

## **The Upper Clear Creek Watershed Association**

The Upper Clear Creek Watershed Association focused on two main areas in 2008 in addition to its ongoing activities as a 208 Management Agency which involves the reviewing and monitoring of plans and projects.

Work begun in 2007 toward a Countywide Wastewater Utility Plan and individual Wastewater Utility Plans for each of the ten dischargers in Clear Creek County neared completion. As of December 31, 2008, all the Wastewater Utility Plans had been accepted by the individual dischargers. Five were reviewed by UCCWA and forwarded to DRCOG for final approval; the remaining five were scheduled for UCCWA review in early 2009. The Wastewater Utility Plans are important for improving wastewater plant performance, effluent quality, and therefore Clear Creek water quality, especially regarding nutrient levels, over time.

UCCWA continued work with consultants in preparation for a Water Quality Control Division hearing to establish new underlying zinc standards and updated temporary modifications for several segments in Clear Creek and presented a proposal at the Water Quality Control Commission's December hearing. The revised zinc standard was tabled for reconsideration until spring 2009, but updated temporary modifications were adopted through 2014.

In its role as the 208 Management Agency for the Watershed, UCCWA reviewed six projects referred for comment. UCCWA membership voted to comment on three other matters that, while not officially referred for comment, were deemed of significance in the Watershed.

At the invitation of the Standley Lake Cities, UCCWA began participation in the Cities' Source Water Protection Project. An official UCCWA representative was designated, and other member entities also participated. The project is expected to reach conclusion and final report in 2009.

## **City of Black Hawk**

In 2008, the City of Black Hawk undertook the following water quality improvement projects:

- Completed construction of the Dory Hill Vortex Pretreatment Building and reactivation of the Historic Rock Tank for raw water storage. The City of Black Hawk currently operates a diatomaceous earth filtration water treatment plant and a raw water storage reservoir at its Dory Hill site. Raw water is supplied to the reservoir from wells and springs along 4-Mile Gulch through the Historic Mountain Supply Pipeline, and from North Clear Creek by pumping from the North Clear Creek infiltration gallery and pump station. Spring runoff flows and summer thunderstorm events create turbid water conditions that exceed the Dory Hill treatment plant capability. Raw water diversion was suspended whenever turbidity levels exceed treatment plant capability. Construction of the Pretreatment Building and reactivation of the Historic Tank has enabled raw water cleanup to levels suitable for treatment plant use during periods of turbid water conditions.
- Completed design and began construction of the one-million-gallon Silver Gulch Potable Water Storage Tank and connector mains with Project completion scheduled for October 2009: Commercial interests in Black Hawk are constructing facility expansions that will add more than 530 hotel rooms to the existing inventory when completed in October 2009. Weekend and holiday water demand typically exceeds diversion and treatment capacity for the potable water systems. Construction of the new water storage tank and connector mains will enable meeting expected weekend demand peaks while maintaining a consistent water diversion and treatment rate.
- Designed and constructed the 12-inch Miners Mesa Bypass Pipeline and Pressure Reducing Station Project: The bypass pipeline serves to replace a section of the water

supply main that tended to entrap air and initiate a water hammer condition during high flow rates. The added pressure reducing station splits a 130 psi pressure step between the new station and an existing pressure reducing station.

- Acquired a joint interest in Green Lake in liaison with Clear Creek County, along with a water delivery right by way of Vidler Tunnel to Leavenworth Creek: Green Lake will then receive water diverted from Leavenworth Creek and will provide up to 270 acre-feet of good quality high altitude raw water storage for use during low stream flow conditions in Clear Creek.
- Completed the final design for improvements at Green Lake and contracted with Jennison Construction Company for their construction, all in liaison with Clear Creek County: The improvements include repair of the inflow pipeline from Leavenworth Creek to Green Lake, construction of an outfall pipeline from Green Lake to South Clear Creek, minor repairs to the existing dam and construction of a pump station and control vault at Green Lake.
- Acquired the decommissioned Jerry B. Buckley Power Plant and three-acre site alongside Clear Creek at Georgetown Lake: Black Hawk intends to dismantle and salvage the power plant improvements and to eliminate the associated 40 cfs penstock flow potential. The 3-acre site will be sold after removal of the salvage items.

