



*Volunteers collected everything from car parts, beer cans, tires, plastic and paper to clothing items from the banks of the Gallatin River during the first annual Gallatin River Cleanup sponsored by BWTF. From left to right, volunteers included: Toni Delzer, San Schwalbe (BWTF Board), Ron Edwards (BWTF Board), Steve Johnson, Brennan Severance, Rob Goveia, Taylor Middleton, Kristin Gardner, Jon Holtzman (BWTF, Board Chair), and Mike Richter (BWTF Board). Absent from photo were volunteers: Tom Rumbaugh, Betsey French, Barbara Rowley, Katie Middleton, Jeremy and Elijah Harder, and photographer, Sharon Holtzman.*

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BWTF was recently chosen as one of eight groups across Montana to host a Watershed Corps Member in the inaugural year of the Montana Watershed Corps Program. More details coming soon!

## First Annual Gallatin River Cleanup a Success!!

*By Jon Holtzman, BWTF Board Chair*

► Everything from car parts, beer cans, tires, plastic and paper to clothing items were collected from the banks of the Gallatin River on Saturday, September 24<sup>th</sup> in a cleanup day sponsored by the Blue Water Task Force ("BWTF"). (Anyone missing the bottom half of an itchy-bitsy, teeny-weeny, pink polka-dot bikini might want to call the BWTF office).

The cleanup was conducted in recognition of National Public Lands Day. Big Sky volunteers picked up trash at Highway 191 turnouts and fishing access points from the mouth of the canyon south to the Yellowstone Park boundary. Volunteers collected several pickup loads of trash.

"We found hub caps, burned out mufflers and full bottles of drain cleaners and shampoo," said Jon Holtzman, chair of the BWTF. In one area volunteers muscled a rusting engine block out of the water. "It was obvious the beverage of choice for river trashers is beer although at trailheads users showed a more healthy choice, leaving plastic water bottles behind," he noted.

Volunteers attended a barbeque at the Big Sky Community Park following the cleanup. Funding for the cleanup was provided by a grant from the Montana Water Course and the Environmental Protection Agency. Other support came from American Rivers.

*Steve Johnson, Ron Edwards, and Eric Becker got a jump start on the first annual Gallatin River Cleanup by pulling out an old engine from the Middle Fork of the West Fork of the Gallatin.*



# Pilot Snowmaking Study to Begin This Winter

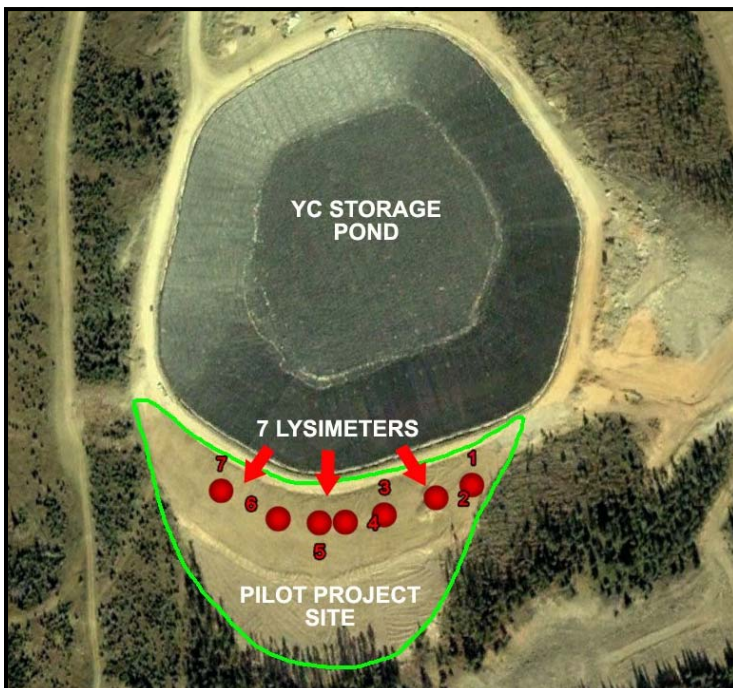
by Ron Edwards, General Manager, Big Sky Water and Sewer District and BWTF Board Member

▶ If the Big Sky Water and Sewer District ("the District") is going to remain committed to being a zero river discharge system in the future, alternatives for disposing treated water need to be explored and developed. One of the options that the District has considered viable for the Big Sky area is winter snowmaking using treated effluent called "snowfluent". This process involves taking treated water and using it to make snow. This could be done in the early season to make base snow, or possibly on land that is off ski terrain. There are several ski areas using snowmaking for wastewater disposal. Island Park, Idaho also has a small snowfluent system.

To move the snowfluent technology forward in Big Sky, the District has partnered with the Yellowstone Club, Spanish Peaks Resort, Big Sky Resort and Moonlight Basin to work on a small scale pilot snowfluent project. The District also received cost share funding from the Big Sky Resort Area District Tax board for the project. The pilot snowfluent project plan, which includes construction of a small snowmaking site on Yellowstone Club property that will not impact the environment, was approved by the Montana Department of Environmental Quality ("MTDEQ") this spring.

Yellowstone Club staff recently completed the site work adding drainage ditches and berms to contain the run-off from the snowmaking site. All run-off from the site will flow back into a lined wastewater storage pond. In August, Yellowstone Club and District staff installed 7 lysimeters along the hillside of the site. These lysimeters collect snowmelt water, which will be analyzed for water quality. Run-off from the same site was sampled this past spring to provide background information on the snowmelt water quality. The Yellowstone Club will provide the snowmaking gun that will be used this winter for the project. It will use water that is pumped from the Yellowstone Club storage pond to make base snow as soon as weather permits and continue throughout the winter months.

The District is hopeful that the data from the first year of pilot testing will lead the MTDEQ to look at snowfluent as a viable treatment and disposal alternative. The project is small scale but if the data from the first year look good it could be the first step. Even if the data is promising the District does not expect that the MTDEQ will write rules around this technology for several years.



*Above Left:* Aerial view of the snowmaking site showing the approximate location of the seven lysimeters that were installed on August 23<sup>rd</sup>. Runoff from the site flows into a lined storage pond. *Above Right:* A mini-excavator was used to dig each lysimeter hole. The depths varied from 3-4 feet depending on how rocky the soil was. Once the hole was dug the lysimeter was placed in the hole with a small drain line and curb stop valve facing downhill. The curbstop valve has a small vertical riser on it so it can be opened to drain the lysimeter after each sample test. BWTF will assist the District and Yellowstone Club staff in collecting water samples from the lysimeters and local streams during the winter and spring runoff. Collected water samples will be analyzed by a state-certified lab to determine if the snowfluent has an impact on water quality.

## FOR MORE INFORMATION

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.....through community education, citizen involvement in water quality monitoring, and scientific data collection.