





Bureau of Abandoned Mine Reclamation

# THE EHRENFELD **AML PILOT RECLAMATION/** RECREATION **&WATERSHED IMPROVEMENT** PROJECT

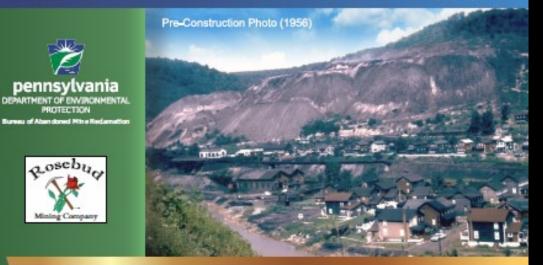
Tom Wolf, Governor

Patrick McDonnell, Secretary



- Pennsylvania Abandoned Mine Land (AML) and Acid Mine Drainage (AMD) Promotional Video featuring Ehrenfeld:
  - <u>"Downstream" Explores Threats to Pennsylvania Watersheds –</u> <u>YouTube</u>
  - 8:26 to 11:56

#### The Ehrenfeld AML Pilot Reclamation/ Recreation & Watershed Improvement Project



#### 2020 OSMRE Award Nomination







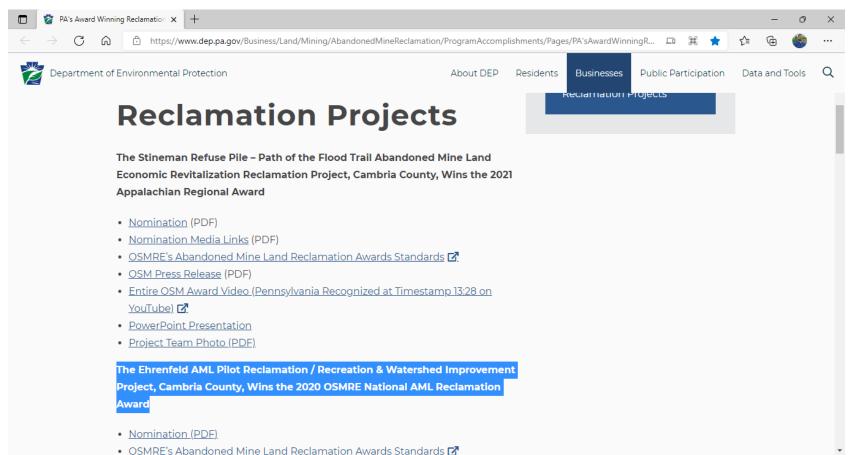






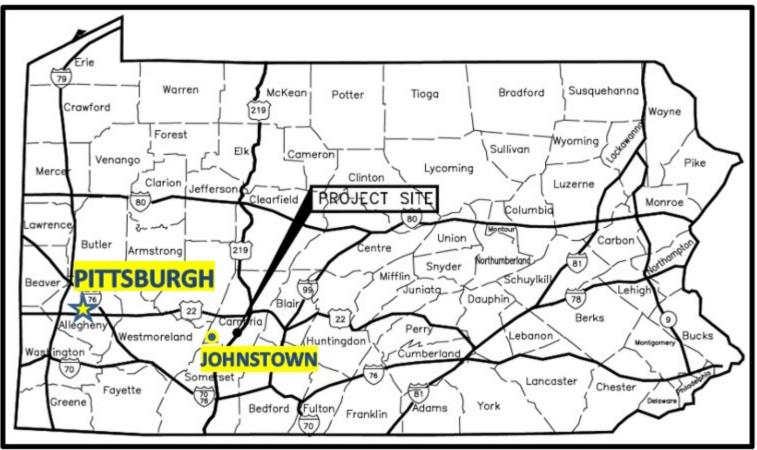
#### PA-DEP-BAMR webpage:

- <u>PA's Award Winning Reclamation Projects</u>
- <u>The Ehrenfeld AML Pilot Reclamation/Recreation & Watershed</u> <u>Imporvement Project, 2020 OSMRE/NAAMLP Pennsylvania</u> <u>Nomination (state.pa.us)</u>



#### Project Location

- Problem Areas (PA 3041 and PA 3261)
- Ehrenfeld Borough, Croyle and East Taylor Townships, Cambria County, Pennsylvania



