period April 15th through November 30th within any year.

(d) "Year" shall mean the period January 1 through the next following December 31.

(e) "Project water" shall mean water which landowners of the District are entitled to use under South Dakota Notices of Appropriation Nos. 18874 and 18875, both dated August 5, 1905, and respectively recorded on pages 12 and 13 of Book 17, Butte County records, South Dakota.

(f) "Keyhole water" shall mean water which the United States is entitled to store in Keyhole reservoir and to dispose of under Wyoming Permit 5707 Res.

(g) "1948 repayment contract" shall mean the amendatory repayment contract (11r-1535) of November 23, 1948, between the United States and the District.

Storage and Use of Water

2. (a) The District shall have storage rights in Keyhole reservoir equal to 7.7 percent of the total active capacity of the reservoir. This percentage initially is equivalent to approximately 10,000 acre-feet of space.

(b) The District may use its Keyhole reservoir storage space to retain either project water or its 7.7 percent share of Keyhole water, or both; and such right to retain water shall include the right to hold over such water from prior years; but the total amount of water retained at any one time shall not exceed that which can be stored within 7.7 percent of the then total active capacity of Keyhole reservoir.

(c) The District shall each year be entitled to the use of 7.7 percent of Keyhole water coming into the Keyhole reservoir during that year. Such right to the use of 7.7 percent of Keyhole water for any one year shall include the right to store or to hold over all or any portion of said 7.7 percent share of Keyhole water in Keyhole reservoir within the limitations above set out in Article 1 (a) and (b).

(d) All space in Keyhole reservoir shall be operated with like priority as to storage rights; and the United States reserves the privilege

of granting to others holder's rights and of itself exercising such holder's rights in any useful space that are not inconsistent with the rights granted to the District under this contract. In determining the amount of stored water to which the District is entitled under this contract, losses incidental to storage shall be apportioned equally over all water in storage; and, in determining the amount of stored water delivered, the point of measurement shall be the outlet works of Keyhole dam and reservoir. The District shall receive said stored water at the point of measurement and shall be wholly responsible for taking said water at that point and conveying, diverting, and utilizing it.

(e) While Keyhole dam and reservoir is being operated and maintained by the United States, it will operate the works to the end of releasing all the water as which the District is entitled under this contract and on such schedule of call order as shall be agreed to between the District's Board of Directors and the officer in charge of the Keyhole dam and reservoir, within the capacity limits of such works and having regard for other existing rights which may be supplied through these facilities. Deliveries of stored water shall be limited in any time to the amount which can be delivered through the outlet works of the dam taking into account the requirement of passing through the reservoir water belonging to prior or coordinate rights.

(f) The District, during the term of this contract and subject to the fulfillment of all its obligations hereunder, shall have a right to its share of Keyhole water, as provided in this Article 2, for beneficial use on District lands, and, upon completion of payment of the District's construction charge obligation under this contract, such right and the District's right hereunder to the use of 7.7 percent of the active capacity of Keyhole reservoir, shall become permanent, subject to the payment of the District's operation and maintenance obligations as determined at the time the construction obligation has been met.

Keyhole Construction Charge

3. Of the reimbursable cost of the Keyhole dam and reservoir, the District shall pay to the United States the sum of \$60,000 as a Keyhole construction charge obligation. This \$60,000 Keyhole construction charge obligation shall be additional to the District's construction charge obligation under the 1940 repayment contract and will be paid in forty successive annual installments each of Fifteen Hundred Dollars (\$1,500), and each of which shall be paid one-half on or before June 30 and one-half on or before December 31, of each year beginning with the year 1953.

Keyhole Operation and Maintenance Charges

4. The District will pay 7.7 percent of the portion of the annual cost of operating and maintaining the Keyhole Dam, Reservoir and appurtenant works allowable for operation. Such payments, in the amounts estimated annually by the Government and submitted in writing to the District, will

be made on or before April 1 of each year this contract is in force. After the first year's notification of operation and maintenance costs, the notifications will contain a credit or surcharge equal to the overage or deficit, as the case may be, in the amount paid the prior year and the actual cost of operation and maintenance for that year. If the United States fails to notify the District of the estimated cost of operation and maintenance prior to April 1 of any year, the prior year's estimated cost will be paid.

Additional Keyhole Water

5. (a) During the term of this contract Keyhole water additional to that accruing to the District under Article 2(c) may be requested by the District upon a deposit of \$1.25 for each acre-foot of additional water so requested. If the Secretary determines that such additional water is available when requested, he shall release the same under the conditions prescribed in Article 6.

(b) The District's annual obligation for the additional Keyhole water so released shall be computed either at the rate of \$1.25 per acre-foot measured at Keyhole Dam, or \$2.00 per acre-foot measured at the boundary line between Wyoming and South Dakota, depending upon which is the most economical to the District, as determined by the Secretary. Should the District's annual obligation be less than the amount deposited under Article 5(a), the overpayment shall be applied to the District's next annual installment under Article 3.

