



Eastern PA Coalition for Abandoned Mine Reclamation

Michael A. Hewitt, GISP
Program Manager

101 South Main Street
Ashley, PA 18706

Main Line: (570) 371-3522

E-mail: hardcoal@epcamr.org

September 2017 Progress Report

Highlights:

- Managed EPCAMR staff as they scanned 212 mine maps into TIFF images, georeferenced 183 & digitized 46 maps for the MSI Mine Mapping Grant. Picked up/dropped off maps 3x. QA/QC checked work. Georeferenced several difficult maps.
- EPCAMR staff hosted AML tour for **Wyoming Seminary Upper School** students and tabled at their school for Founder's Day; Participated in **AML Campaign** and **AMR Conference** calls; Provided **Knox Mine Disaster** maps to a documentarian all in the name of EE.
- Worked out deals for free software in exchange for testimonials: **MapIt App** and **Cincopa**
- EPCAMR staff sampled the **Plainsville Borehole Discharge** in **Luzerne Co.** and 3 sites on **Dutch Mountain** (2 of which were determined AML sites in the **Mehoopany Creek Watershed**)
- Updated www.epcamr.org. Administered the EPCAMR Facebook and G Suite for Nonprofit accounts. Maintained GobbaDaPile in-house domain server. Setup Android Tablets for field use.

Education, Outreach and Admin.:

- EPCAMR staff released a small snake that was caught on a glue trap that the exterminator placed near the doorway in the storage area. We used peanut butter and oil to counter-act the glue. The snake was small enough to crawl through a gap under the door.
- Spoke with a lawyer from Arizona that revived a patent that deals with an extraction/fuels plant that converts waste coal (culm) into fuel and minerals. He contacted folks from several states in the Appalachian Region that have legacy waste coal piles. The proposal involves EPCAMR working as a local scout for culm and sending the waste coal to Grand Canyon University where a pilot plant will be operating. We were asked to fundraise for the research project (one source suggested was Pilot funding and RECLAIM Act) and would be paid back with a "finders fee". An analysis of the byproducts and efficiency will be sent back for each source to ascertain if a full scale plant is recommended for that site. One of the byproducts would obviously be power (electricity) and ash. The power would be used to run the extraction side of things and leftover power to the grid. The ash could be dealt with in several ways to produce things like sulfuric acid, which has a large market especially in the Western US Hardrock mines. Others byproducts were defined as heavy metals and rare earth elements. Our reservations deal with the issue of where we would have to ship the culm out of state, the fact that the culm is someone's personal property and that the pilot plant is not in Pennsylvania. If the results come back positive, there would be many steps to creating an extraction/fuels plant on AML sites.
- EPCAMR staff participated in an Abandoned Mine Lands (AML) Campaign Call to discuss important upcoming legislation.
- EPCAMR staff participated in an Abandoned Mine Reclamation (AMR) Conference Call to begin to prepare for the 2018 conference. Discussed the option of teaming up with PA DEP BAMR for a joint conference in Pittsburgh in 2019. Committee asked that I finish the conference budget

early to help with the decision. Typically, the final budget wouldn't be finished until October or November after all statements and accounting work was finalized in QuickBooks.