#### AML Problems (Title IV):

- 69.5 Acres of Total AML
- Priority 2 Dangerous Pile and Embankment (DPE)
  - ♦ Refuse Pile 1 55.8 acres
  - ♦ Refuse Pile 2 7.7 acres
  - "Johnstown Path of the Flood Trail" Refuse Pile 6.0 acres
- Priority 2 Surface Burning Condition (SB)
- Priority 2 Clogged Stream Land (CSL)
- Priority 2 Dangerous Slide (DS)
- Priority 3 Gob Pile (GO)
- Active Surface Mine Permit (SMP) Area Title V):
  - Total Area 726.3 acres
  - Authorized Mining Area 246.6 acres
    - 125.8 acres of remining of eligible Title IV AML
    - 120.8 acres of new Title V active surface mining
    - Primary Refuse Disposal area of the Ehrenfeld AML Dangerous Refuse Pile Areas



Project Start and Completion Dates:

- April 28, 2016 to August 25, 2020

#### Construction Costs (As-Built):

Funding Source	Description	Cost	Funding Percent
U.S.A. General Fund	AML Pilot (FY 2016)	\$ 4,870,000.00	13.79%
	AML (Title IV Funding)	\$ 12,141,822.39	34.38%
OMSRE	\$5.14/CY Refuse Disposal Fee (Title IV Funding - License Agreement Fee Between Rosebud Mining Co. & PA-DEP BAMR)	\$ 17,726,302.58	50.20%
Pennsylvania	State Growing Greener Grant	\$ 500,000.00	1.42%
Partners	Foundation for Pennsylvania Watersheds	\$ 20,000.00	0.06%
	Community Foundation for the Alleghenies	\$ 25,000.00	0.07%
	The American Chestnut	\$ 25,000.00	0.07%
	Cambria County Conservation and Recreation Authority	\$ 5,000.00	0.01%
Total (as of 6/15/2020) = \$35,313,124.97			

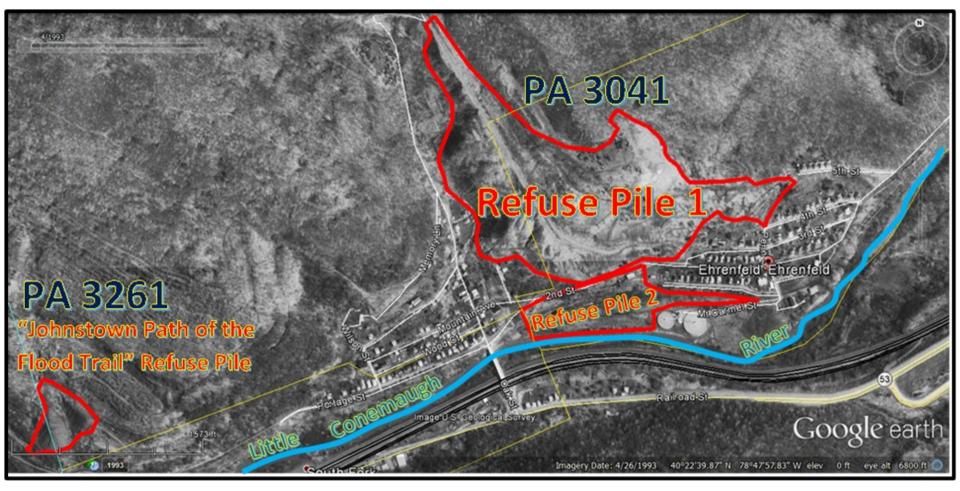


#### Primary Project Partners:

- Office of Surface Mining Reclamation and Enforcement
- PA DEP, Bureau of Abandoned Mine Reclamation
- PA DEP, Cambria District Mining Office
- Foundation for Pennsylvania Watersheds
- Community Foundation for the Alleghenies
- American Chestnut Foundation of Asheville, North Carolina
- Cambria County Conservation & Recreational Authority
- Arcelor Mittal Pristine Resources, LLC (Property Owner)
- Rosebud Mining Company (Contractor)



