TURTLE TRACKS
SPRING 2003 EDITION

OFFICIAL NEWSLETTER OF THE TURTLE CREEK WATERSHED ASSOCIATION

New Board Member - Joe Prosser

New Associate Member - Dave McMaster

What Does "AMD" Mean?

Abandoned Mine Drainage

This region of the country had a thriving coal mining industry for many years. While the mines were active, groundwater and rainwater infiltrating from the land surface above the mines normally entered them during operation. This water was constantly pumped out so that miners could work. As the coal was mined out, the mines were abandoned, and in many cases, the mining companies went out of business. However, the water continued to enter the mines just as it always had.

With the mines closed and the pumping stopped, the water then collected in the mines, forming large pools underground. Sooner or later, this water had to find a way out. It could drain from a mine by coming to the surface at distinct points such as old vents or shafts or at weak spots in the overburden (the rocks and soil) above the mine. Due to the large amount of water in these pools and the pressure created, sometimes an artesian effect occurred as water gushed out of the ground. Other times the water simply oozed or seeped out of broad areas of ground. This abandoned mine drainage (AMD) is still going on today.

But that's only part of the story. Inside the mine pool, there are chemical reactions taking place. Water is an excellent solvent, and so it dissolves the substances it comes in contact with. One mineral substance that often falls into an abandoned mine is pyrite (fool's gold), made of iron and sulfer. Eons ago when the coal was forming from plant material, bacteria were at work on those dying leaves.

Some of these bacteria could metabolize sulfer. The sulfer thus produced bonded chemically with iron in the soil, and pyrite was formed. Consequently, pyrite deposits and coal deposits are found together. Pyrite is typically part of the overburden material. Another component of the overburden is limestone, which was formed in a geologic time period close to the time the coal and pyrite were made.

As the overburden starts to fall into the mines, several things happen that cause problems. The water begins to dissolve the sulfer and sulfuric acid is created. The amount produced can be great enough to make the water quite acidic. The iron is also dissolved, but as long as the water is underground and air is not present, the iron is not a problem. When the water with the iron ions hits the air, another reaction takes place and iron hydroxide is formed.

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Conservation School

Westmoreland County Junior Conservation School - 2003, sponsored by the Westmoreland County Sportsmen's League, will be held in Keystone State Park from July 19 through 25th. Students must be ages 13,14, or 15, and have completed the 7th grade. For more details and application forms, call Mr. Archie Bossart at 724/423-3150.

Preseason Trout Stocking -

A great turnout of volunteers and onlookers on April 10th at Saunders Station Bridge. Fish were placed in 5 gallon buckets and carried down the path to Turtle Creek.

Once at the edge of the water, the trout were loaded into stocking barrels which were then walked downstream. Along the way, the fish were released a few at a time, thus insuring good fishing all the way from Saunders Station to the Pinnacle Building along Forbes Road.

Clean-up Day

Saunders Station Bridge

Several years ago, the very first clean up day at the bridge netted a huge amount of litter, dumped trash, old tires and car parts, abandoned appliances and the like. Mr. Wayne Norris of Dura-Bond Industries donated the use of some flat cars to carry everything away.

Each year since then, the amount of trash recovered has decreased. It is good to be able to report that the pattern continues. Now that the area is being taken care of, people are less likely to dump trash there, and those who use the area to fish and hike are taking responsibility for its condition. A relatively small amount of material needed to be cleaned up, and much of that obviously came from passing cars.

Our thanks to board members Henry Hoffman and Dave McMaster for organizing the work and providing supplies and equipment. Thanks also to Craig Barras, Rocco Estatico, Bill Mazik, John Mores, and Diane Selvaggio for their help.

OSM Intern

Our application to the Office of Surface Mining, US Department of the Interior, as a sponsoring organization for an internship has been approved. The intern will be working on water monitoring, development of educational materials for school and community use, and website maintenance.

