

Milltown Reservoir Site Update – January 10, 2008

One hundred years after the completion of William Andrews Clark's Milltown Dam, preparations are underway for its removal. The reservoir behind the power dam was first filled on January 6, 1908, drowning about 600 acres of river bottom including a portion of Daniel Bandmann's ranch along the Clark Fork River. The waters of the Milltown Dam also submerged the dam built in 1884 on the Blackfoot River by the Montana Improvement Company, which was a partnership of A.B. Hammond, Richard Eddy, E.L. Bonner and Clark's rival copper king Marcus Daly.



Here is a portion of a Missoulian article written on January 10, 1908, one hundred years ago today.

MISSOULA, MONTA

POWER PLANT AT BONNER TESTED

ELECTRICITY GENERATED BY GREAT CLARK DAM TURNED ON FOR FIRST TIME.

A. H. WETHEY IS PLEASED

After Inspecting Property Manager of Clark Interests Expresses Satisfaction Over What Has Been Accomplished—Project Means Much to City of Missoula.

Construction work on the new Clark dam, a short distance below Bonner, and seven miles east of Missoula, which began on Friday, September 11, 1908, is now practically finished, and the first electric light generated from water power of the Big Blackfoot and Missoula rivers was turned on yesterday afternoon, in the presence of a party who made the trip from this city in automobiles for the purpose of witnessing the novel sight. The party was made up of A. H. Wethey of Butte, who represented the Clark interests; Mrs. Wethey, George R. Brown of Butte, who is superintendent of the water department of the light and water company; B. H. Inch, superintendent of the electrical department of the company; John M. Evans, H. E. Chaney, H. T. Wilkinson, John Bonner and a couple of newspaper men. The members of the party were shown over the immense plant by Superintendent George Slack, who has been in charge of the work at that place for the past few months.

The First Electricity.

The first electricity generated at the new power house flashed over the wires at 1:14 o'clock yesterday afternoon, and for a period of several minutes the big plant was brilliantly illuminated.

The interior of the power plant contains six large turbines, which, when connected and running to their full capacity, will generate 5,000 horsepower. Two small turbines act independently of the others, and it was these that were operated yesterday. The plant is one of the most substantial ever erected for power purposes. It is absolutely fireproof throughout and is erected upon a concrete foundation sunk to bedrock. The walls of the building, facing the river, are 18 feet thick at the bottom and are of solid concrete, reinforced with hundreds of tons of structural steel.

Gates Strongly Constructed.

The gates opening to the great turbines, of which there are seven, are strongly constructed, and each gate sustains the great pressure of 50 tons. In the center of each gate there is a small square hole, and it is necessary to open this before the great gate can be raised or lowered. The raising of the gates is done by the aid of electricity, and when in running order the water supply of each gate can be opened or reduced at the will of the operator by simply throwing a small switch.

Reservoir Fills Quickly.

The gates of the huge dam were first closed on Sunday evening. They were lowered in a gradual manner and in the short space of 26 1/2 hours a stream of water 15 inches deep was flowing over the large spillway, while the waters were backed up the Missoula river a distance of one and one-half miles, completely inundating lands that but a short time ago was used for agricultural purposes. The back waters also extend a considerable distance up the Big Blackfoot river, and in one place cover a former county road to the depth of 11 feet. The deepest spot is near the center of the dam, where the water measured 27 feet yesterday afternoon. The total area of the ground covered by the pent-up waters is nearly 800 acres.

Large Amount of Material Used.

"In the construction of the new dam an enormous amount of material has entered," said Superintendent George Slack to The Missoulian. "Two million feet of timber were used in the dam proper, while in the concrete work constructed, and which is of vital importance, 5,000 barrels of cement found their way. Just how many thousand tons of granite are in the huge dam is a pretty hard question to answer; hundreds of tons of structural steel are also to be found in the great mass of strength that is nearing completion, and when the last piece of timber is added to the dam it will be in such condition that the highest waters ever known in this vicinity will not affect it in the least. No expense was spared in making the dam one of the strongest of its kind, and with the completion of the work enough power will be generated to furnish the entire western portion of the state with electricity for all purposes.