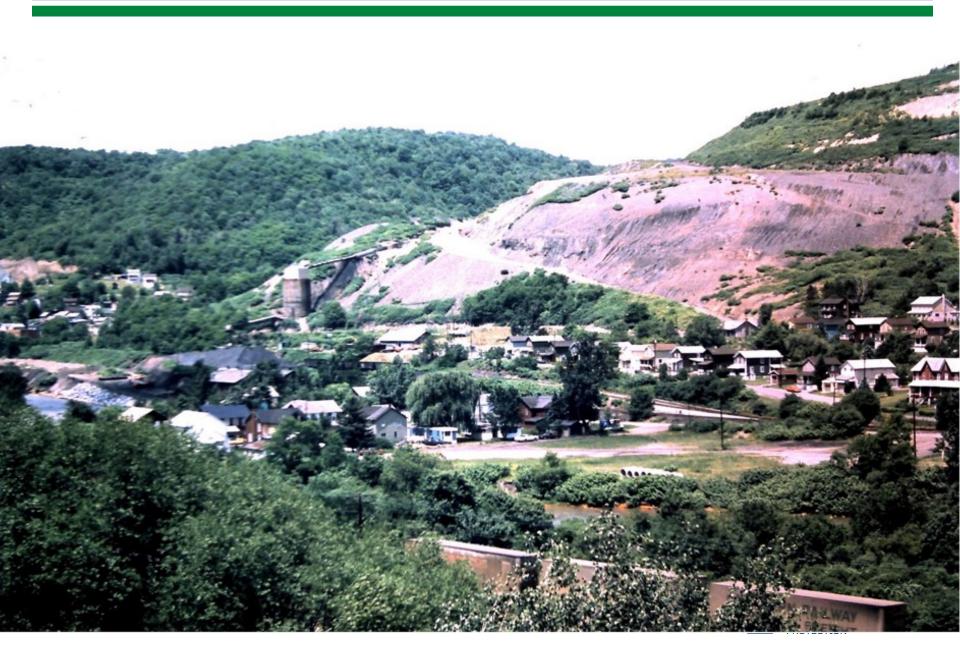
#### Before Construction Conditions of the AML Site



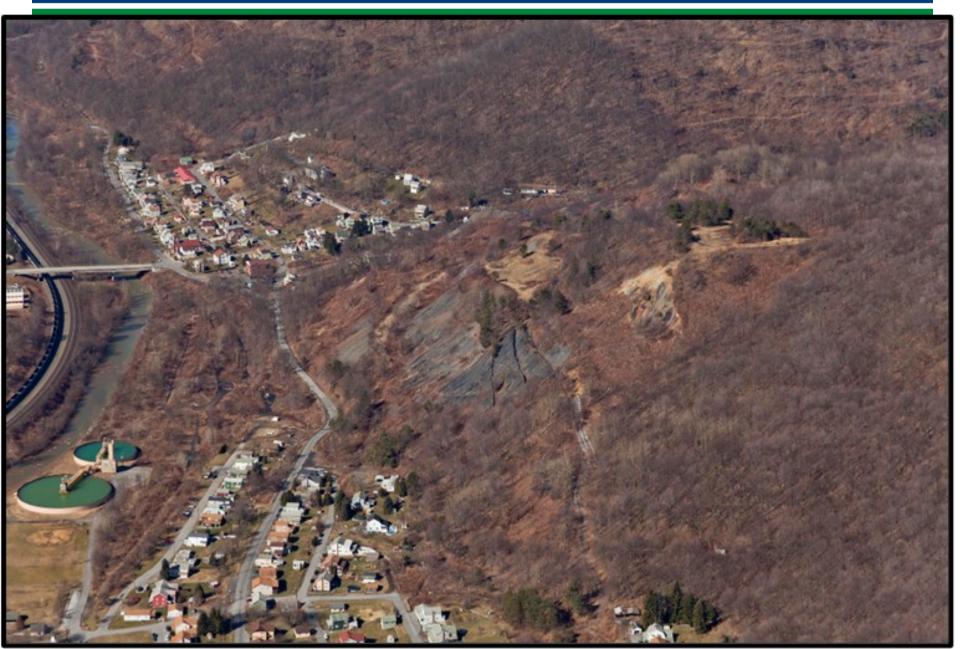




Eh Renfeld 1956



















#### AML Problems (Title IV):

- 69.5 Acres of Total AML
- Priority 2 Dangerous Pile and Embankment (DPE)
  - ♦ Refuse Pile 1 55.8 acres
  - ♦ Refuse Pile 2 7.7 acres
  - "Johnstown Path of the Flood Trail" Refuse Pile 6.0 acres
- Reclamation Methods?
  - Processed refuse as fuel at a Co-Generation Facility?
    - No, the Ehrenfeld refuse had low BTU and high sulfur content.
  - Excavated and disposed in permitted land fill facility?
    - Yes, however where would be the closets to incur lowest travel costs?
      - Permitted land fill?
      - Other eligible AML areas like dangerous highwall pits that require backfill?
  - Regraded, and soil capped on-site?
    - No, the existing slopes of the pile where very steep and there was not enough safe area to regrade the pile on-site.







