

(Continued from page 1)

the state standard of 4.6 ppb?

A - There are data showing that most of the major tributaries exceed the standard. However, additional data will be needed from other tributaries to determine their concentrations.

Q - What if no action is taken by the GVSTF to address the selenium issue in the Valley?

A - The State will assume responsibility and develop a Total Maximum Daily Load (TMDL) for the 303d listed segments. They will allocate responsibility for load reductions to the various point and non-point

pollution sources.

Q - What is a TMDL?

A - It is the means by which the State determines load allocations for selenium or other constituents that exceed standards and, in some cases, identifies the best methods to reduce that load.

Q - Wouldn't it be better to take action at the local level instead of letting the State make the decisions?

A - Yes, that is the primary reason the GVSTF was formed, to try and deal with the 303 listed water bodies at the local level.

The Grand Valley Selenium Task Force is also in the process of coming up with a mission statement. A draft version of the statement is as follows: "To evaluate, assess and address selenium and other water quality issues in the Grand Valley, while maintaining the area's current economic viability, quality of life and agricultural heritage". If you would like to participate in the Grand Valley Selenium Task Force the group meets monthly; the next meeting will be March 12, from 1-3 pm at the Unified Technical Education Campus, 2508 Blichmann Ave in Grand Junction.

Page 4

We welcome your input.

Do you have ideas for future newsletters, or do you have a question?

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Selenium Update

For Colorado's Lower Gunnison River Basin & Grand Valley
Prepared by the National Irrigation Water Quality Program



No. 6

February 2003

Greetings from the NIWQP

Selenium continued to be a topic of significant public interest in western Colorado in 2002. The National Irrigation Water Quality Program (NIWQP) continued to pursue our goal of addressing the impacts of Federal irrigation projects and reducing selenium hazards for endangered fish in and adjacent to the Colorado and Gunnison Rivers. A new selenium task force was formed by the State of Colorado to address exceedences of water quality standards in the Grand Valley. The NIWQP made additional improvements at the Orchard Mesa Wildlife Area and continued planning for remediation at two other backwater sites – Colorado River Wildlife Area and at the mouth of Adobe Creek. In the Gunnison River basin, local efforts resulted in a "write-in" to the NIWQP budget to provide \$750,000 for piping irrigation laterals in the Uncompahgre Valley to reduce selenium loading.

In 2003, we look forward to construction at the two Grand Valley backwater sites and hopefully laying pipe near Montrose. We will continue

working with the two task force groups to identify and implement reasonable measures for addressing this problem. The participants in both groups are applauded for their cooperative efforts and willingness to address the issue. Improved understandings, developed by listening to and respecting the

views of all interests, has led to some extraordinary progress. Progress is not always fast, but it is steady. As a friend says, we continue to move the pile. Thank you all.

Mike Baker
NIWQP Team Leader

Grand Valley Selenium Task Force

Early in 2002, the Colorado Water Quality Control Division recognized that all of the tributaries to the Colorado River within the Grand Valley (known as Segment 13b) would soon be placed on the state's list of impaired water bodies (303d list). This was the reason for the development of the Grand Valley Selenium Task Force (GVSTF). The GVSTF brings together a local group to evaluate means to bring these tributaries into compliance with the selenium standard of 4.6 parts per billion.

The GVSTF meets monthly with a mix of federal and state government officials, city and county administrators, water user representatives and interested citizens. The NIWQP is working with the GVSTF where our objectives overlap, especially in areas where endangered fish are exposed to high selenium concentrations. Recently, it was

recognized that segment 13a (the main-stem Colorado river) was a candidate for the 303d list because its 5.2 ppb selenium concentration in the reach from the confluence with the Gunnison River to the state line exceeds the 4.6 ppb water quality standard. The state is considering placing this segment on a Monitoring and Evaluation list which will give it more attention and require additional data be collected to determine if it should be added to the 303d list.

Several questions have been raised in the group's discussion which may be of interest:

Q - How many tributary drainages are in segment 13b?

A - Approximately 28.

Q - Do all of the drainages exceed
(Continued on page 4)

Status of Grand Valley Remediation

The NIWQP completed a diversion structure and pipeline at the Orchard Mesa Wildlife Area (OMWA) in September 2002 at a cost of about \$82,000. This was the final step planned for reducing selenium hazards for endangered fish using the old river channels and backwaters within the OMWA. The project provides a way of beneficially using water from the OM4 Drain which has selenium concentrations ranging from 10 to 30 ppb. Additional acreage within the wildlife area can now be irrigated to enhance the available habitat. Irrigation will be done in a way which maximizes plant use and infiltration of water into the soils. The return flows will become a diffuse discharge in a reach of the Colorado River which is relatively low in selenium. Surface ponding of this water will be minimized to limit selenium exposure for waterfowl. We will continue annual maintenance in several previously constructed flushing channels that dilute high selenium concentrations in the fish habitat.

secondary channel at the mouth of Adobe Creek. However, due to physical barriers limiting endangered fish access except during very high runoff, remediation is not being recommended at the Panorama site.



Inlet to new OMWA pipeline

The CRWA Backwater is located directly across the river from the OMWA. A plan was recently selected which initially involves the excavation of a flushing channel to carry river water into this backwater to dilute high selenium concentrations resulting from inflows from Lewis Wash, the GJ3 Drain, and diffuse ground water. Construction, of this estimated \$20,000 project, is projected to be complete before the 2003 spring runoff.

