1549488 - R8 SDMS

Silver Bow Creek/Butte Area

Storm Water off the Butte Hill

Bulletin #20 **March 2, 2014**

Storm Water Blow-Out
Montana Street, Early Fall 2014

Wyoming Street
Steep Challenges for
Curb and Gutter
Storm Water Control

Storm water can present itself in any season, in any drainage and at different volumes down the Butte Hill. Storm water is highly variable and as such, is difficult to measure, sample, analyze, and determine how to best control it and minimize negative impacts to Silver Bow Creek. Silver Bow Creek is a small receiving water body, surrounded by extensive historical mining activities, in a mineralized area, with steep drainages entering from the Butte Hill.

Most municipalities have challenges meeting storm water requirements. It has also been a Superfund challenge, when a source of contamination is mining waste addressed by the Superfund law. Butte Priority Soils Operable Unit (BPSOU) Superfund response efforts and storm water controls have been extensive and ongoing for over twenty years. Fish and other aquatic organisms now thrive in Silver Bow Creek, and it will take continued implementation and sustained effort by all stakeholders to protect Silver Bow Creek from highly variable storm water.

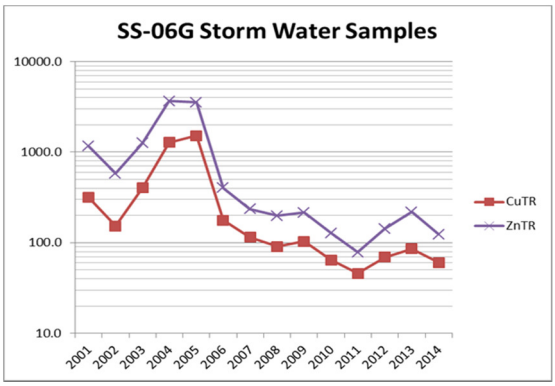
The Butte Hill has come along ways from what it used to be like. Do you remember when it was like this?

Or maybe you remember when the top of Buffalo Gulch looked like this at the Buffalo Dump?

Reclamation and re-vegetation is a major component of the BPSOU remedy and is essential to minimize, trap, and absorb storm water before it reaches Silver Bow Creek.

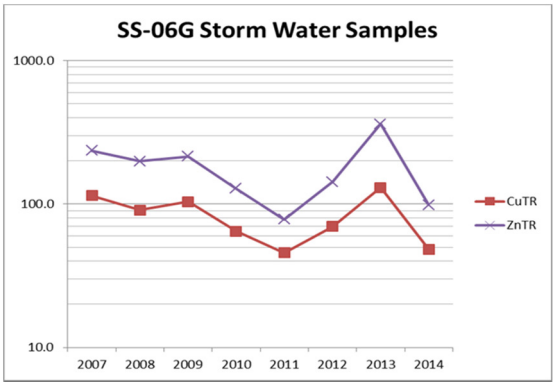
Several hundred actions have been implemented including residential yards and mine dump re-vegetation to minimize contaminated run-off and protect Silver Bow Creek.

A Summary of what the Storm Water Data is telling us



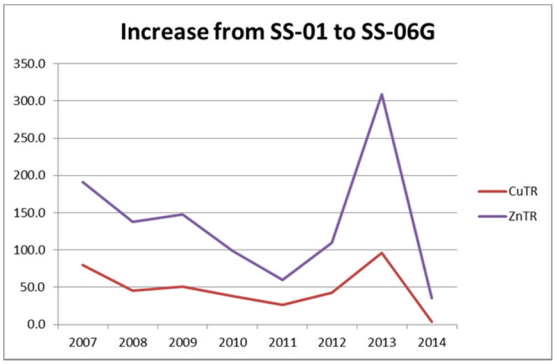
Graphs to the right are measured in Parts Per Billion (ug/L) versus Time (years).

Using all available storm water data from 2001 to 2014, there has been an overall decrease in total recoverable (TR) copper and zinc concentrations at station SS-06G (located inside the western boundary of BPSOU). From 2005 to 2013, there has been a 96% decrease in copper and a 97% decrease in zinc TR concentrations.



Since 2007 the decreases in copper and zinc have been variable. There was a downward trend from 2007 to 2011. 2012 and 2013 showed increases and 2014 was lower again. The data show an overall improvement since 2007.

Of course, that's not the whole story. The upstream station, SS-01 (located outside the eastern boundary of BPSOU), also had increases in 2012 and 2013. The difference between SS-01 and SS-06G reflects contributions from BPSOU. Based on the differences, there has been improvement.



There are clear improvements since 2002, but improvements since 2007 are less obvious and subject to annual variations in conditions.

Although Silver Bow Creek has had large improvements in water quality during storm events, storm water still presents a challenge.

The Environmental Protection Agency (EPA) is currently working with the Montana Department of Environmental Quality and the BPSOU responsible parties on the evaluation and implementation of additional Best Management Practices (BMPs) (i.e. projects to protect Silver Bow Creek from contaminated storm water). The 2006 BPSOU Record of Decision (ROD) requires continued and iterative BMPs to further control contaminated storm water from mining sources. The ROD also notes that alternative, protective water quality standards may be necessary at BPSOU. EPA will continue to enforce order authorities and oversee implementation of Superfund work on the Butte Hill, ensuring progress and meeting the shared goal of protecting Silver Bow Creek.

Do you Need More Information?

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