ADEM

Alabama's Scrap Tire Program

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Overview

- Program Funding
- Unauthorized Scrap Tire Sites (USTS)
- Whole Tire Issues & Rulemaking
- Grant Program & Success Stories

Program Funding

ADEM Scrap Tire Program established in 2003 with the enactment of Alabama Scrap Tire Environmental Quality Act §22-40A-1 to §22-40A-24

- Funding source is through a $1.00 per tire collection at the point of sale of each new, used, or retreaded tire sold.
  - ADEM Regulatory Program Costs – up to 20%
  - Remediation – range of 45% to 75%
  - Market Development – range of 0% to 20%
  - Regulatory County Delegation – up to 10%
  - Retailer Collection Costs – not to exceed 7%
  - Alabama Department of Revenue Administrative Costs – not to exceed 2%

Large Scrap Tire Site Remediation Projects

Completed Large Scrap Tire Site Remediation Projects
(Since Inception)

LOCATION	STATUS	PTE*
Attalla, Etowah County	Complete	4,173,000
Prichard, Mobile County	Complete	1,353,610
Samson, Geneva County	Complete	1,570,520
Robertsdale, Baldwin County	Complete	68,130
Holt, Tuscaloosa County	Complete	18,690
Columbiana, Shelby County	Complete	350,230
Abbeville, Henry County	Complete	158,850
Chambers, Tallapoosa County	Complete	335,790

Total PTE Removed = 8,028,810

*PTE: passenger tire equivalent

Attalla, Alabama

Estimated 6,000,000 – 8,000,000 scrap tires

Aerial Photo taken before remediation activities in August 2006

- Removed 4,173,301 Passenger Tire Equivalents

Aerial Photo taken April 2008 with removal approximately 95% completed

Large Tire Site
Chambers/Tallapoosa Co

Before Cleanup

After Cleanup

Small STS Sites

Before Cleanup

After Cleanup

Scrap Tire Cleanups

- Scrap Tires cleanup since 2006
  - 399 illegal scrap tire dumps cleaned up
  - >11.1 million passenger tires cleaned up
- Scrap Tire Right-of-Way Program
  - Provide reimbursement to county governments for costs of removal and proper disposal of discarded tires located on county rights-of-way.
  - $150,000 per 3-year agreement (50+ of 67 counties participating)
  - ~152,000+ passenger tires cleaned up for FY2025

Program Management

- The foundation of effective scrap tire management is the development of a robust and sustainable processing infrastructure
- A well-developed scrap tire processing infrastructure ensures that scrap tires are efficiently collected, processed, and converted into valuable materials
- Infrastructure is essential to reducing scrap tire sites, protecting the environment, and creating long-term economic opportunities
- The following slides will demonstrate how effective processing systems allow scrap tires to be recycled, reused, or repurposed into marketable products rather than disposed of in landfills

Issues with Whole Tires

- Alabama is currently the only State in the southeast region that still allows whole scrap tires to be landfilled, resulting in a large influx of whole tires for disposal from the states surrounding Alabama. This will change January 1, 2028.
- Nearly half (or 50%) of the volume of tires received at tire monofills in Alabama are received from out of state.
- Whole tires present increased landfill management issues, specifically including the ability of the landfill to properly cover (and maintain cover) or properly compact the disposed tires.
- Whole tires present increased fire hazards due to increased air space within the waste mass from inefficient compaction and cover.
- Whole tires also present increased vector issues due to increased water retention when not properly covered. As a result of these matters, an increase in compliance issues related to the management of whole scrap tires has been noted at several landfills within the State.