(c) When releasing only Keyhole water from the reservoir, all water measured at the state line will be considered released water for determining cost of water at \$2.00 per acre-foot.

(d) When releasing Keyhole water with Project water, all water measured at the state line will be considered released water and the losses will be assigned in the same proportion as the amount of each kind of water released for purposes of determining the cost of additional Keyhole water.

Manner of Release

6. Any release of Keyhole water will be made in increments of 3,000 acre-feet or more, or will be made in conjunction with a release of project water in which the total release equals 3,000 acre-feet or more; Provided, That this requirement may be modified by agreement between the Secretary and the District's Board of Directors.

Agreed Charges a General Obligation of the District

7. The District as a whole is obligated to pay to the United States the charges hereinafter provided for this contract, notwithstanding the default in payment by the District of individual water users of assessments, tolls, or other charges levied by the District.

Levy of Assessments, Tolls, and Charges

3. (a) The District shall cause to be levied and collected all necessary assessments, tolls, and other charges, and will use all of the authority and resources of the District to meet the obligations of the District to make in full all payments to be made pursuant to this contract on or before the date such payments become due and to meet its other obligations under this contract.

(b) It is understood that the provisions of this contract will benefit lands of the District including the lands within the so-called Johnson lateral and Inlet canal areas. The District agrees to levy charges against all lands in accordance with land classification. Assessments, tolls or other charges against all lands for the purpose of paying the District's obligations hereunder shall be fixed for the different classes of land at such ratios as may be determined by the District's Board of Directors. Provided, That all assessments shall be within the percentage ratios as follows, all ratios being based on a ratio of 100 for Class 1 land:

Class 1 - 100
Class 2 - 88-92
Class 3 - 80-85
Class 4 - 48-50

Application of 1949 Repayment Contract

9. (a) The 1949 repayment contract shall continue in full force and effect.

(b) The additional obligations assumed by the parties to this second amendatory contract shall be governed by the same provisions as are stipulated in the 1949 repayment contract respecting penalties (Article 17); defaults (Article 20); general obligation (Article 21); application of payment (Article 22); the keeping of records (Article 24); access to books and records (Article 25); excess lands (Article 27); computation of costs (Article 29); rules and regulations (Article 30); liability for drouth (Article 32); assignments and successors (Article 34); and contingency on appropriations or allotments (Article 37). Such provisions and the articles containing them are incorporated in this second amendatory contract by reference and made a part hereof.

(c) The District's obligation to prepare and submit a District budget and to make assessments as provided in Article 19 of the 1949 repayment contract shall be extended to cover additionally the annual installments of the Keyhole construction charge obligation and the Keyhole operation and maintenance charges as above prescribed in Article 3 of the second amendatory contract.

Confirmation of Contract

10. The execution of this second amendatory contract shall be authorized by a vote of qualified electors of the District as provided by

law. Thereafter, without delay, the District shall prosecute a proceeding in court for a judicial confirmation of (1) the regularity of the steps leading up to the making of this contract, and (2) the validity of the contract so far as the District and the District landowners are concerned. The District shall furnish the United States for its files, certified copies of all proceedings relating to the authorization of this contract.

Nondiscrimination

11. The following provisions governing performance of work under Government contracts, as set out in Section 301 of Executive Order 10925, dated March 6, 1961, shall be applicable to this contract, and shall be included in all contracts executed by the District for the performance of work contemplated by this contract, and for that purpose the term "contract" shall be deemed to refer to this instrument and to contracts awarded by the District and the term "contractor" shall be deemed to refer to the District and to contractors awarded contracts by the District:

In connection with the performance of work under this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.

(3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the said labor union or workers' representative of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The contractor will comply with all provisions of Executive Order No. 10925 of March 6, 1961, and of the rules, regulations, and relevant orders of the President's Committee on Equal Employment Opportunity created thereby.

(5) The contractor will furnish all information and reports required by Executive Order No. 10925 of March 6, 1961, and by the rules, regulations, and orders of the said Committee, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Committee for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the contractor's non-compliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be cancelled in whole or in part and the contractor may be declared ineligible for further government contracts in accordance with procedures authorized in Executive Order No. 10925 of March 6, 1961, and such other sanctions may be imposed and remedies invoked as provided in the said Executive Order or by rule, regulation, or order of the President's Committee on Equal Employment Opportunity, or as otherwise provided by law.

(7) The contractor will include the provisions of the foregoing paragraphs (1) through (6) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the President's Committee on Equal Employment Opportunity issued pursuant to Section 303 of Executive Order No. 10925 of March 6, 1961, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions, including sanctions for non-compliance: Provided, however, That in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

Term of Contract

12. The term of this contract is the 40-year period beginning January 1, 1963.

Officials Not to Benefit

13. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

IN WITNESS WHEREOF, the parties hereto have signed their names the day and year first above written.

UNITED STATES OF AMERICA

By 

Regional Director, Region 6
Bureau of Reclamation


BELLE FOURCHE IRRIGATION DISTRICT

By 

President, Board of Directors

ATTEST:

(SEAL)


Secretary, Board of Directors

