

Re-Energizing Pennsylvania's Coal Mines- Brownfields to Brightfields

Presented by:



AMO ENVIRONMENTAL DECISIONS

Environmental Risk & Remediation Consultants

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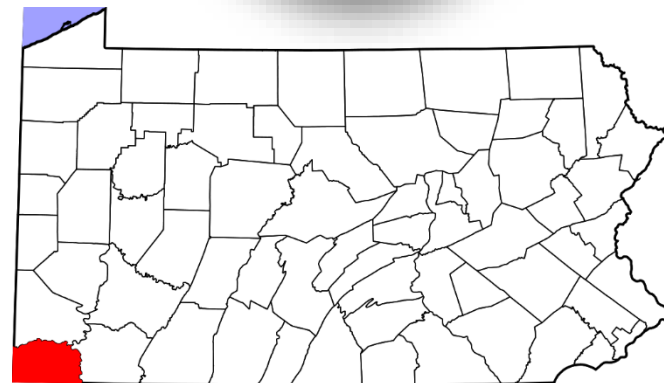


Background



Greene County

- Cornerstone of the Keystone State
- Growth historically from coal mines
- Oil and Gas Boom
- Growing new industry on brownfields



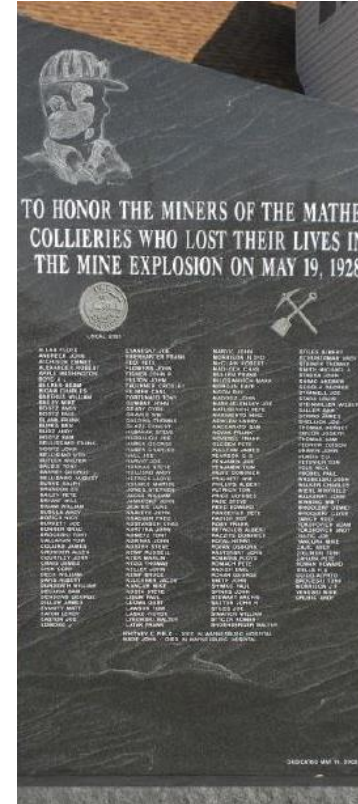


Background



Mather Site

- Coal mine from early 1920's – 1960's
- Mather Mine Disaster 1928
- Creosote Rail Tie Operation 1975-1984
- PADEP BAMR Regrading effort 2016
- Greene County Industrial Development Authority took ownership in 2021





