FREESTONE AQUATICS, Inc
www.freestoneaquatics.com

P.O. Box 271229
Littleton, CO 80127

North Fork of the South Platte River Headwaters

Total Maximum Daily Load Assessment - Hall Valley / Handcart Gulch
Upper South Platte River Segment 4
Park County, Colorado - April 2008

Introduction

The headwaters of the North Fork of the South Platte River include the Hall Valley and Handcart Gulch watersheds. These drainages lie on the northwest edge of Park County, CO and cover approximately 11.2 square miles. Hall Valley and Handcart Gulch are located in an area known as the Colorado mineral belt.

Within this region is the Red Cone Peak area which has been identified by the Colorado Geological Survey as an area with naturally-occurring acid rock drainage (ARD). Specifically, the Handcart Gulch is an unmined drainage with naturally occurring ARD.

The Hall Valley has a long history of mining and has two distinguishable areas of historical activity. The Whale Mine contributes to poor water quality through a maze of 3,300 feet of shafts and adits. The Missouri Mine is approximately ½ mile downstream of the Whale Mine and contains over 2,100 feet of drifts which contribute further to the North Fork's poor water quality. It has been identified that the main source of copper pollution in the North Fork upstream of the Handcart Gulch confluence is from the Missouri Mine. Due to the naturally-occurring ARD the dissolved copper loading from Handcart Gulch is higher than the Missouri Mine loading. This is due both to higher flows and higher copper concentrations.

Environmental Protection Agency's 303d list

Section 303(d) of the federal Clean Water Act requires states to identify water bodies or stream segments which are water quality impaired due to appropriate standards. The portion of the mainstem of the North Fork of the South Platte River and tributaries from Hall Valley area to the confluence with Geneva Creek has been identified as impaired on all of the 303(d) lists since the first list was prepared in 1992. Pollutants including Copper, Manganese, Cadmium, Iron, Aluminum, and Lead were all identified as negatively affecting water quality at some point in the 303(d) lists since 1992.

The Total Maximum Daily Load Assessments (TMDL) addresses a portion of the Upper South Platte segment 4 (COSPUS04). This section includes the mainstem of the North Fork of the South Platte River, including all tributaries, lakes, reservoirs, and wetlands from the source to the confluence with the South Platte River. The mainstem of the North Fork begins to show aquatic life impairment below the Missouri Mine as it starts its flow through the Hall Valley area. The Colorado Division of Wildlife reports fish populations in the North Fork above the confluence with Handcart Gulch. Handcart Gulch and the North Fork do not support a fishery below the confluence for an

undetermined distance downstream. Fish populations are known to exist in the North Fork below the confluence with Geneva Creek.

The latest 303(d) list presented in 2008 identifies dissolved copper as the primary source of pollution to the North Fork. The Water Quality Control Division and the Colorado Department of Public Health and Environment (CDPHE) Hazardous Materials and Waste Management Division both have data collection sites on the North Fork, and their data is used when preparing the EPA's 303(d) lists. Both Divisions have measured copper levels over four times the acceptable level in the North Fork. The acute water quality standards were exceeded for twenty-five out of thirty-four sampling events. Handcart Gulch has been identified as the primary source of dissolved copper loading, however the Missouri Mine is the main source of dissolved copper to the North Fork upstream of Handcart Gulch.

Mine Reclamation and Restoration Planning

According to the latest TMDL Executive Summary (2008), the division plans only limited monitoring for this area. The area is owned by the U.S. Forest Service and private interests. Currently, there are no plans to develop the area for recreation, logging, or mining that may expose additional rock to precipitation and weathering. The area has not been mined for over 75 years and is not expected to be explored or mined for the next 20 years. The CDPHE Hazardous Materials and Waste Management Division prepared an Analytical Results Report of the Hall Valley watershed. In response, the EPA is not expected to pursue any remedial activities designed to improve water quality in the valley.

Public Involvement

The development of the EPA's 303(d) lists is a public process. The listing process involves solicitation from the public of candidate waterbodies, formation of a technical review committee comprised of both the public and private entities, and a public hearing before the Colorado Water Quality Control Commission. Public notice is provided concerning both the solicitation of impaired waterbodies and the public hearing. The TMDL summarized here was made available for public review and comment during a 30 day public notice period in April of 2008.

References

This TMDL summary report is provided by Freestone Aquatics, Inc. All information and data presented and sited in this report is from the TMDL, Upper South Platte River Segment 4, Hall Valley/Handcart Gulch, Copper, Park County, CO, dated April 2008:

http://www.cdphe.state.co.us/wq/assessment/TMDL/tmdls.pdf/COSPUS04_Hall_Valley_Handcart_Gulch_TMDL_final.pdf