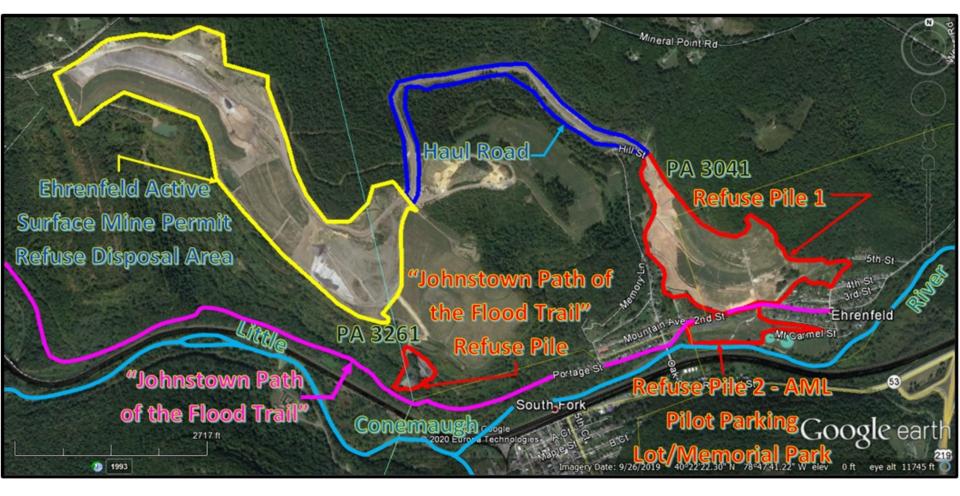
Bureau of Abandoned Mine Reclamation

# PAUSE FOR ANY QUESTIONS?

Patrick M. Webb, P.E. | Assistant Director Department of Environmental Protection Cambria District Office 286 Industrial Park Road | Ebensburg, PA 15931 Phone: 814.472.1830 pawebb@pa.gov



#### Before Construction Conditions of the SMP Site

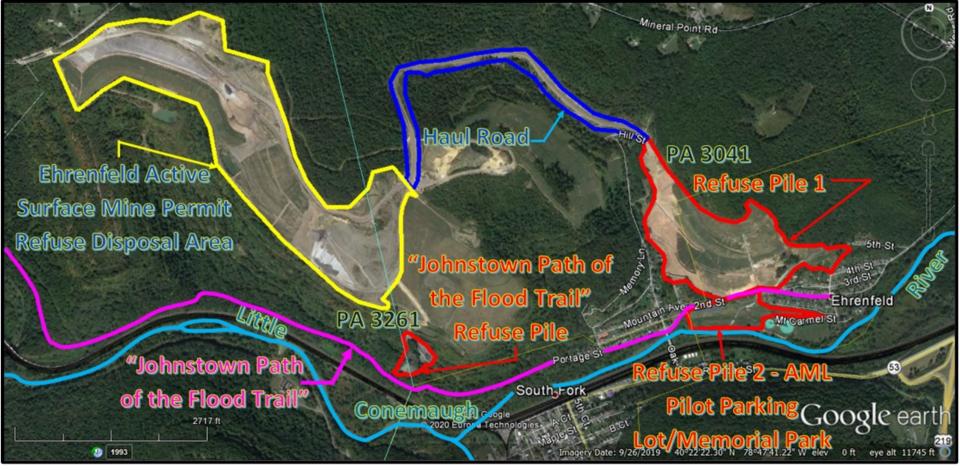




#### Before Construction Conditions of the SMP Site



Before Construction Conditions of the SMP Site that would become the Refuse Disposal Site





- 10/08/2008 Surface Mine Permit Issued to Amfire Mining Company to mine 246.6 acres of a 726.3 acres permitted area.
- 08/20/2013 Lowest responsible bid of \$98,925,244 received to reclaim the 69.5-acre AML site and dispose mine refuse at a permitted disposal facility. Contract was not awarded due to the excessive bid.
- 12/29/2014 Surface Mine Permit transferred Rosebud Mining Company
- 8/14/2015 Rosebud Mining Company amended the permit to accept mine refuse with alkaline addition at a \$5.14 per cubic yard disposal fee to produce a gradual final contour and reduce erosion.
- 11/19/2015 Reclamation of AML site redesigned to be disposed of within the permitted surface mine was advertised and received 4 bids.
- 2/16/2016 Rosebud Mining Company was the low bid and were awarded the reclamation contract at \$13,455,319 (As-Bid).
  - \$12,736,920 Estimated Refuse Disposal Fee Total (As-Bid)
  - (+) \$13,455,319 Rosebud Mining Company Qualified Low Bid
  - \$26,192,239 As-Bid Total (2/16/2016 vs. \$98,925,244 (8/20/2013 Bid)





Bureau of Abandoned Mine Reclamation

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#### August 16, 2016, Project Groundbreaking Ceremony

- <u>https://www.youtube.com/watch?app=desktop&v=r3xyJw</u> <u>WCz2U</u>
- Time: 1:17

