Penn Hills #2 Passive Treatment System
SRI O&M TAG Project #35 Request #3
OSM PTS ID: PA-132

Requesting Organization: Blacklick Creek Watershed Association (in-kind partner)
Requesting Organization Representative: Dennis Remy
Dates of work performed: 3/2/2023, 8/18/2023 – 8/25/2023, 5/17/2024 – 6/14/2024/

Initial Request: On 3/2/2023, the Blacklick Creek Watershed Association (BCWA) requested a site visit to Penn Hills #2 treatment system to clear a blockage at the mine discharge, Sample Point 436. Additional work was requested in August 2023 that was completed in June 2024.

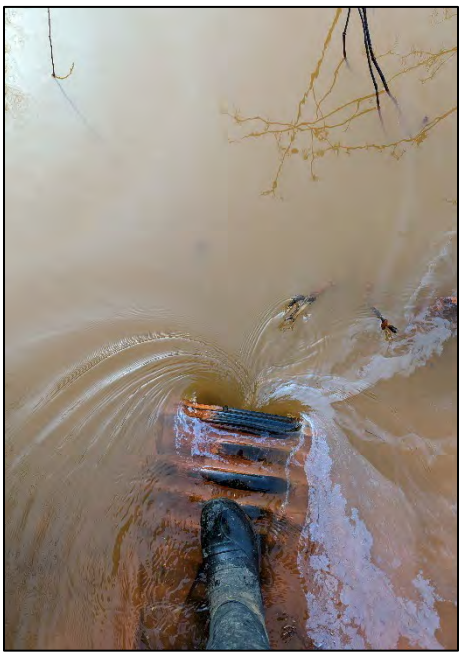
Initial Site Visit, Observations, and Identified Needs: As both BioMost and Stream Restoration Incorporated (SRI) were familiar with the system and the issue appeared to be straightforward, an initial assessment was not conducted based on information provided by BCWA.

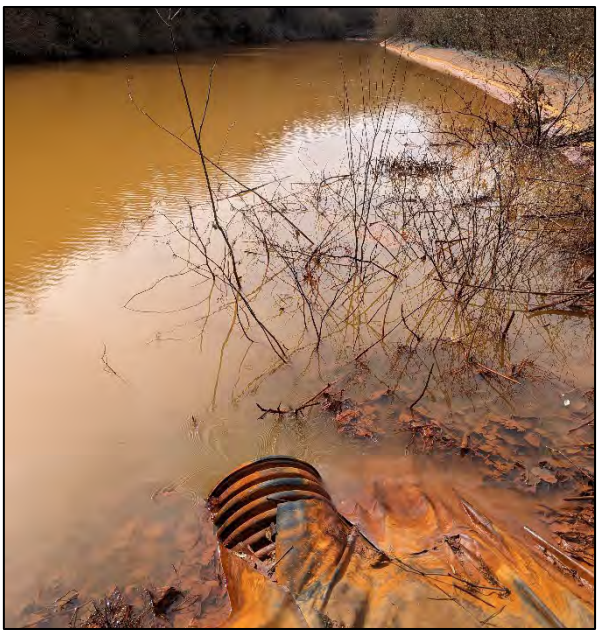
Work Completed (March 2023)
BioMost, Inc mobilized to the site. Various trees and brush were cleared from the access road in order to assess the mine discharge/treatment system. After inspection of the mine discharge, vegetation and iron solids were cleared by hand using a shovel to restore full flow to the system. The pipe was not completely occluded with material but enough material was present to raise the elevation of the forebay pond approximately one foot. A pipe was removed from the overflow culvert pipe to limit overflow from the "Unknown Source Discharging to Pond" which was overwhelmed by the amount of flow coming from the forebay. Additional trees and debris were cleared from the access road along the access road loop.

