pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF ABANDONED MINE RECLAMATION

History of
Pennsylvania's
Abandoned Mine Land (AML)
Inventory

❑ The Surface Mining Control and Reclamation Act (P.L. 95-87) was signed into law on August 3, 1977. The public law included a section for abandoned mine reclamation identified as Title IV.

❑ The law (Title IV) required Pennsylvania to develop a reclamation plan that generally identified areas in need of reclamation.

❑ Pennsylvania (then DER-BAMR) contracted with Earth Satellite Corporation of Chevy Chase, Maryland to develop the original AML Inventory.

❑ This work was completed between 1980 and 1983 at a cost of approximately $2.2 million.

❑ The inventory focused primarily on coal mining features and was created based on criteria established by OSM and published in an AML Inventory Manual.

❑ The inventory was created from Department files, Scarlift Reports and records, aerial photography, and actual site visits.

❑ The inventory was provided to Pennsylvania in 1984 in hard copy (computer printouts and map overlays).

❑ The inventory provided a very good representation of the AML problem in Pennsylvania, but was by no means complete as many AML problems and features exist that have never been added to the inventory.

❑ This inventory, when completed, was reviewed and accepted by OSM (through a random field validation of the sites), and was then used in OSM's formula to distribute Title IV AML monies to Pennsylvania. Nationally, OSM used the total of each state's inventory to calculate their share and distribute annual AML funding among the participating states/tribes.

❑ Pennsylvania received primacy for its Title V (mining regulatory program) and Title IV (Abandoned Mine Reclamation Program) in July of 1982.

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❑ Pennsylvania's Abandoned Mine Reclamation Plan (the guidelines by which PA would operate its approved reclamation program) was completed and approved in December 1983.

❑ In 1985, BAMR began converting the hard copy inventory to a computer based inventory system capable of printing the hardcopy forms OSM required to inventory a site, determine eligibility of a site, request project funding for a site, and prepare a project completion report once a project had been constructed and closed out.

❑ This newly created mainframe-based inventory application was given the acronym 'NALIS' meaning National Abandoned Lands Inventory System. The inventory followed the national AML criteria but contained only Pennsylvania site data.

❑ In the mid 1980's, other states/tribes began to add large dollar amounts to their AML inventories to increase their AML grants since the value of a particular state or tribe's AML inventory was used in the OSM's grant distribution formula.

❑ Pennsylvania followed suit, and during 1986 and 1987, a significant effort to update and expand Pennsylvania's AML inventory was completed by PA-DEP-BAMR.

❑ By 1988 or 1989 the competition among states/tribes, to maximize their AML inventories and gain a larger share of the AML funding, led to a congressional order for OSM to review and reconcile the AML inventory nationally.

❑ OSM completed an inventory 'scrub' for each state/tribe and revised the criteria for several AML problem types for classification as high-priority (Priority 1 or 2) versus environmental degradation (Priority 3). This inventory scrub was completed from the air in helicopters as well as some ground reconnaissance and resulted in many high-priority sites being entirely or partially removed form Pennsylvania's approved inventory.

❑ Pennsylvania disputed many of the determinations made by OSM in writing, and in 1991 OSM responded to those objections Problem Area by Problem Area with most of the scrub results being upheld.

❑ OSM revised the formula used to determine AML Grant amounts to individual states and tribes eliminating the component of each program's AML inventory instead basing the formula on historic coal production (coal mined prior to 1977). Under this formula Pennsylvania receives 34.65% of the historic coal share.

❑ OSM published the revised AML inventory guidelines in a new document entitled AML-1. A completely new set of documents to inventory a site, request project funding, determine a project's eligibility and to prepare completion reports were developed as part of AML-1. This devalued the capability of NALIS since many of the new documents had to be completed off-line. As a result, data entry into NALIS was significantly reduced or curtailed.

❑ Congress amended SMCRA in 1990 and Section 403(c) was added which required the Secretary of the Interior to maintain an inventory of high-priority coal sites and to provide standardized procedures for states and tribes to use in updating the inventory.

❑ The need for an automated nationwide inventory led to the creation of AMLIS in the early 1990s which is a compilation of the individual State, Tribe and Federal Reclamation Program inventories of AML problems.

❑ Pennsylvania's 'scrubbed' Priority 1 and 2 inventory information was used by OSM when AMLIS was developed. From the inception this created a wide data gap between OSM's AMLIS and PA's NALIS.

❑ Since AMLIS was primarily used to document projects being funded and reclaimed and not for determining AML grant amounts, no pressing need to reconcile NALIS and AMLIS was evident for Pennsylvania.

