

Lyons Run Demonstration Project 2011

Lyons Run Watershed Association

2500 Eldo Road • Monroeville, PA 15146



The Organization

A Not for Profit 501 c 3 corporation formed
in 2004 to develop the Lyons Run
Demonstration Project

The corporation includes Board Members,
an Executive Director and Technical
Consultants



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An Environmental Enhancement Initiative to Treat Acid Mine Drainage



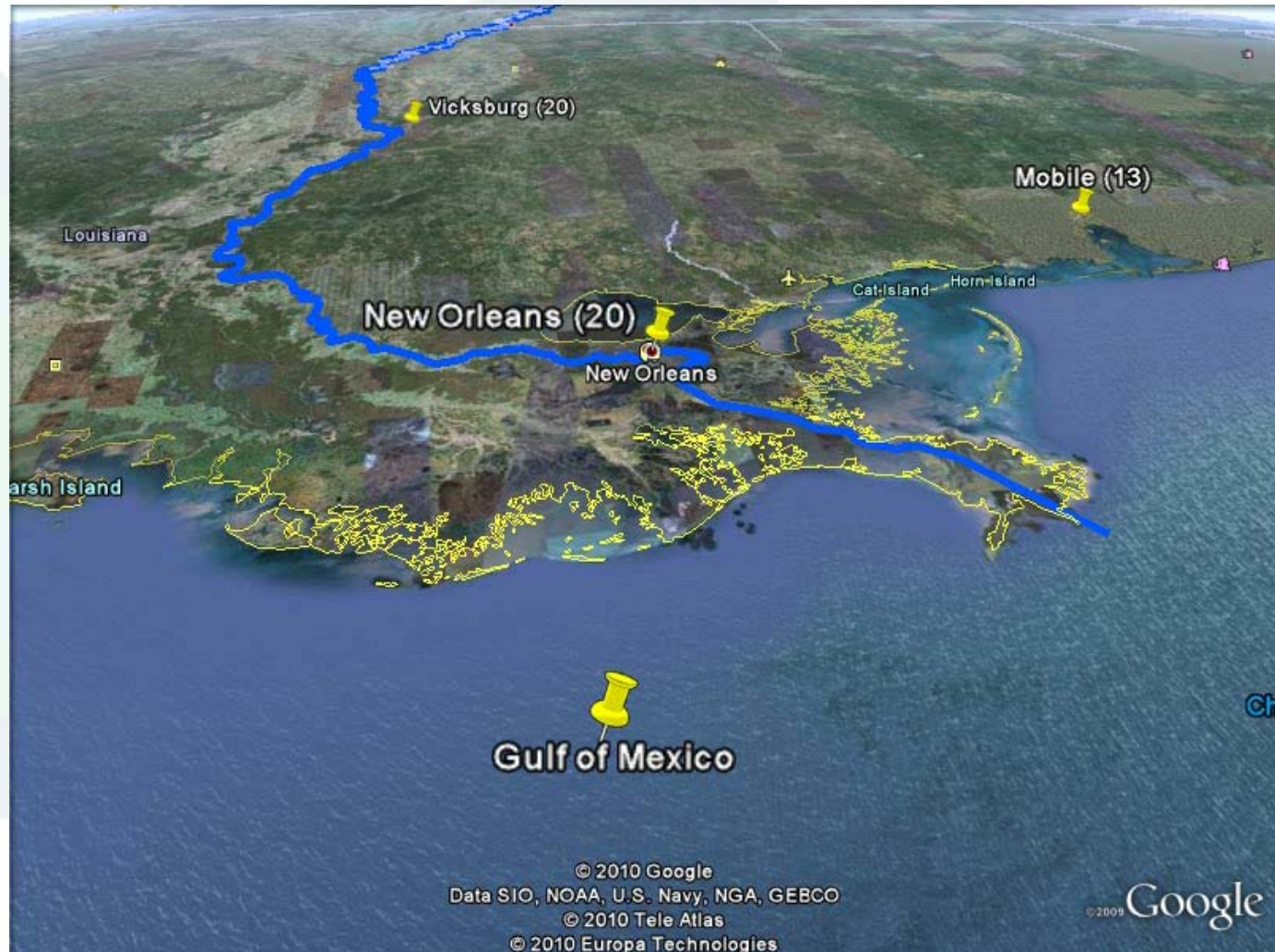


Lyons Run Watershed

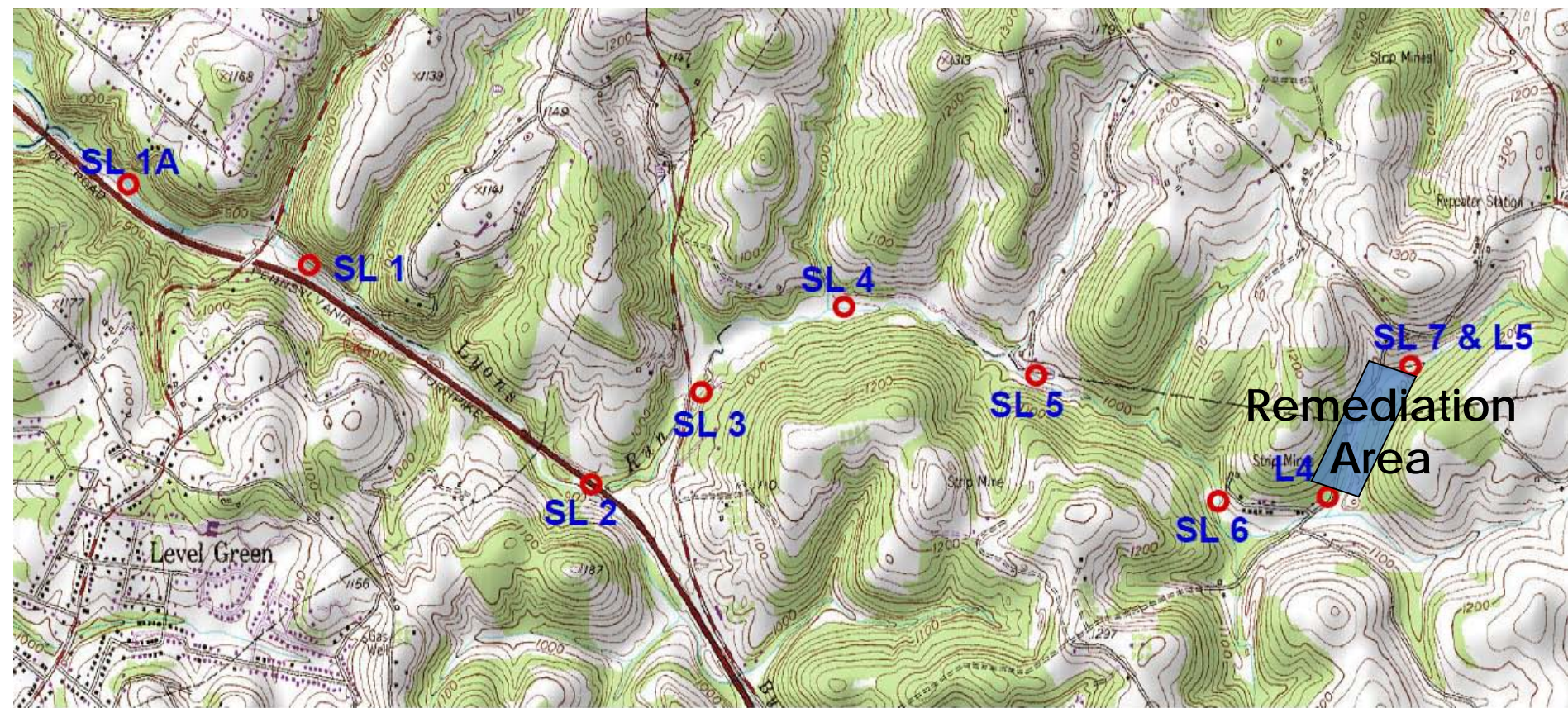


Lyons Run – Upstream from Gulf

- Gulf of Mexico
- Mississippi River ;
Ohio River
- The Ohio formed
by the Allegheny
& Monongahela
Rivers
- Monongahela ;
Turtle Creek
- Turtle Creek ;
Lyons Run
- Remediation