#### During Construction Conditions of the AML Site





























## During Construction Conditions of the SMP/Disposal Site







- Pennsylvania Environmental Council (PEC) 2017
  Western PA Awards
  - Award for the project during construction.
  - <u>https://www.youtube.com/watch?app=desktop&v=o4W8</u>
    <u>TJnr6SE</u>
  - Time: 5:29





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### Post Construction Conditions of the AML Site





















## Post Construction Conditions of the SMP Disposal Site













# PAUSE FOR ANY QUESTIONS?

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## Watershed Conditions at the AML Site

Sample Point	Date	Flow	Lab pH	Alkalinity	Hot Acidity	Total Fe	Mn	AI	Sulfate	Suspend Solids
Description		gpm	SU	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
Unnamed	05/31/16	120	5.7	8.2	2.60	< 0.300	0.094	< 0.500	<20.0	10.0
Tributary	12/20/17	110	7.4	43.2	-26.00	3.249	0.290	0.672	78.6	16.0
ABOVE	04/11/19	130	6.2	7.8	4.20	<0.300	0.110	< 0.500	25.2	<5
Refuse Pile	12/19/19	100	5.8	7.4	10.80	<0.300	0.188	< 0.500		14.0
			EHREN	NFELD AMI	. REFUSE	E PILE SITI	E			
Sample Point	Date	Flow	pН	Alkalinity	Hot Acidity	Total Fe	Mn	AI	Sulfate	Suspend Solids
Description		gpm	SU	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
	08/06/12	120	4.8	0.0	46.40	0.139	0.854	15.700	261.7	
Unnormod	06/02/14	130	7.4	27.6	10.00	0.110	0.282	4.628	142.3	18.0
Unnamed		4/28/	2016 -	AML Recla	amation	of Refuse	e Pile C	ontract s	Start	
Tributary BELOW	05/31/16	140	7.6	33.0	-15.00	0.783	0.234	4.334	116.6	26.0
Refuse Pile	12/20/17	130	7.6	87.0	-67.40	3.785	0.347	0.824	110.1	26.0
Neruse File	04/11/19	150	7.4	45.6	-33.80	<0.300	0.122	0.854	110.4	6.0
	12/19/19	120	7.5	40.4	-21.00	<0.300	0.059	< 0.005		36.0

### Watershed Conditions at the SMP Disposal Site

Sample Point Description	Date	Flow	Lab pH	Alkalinity	Hot Acidity	Total Fe	Mn	AI	Sulfate	Specific Conductance	Suspend Solids
Description		gpm	SU	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(uS/cm)	(mg/l)
Monitoring	12/31/08	90	4.9	6	20	0.08	0.31	4.54	114	307	13.0
Point of the	03/17/09	100	5.1	7	20	0.07	0.40	7.67	172	418	27.0
Unnamed	06/16/09	90	6.3	12	10	0.16	0.35	7.08	16	479	23.0
Tributary	09/23/09	20	5.2	9	34	0.13	1.03	14.70	394	748	53.0
below	11/13/09	95	6.3	19	-13	0.16	0.69	15.30	37	569	34.0
EHRENFELD	03/31/10	100+	5.6	7	18	0.12	0.26	4.83	103	294	14.0
SMP area	06/14/10	75	5.9	11	19	1.14	0.37	14.10	184	411	56.0

### 4/28/2016 - START OF EHRENFELD AML REFUSE AND AKALINE ADDITION PLACED AT THE EHRENFELD SMP SITE

Sample Point Description	Date	Flow	рН	Alkalinity	Hot Acidity	Total Fe	Mn	AI	Sulfate	Specific Conductance	Suspend Solids
Description		gpm	SU	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(uS/cm)	(mg/l)
Monitoring	03/26/18	500	7.0	20.6	-16.32	<0.1	0.18	2.50	104.0	362	16.0
Point of the	06/26/18	80	6.3	3.1	7.36	0.24	< 0.05	0.37	19.7	113	8.0
Unnamed	09/24/18	200	6.5	3.1	0.80	1.91	1.00	< 0.10	17.2	125	9.0
Tributary	12/28/18	400	6.2	1.9	3.58	1.14	0.14	0.98	16.4	87	35.0
below	03/27/19	100	6.2	1.9	1.99	0.16	0.05	0.14	17.9	120	36.0
EHRENFELD	06/12/19	115	7.7	48.7	-40.60	0.85	0.11	0.82	71.3	313	30.0
SMP area	08/20/19	145	7.7	76.1	-66.27	2.07	0.15	1.49	144.9	447	61.0

- Post Construction Conditions of the AML and SMP Site
  - PA DEP Promotional Video:
  - <u>https://www.youtube.com/watch?v=umobvFoJNgE</u>
    Time: 1:09
  - AML site Post Construction Video Drive By
  - <u>https://www.youtube.com/watch?v=GKg\_BPEHEkE</u>
    Time: 4:21