### **Black Hawk/Central City Sanitation District**

The Black Hawk/Central City Sanitation District plant continues to meet all discharge permit limits. Average daily flows remained below 0.55 million gallons/day. As the result of an Intergovernmental Agreement, the plant incorporates full scale Biological Nutrient Removal (BNR) and filtration. It consistently removes nutrients to very low levels, even though there are no nutrient limits in its CDPS permit. During 2008 the plant experienced total phosphorus levels well below 0.3 mg/l.

### **City of Central**

Central City continued the standard erosion control measures in 2008 on the Central City Parkway and throughout the City; including rock mitigation work, cleaning out storm drains; and, removing sand from gutters and on the shoulders from winter maintenance. Central City continues working with Black Hawk on projects of mutual benefit. The City cooperated with CDPHE on several projects in and adjacent to the City.

### **Central Clear Creek Sanitation District**

AAA Operations tests monthly for BOD, TSS, FC, ammonia, flow and % capacity and reports that no effluent violations occurred during 2008. CCCSD continues alum addition and controls sludge age to achieve biological nutrient removal. The CCCSD Board of Directors, managers and operations team are always working to improve plant efficiencies. Records are available for review at AAA.

### **Clear Creek County**

In 2008 the Clear Creek County Environmental Health Department issued 33 Individual Sewage Disposal System (ISDS) permits (25 new, 8 repair) and conducted 190 inspections.

Wastewater Utility Plans (WUPs) developed in conjunction with the Clear Creek County Wastewater Alternatives Evaluation Report from 2007 continued to move through the UCCWA and DRCOG review and approval process. Ten plans were drafted for wastewater dischargers located in the Upper Clear Creek Basin area. The DOLA grant that funded the project, administered by the County, is expected to be closed out in 2009.

### *Clear Creek Emergency Call-Down System*

In order to notify down-stream users of water from Clear Creek of any potential contamination from an upstream source, Clear Creek County uses an emergency call-down system. The Clear Creek County Office of Emergency Management Director continues to update and maintain the database for the call lists. This system applies to incidents/spills into Clear Creek and tributaries leading into Clear Creek.

In 2008, there were four launches from the Clear Creek Emergency Call-Down System:

- March 20 – Broken sewer line in Idaho Springs, approximately 20 gpm sewage spill into Clear Creek.
- May 13 – Possible contamination from vehicle in Clear Creek.
- July 14 – Vehicle in Urad Lake spilling approximately 20 gallons of gasoline and windshield washer fluid into lake.
- August 21 – Minimum of 50 gallons #2 diesel fuel spilled into Clear Creek.

### **Clear Creek High School**

The Clear Creek High School is a Zenon (MBR) membrane filtration plant. It came on line in 2004 with management continuing to be provided by AAA Operations, Inc. Alum continues to be added for nutrient removal when needed. Alum addition and control of the sludge age continue to improve nutrient removal. AAA Operations tests monthly for BOD, TSS, FC, ammonia, flow and % capacity and reports that no effluent violations occurred during 2008. Records are available for review at AAA Operations, Inc.

### **Clear Creek Ski Corporation**

Clear Creek Ski Corporation's most recent permit reduced the effluent limit of fecal coli form so a compliance schedule was included in the event new construction or modifications were required to achieve the limit. CCSC continues to meet the new limit with operational changes only. Records are available for review at AAA.

### **Clear Creek Watershed Foundation (CCWF)**

In 2008, the CCWF's efforts continued to focus on projects identified in their "2007 Clear Creek Watershed Report: Exploring Watershed Sustainability". This report, funded by an EPA grant, identified threats to cleaner water and opportunities for sustainable management of natural resources. Discourse-based evaluations by watershed stakeholders quantified and prioritized overall threats and project/BMP opportunities/initiatives in the watershed to mitigate the threats and promote sustainable watershed management. CCWF continued to define and advance projects, partnerships, funding, and implementation strategies in the areas of:

#### *Alternative Energy & Transportation*

- Spearheaded the Distributed Renewable Energy Initiative (DREI) and Task Force, prepared the DREI Strategic Plan, supported Clear Creek County's Renewable Energy Initiative, testified at PUC hearing, organized and hosted the April Renewable Energy in Clear Creek County Planning Workshop.
- Ongoing involvement with the I-70 SWEEP process.