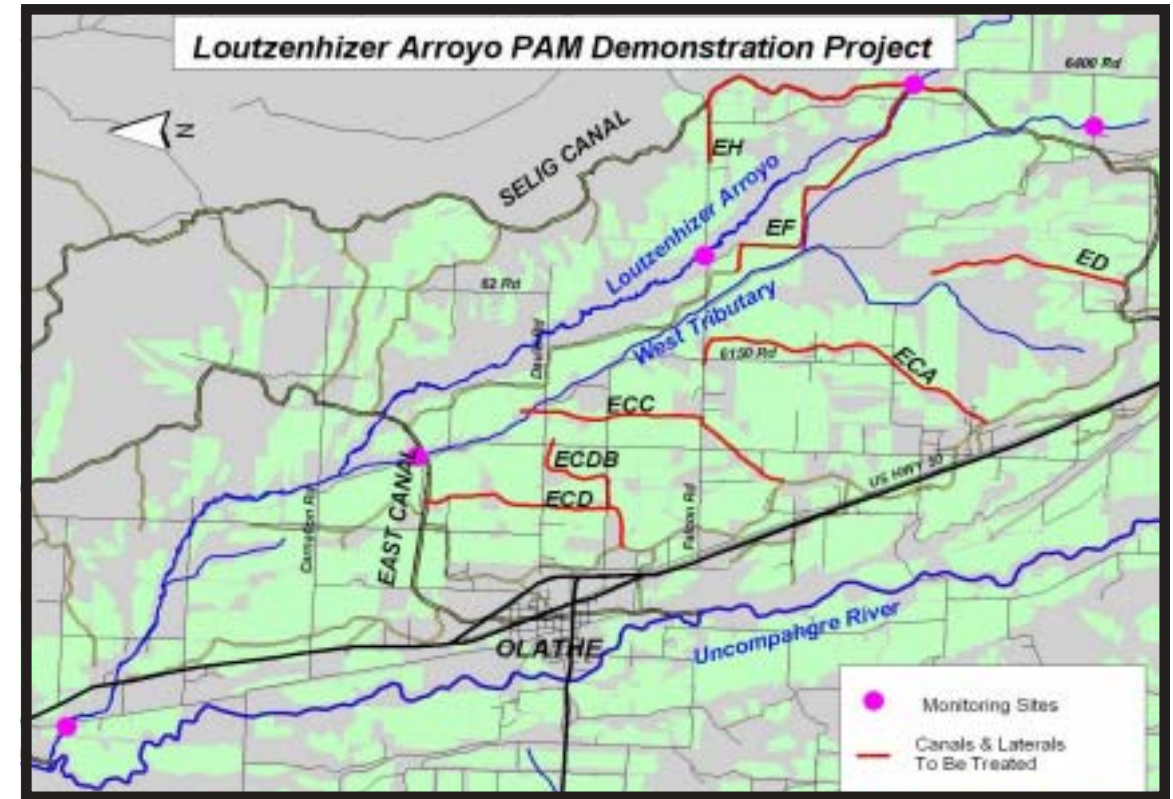
At the Adobe Creek site, about 8 miles west of Grand Junction, planning is nearing completion on a 950-foot long, 36-inch pipeline to convey high selenium irrigation return flows past a secondary channel of the Colorado River. The channel is important habitat for endangered fish. This project is scheduled for construction following runoff, in August 2003.



Adobe Creek site remediation plan

Elsewhere in the Grand Valley, three sites were evaluated for remediation; the Colorado River Wildlife Area (CRWA) Backwater, a secondary channel at the mouth of Adobe Creek, and the south side of the Colorado River near the Panorama subdivision. Remediation is planned for the CRWA Backwater and for the

Activities in the Lower Gunnison Basin



The Gunnison River Basin Selenium Task Force (GRBSTF) and NIWQP continued work in 2002 on a plan aimed at reducing selenium concentrations in the lower Gunnison River and Uncompahgre River to meet water quality standards and benefit aquatic species including endangered Colorado River fish. This plan is being designed to fit with the GRBSTF goal of maintaining the "economic viability and life-style" of the basin. It will likely include measures to reduce seepage from ponds and irrigation canals and ditches (laterals), and reduce deep percolation resulting from on-farm, municipal, and residential water use.

As part of the evaluations of what measures might be cost effective, a number of demonstration projects have been started or are being proposed by GRBSTF members and others. These include:

- * applying PAM (polyacrylamide) to irrigation canals and laterals to reduce seepage (underway)
- * lining farm and residential ponds (underway)

- * installing center pivot sprinkler irrigation systems (proposed)
- * applying Hydrogel in farm fields to increase water use efficiency (underway)

NIWQP's studies of the use of polyacrylamide (PAM) to seal canals and laterals continued in 2002 under a cooperative effort with the Uncompahgre Valley Water Users Association and the Bureau of Reclamation's Water Management & Conservation Program. Preliminary results indicate that the use of PAM seems to be reducing selenium loads in Loutzenhizer Arroyo and the Sunflower Drain. The potential for widespread regular use of PAM has raised concerns about possible environmental effects, because there is limited information about the transport and fate of PAM in the environment. In 2002, NIWQP collected information in areas treated with PAM to determine the fate and transport of PAM used in Loutzenhizer Arroyo. Lab results are still pending. Results detailing the effect of PAM on reducing selenium and salt discharges and what was found about the transport of PAM will be reported in future issues of

this newsletter. Even while studies are continuing, some selenium reduction projects are being implemented. One of these is aimed at reducing contributions from existing and new nonagricultural water uses such as golf courses, septic systems, ponds, and small acreage home sites. The GRBSTF has received a state grant to develop Best Management Practices (BMPs) to address these sources and to provide that information to the community.

Additionally, a major dent in the selenium problem may be made through local efforts to obtain funding to pipe irrigation laterals east of the Uncompahgre River. Congress has approved \$750,000 to be used in 2003 to pipe those laterals which are a significant source of selenium loading in some of the "hottest" areas of the valley. Additional funding from the Colorado River Basin Salinity Control Program will also be pursued.