"When all of the turbines are in position we will be able to generate 5,000 horse-power, which will be sufficient to supply the needs of the western portion of the state for many years to come. The plant is so constructed, however, that it can be enlarged at any time with a small additional outlay of time and money.

"We expect to be in a position to furnish electricity for all purposes within the next few days, but it will be necessary to run the machinery for a number of days in order to dry out all of the damp places in the huge dynamos before they are used steadily for power purposes.

"At present we have 20 names on the payroll, and this number will be complete running order, which in all

REAL ESTATE, FIRE, ACCIDENT AND HEALTH INSURANCE. LOANS AND RENTALS. 124 Higgins Avenue. 1908

POWER PLANT AT BONNER IS TESTED

(Continued From Page One)

The intake of the city's water supply, on the Hattiesnake, for the purpose of inspecting conditions there. It is the intention of the water company to greatly enlarge the reservoir, and the work will be started early next spring.

From the intake at the Hattiesnake dam the water is carried through a 30-inch pipe to the huge reservoir on top of the hill, near the Northern Pacific roundhouse, where it is distributed to users throughout the city. The first 35 feet of the intake there is through solid rock, and by a clever mechanical arrangement screens are so placed as to catch all of the leaves that float down the stream during flood conditions. When these screens become filled an automatic alarm is sounded and the debris is removed by a caretaker.

Wethey is Pleased.

Upon his return to the city, from Bonner Mr. Wethey stated that he was more than pleased that the great work on the dam at Bonner was nearing completion. "It has been a tremendous undertaking," he said, "and the work has continued, with slight interruptions, for the past two and one-half years. The cost of the plant complete will aggregate 1,400,000. The completion of the plant means much for Missoula and the surrounding country, as it is our intention to shortly construct a street railway system in your beautiful town, with a possible extension of the system up the Hitter foot valley, together with a trolley line to Bonner. One of the large turbines at the power plant will generate enough electricity to operate the entire system.

"I am also glad that the plant is nearing completion on account of its being able to furnish power for local manufacturers which are bound to increase in this section of the state. Electricity is a wonderful thing, and wherever power plants are introduced there seems to be no limit to the wonderful possibilities that can be accomplished with this great power.

Pushing Railroad Construction.

The Northern Pacific railroad has recently commenced the work of excavating for a bridge across the Missoula river a short distance below the dam, which, when completed, will shorten up that line considerably between this point and Bonner. On the opposite side of the river the Milwaukee people are rapidly pushing construction work on their grade, which makes the narrow place in the canyon one of the busiest sections of the country. It is estimated that nearly 100 men find employment in that section at present.

No Serious Accidents.

Although work on the great project was started on Friday, September 11, 1908, none of the hundreds of employes received injuries which resulted fatally. The remarkable showing made is one that the men in charge of the work were proud of, and their handiwork will last throughout the ages that are yet unborn.

DAMAGE IS SLIGHT.

The fire department was called out at an early hour this morning by a blaze at the power plant of the electric light company, near the north end of the bridge. The fire was confined to a roof and the damage was of a slight nature.

WESTBY FUNERAL TODAY.

The funeral services for the late Mr. W. Westby will be held at 10 o'clock this morning at the funeral home.

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F. J. AAN H



A century later, the process of removing the Milltown Dam and its most contaminated sediments is underway. The photos above were taken on January 8, 2008.