Mather Site





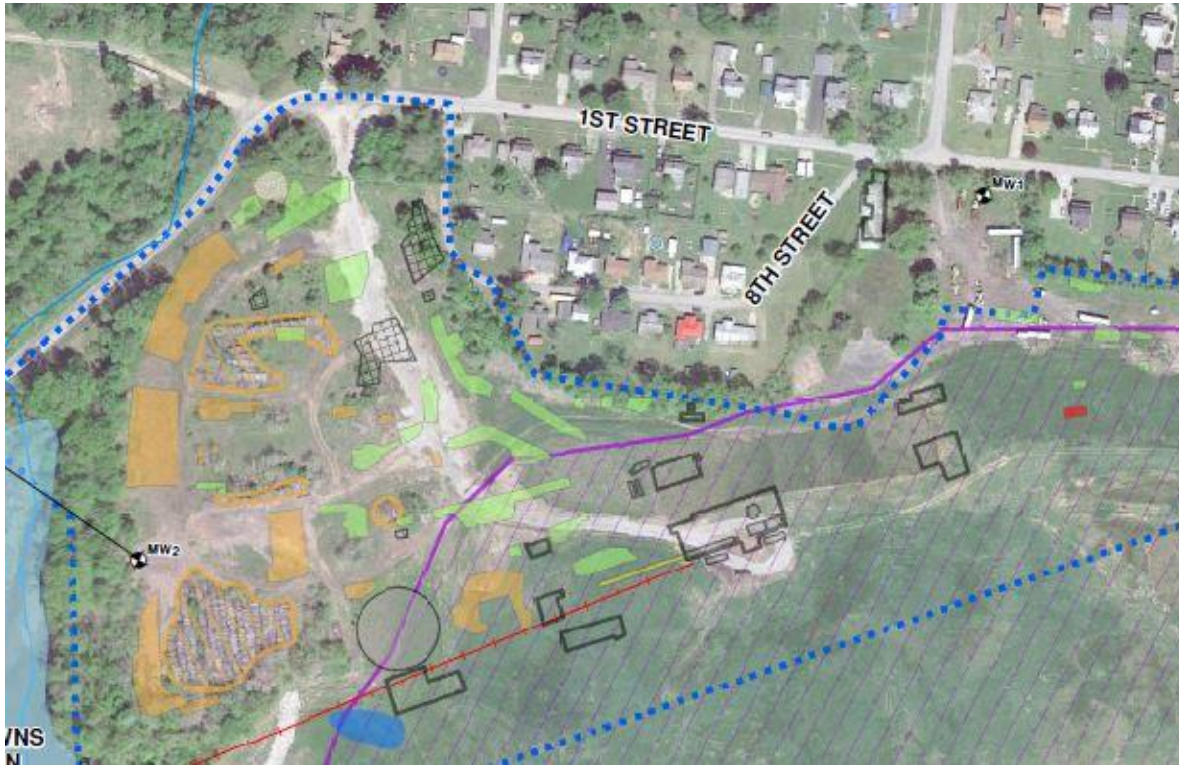
Mather Assessment Efforts

- 1981 Hazardous Waste Spill
- 1994 PADEP Notice of Violation
- 1995 Drum Sampling and Disposal
- 1996 Impacted Soils Excavation and Disposal
- 2000 Subsurface Investigation
- 2001 Site Sampling Results Letter
- 2002 PADEP Species Impact Review
- 2002 Risk Assessment AOC A & C
- 2003 Remedial Investigation Report
- 2005 Final Report Statewide Health Standard – AOC A&C
- 2005 Phase I ESA
- 2005 Phase II ESA





Mather Assessment Efforts



Legend

- Monitoring Well
- Former Railroad Spur
- Streams
- Former Building Footprint
- Former Drip Track
- Former Equipment Storage
- Ruins
- Former Storage
- Former Tank
- Former Timber Storage
- Previous Excavation
- Surface Water Body
- Former Surface Water Body
- Approximate Extent of Regraded Fill
- Current Timber Storage
- Gateway Parcel Boundary





Mather Assessment Efforts

- Soil Impacts
 - Benzene
 - 2,4-dinitrotoluene
 - Benzo(a)pyrene
 - Vanadium
 - Arsenic
 - Beryllium
 - Iron
- Groundwater Impacts
 - No VOCs, BNAs, or PCBs
 - Manganese
 - Beryllium
 - Cadmium
 - Cobalt
 - Nickel
 - Zinc
- 2002 Risk Assessment AOC A & C
- 2003 Remedial Investigation Report
- 2005 Final Report Statewide Health Standard – AOC A&C
- 2005 Phase I ESA
- 2005 Phase II ESA