#### *Water & Wastewater Management/Waste Stream Reduction*

- Organized and co-hosted with CSM the Clear Creek Resource Recovery Forum in November to further explore the opportunities for Vertad/Vertreat wastewater treatment.
- Ongoing promotion of a county biosolids facility.

#### *Orphan (Abandoned) Mine Remediation/Mineral Resources (Subsurface Rights & Uses)*

- Collaborated with the USFS, Coors, and the National Forest Foundation for greenback cutthroat trout habitat creation at Jones Pass (this was add-on work to the 2006 Dr. Mine orphan mine remediation work).
- Ongoing long-term maintenance of the retaining wall at the Maude Monroe site (this \$600K SEP project was in lieu of Iowa Tank Lines paying a fine).
- CCWF remediated the West Gold Orphan Mine Site under a \$120,000 contract with USFS, with cost match from DRMS; work included drainage controls and removal of the unstable ore bin for display at the Idaho Springs Heritage Museum.
- Upper Trail Creek Orphan Mine Remediation 319 grant (\$484K) — ongoing contract negotiations, PIP/QAPP/SAP preparation, preliminary site characterization.
- Gilson Gulch Orphan Mine Remediation 319 grant (\$425K) — ongoing contract negotiations, PIP/QAPP/SAP preparation, preliminary site characterization. Ongoing coordination with DRMS regarding Franklin Mine Bond Revocation/Remediation Project.
- EPA Targeted Watershed Grant (\$744K) for remediation projects in Lower Trail Creek, North Empire/Lion's Creek and the Maude Monroe (contract finalized in October) — conducted site characterization, surveys, access/easement research, QAPP/SAP preparation, and water quality monitoring.
- Funded the 2008 Trace Metals Addendum.

#### *Preservation and Promotion of Historic Mine Sites*

- Ongoing promotion of Maude Monroe/Donna Juanita site as Living History Museum.
- Worked with HSIS on new mining history exhibit.

#### *Natural Resource Management*

- Conducted community outreach for Clear Creek County Community Wildfire Protection Plan, including comment form and April Public Meetings.
- Coordinated with USFS and Mill Creek property owners for wildfire mitigation planning.
- Ongoing discussions with Trout Unlimited and USFS concerning headwaters restoration projects.

#### *Outreach/Education*

- Throughout the year, CCWF continued its tradition of public education about watersheds and mining through attendance and presentations made at numerous professional conferences and meetings (including TWG Conference, Colorado Mining Association Conference, Colorado Watershed Assembly Conference); projects focused on elementary school education; public tours of the Clear Creek Watershed Exhibit; updating its website ([www.clearcreekwater.org](http://www.clearcreekwater.org)); and exhibits/booths at events such as the State Fair.
- Ongoing communication and meetings with Board of Directors and numerous other watershed stakeholders; and annual Public Hearing with Clear Creek County Board of County Commissioners.
- In the fall, CCWF was honored to be the recipient of the 2008 United States Forest Service Regional Forester Water Partner of the Year Award. CCWF President Ed Rapp attended the Rocky Mountain USFS Regional Forester Honor Awards Ceremony & Dinner to accept this prestigious award.
- CCWF also participated on the 150<sup>th</sup> Anniversary of the Colorado Gold Rush Planning Committee, including updating and re-printing the *Summer of Gold* student workbook.

## **Climax Molybdenum Company**

### *Henderson Mine*

In 2008, Henderson improved the Storm Water Management Plan by adding 2 new outfalls and several new BMPs. BMPs included a sediment basin by the mine entrance and a culvert to redirect storm water to a retention basin. The existing BMP were cleaned and repaired.

### *Urad Mine site*

A meteorological station and new stream gauging station data loggers were installed at URAD.