- Prior to the project winning the 2020 OSMRE National AML Reclamation Award, the project was also awarded the Interstate Mining Compact Commission (IMCC) 2020 Coal Category Award
  - <u>Interstate Mining Compact Commission Home</u> (imcc.isa.us)

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Interstate Mining Compact Commission	HOME	MEMBER STATES	MINING & THE ROLE OF IMCC	CONTACT	MOR	E	



### **Interstate Mining Compact Commission**

For decades, states have effectively regulated mining impacts in accordance with federal and state laws. These laws strike a balance between society's needs for the goods and energy produced from solid minerals and the need for protection of people and the environment.

The IMCC is a multi-state governmental organization supporting the natural resource and related environmental protection and mine safety and health interests of its member states.

For more information, visit Mining & The Role of IMCC

## 2020 IMCC Annual Newsletter

IMCC 2020 Annual Report

## INTERSTATE MINING COMPACT COMMISSION



### 2020 Kenes C. Bowling Reclamation Award Winners

#### 2020 Winners

The Compact's annual reclamation awards were established to recognize companies and individuals for their outstanding achievements in reclamation. The reclamation awards are presented in two main categories, coal and noncoal. Award winners are presented with an engraved plaque of recognition.

Coal Category Winner:

Rosebud Mining Company – Ehrenfeld Mine (Pennsylvania)



ANNUAL REPORT 2020

#### Noncoal Category Winner:

Lafarge – Algonquin Pit #5 (Illinois)







# OSMRE 2020 ABANDONED MINE LAND RECLAMATION AWARDS

# NATIONAL AWARD WINNER











# THE EHRENFELD **AML PILOT RECLAMATION/** RECREATION **&WATERSHED IMPROVEMENT** PROJECT

Tom Wolf, Governor

Patrick McDonnell, Secretary



## Project Team:

- WRITTEN BY: Patrick M. Webb, P.E.
- SUBMITTED FOR:
- Director-Eric E. Cavazza, P.E. (Retired), now Brian J. Bradley, P.G.
- Environmental Program Manager Dean R. Baker, P.E. (Retired)
- Construction Roger F. Rummel, P.E. and Ryan J. Farabaugh, P.E.
- Construction Inspection Ronald R. Lindemuth and Ronald S. Fogel
- Design Thomas C. Malesky, P.E. and Mark T. Sossong, E.I.T.
- Development/Permitting Patrick M. Webb, P.E., Richard L. Beam, P.G., Kelsey Q. Jones, P.E., Maria T. Kasecky, P.E., and Michael A. Stayrook, P.E.
- Investigation Martin E. Hughes, P.E. and Jeffery Kostelac, P.E. Pennsylvania Department of Environmental Protection Bureau of Abandoned Mine Reclamation, Cambria District Office Ebensburg, PA, 15931 814-472-1800





### Abandoned Mine Land Reclamation Awards

## A A A 🗣 🖨

OSMRE first recognized outstanding abandoned mine land reclamation and exemplary reclamation techniques in 1992, when it started the annual Abandoned Mine Land (AML) Reclamation Awards Program. The program mirrors one of the objectives of the Surface Mining Control and Reclamation Act of 1977 to ensure that land mined for coal would be restored to beneficial use as part of the mining process, and that lands abandoned without reclamation prior to the law would be reclaimed.

# Abandoned Mine Land

### AWARD ELIGIBILITY

AML projects funded wholly or in part and completed by approved state or tribal programs are eligible for an award, including coal, non-coal, high-priority, and emergency projects. Abandoned mine reclamation completed by citizen groups or other non-state/nontribal organizations are not eligible for these awards. One project may be submitted by each state or tribal program each year.









### AWARD WINNERS

OSMRE has traditionally given five awards:

- One national award
- One national award for small projects (restricted to projects receiving less than \$1 million in a state or tribe that receives less than \$6 million annually in AML funding)
- Three region-based awards

Any entry is eligible for the national award. Eligible voters and organizations eligible to submit nominations are listed below.

View previous AML Reclamation Award Winners.



An example of geomorphic design techniques being used.