Topographical Map



SL = Sample Locations
L = AMD Sources

LYONS RUN

DATE: DECEMBER 2009



DAMARISCOTTA

650 Merle Street, Suite C, Clarion, PA - ENVIRONMENTAL CONSULTING

Lyons Run Loadings – 2008 Sampling

Sampling Location	Aluminum <i>tons/year</i>	Iron <i>tons/year</i>	Acidity <i>tons/year</i>
1A	6.7	9.5	19.2
1	3.0	6.5	0*
2	7.0	8.1	28.2
3	4.5	3.9	17.2
4	6.0	2.3	38.9
5	7.4	2.5	54.7
6	9.1	7.8	97.2
<u>7</u>	<u>3.2</u>	<u>4.2</u>	<u>43.3</u>

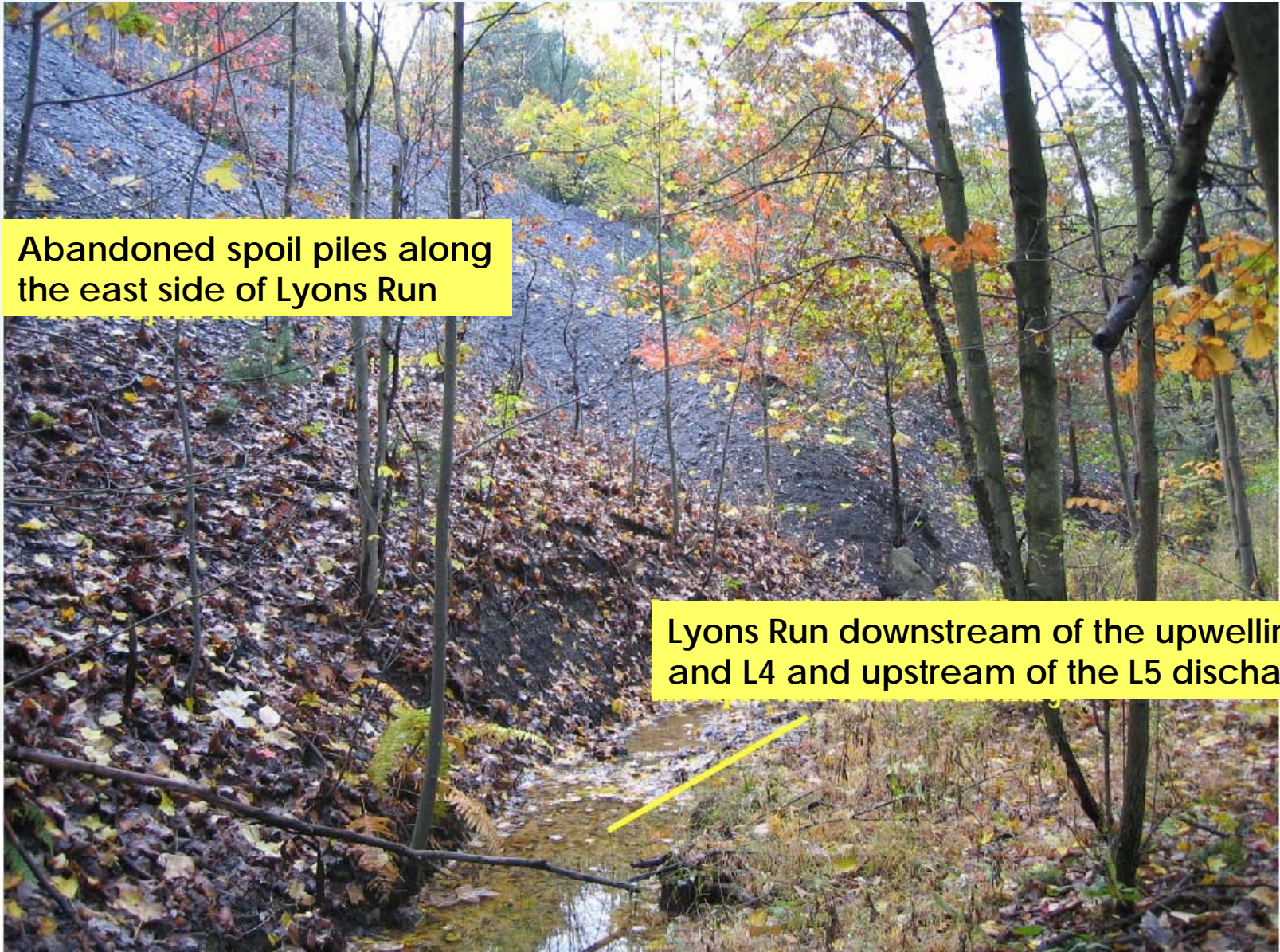
*value due to small sample size (n=11)