## **Colorado Department of Transportation**

In 2008, CDOT continued its Highway Stormwater Monitoring project along I-70. This includes data on snowmelt and runoff events. CDOT is working with stakeholders on the I-70 Corridor PEIS, using the Collaborative Effort (CE) approach. Water quality impacts are among those being evaluated; mitigation will be identified in the PEIS for all significant impacts. CDOT continues to clean traction sand from I-70 and US 40 within the Clear Creek Watershed.

Since the final phase of construction on Berthoud Pass East (Hoop Creek) was completed in 2006, water quality monitoring continued in this basin. Three large sediment control basins were added during the final phase. Sediment removed from the east side of Berthoud Pass was placed on the mill tailings cap in Empire, which is now full. The cap was regraded in late fall of 2008, and will be reseeded. A new sand disposal site has been identified within CDOT right-of-way along the westbound on-ramp from Fall River to I-70. This area will allow for continued removal of traction sand from CDOT's roads and sediment basins. More chain up sites for trucks are being added to both east and west-bound sides of I-70. This supports the increased enforcement of Colorado chain laws, and should help to reduce truck accidents in winter months. Fewer truck accidents means fewer spills into Clear Creek.

Two sediment dams have been constructed on the north side of I-70 in an effort to capture off-site sediment before it enters highway drainage culverts. The dams are located at Huckle Gulch just west of Idaho Springs, and the other is located east of the west-bound exit ramp to Dumont.

The study of water exiting the Eisenhower-Johnson Memorial Tunnel was shut down in August 2008, both for seasonal and funding reasons. This effort tracks water quality and quantity at the inflow and outflow areas. Although the WWTP at the tunnel treats a much smaller amount of waste since the Homeland Security closed the restrooms to the public, flow levels indicate a large influx of groundwater to the wastewater treatment area. In lieu of keeping the tunnel restrooms open to the public, CDOT supports such facilities at the Georgetown and Silverthorne Visitor Centers.

## **Coors Brewing Company**

Coors Brewing Company continues to fund stormwater efforts, water quality monitoring and habitat restoration funding throughout the Clear Creek watershed. In particular, Coors funded \$30,000 to the Clear Creek Foundation and provided funding for the "Golden Mile" in Golden, a Trout Unlimited stream restoration project. In addition, Coors is involved with multiple committees to focus on sustainable and long-term programs to enhance the quality and sustainability of the Clear Creek watershed and ecosystem.

## **Town of Georgetown**

2008 saw \$250,000 I/I work completed on the collection system; resulting in a 21% flow reduction the first three months of 2009. Georgetown also participated with UCCWA to work on proposed TMDL's for metals on the affected segments of Clear Creek.

Georgetown did have the following violations in 2008: A 30 day average on ammonias for June, 2008; Hydraulic flow 30 day average over .58 MGD for June.

Frchetti Engineering was hired and completed a preliminary engineering study and up to 30% design for the new wastewater plant. The Town was involved in pilot testing a Koch membrane wastewater plant.

### **Gilpin County**

Gilpin County continues programs that contribute to meeting the goals of the agreement, including requiring best management practices for erosion control, and enhanced individual sewage disposal systems in sensitive areas and areas with higher densities.

### **City of Golden**

#### *Water Quality/Pretreatment Program*

- Section 13.13 of the Golden Municipal Code - Wastewater Pretreatment Requirements, was amended to include a general discharge prohibition for prescription drugs. Planning began in December to include a drug take back program to be included as part of the City's annual community recycle and clean up days scheduled in May of each year.
- The Pretreatment Program has completed the requirements for the sanitary sewer Inflow and Infiltration (I&I) study and mitigation program and has exceeded the requirements to reduce I&I contribution to the sanitary sewer as required by the City's CDPS permit. The 5 year evaluation has demonstrated continuing progress in identifying and improving the wastewater collection system through utility replacement and other associated capital projects.
- In addition to Inflow and Infiltration mitigation activities, the Utilities Division has installed 5 sanitary sewer monitoring stations to evaluate real-time flows to the collection system.
- The Pretreatment Program issued 3 Mobile Power Washing permits in 2008.