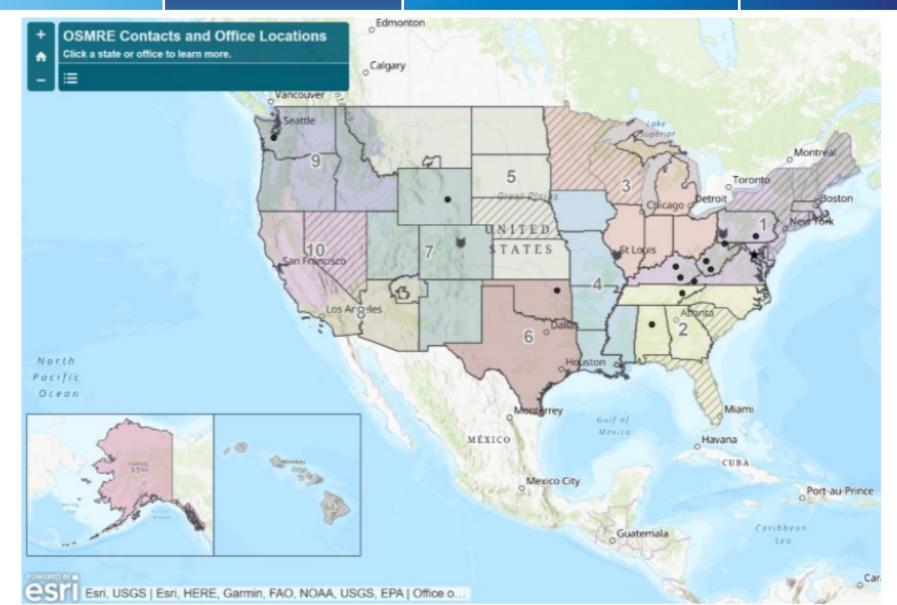
















EPARTMENT OF ENVIRONMENT

### **Organizations Eligible to Submit Nominations - 27 Total**

#### Appalachian States Region - 7

- Pennsylvania Bureau of Abandoned Mine Reclamation 1
- 2 West Virginia Office of Abandoned Mine Lands and Reclamation
- Virginia Division of Mine Land Reclamation 3
- Tennessee Abandoned Mine Land Program 4
- Ohio Division of Mines and Reclamation 5
- Maryland Abandoned Mine Lands Section 6
- Kentucky Division of Abandoned Mine Lands 7

Inte	rior States Region - 10
8	Alabama Mining and Reclamation
9	Arkansas Dept. of Pollution Control and Ecology
10	Illinois Abandoned Mine Land Reclamation Division
11	Texas Surface Mining and Reclamation Division
12	Oklahoma AML Program
13	Louisiana Injection and Mining Division
14	Kansas Surface Mining Section
15	Missouri AML Section Land Reclamation Program
16	Indiana Division of Reclamation
17	Iowa AML Program

Wes	stern States and Tribes Region - 10
18	Wyoming AML Program
19	Utah Abandoned Mine Reclamation Program
20	North Dakota AML Division
21	New Mexico Mining and Minerals Division
22	Montana Abandoned Mine Reclamation Bureau
23	Colorado Office of Active and Inactive Mines
24	Alaska Division of Mining
25	Navajo Nation Abandoned Mine Land Reclamation Department
26	Hopi Tribe Abandoned Mine Land Program
27	Crow Tribe AML Program







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### JUDGING STANDARDS

- 1. Innovative use of current technology (12 pts.)
- Difficulty of Achieving Reclamation under Existing Conditions (17 pts.)
  - a. Special and unique considerations (8)
  - b. On-site difficulty of the project (9)
  - c. Project start and completion dates and construction costs
  - d. Names of organizations responsible for the reclamation, including contractors
  - e. Date submitted
- On-Site Effectiveness (23 pts.)
  - a. Effective/innovative use of technology (8)
  - b. Landscape conforms to the natural environment (8)
  - c. Elimination of significant health or safety problems (7)
- 4. Funding (12 pts.)
  - a. Effective use of funds (6)
  - b. Leveraging use of partners for funding or technology (6)
- 5. Benefits to the Community (18 pts.)
  - a. Community support for the project (6)
  - b. Long-term benefits to the community (12)
- Surface Mining Control and Reclamation Act (18 pts.)
  - a. Exceeds the spirit and intent of SMCRA (10)
  - b. Increased public awareness of SMCRA (4)
  - c. Transferability to other AML projects (4)

- Examples of Judging Standards:
- Innovative Use of Current Technology
  - NPDES permit was limited to only have areas disturbed in 6-acre increments
- Difficulty of Achieving Reclamation under Existing Conditions
  - Phasing of work was all located above homes, therefore stormwater had to be constantly redirected away via:
    - Series of Berms, Diversion Channels, Pipes that relocated in multiple phases
- On-Site Effectiveness
  - 69.5 acres of SMP now reclaimed with grasses and up to 2,900 trees.
- Funding
  - 64% cost savings with the as built final cost of \$35.3 Million versus the \$98
    Million construction bid in 2013
- Benefits to the Community
  - Refuse Pile 2 area is now a memorial park and trail head
  - 40 Laid off miners of Rosebud Mining Company where rehired for the AML project.
- Surface Mining Control and Reclamation Act
  - Simultaneous reclamation of:
    - ♦ 69.5 Acres of Title IV AML site
    - 246.6 Acres of Title V SMP site (Disposal Area)









