

# SURVEY OF LOW FLOW DRAINAGES AND SEEPS IN COLORADO TO ASSESS IMPLEMENTABILITY OF PASSIVE TREATMENT OPTIONS<sup>1</sup>

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**Abstract:** Low flow drainages and seeps are typically not evaluated for mitigation due to the perceived low impact on the watershed. However, localized metals concentrations and acidity can be at levels of concern. Future passage of a “Good Samaritan Act” should increase activity at currently perceived low impact sites to improve overall watershed water quality. This paper details an assessment of 25 sites in Colorado for implementability of passive treatment systems. Criteria included water quality, flow, regulatory status, accessibility and topography. Field reconnaissance was conducted at each site. Water quality information was extracted from existing sources when possible. Water quality analysis of grab samples was completed for selected sites. The ranking factors and decision analysis should prove useful in developing a data base of low flow drainages and seeps on abandoned and orphaned mine sites that can be used in watershed assessments and incremental improvements in TMDLs.

Known mine drainages within the Central City/Clear Creek Superfund site and within a one-hour drive time from the Colorado School of Mines were identified. Efforts in field reconnaissance at identified sites and sampling of the water quality is summarized in a matrix (contained in a separate excel files entitled “Potential\_Drainages\_091505.xls” and Data Matrix 091505 v7.xl). Not all sites identified and visited are presented in the both files. Several version of the Data Matrix were produced in August and September 2005. Extensive photographic documentation of the sites was taken (The file size of the photographic documentation precludes inclusion with this document or attachment via email). Only the most promising sites were sampled for water quality. The Silver Cycle Mine site at the head of Gilson Gulch was identified as the best candidate.

**Additional Key Words:** site assessment, acid mine drainage, water treatment, watershed planning, and TMDL

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