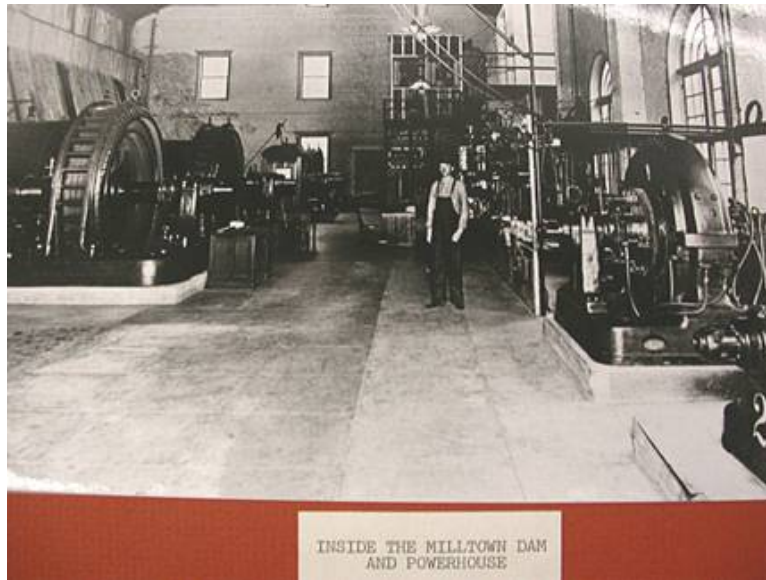
Much of the electrical generating equipment has been removed from the dam's powerhouse in preparation for its removal. The project began with the demolition of the metal shop building adjacent to the brick powerhouse this week. The dam's generators will be removed later this month. Two of the powerhouse windows, the dam's control panel, and other historic artifacts have been salvaged from the dam thanks to the cooperation of many parties, including NorthWestern Energy (operators Bill Scarborough and Mike Haenke), Envirocon (Matt Fein, Kris Cook and Ben Johnson), The Missoula Historic Preservation Commission (Phillip Maechling, Tracy O'Reilly and Steve Adler), Gary Delp of Heritage Timbers, The U.S. Environmental Protection Agency (Diana Hammer and Russ Forba) and the Milltown Redevelopment Working Group (Judy Matson, Warren Hampton and Mike Kustudia). These artifacts will be preserved for historic interpretation facilities that the Redevelopment Working Group proposes to be built near the dam or at another location in the local community in the future.



The photo above shows a view of the powerhouse forebay, looking downstream at the dam. This area will be the site of construction activity to prepare of the powerhouse removal, beginning this month.



This photo of the powerhouse interior was taken in December, 2007. The lead based paint has been removed from the powerhouse floor and the headwall, at the right side of the photo.



INSIDE THE MILLTOWN DAM
AND POWERHOUSE

This historic photo from the Jack Demmons Collection shows what the interior of the powerhouse looked like in the early days.



This generator will be salvaged, thanks to NorthWestern Energy, Envirocon and EPA and stored in a secure location for future historic interpretation.