### **Eligible Voters - 43 Total**

#### OSMRE - 16

OSIVIRE	- 16
1	Chief, OSMRE Alton Field Division
2	Chief, OSMRE Denver Field Division
3	Chief, OSMRE Federal Reclamation Program Division
4	Chief, OSMRE Pittsburgh Field Division
5	Regional Director, OSMRE Appalachian Region
6	Regional Director, OSMRE Mid-Continent Region
7	Regional Director, OSMRE Western Region
8	Field Office Director, OSMRE Tulsa Field Office
9	Field Office Director, OSMRE Wyoming Field Office
10	Field Office Director, OSMRE Birmingham Field Office
11	Field Office Director, OSMRE Casper Field Office
12	Field Office Director, OSMRE Charleston Field Office
13	Field Office Director, OSMRE Knoxville Field Office
14	Manager, OSMRE Olympia Office
15	Environmental Specialist, OSMRE Pittsburgh Field Division
16	AML Program Specialist, OSMRE Lexington Field Office

#### Appalachian States Region - 7

17	Director, Pennsylvania Bureau of Abandoned Mine Rec.
18	Chief, West Virginia Office of Abandoned Mine Lands and Rec.
19	AML Manager, Virginia Division of Mined Land Reclamation
20	Director, Tennessee AML Program
21	Natural Resources Administrator, Ohio Div. of Mines and Rec.
22	Supervisor, Maryland Abandoned Mine Lands Section
23	Director, Kentucky Division of Abandoned Mine Lands

Interio	r States Region - 10
24	Director, Alabama Mining and Reclamation Division
25	Chief, Surface Mining and Reclamation Division, Arkansas
26	Manager, Illinois Abandoned Mine Land Reclamation Division
27	Director, Texas Surface Mining and Reclamation Division
28	Director, Oklahoma AML Program
29	Director, Injection and Mining Division, DNR, Louisiana
30	Mining Section Chief, Kansas Surface Mining Section
31	Chief, Missouri AML Section Land Reclamation Program
32	Assistant Director Restoration, Indiana Division of Rec.
33	Environmental Specialist – Senior, Div. of Soil Conserv., Iowa

Weste	ern States and Tribes Region - 10
34	Director, Wyoming AML Program
35	Chief, Utah Abandoned Mine Reclamation Program
36	Director, North Dakota AML Division
37	AML Program Manager, New Mexico Mining and Minerals Div.
38	Chief, Montana Abandoned Mine Reclamation Bureau
39	Director, Colorado Office of Active and Inactive Mines
40	AML Program Coordinator, Alaska Division of Mining
41	Director, Navajo Nation Abandoned Mine Land Rec. Depart.
42	Manager, Hopi Tribe Abandoned Mine Land Program
43	Director, Crow Tribe AML Program

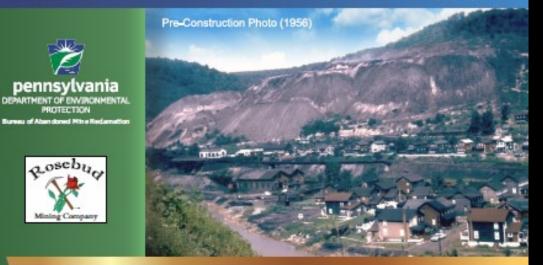


### OSMRE 2020 Awards Presentation Video

- <u>https://youtu.be/VAXM81E2dXo</u>
  - ♦ 0:00 to 01:24 Introduction
  - ♦ 14:08 to 18:14 National Award Winner Ehrenfeld



### The Ehrenfeld AML Pilot Reclamation/ Recreation & Watershed Improvement Project



### 2020 OSMRE Award Nomination











- Watershed Promotional Video featuring the Super 7 AMD Discharges, featuring Ehrenfeld – A River Reborn
  - <u>A River Reborn YouTube</u>
  - 1:25 to 3:20
  - 5:37 to 6:41
  - 12:36 to 16:03
  - 25:39 to 26:30 Mayor Plumber Dedication

## What's next for the Little Conemaugh River Watershed,

- The Little Conemaugh AMDTP in Portage, PA
- <u>Little Conemaugh River could run clear again with proposed treatment site</u> in Portage | WJAC (wjactv.com)
- 2:14







# THANK YOU – ANY QUESTIONS?

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