

EPCAMR



Eastern PA Coalition for Abandoned Mine Reclamation

Michael A. Hewitt, *Program Manager*

101 South Main Street

Ashley, PA 18706

Fax & Main Line: (570) 371-3522

E-mail: hardcoal@epcamr.org

Website: www.epcamr.org

March 2012 Progress Report

Highlights:

- EPCAMR staff participated in an AMR Conference Call. Printed 4 posters for the an educational display.
- EPCAMR staff sampled 15 boreholes in the Lackawanna Valley, 26 in the Wyoming Valley. Measured flow on 3 discharges, found 3 boreholes and “day-lighted” 3 boreholes for water level monitoring in the northern field. Updated 2 GIS datasets, began creating a 3D mine pool model for the southern field related to the mine pool mapping initiative. Updated another GIS dataset, created 2 maps and shared with EPCAMR partners.
- Continued transferring old archived content from Nuke to WordPress format on www.epcamr.org. Continued work on www.treatminewater.com. Administered the EPCAMR facebook page and Google Apps for Nonprofits account.

Education and Outreach:

- Created and posted a final collage header image for the AMR Conference website at www.treatminewater.com.
- Researched available mine land and reclaimed mine land in Luzerne County for Bruce Trumbower, EPCAMR representative from Luzerne County and member of the Conservation Coalition. He was looking for a large acreage to plant food plots for wildlife and game species. The Conservation Coalition has ties to national organizations such as Pheasants Forever and the Wild Turkey Federation that have grants to purchase land and provide seed.
- EPCAMR staff collaborated to revive the Hicks Creek Natural Stream Channel Design project to see what the next steps were to get the project moving again for possible construction in the spring / summer [GG2].
- Created EPCAMR Program Manager monthly report for the previous month, gathered other staff reports, posted them to www.epcamr.org and sent to PA Department of Environmental Protection (DEP) 319 Nonpoint source (NPS) program staff. Aided executive director in preparing the reimbursement and sent to 319 program staff.
- Added the Call for Presentations to the News page, a Sponsors page and a Mayfly Award page to www.treatminewater.com and updated the home page to reflect the “blurb” from WPCAMR staff. Removed any references to Marcellus Shale Gas on the website. Modified the committee list on the About page.
- Printed the EPCAMR Intern, Restore, Help and Educate posters for an EPCAMR exhibit at Wilkes University for their Career Day.
- EPCAMR staff participated in an AMR Conference Call to work out details associated with conference planning. Put together an e-mail inviting sponsors and exhibitors from last year to exhibit or sponsor for the 2012 conference.
- Continued to transfer pages from the old CPG Nuke Format to the New WordPress format on www.epcamr.org.

Technical Assistance:

- Studied the instructional manual for the Kemmerer Bottle and contacted tech support from Wildlife Supply Co. to find out how to set up the sampler for field collection. The sampler had to be threaded (a very difficult task which was not explained in the manual or support staff)[SRBC].
- Placed Solomon Creek sampling points on a map and printed the map for the Coldwater Heritage Plan project [TU].
- Received a mine drainage sampling quote from Hawk Mountain Labs as requested. The quote was requested to see if it was more economical to have samples for SRBC and for the Dashed AMD Treatment System Snapshot analyzed locally or have them sent across the state. Unfortunately, the prices came in too high and they will be shipped to Mahaffey Labs.
- Edited attribute table for the barrier pillar GIS layer for the Lackawanna Valley with the US Bureau of Mines Report 517 (aka the "Ash Report"). Added the altitude of effectiveness and hydraulic head values into the table and made a judgment as to whether the barrier was solid or breached (whether it was holding back a mine pool or letting water flow through)[LRCA].
- Adjusted the Lackawanna and Wyoming Valley mine pool boundaries from the Ash Reports. Initially when these pools were drawn in GIS they were not in proper alignment due to incorrect alignment of the aerial photos and topographic maps that were used to line them up. This was an issue with many layers that were made from georeferenced maps at the time since the PA Spatial Data Server (PASDA) was serving up layers that were in an imperfect alignment when using the North American Datum (NAD) 1927 Universal Transverse Mercator (UTM) Zone 18 North projection. This datum and projection was chosen since the data was produced around the 1950's. Anything produced in the 1980's and more recent would require a NAD 1983 datum. Currently EPCAMR uses the basemap services in ArcGIS 10 from ArcGIS.com (ie. Bing Aerial Photos, Hybrid Aerial Photo/Street Maps and Topographic Mosaics) [SRBC].
- Produced a 4th quarter of 2011 invoice for work completed for the Anthracite Remediation Strategy project and submitted it to the Susquehanna River Basin Commission [SRBC].
- EPCAMR staff traveled to Nebraska section of Jermyn and Winton section of Archbald to open sampling boreholes to the mines and raise the caps to the road surface with SRBC and the Lackawanna River Corridor Association (LRCA). The boreholes are known as #103 and #105 respectively. The road work was performed by PA Tectonics staff and collars ordered from Central Clay Products in Wilkes- Barre. Once opened we took a water level reading in each [SRBC].
- EPCAMR staff traveled to Old Forge to cut an access strip in the cap of the Old Forge Borehole conveyance channel. PA Tectonics staff cut through and jack-hammered out the foot thick concrete laced with reinforcement bar. Once clear, EPCAMR and SRBC staff were able to get measurements of the channel cross section and devise a way to calculate the flow. EPCAMR staff purchased a more robust flow meter from Swoffer Instruments that can be clamped to a steel rod and lowered ~9 feet into the ~4 foot per second flow. Took flow at 20% and 80% of the depth and plugged it into a spreadsheet created by SRBC to get a flow [LRCA].
- EPCAMR staff traveled back to Jermyn to collect water chemistry samples from the Jermyn borehole at several depths with the Kemmerer Bottle. Measured the water level again with the Herron Water Level Meter and sent the probe down over 250 feet in an attempt to find the bottom. At about 115 feet there was a constriction which caught the probe on the way back. Took water quality samples with the Kemmerer Bottle at 2' below the surface of the water and attempted to go to 50' but the bottle stopped at ~23' so took a second sample at 20' that came up very sludgy [SRBC].
- Printed a map with the updated barrier pillar information and mine pool monitoring borehole locations. Studied the map to attempt to identify additional data gaps and grouped the water levels in the boreholes based on water level charts. Calculated "decade averages" for the boreholes in the spreadsheet. There are 4 water levels within the Scranton Metro Mine Pool.