- EPCAMR staff dropped off and picked up maps at the PA DEP BAMR Wilkes-Barre Office. This should have been the last batch of maps from this source, but there were several maps that needed to be rescanned and other random maps that needed to be placed back in shelves as organized in the catalog. [MSI]
- EPCAMR staff welcomed new intern, Llewellyn Westrick from Kings College, on board and started him on several projects related to EPCAMR.
- EPCAMR staff dropped off and picked up maps at the PA DEP BAMR Franklin Warehouse 2 times this month. Cleaned the maps onsite before bringing them to the office. Once in the office the maps were pre-cataloged to determine if there was a copy in PHUMMIS that already exists. If so, the map would not be scanned. Spoke with Kim Snyder of PA DEP BAMR Wilkes-Barre Office who requested that we set-aside these maps which were scanned to come back to the Wilkes-Barre Office. Relayed the request to our project manager who approved it. [MSI]
- EPCAMR staff hosted a tour and environmental education seminar for Wyoming Seminary Upper School students in coordination with their upcoming Founder's Day curriculum. The teacher purchased 3 bags of iron oxide to aide in upcoming related projects.
- Was offered a free Cincopa Account that isn't throttled for answering 4 questions on how EPCAMR uses Cincopa which will be placed on a public review site. The request turned into providing testimonial on several review sites including usage of the video hosting service (which we do not use). I ended up posting testimonials on 2 sites without information on the video hosting and we were awarded the free account shortly after (\$80/year value).
- Attended and setup a display for Founder's Day at Wyoming Seminary Upper School. Several students stopped by to ask questions spurred by a presentation at an assembly earlier in the day. It's interesting to talk to high school aged students that are so driven to be engaged and passionate about learning. In some ways this school is very different from a public high school. Reprinted a set of maps from the OSMRE Anthracite Mine Map Folio that underlie their school.

Technical Assistance:

- Corresponded with Patrick Jacquay, PA DEP California District Mining Office (DMO), related to work that was completed in June. Ended up having to rescan and re-georeference several maps that were corrupted. Sent the sdwx files of the re-georeferenced maps via email. [MSI]
- Completed more quality assurance and quality control (QA/QC) work to find mistakes before the drives were sent to the PA DEP MSI Program. [MSI]
- Georeferenced some difficult maps. Some were truly too difficult to do and were placed in a folder that are not feasible for georeferencing. [MSI]
- Installed Symantec Endpoint Protection back on the Server, being that it is one of the only AntiVirus programs that works on Windows Server 2012 R2 operating systems. Unsure if Servers actually need an AntiVirus, but I feel better knowing it has one.
- Troubleshooting issues with RAID drives on the server. Switched the X Drive and M Drive RAID Towers to the 1st RocketRAID card. The 2nd card seemed to be malfunctioning.
- Continued to work on upgrading our ArcGIS server to run with ArcGIS 10.5.1. Received information from the Office of Surface Mining Reclamation and Enforcement (OSMRE) Technical Innovation and Professional Services (TIPS) program to setup a new enterprise geodatabase server (formerly known as ArcSDE). The install took several attempts. The geodatabase allows multiple editors on one file which is essential to workflow. [MSI]
- EPCAMR staff traveled to Red Brook, a tributary to the Mehoopany Creek which impacted by abandoned mine drainage (AMD) and/or deposition from acid rain and the recently drained Spring Mountain Reservoir, both of which provide acid loading downstream. We were accompanied by John Levitsky, Luzerne Conservation District Watershed Specialist. Researched the area on AMLIS to discover there are at least 2 mine entries that may or may not have a discharge. Attempted to use the HP iPAQ to lead us to the AML Inventory System (AMLIS) site locations. Eventually found a slope which was not discharging but a PA DEP Bureau of Abandoned Mine Reclamation (BAMR) project had been completed with a limestone

channel offering a clue that it had discharged in the past. Walked a short distance along a haul road to find Red Brook and sampled the headwaters discharge from a Coal Bed Swamp. The chemistry seems to define it as an underground AMD discharge (100 gallons per minute with a temperature of 54 degrees Fahrenheit, pH 3.57 and iron 3 mg/L) though there isn't evidence that Coal Bed Swamp in particular was mined. Another nearby swamp seems to degrade another tributary to Mehoopany Creek on the north side of the mountain in a similar fashion. Perhaps another field trip to that stream is called for in the future. Also sampled a spring in the drying lake bed of Spring Mountain Reservoir whose chemistry put it on the verge of AMD (68 degrees Fahrenheit, pH 5.62 and iron 1.85 mg/L), but more plausible that it was surface water that was leaching into/out of a rock formation that was acidic and contained heavy metals. It is downstream from a rail bed, which are typically rich in mined soils. Forwarded the information to John.