❑ BAMR was hit with significant staff reductions in February of 1991 due to a furlough action and in order to maintain operations and services, management decided to stop updating and maintaining the NALIS database. Inventory updates and other required project documentation were prepared on paper forms and submitted to OSM.

❑ The revisions to SMCRA in the early 1990s allowed the inventorying of high-priority problems based a general welfare criteria rather than human health and safety as had been required previously.

❑ As a result of the general welfare criteria, Pennsylvania added approximately $3.6 billion in general welfare projects for water problems identified and published in the Operation Scarlift reports. Subsequent revisions to SMCRA in 2006 rendered problems based on the general welfare criteria ineligible for Title IV AML funding.

❑ In the mid 1990s, the mainframe computer system that housed the NALIS database was going to soon become unusable due to outdated hardware and

software. The NALIS database was converted to a shared desktop application based on Microsoft Access.

❑ The database was separate from paper-based AML inventory maps (USGS quad based overlays with AML Problem Areas and Features depicted by symbols) that were updated manually using conventional pen-and-ink drafting.

❑ In 1998, PA-DEP-BAMR contracted with Penn State University to convert the NALIS database and map set into electronic data layers that could be combined with data from the NALIS database into a Geographic Information System (GIS). This project was completed in 1999.

❑ In 2004 the Microsoft Access NALIS database was converted into PA-DEP's eFACTS data system. The GIS data was eventually added to the PA-DEP's web based GIS application, eMapPA (www.emappa.dep.state.pa.us) and made available for download from Penn State's Pennsylvania Spatial Data Access website, PASDA (www.pasda.psu.edu).

❑ Also, during the 1990s and early 2000s Pennsylvania's AML inventory was sporadically updated for various initiatives or for selected geographic areas. The updated information was added to the data in NALIS (now eFACTS) but often was not forwarded on to OSM for inclusion in AMLIS.

❑ Since the creation of Pennsylvania's AML inventory in the mid 1980s, many AML features have been altered, re-mined, or reclaimed by property owners, developers, mining companies or others, and much of this information has not been documented into NALIS or eFACTS.

❑ Most maps and other AML information provided to County Conservation Districts, District Mining Offices and other agencies and groups within Pennsylvania were developed from information included in NALIS (now eFACTS) and may not reflect the site status within OSM's AMLIS system. Hardcopy maps are no longer distributed; they have been replaced by the electronic data available through eMapPA and PASDA.

❑ The reauthorization of Title IV of SMCRA in 2006 was based on data included in the OSM's AMLIS inventory system. The inventory was used to show (theoretically) when certain non-certified states would complete reclamation of their high-priority sites.

❑ Through 2006, many of the projects under development and design within Pennsylvania's AML program were documented high-priority sites within eFACTS

but were not included in OSM's AMLIS system until PA-DEP-BAMR requested Authorization to Proceed (ATP, a.k.a.: funding approval). The 2006 amendments to SMCRA now require that states/tribes submit AMLIS inventory updates, and receive OSM's approval of the update, before spending AML funds for project development, design, or construction of reclamation projects.

- PA-DEP-BAMR has been discussing the pros and cons of updating Pennsylvania's inventory and rectifying the information with OSM's AMLIS system. A comprehensive inventory update would be very time consuming and expensive to undertake.

- In 2012 OSM developed new guidelines and procedures for updating the eAMLIS system including adding any new problem areas. The AMLIS Directive, AML-1, is available on OSM's website: www.osmre.gov/guidance/directives/directives.shtm#AML.

- OSM's eAMLIS is the definitive source of the Priority 1 and 2 AML problems currently eligible for the expenditure of Title IV AML funding. Pennsylvania's AML inventory remains a more comprehensive dataset of documented AML problems with regard to: Priority 1 and 2 AML problems that have not been submitted to AMLIS; acid mine drainage problems; and Priority 3 environmental restoration problems as defined in SMCRA.

Accessing the data

- Pennsylvania's AML Inventory - The Departments eMapPA website (www.emappa.dep.state.pa.us) provides the easiest public access to the Department's AML Inventory information for specific areas within Pennsylvania. Expand the Mining folder to enable the AML layers. Statewide GIS data layers can be downloaded from PASDA, (www.pasda.psu.edu) by searching for keyword "AML Inventory".

- eAMLIS – The federal Abandoned Mine Land Inventory System can be accessed through OSM's website, www.osmre.gov/aml/AMLIS/AMLIS.shtm.