Recommending that an additional borehole be opened in the Minooka area to find out if a pool is held back in that area as well [LRCA].

- Updated the HACH AMD Field Test Kit Cheat Sheets to include updates to the instructions and explained some limitations on certain parameters. Researched and found out that the Dissolved Oxygen Test is an Azide Modified Winkler Method, but if too much Iron is present the test will give a false positive. Laminated the sheets and placed the new ones in the test kits.
- Found boreholes 14 and 15 in Plymouth Township and read the water levels. Added these boreholes along with boreholes 103 and 105 to the borehole data spreadsheet and to the borehole GIS layer. Checked the position and elevation recorded in the GIS layer and updated based on LiDAR elevation contours and aerial photos. Found the Loree Borehole #38 in Larksville, but it was holding water, assumed blocked and storm grates were added to the top. Searched for the Avondale Borehole #35 and marked the approximate location at the bottom of Sickler Hill Road. PA DOT came by the next day to dig it up, but could not find it. They will be milling Route 11 in the summer and will keep an eye out for it [SRBC].
- Began creating a 3D mine pool model for the western prong of the Southern Anthracite Coal Field from Tower City to Lykens (ie. I-529 Report and Maps) in earthVision with EPCAMR Intern, Justyna. There were 25 veins/splits in the stratigraphic sequence and several faults that made for a difficult geologic structure. Continued to calculate the top of each vein based on the I-602 reports, maps and core logs. Began to add the tops of each vein into the stratigraphic sequence and found several that were less than 1 foot or had no thickness. These veins were removed from the model as well as several small split veins leaving 18 veins that were independently mineable. Created polygon files to show the geographic extent of the veins for later use in the model [SRBC].
- EPCAMR staff traveled around the Lackawanna Valley to conduct water level monitoring of 15 boreholes related to the Scranton Metropolitan Mine Pool [LRCA].
- In the process of looking for more boreholes, I found a map from the PA DEP Pottsville District Mining Office (DMO) that showed the location of all the newer borehole drilled in the Lackawanna Valley. All boreholes were marked on the GIS layer from PA DEP Bureau of Abandoned Mine Reclamation (BAMR) except for #102. Traveled to Carbondale to attempt to find this additional borehole in the Jermyn pool, spoke with folks in the neighborhood, but could not find it initially [SRBC].
- Continued to “tweak” the I-529 3D Mine Pool Model with tech support from Dynamic Graphics. My initial question dealt with placing a geographic extent on each vein placed in the workflow manager (WFM) utility. This was not possible, only the full model can be clipped, as I learned. Came up with an idea to split the model up into 4 different groupings of veins with similar geographic extents. Those groups are the Lykens Valley (LV) 6 to LV 4, LV 3 to 3 (Little Buck Mtn.), 5 (Buck Mtn.) to 9 (Top Split Mammoth), 10 (Holmes) to 13 (Little Orchard). Sent snapshots of the model to SRBC Staff [SRBC].
- EPCAMR Staff traveled around the Wyoming Valley to monitor water levels in 24 boreholes in the Wyoming Valley. Added boreholes 14 and 15 to the route. The Glen Lyon Discharge was not flowing, but we were able to take pipe full measurements on the Askam Borehole Discharge to calculate the amount of mine water flowing [SRBC].
- Adjusted mine pool boundaries for the southernmost Southern Anthracite Coal Field as they were initially lined up from north to south. This was good for the northern most pools down to about Minersville, but it left the southernmost pools with a skewed georeferencing when compared to contours of the lowest mineable bed created from earthVision 3D model. This may have been the mistake of those completing the Operation SCARLIFT reports, since the maps are skewed as well. After lining up the maps from south to north and stopping at Minersville, the maps were much better aligned [SRBC].
- Found an area of OSM Mine Map Folio S15-16 Coverage for the Markson Mine and lined these maps up to draw a mined out area that was not available from the second geologic survey. Added this area to create an underground mining extent. Found that the mine pool drawn on

the Operation SCARLIFT maps was also skewed and about 2x larger than it should be with an estimated 100 million gallons of water in the Markson Mine Pool. Digitized a new mine pool from the discharge elevation and spot elevations on the folio maps. Guessing that the volume will only be about 50 million gallons of water. Merged this underground workings layer with the mine pool layer to create a geobasin layer to clip the model to [SRBC].

- Traveled to the Old Forge Borehole and Duryea Breach AMD Discharges to calculate a flow, a bi-weekly task until we build a flow rating curve [LRCA].

[] - Denotes funding source where applicable.