Project Updates

Borland Farm Road Abandoned Mine Drainage (AMD) Remediation; Phase I and Phase II

No viable bids were received for the coal refuse pile removal. However, it turned out that Robindale Energy Services, Inc. of Johnstown already had a DEP exploration permit waiver for this pile. Their interest was to use it as fuel for the new Seward co-generation plant. To obtain some needed data on the contents, RES took volume measurements and arranged for testing to determine the BTU potential of the pile material. Unfortunately, this value was considerably lower than anticipated. Consequently, we are now in the process of finding an alternative use for the pile material. It can be mixed with certified ash to neutralize the pH and then used as fill in strip mine reclamation sites, etc.

Borland Farm Road AMD Remediation Phase III

We are still awaiting appraisal of the property by Penndot. Once completed, more grant funds can be sought and negotiations for the purchase can begin.

Export Mine Discharge Remediation Phase II

Word about the 2003 grant from the PA DEP Growing Greener Program is expected in July.

Streambank Stabilization

Work in Sugar Camp Park is due to begin shortly. We are also in the preparatory stages of three other stabilization projects. If our funding option is successful, we hope to complete these by fall of 2003.

Saturday, May 31st 11:00 - 3:00

Fun Day at BY Pond in Trafford

The pond will be stocked with trout for our annual children's fishing tournament. Prizes will be awarded, a raffle will be held, and a variety of demonstrations and displays will be on site. Adults without licenses can help out their favorite small fry, but in order to actually fish, a license will be required for those 16 and over.

Abandoned Mine Drainage - continued

This is the substance that turns stream water orange and "paints" the rocks. Once this happens, then the tiny plants and animals at the bottom of the food chain that normally live on the rocks can no longer attach to them.

The water in the mine pool also dissolves the limestone, but it is not acidic. Instead, it has a high pH and is basic. Found in sufficient quantities together, the sulfuric acid and the dissolved limestone neutralize each other. If there is little limestone, then the water is acidic (low pH).

Acidic water can also dissolve other minerals in the ground. Aluminum is one of those most common in the earth's crust. Once it dissolves, it can precipitate into the white solid hydroxide form if the pH of the water rises. The tiny white particles give stream water a milky color. But at a low pH, the aluminum ions stay in solution and are very toxic to all life forms in the stream.

In a nutshell, this combination of low pH, iron hydroxide covering the streambed, the "rotten egg" smell, and either dissolved or solid aluminum, all the result of drainage from abandoned coal mines, is the scenario that we see throughout the Turtle Creek Watershed. This also explains why it is such a pervasive and persistent problem, very difficult to solve. And it explains why TCWA is always looking for help from everyone in the community!

Education Grants

TCWA has applied for education grants from two sources. 1) A League of Women Voter's Water Resource Education Network grant to fund the purchase of interactive, 3-D models depicting wetlands, watersheds, and hazardous waste problems. Related literature to be used for presentations at schools, civic groups, etc. would also be developed.

2) An Allegheny County Health Department mini-grant to fund the creation of a small pilot program to work with local high school students and faculty to perform consistent water quality monitoring for both biotic and abiotic parameters at several designated sites.

Join Us !! Become a member of the Turtle Creek Watershed Association and become a partner in a dynamic local conservation effort. A broad base of financial and volunteer support from local individuals, families, communities, businesses, and industry will allow all of us together continue improving the quality of life in this region. (Don't forget - it's tax deductible!)

Membership Form 2003

Name: _____

_____

Address: _____

_____

Phone: _____ (h)

_____ (w)

Thank you very much!

☐ Individual	$10	☐ Family	$15
☐ Organization	$25	☐ Small Business	$50
☐ Life	$100	☐ Corporate	$150
☐ Other	$ ____		

Please make check payable to:
Turtle Creek Watershed Association
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Wilmerding, PA 15148
412/829-2817 phone

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Murrysville Summer Celebration
June 7 Noon until 8:00 p.m. Fireworks at night.
Come see us at Murrysville Community Park on June 7th !!