Proposed Treatment System Area



Area between the L4/upwelling and L5,
between Lyons Run and Boxcar Town Road

Existing Conditions-Spoil Piles



Abandoned spoil piles along the east side of Lyons Run

Lyons Run downstream of the upwelling and L4 and upstream of the L5 discharge

Existing Mine Drainage/Stream Conditions



Existing Mine Drainage/Stream Conditions



Existing Mine Drainage/Stream Conditions



Existing Mine Drainage/Stream Conditions



Background Efforts

2004

- Lyons Run Watershed Association is Established and given 501 c 3 status
- Initial meeting with PA Department of Environmental Protection

2005

- Initial meeting w/ Penn Township and Turtle Creek Watershed Association
- Draft proposals submitted to PA Dept of Environmental Protection

2006

- Association meeting with Water Management Division of the PA DEP
- Mitigation Banking Prospectus submitted to the U. S. Army Corps of Engineers
- Field meeting held with representatives from the MBRT*
- Meeting w/ Turtle Creek Watershed Assoc. and Blackthorne Development

(*MBRT) = *U. S. Army Corps of Engineers, *The PA Department of Environmental Protection, *U. S. Environmental Protection Agency, *PA Game Commission and *U. S. Fish and Wildlife

Background Efforts cont...

2007

- Second field meeting held at Lyons Run with Mitigation Bank Review Team
- U. S. Army Corps of Engineers requests water quality monitoring

2008

- Year long water samples collected and sent for analysis

2009

- Executive Director hired to assist in the development of the project
- Project Narrative and Financial Projections formulated
- The Association participates in the National Mitigation Banking Conference
- Formal response sent to the U. S. Army Corps of Engineers
- The Association obtains agreement for the Proposed Treatment System Site

(*MBRT) = *U. S. Army Corps of Engineers, *The PA Department of Environmental Protection, *U. S. Environmental Protection Agency, *PA Game Commission and *U. S. Fish and Wildlife

Background Efforts cont...

2010

- Mitigation Banking Prospectus submitted to the MBRT
- U. S. Army Corps of Engineers publishes Public Notice 10-20 about the project
- Comments to Public Notice received by U. S. Army Corps of Engineers and Association responds to comments
- Participation in the National Mitigation Banking Conference

2011

- Lyons Run Watershed Association makes presentation to MBRT to address comments to Public Notice 10-20
- Presentation at National Banking and Ecosystem Conference, Balto. MD
- Presentation at Eastern Coal Regional Roundtable, West Virginia
- Presentation at Western PA Coalition of Abandoned Mines Board Meeting, PA
- Meeting with Col. Graham and staff at Pittsburgh District USACE
- Development of pilot project working initially with the State

Site Acquisition/Project Area Control

In 2009, the Lyons Run Watershed Association obtained a Sales Agreement for a 10 acre site along Lyons Run from a private landowner. The proposed site is ideal for the construction of the proposed Treatment System. Currently this parcel has been appraised by the Association and is considered a piece of land with little marketable value. There are approximately 1500 feet of coal mine tailings on this parcel that will be removed from this site.

The Proposed Passive Treatment System

Successive Alkalinity Producing System (SAPS)

Projected size of construction site :

- **1 Acre initial SAPS**

2,200 Tons Limestone ;

500 Cubic Yards of Organic Compost

- **1 Acre for the Settling Basin**

- **2 Acres Final Combination Wetland/SAPS**

2,200 Tons Limestone ;