#### *Stormwater Program*

- The Stormwater Program continues its public education campaign by distributing educational materials and attending public events.
- The City responded to 27 reports of discharges, or potential discharges, to the storm sewer system, issuing 10 written warnings, one summons and requiring one reimbursement for clean-up.
- The City administered 30 stormwater quality construction permits; conducted 895 erosion and sediment control inspections; issued 88 written notifications of violation, 270 verbal notifications of violation, withheld 3 permits, and used performance security for corrections at five sites.
- The Stormwater Maintenance Program conducted 186 inspections of permanent water quality BMPs and sent 139 letters requesting maintenance to land owners, with subsequent 100% compliance.
- The City conducted an erosion and sediment control training required for all contractors performing work under the Capital Projects program.

#### *Watershed/Other Activities*

- In 2008, the City contributed \$7,903.00 to the Rooney Road Recycling Center.
- The City paid \$3,591.00 in annual dues to the Upper Clear Creek Watershed Association and is an active participant in Association activities.
- The City's permanent monitoring and sampling station at CC59, successfully collected samples for 5 stormwater events during the 2008 season and a summary report is

available from the City upon request. The CC59 sample site is part of the cooperative monitoring program between the upper and lower basin water users.

### **City of Idaho Springs**

The City of Idaho Springs remains an active member of the Upper Clear Creek Watershed Association, DRCOG WQAC, and local issues including, TMDL, Watershed Protection, and Regional Bio-Solids committees. 2008 marked the third year of a revived commitment to water quality protection. Since 2006 Ramey Environmental Compliance has been the city's ORC, and operations, funding and staffing issues have been greatly improved. The entire water/wastewater staff is new to the city and has doubled since 2005. Six employees have passed thirty-four State Operator License Exams since 2006, and new operators received the CRWA "Rookie Operator of the Year" in 2007 and 2008. The City of Idaho Springs also took on the highly unpopular task of implementing a FOG compliance program in 2008, achieving 100% compliance by the end of the year. Phase two of a three-phase sewer upgrade project was completed in 2008, and phase three is in engineering stage for 2009 completion. When completed, this project will eliminate the majority of I&I, remove manholes from the banks of Clear Creek, and minimize the risks of SSO's in the problematic area. Due to delays in grant funding, upgrades planned for the WWTF in 2008 and 2009 are now in early design stage with aggressive time schedules. The planned improvements will concentrate on reliability and nutrient removal, and a possible switch from batch discharges and gaseous chlorine, to equalization and UV.

### **Jefferson County**

Jefferson County has a municipal separate storm sewer permit. Jefferson County's program includes: Public Education and Outreach; Public Participation and Involvement; Illicit Discharge Detection and Elimination; Construction Site Runoff Control; Post Construction Site Runoff Control; and Pollution Prevention/Good Housekeeping. Jefferson County supports many stormwater management programs in the watershed, including the Rooney Road Recycling Center, which also serves as watershed prevention BMP. The county provides opportunities for residents and visitors in the watershed to learn and be involved in environmental stewardship and programs that promote water quality. The county has a comprehensive storm sewer outfall map to trace sources of potential illicit discharges and illegal dumping in the watershed.

Jefferson County also maintains an erosion and sediment control program as part of their MS4 permit. The county maintains a small-site erosion control manual that explains the basic principles of erosion control and illustrates techniques to control sediment from small development sites. Jefferson County has an inspection program for illicit discharges, construction activities, and includes post-construction Inspections.

#### *Jefferson County Storm Water 2008 Activities and Actions*

Illicit Discharge Verbal Notification of Violation – 4  
Illicit Discharge Monetary Penalty/Fine – 1  
Construction Sites Covered by Program – 742  
Construction Inspections – 4,405  
Enforcement Verbal Notification of Violation – 600  
Post-Construction Inspections – 37  
Storm drain marking program - Ongoing

### **Saddleback Metropolitan District**

The 20 lots in Phase 1 of the 86 lot Saddleback residential development have been sold. Thirteen (13) homes have received a Certificate of Occupancy with five (5) more under construction. Well and ISDS monitoring are underway. Sampling continues at the three groundwater monitoring wells down-gradient of the subdivision, and no impacts have been seen to date. Road construction is nearing completion on Phase 2A (12 lots).