Mather Reclamation

Before





Mather Reclamation

Before





Mather Reclamation

Before





Mather Reclamation

Before





Mather Reclamation

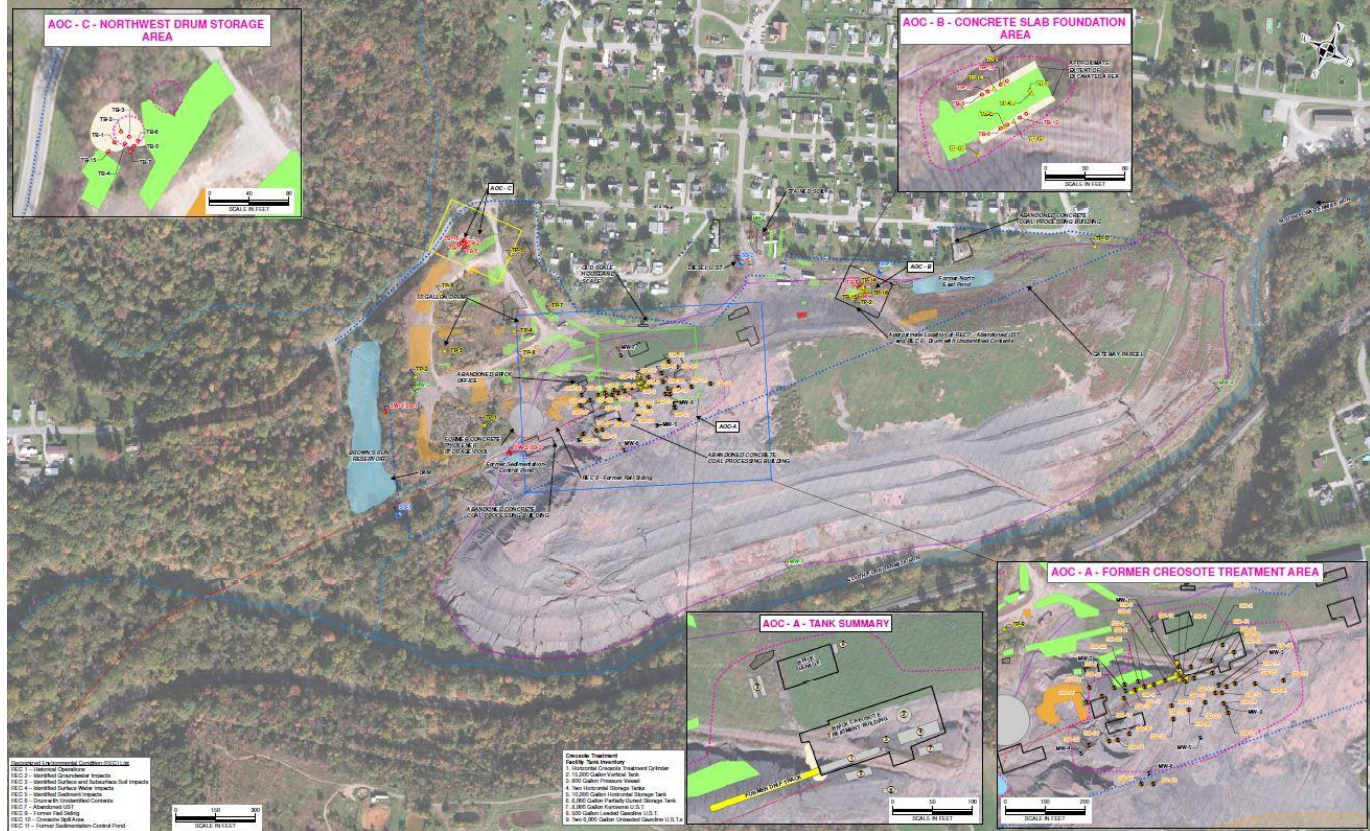
After





Mather Assessment Efforts

- 2015 PA DCED ISRP Assessment Grant \$250,000
- Comprehensive Site Investigation





US EPA Brownfields Grant



- 2018 US EPA Brownfields Assessment Grant
- Site Characterization of 2016 Impacts
- Natural Attenuation
- Only Arsenic identified
- Background Analysis





Solar Farm Potential



- Statewide Search
- Specific Search Criteria
- Greene County shortlisted
- Former Mine Sites Highlighted





Solar Farm Benefits



- Public Health
- Economic Growth
- Job Opportunities
- Cleaner Air





Pennsylvania's Solar Assets¹



- Resource Potential
- Abundant Land
- Geographic Location
- Grid Readiness
- Competitive Prices
- Interested Project Developers
- Market Maturity

1 - "PADEP, "Pennsylvania's Solar Future Plan", 2018





Solar Farm Potential



- NJ Clean Energy Ventures
- Based on State Wide Search
- Proposal to lease Mather Site
- Reduction of CO2
- Increase tax revenue
- Penn State 2020 Study “25-year solar land lease rates were \$700-\$1,000 per acre”





Solar Farm Case Study



- NJ Clean Energy Ventures
- NJ Mount Olive Landfill
- 25.6 MW Solar Farm
- Power 4,000 Homes
- Increase tax revenue

- Mather Site!...lingering issues





Some Creosote Rail Ties





Mather Site Rail Ties



Some Creosote Rail Ties





Mather Site





US EPA Brownfields Grant

- US EPA Brownfields Cleanup Grant 2020
- Disposal of Creosote Rail Ties
- Soil Sampling beneath tie piles and Act 2 Closure



- 144 truck loads
- 1,665 tons of creosote rail ties removed and disposed





US EPA Brownfields Grant



- Targeted and Random Grid Sampling
- Shallow soil sampling
- Soil Analyzed for BNAs and Arsenic

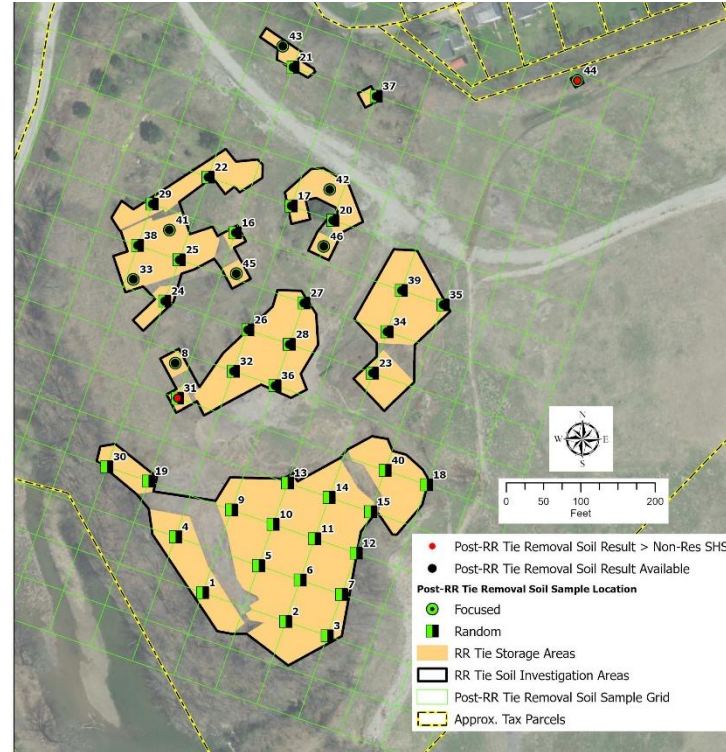




US EPA Brownfields Grant



- Two locations with exceedances
- Arsenic and BNAs
- Arsenic within background range
- Targeted excavation planned for one location
- Final Act 2 for areas evaluated





Next Steps

- Additional Grant Funding
- Initiate NJR Clean Energy Lease
- Solar Farm Construction
- Annual Revenue to County
- Identify the Next PA Location
- Leave the world a little better than we found it.



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