Work Completed (August 2023 through June 2024):
-An access ramp was constructed to provide safer access to the overflow pipe.
-Baffles were installed around the overflow pipe to reduce floating debris entering the pipe.
-Baffles were installed around the splitter box inlet pipe to reduce floating debris entering the pipe.
-Multiple methods were used to attempt to clear the blockage from the splitter box pipe; It appears to have been partially successful as water is now flowing to the splitter box as designed.
-Material was removed from the flow spitter box to unclog piping and restore flow paths as designed.
-Combination lock matching on site code installed at flow splitter box.
-Vegetation was removed from the access road using a mini excavator.
-Installation of three cleanouts along the 18" N12 pipe that extends from the Mine Discharge Pond (collection pond) and the Splitter Box.
-Jetter the 1,200 feet of 18" N12 pipe from collection pond to splitter box
    -Jetting the pipe generally removed iron to open the 18" N12 pipe from mostly occluded to more than 80% open for the entire length of the pipe

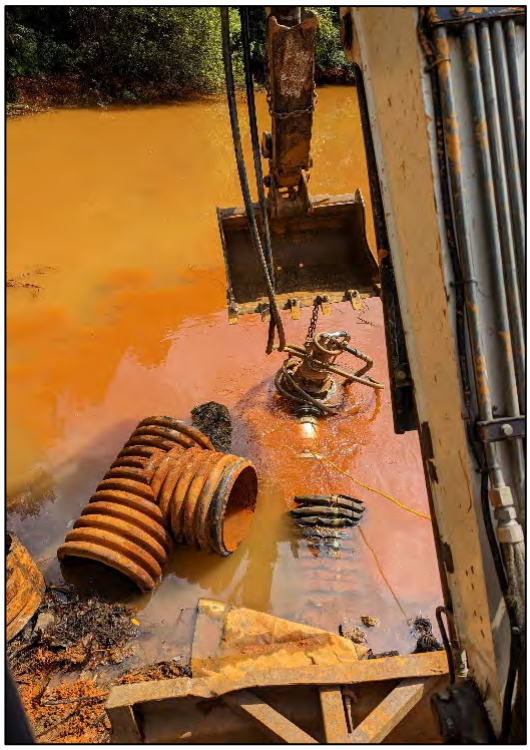
Recommendations & Future Considerations: On-going water monitoring and site inspections should continue. Debris should be cleared periodically from the mine discharge forebay to reduce future maintenance needs. It is recommended that the forebay outlet pipes be jettered as needed to remove iron accumulation. A re-design of the forebay outlet should consider a TIF rather than a pipe to take advantage of iron precipitation prior to other treatment system components.

Photo Log





Top Left: Mine Discharge Sample Point 436 was occluded with iron precipitates and vegetation (3/2/23).
Top Right: Full flow to Sample Point 439 was restored (3/2/23).
Bottom Left: Flow from the "Unknown Source Discharging to Pond" overflow was allowed to reduce water overtopping the embankment (3/2/23).
Bottom Right: The forebay water level was dropped due to clearing the vegetation blockage (3/2/23).



Top Left: Mine Discharge Sample Point 436 improved with an access deck and baffles (8/25/23).
Top Right: Pumping water to clear material from forebay outlet pipe (8/25/23).
Bottom Left: Iron occluding splitter box components, noted after flow was restored (8/24/23).
Bottom Right: Various methods were attempted to clear sediment from the system pipes (8/25/23).

Top Left: The 18” N12 Pipe was uncovered and a 12” diameter hole cut into the top to facilitate the installation of a saddle tee. The pipe was found to be filled with varying amounts of iron oxide (low-pH iron), the selected photo shows that the pipe was about 90% filled (5/23/24).
Top Right: Dense iron solids were able to be removed by jetting (6/12/24).
Bottom Left: At a different location from top photos the pipe was found to be about 70% filled just prior to jettering, with jetter nozzle and hose shown on left (5/31/24).
Bottom Right: During jetting, as the pipe was unclogged, water flow increased causing the temporary excavation to become filled.

Top Left: Prior to jetting, the collection pond was discharging via the overflow pipe (6/11/24).
Top Right: The 18” N12 pipe was uncovered in three locations for jetting and cleanout installation (5/23/24).
Bottom Left: 18” x 12” N12 saddle tees were installed by cutting a hole in the top of the 18” pipe and fastening a tee with hose clamps (5/23/24).
Bottom Right: The cleanout risers extend above final grade with Polylok caps (6/14/24).