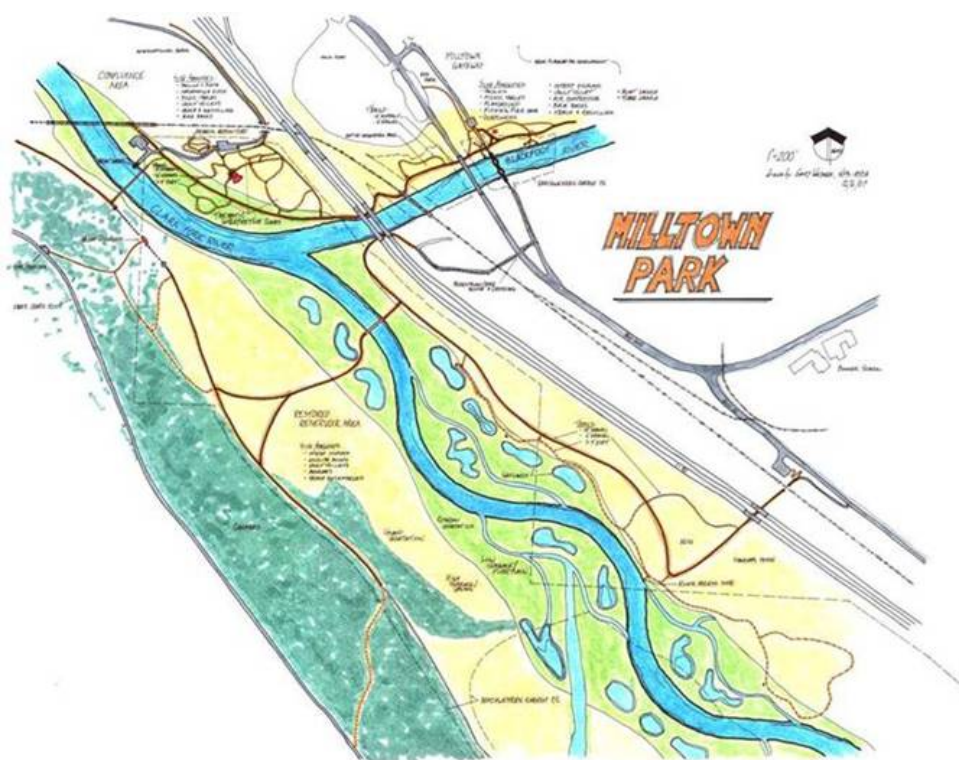
This photo shows a view of the powerhouse in 1988 during repair and upgrade work completed by Montana Power following a damaging ice and flood event in 1986. A temporary gravel and metal sheet pile dam, known as a coffer dam, was built just upstream (to the right) of the powerhouse to dry out the work area in the forebay and allow repairs to be completed. A remnant of the old coffer dam still remains in the reservoir upstream of the powerhouse today. Envirocon will begin construction of a similar cofferdam, using a portion of the remnant coffer dam, later this month. This photo was taken prior to the construction of the Bonner truck stop along highway 200, near the top of the photo



The photo above, from the Jack Demmons Collection, shows a view of the forebay and sediment accumulation in 1930.



The two photos above were taken in 1971, by Montana Power Company. The reservoir had been drawn down, even further than it is today (currently at 12 foot drawdown). An excavator removed sediment accumulations from the forebay. Montana Power routinely performed drawdowns of the Milltown Reservoir in order to complete maintenance and repairs until the Montana Wildlife Federation and Montana Trout Unlimited took the matter to court and obtained an injunction in 1981. That was the same year that arsenic contamination was first found in the Milltown Public Water system by Missoula City-County Health Department employee Ed Zuleger, who is set to retire later this year after a long and successful career. When the forebay area is demolished this spring, the timber cribbing shown in this photo will be removed. Some of the timbers and the concrete may be salvaged and recycled for re-use, thanks to the cooperative efforts of Envirocon, the State Natural Resource Damage Program, EPA and the Redevelopment Working Group.



Looking to the future, the drawing above shows the latest plans of the Milltown Site Redevelopment Working Group for a publicly owned park at the confluence of the two rivers

following dam removal and site restoration. The drawing was completed by Gary Weiner of the National Park Service Rivers and Trails Conservation Assistance Program, who has served as a technical advisor to the redevelopment working group for the past several years. A higher resolution version of this drawing and two others showing the final designs from September's Milltown Park Design Workshop can be viewed at the Clark Fork River Technical Assistance Committee's website, <http://www.cfrtac.org/?p=178>. Organized by the Milltown Superfund Redevelopment Working Group, the two-day workshop drew community residents and stakeholders, representatives of the Fish, Wildlife and Parks Dept. and a team of volunteer landscape architects to design a park for the Milltown Reservoir Superfund site after the remediation and restoration work is complete. Final designs are based on that workshop and a round of public meetings afterward and will be incorporated into a report to the Missoula County Commissioners in early 2008. Start with a bird's eye view of the [Milltown Park](#), and then more detailed views of the [Blackfoot and Clark Fork Rivers confluence area](#) and the [Milltown gateway](#).

Happy New Year! After one hundred years of service, the Milltown Dam is about to be removed and the hard-working Clark Fork will begin performing a new job for the citizens of Missoula and the State of Montana – as a free-flowing river.

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