### **St. Mary's Glacier Water & Sanitation District**

St. Mary's continues to make steady and consistent progress in its I/I program. Each year, sewer lines are cleaned and partially videotaped. Deficiencies in the system are corrected to the extent possible. Each year since the program was implemented, runoff flows through the plant have been lower. St. Mary's considers the program to be a success in reducing I/I in its system. AAA Operations tests monthly for BOD, TSS, FC, ammonia, flow and % capacity and reports that no effluent violations occurred during 2008. AAA continues to control sludge age for biological nutrient removal. The District has immediate plans to convert the Silver Lake 'spillway' into an underground culvert with functioning head gate, and review plans for a bar screen and grit removal system at our waste water treatment plant. Records are available for review at AAA.

### **Town of Silver Plume**

The Town of Silver Plume is keenly aware of Clear Creek flowing through its boundaries and takes action to ensure clean water. Among actions taken over the past year are such things as:

- Use of gravel for road maintenance to minimize the development of fine dust which eventually results in sediment.
- All road grading is performed to ensure no direct storm water runoff goes into the creek.
- The town's administrative board's action focused on ensuring no degradation of water quality.

### **Superfund (CDPHE/EPA) Remediation Projects**

The Argo Tunnel Water Treatment plant continues to operate, treating an average of 250 gallons per minute from the Argo Tunnel, Big Five Mine adit and Virginia Canyon. The plant's operation prevents an average of 890 pounds per day of metals from entering Clear Creek.

CDPHE constructed most of the Phase II sediment control measures for the Nevada and Russell Gulches areas in 2008. Revegetation is being completed this spring. Phase I, constructed in 2007, included construction of two sediment dams in Nevada and Russell Gulches and erosion protection measures at various waste piles. Phase II included the State's acquisition of a portion of the Church Placer claim in Russell Gulch for future use as a mine waste repository, significant regrading and preparation of the Church Placer property, and capping and erosion control at the Pittsburgh and nearby waste piles. CDPHE transported CDOT rock and soil generated from a CDOT curve straightening project on State Highway (SH) 119 to the Pittsburgh mine waste pile for capping mine wastes and to the repository site for use as cover material. Phase III, scheduled for construction in summer 2009, will provide erosion control for mine waste piles in Russell, Willis and Nevada Gulches not already remediated under Phase I or II. It also includes removal of certain waste piles into the on-site repository and covering the repository consolidation area. Four associated mine adits will be closed.

The Golden Gilpin Mill Site remedial action was completed in summer 2008.

On behalf of CDPHE and EPA, Colorado School of Mines (CSM) continued treatability testing of sulfate reducing bioreactors for the National Tunnel mine drainage and made recommendations for the preliminary design/layout of a full-scale system. CDPHE and EPA have been



coordinating with CDOT in an effort to leverage the agencies' various interests along North Clear Creek on the SH 119 corridor. These interests will be formalized in an interagency agreement between CDPHE and CDOT, currently under development. CDPHE has identified the SH 119 right-of-way to be an ideal location to site a pipeline for conveying National Tunnel mine drainage to a downstream location for treatment, and CDOT has indicated a willingness to allow CDPHE to locate the National Tunnel pipeline and passive treatment system within the right-of-way during highway widening construction.

CDPHE and EPA continued to evaluate the Bates Hunter water treatment facility for treatment of the Gregory Incline and Gulch waters. Additional information on the relationship between the mine pool, groundwater and surface water was collected. CDPHE and EPA communicated with a Black Hawk landowner regarding a CDPHE/EPA request to drill into the Gregory Incline mine pool.

Construction of the Black Hawk Central City Sanitation District mitigation wetland was completed in 2007 as a teamed project with the Sanitation District and CDPHE/EPA splitting the cost of this project. The project provides flow-controlled wetland cells that polish North Clear Creek water. In 2008, minor readjustments of rocks in North Clear Creek channel were made. Following the 2008 growing season, the vegetation at the wetlands appears pretty well established. A CSM graduate student monitored the wetland cells over the summer and will continue this effort through 2009.