500 Cubic Yards of Organic Compost

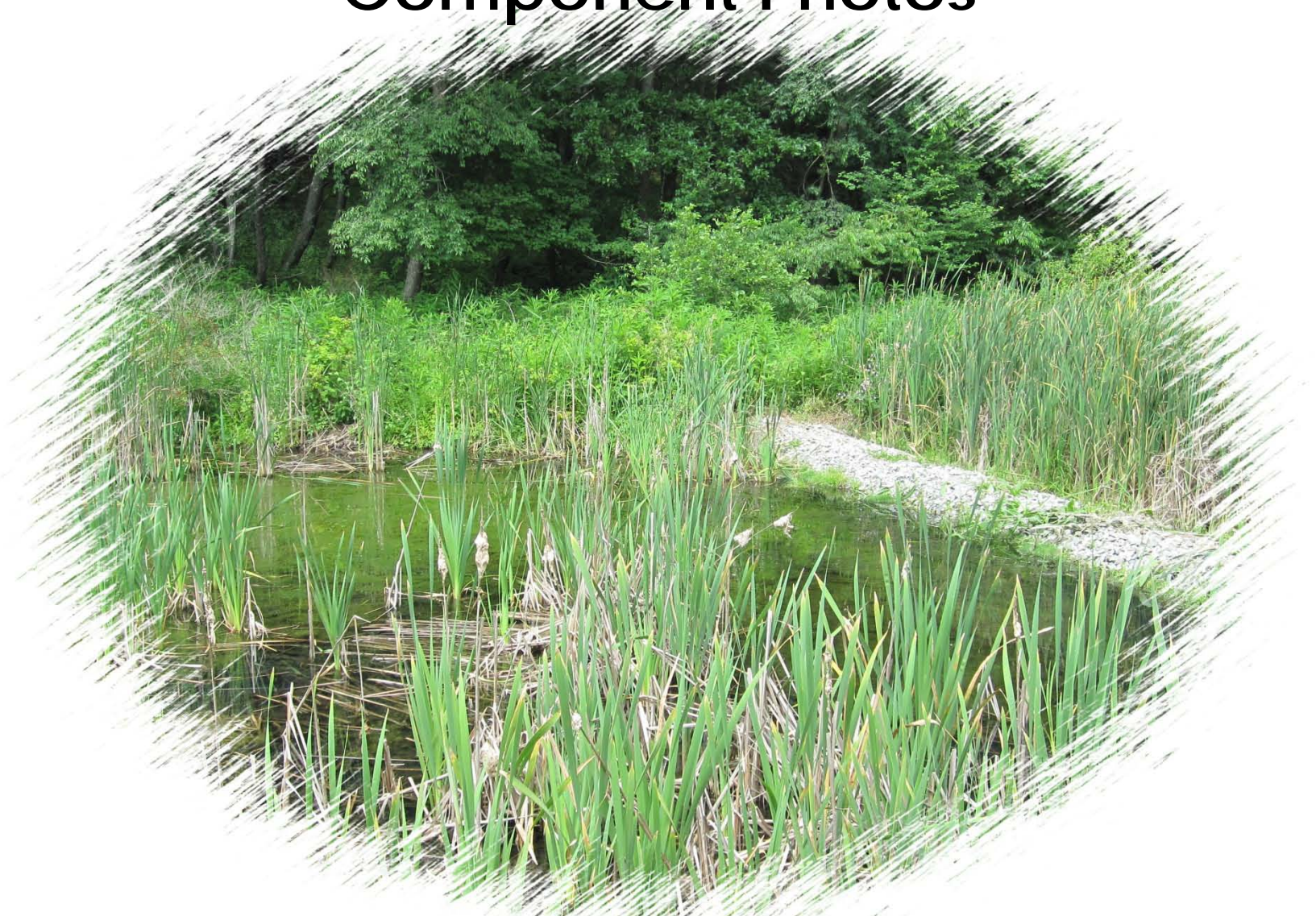
Typical Initial SAPS Under Construction



SAPS Photos – Typical Settling Basins



Typical Final Wetland Treatment Component Photos



Downstream from SAPS

Financing the Project Through Private Donations and Sale of Credits

Contributions to the 501 c 3 Corporation are tax deductible and will be used to:

- Acquire the Project Site
- Construct the Passive Treatment System
- Monitor and Adjust System to meet Performance Standards
- Establish the Lyons Run Mitigation Bank
- Market the Mitigation Bank

Lyons Run Mitigation Bank

- Assurances of Land Control
- Construction Assurances
- System and Water Quality/ Biota Monitoring
- Long Term Management Plans
- Credit Allocations and Release Schedules*
- Bank Reporting Requirements
- Financial Assurances
- Assurances of Perpetual Maintenance

*Two (2) Acres of Wetland Creation = 2 Wetland Credits

14,784 Linear Feet of Stream Reclamation = 14,784 Stream Credits

Endowment Fund for Perpetual Monitoring/Maintenance

Through the sale of stream and wetland credits from the Lyons Run Watershed Association Mitigation Bank, an endowment fund will be established to perpetually maintain the treatment system.