- Discovered a program called MapIt for android devices which is similar to ESRI's discontinued ArcPad. I kept around an old HP iPAQ handheld device which had an old version of ArcPad and a Bluetooth GPS device for the occasion when we went to remote AML sites which had no cell service so we could look up AMLIS information about these sites without carrying a laptop computer around and guessing at our location. The MapIt program allows GIS info to be stored on a device and uses the internal GPS to locate features on the ground without the help of the internet. Worked with the makers of MapIt to get the software for free (\$9.99 value per device) in return for a [testimonial](#) as to how EPCAMR uses the software.
- Received the MSI travel drive and transferred the SID files to the server to be georeferenced. [MSI]
- Setup North Atlantic Aquatic Connectivity Collaborative (NAACC) Offline Data Manager (ODM) on 2 Android Tablets to aide in road culvert field assessments. The program uses the tablet's built in GPS and camera to help the user fill in information about the culverts related to aquatic habitat connectivity. Initially, the GPS functionality was not working. Aided the technical support from NAACC in troubleshooting the issue which ended up being that our tablets were newer than the ones typically used in the program and some coding needed to be updated. Also setup MapIT on these devices but discovered a limiting factor related to the processing capacity of the device in which large datasets like AMLIS needed to be broken up in order to function properly. Sanctioned one tablet to hold Southern and Western Middle Anthracite AMLIS GIS data and the other to house Northern and Eastern Middle Anthracite as well as North Central Semi-Anthracite and Bituminous coal field data.
- Completed a reimbursement for time spent in the month of July on the Mine Mapping Grant (MMG) and sent a travel drive with the corresponding images and data files to PA DEP California DMO.
- Worked with Tom Grote, WPCAMR volunteer, to get his email reconnected to the pyritebad listserv, used the AMR Conference Committee. After several attempts to invite him back to the list, he realized that there was a registration email to complete. This is a new feature that I was unaware of as well which was probably a product of a recent breach in Yahoo Groups security.
- Worked on EPCAMR website at www.epcamr.org to fix several broken things. Photo galleries were broken which connected to Facebook and Cincopa. Found plugins to fix these and started a discussion with Cincopa to ascertain a free account with them which would not blackout after a certain amount of data was used to open photo galleries on our site. Fixed several broken links. Tackled the news archive again to break up by year and allow it to be more searchable by custom search tools. Added a newsletter archive which links to a feed of MailChimp campaigns. Updated call to action links with better tools to search for government representatives.
- Performed several Windows Updates on the server. Certain issues started popping up like RAID Tower drives going down again. Tackled issues where the network printers were no longer communicating with several workstations. Most likely related to recent windows updates on client computers which can no longer be stopped or even postponed in Windows 10. Symantec firewall was to blame for the printer disconnect. Shutting it off allowed access.

- Georeferenced maps related to coal veins in the Green Mountain colliery and digitized the Anthracite Grid in that area to aid GIS Technicians in georeferencing several more maps in the area.
- Tackled an issue with the map scanner acting up and not saving maps. The cause was not enough room on the C Drive. We weren't transferring maps to the server since it had been down a lot this month. The issue was easily remedied by transferring maps to the X Drive. [MSI]
- EPCAMR staff sampled the Plainsville Borehole in an attempt to gather baseline information and ascertain the feasibility of enhancing the ponds to settle out and retain more iron. [FPW]
- Researched common issues with servers and RAID storage. What common tasks can be done to keep them functioning? Found some recommendations like scanning drives for errors and rebooting periodically.
- Researched issue as to why ArcGIS 10.5.1 was running so slow now that the Enterprise Geodatabase was updated on the server. Blogs did not seem to have an answer so I started a few new threads and talked with people on GeoNet. Found a patch from ESRI and an update for SQL 2014 both which did not seem to help much.
- Found more maps related to the Knox Mine Disaster and provided them to David Brocca, who is working on a documentary.
- Printed OSMRE Mine Map Folios related to the Huber Colliery for a gentleman who was working on developing property in the area.

[] - Denotes funding source where applicable.