Moving the Project Forward-

Mitigation Banking Review Team (MBRT)

- Establish Performance Criteria
- Establish Credit Release Schedules
- Approve Banking Instrument Structure
- Approve Long Range Management Plan Structure

Moving the Project Forward-

Other Steps

- Continue working with the MBRT
- Finalize the engineering design of the system
- Finalize the Banking Instrument
- Finalize the Long Term Management Plan
- Finalize Marketing Materials for the Mitigation Bank
- Succession planning for Lyons Run Organization



Public Notice

**U.S. Army Corps
of Engineers**
Pittsburgh District

In Reply Refer to
Notice No. below

US Army Corps of Engineers, Pittsburgh District
1000 Liberty Avenue
Pittsburgh, PA 15222-4186

Application No. 2006-938

Date: May 6, 2010

Notice No. 10-20

Closing Date: June 6, 2010

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Issues Remaining

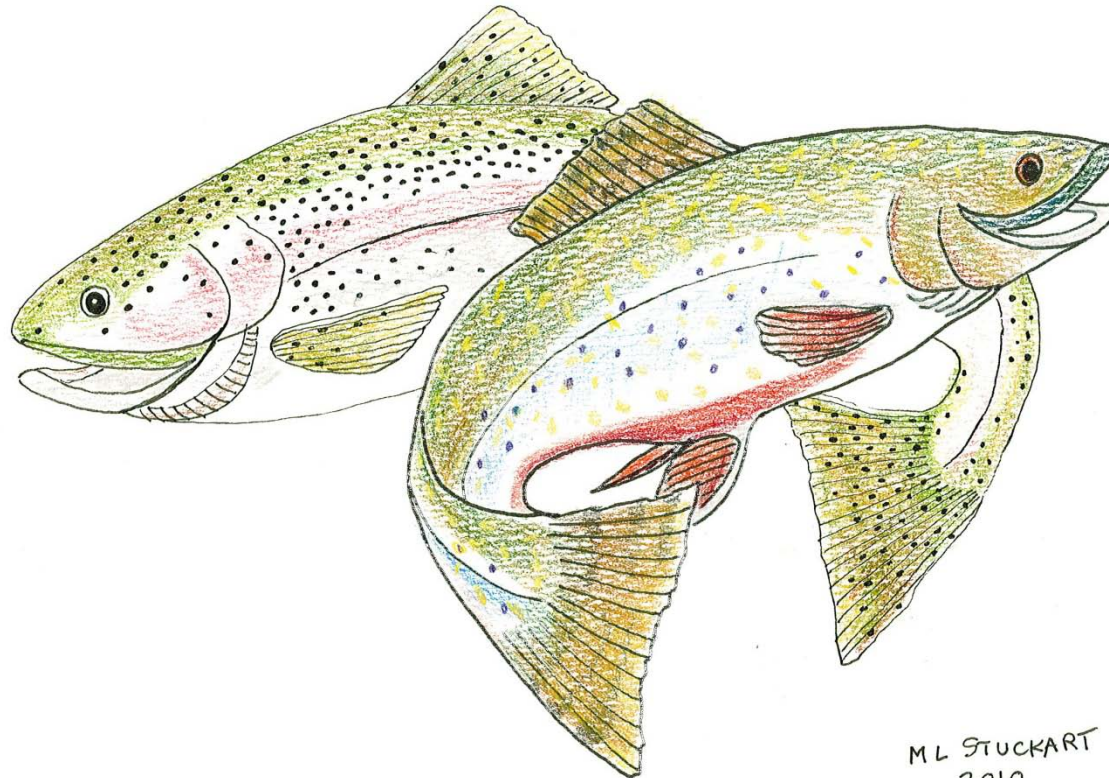
- Does not fit 2008 Mitigation Rule
- Self-sustaining
- In-kind/out-of-kind compensation

Current Direction(s)??

- Credit “Streams”
- Credit Stacking
- Need to make this a Cooperative Pilot Project

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ML STUCKART
2010

Thank You!