Compliant Permitted Landfill

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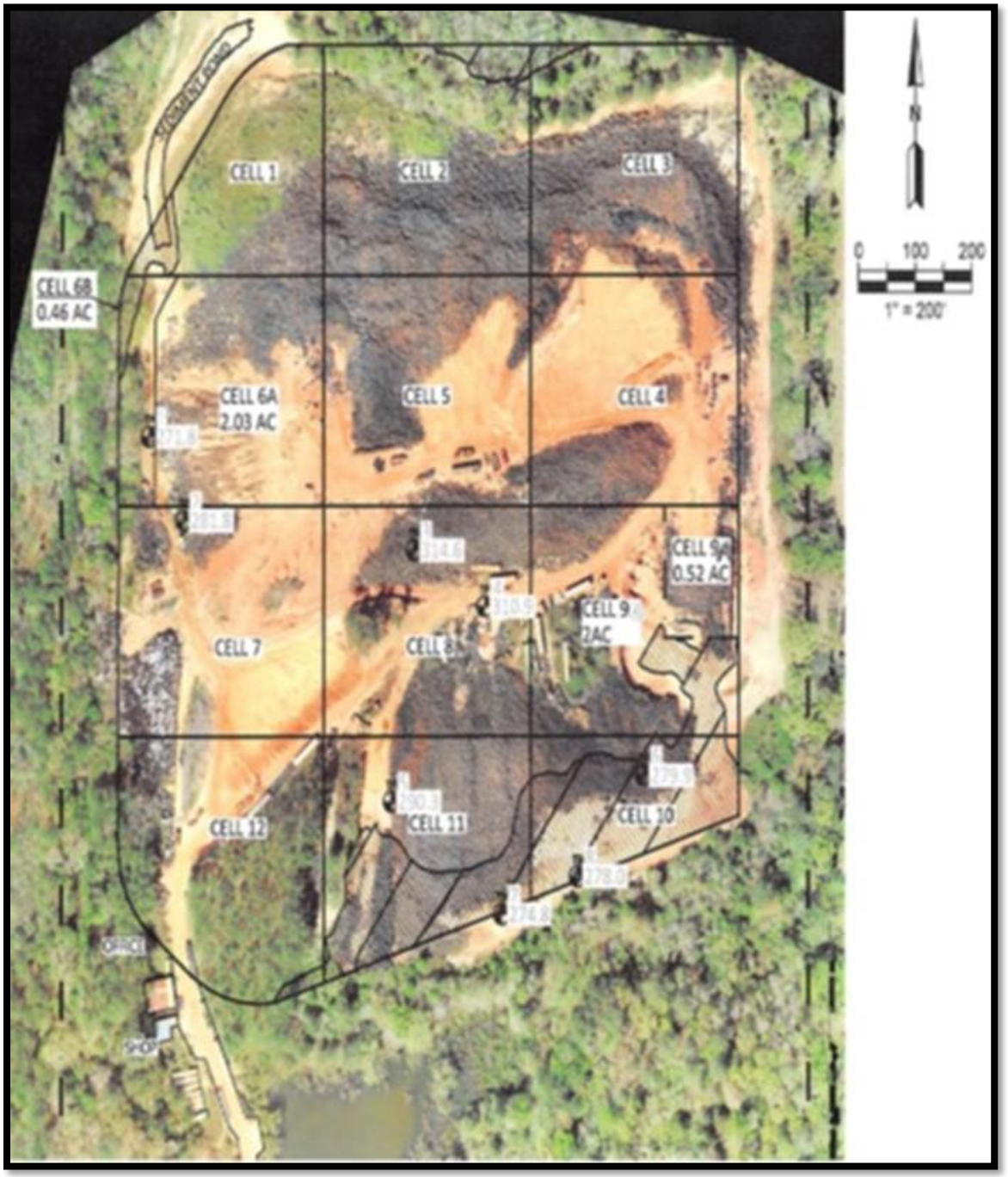
Non-Compliant Permitted Landfill Aerial View



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Scrap Tire Rulemaking

Scrap Tire (Division 4) –Effective August 12, 2024

- Updated scrap tire management requirements, including registration renewal requirements, scrap tire processing incentives, etc.

Solid Waste (Division 13 – Landfill Disposal) – Effective December 15, 2024

- Restricts the disposal of whole tires in landfills after December 31, 2027
- Requires that tires be cut into thirds or smaller pieces before disposal

Regulatory Requirement

ADEM Admin. Code r. 335-13-4-.21(1)(i)

- Except as provided in paragraph 1 below, a landfill shall not dispose of whole tires after December 31, 2027. Whole tires shall, at a minimum, be shredded or cut into thirds or smaller pieces prior to disposal.

  1. Incidental whole tires received in loads of solid waste may be disposed, provided the whole tires constitute a de minimis portion of the overall load of waste.

  2. "De minimis" refers to a small amount of material or number of items, as applicable, commingled and incidentally disposed of with other solid waste.

Program Summary

- Since 2011, this program has granted over $14.5 million for the implementation of Scrap Tire Marketing Demonstration Projects across the state.
- Of this total, over 57 grants totaling more than $9.5 million have been issued to local governments.
- Projects range in cost from approximately $2K - $5.8M and have included the following types:
  - walking tracks
  - rubber-modified asphalt (RMA)
  - playground and landscape mulch
  - solid surface playgrounds
  - septic tank media
  - splash pads
  - alternatives to traditional materials utilized for energy, manufacturing, and engineering projects

Various Scrap Tire Projects

Tire mulch for playground area

Septic Field Media Reimbursement Program

Other Scrap Tire Projects

- Walking track is ¼ mile long
- Reused approximately 1,600 scrap tires

ADEM Walking Track

Other Scrap Tire Projects

- Project utilized over 2000 square feet of scrap tire material
- A solid mat made from poured-in-place tire material
- Pour-in-place is composed of recycled tire material and binding agents.
- It is poured under and around playground equipment, like concrete.

City of Prattville's Splash Pad

Rubber Modified Asphalt Projects

RMA Resurfacing Project

- **Guntersville State Park**: Received a grant to fund the use of Rubber Modified Asphalt (RMA)
- Additional RMA paving at the Lodge and main parking area that was funded by the Alabama Department of Conservation and Natural Resources
- Additional projects at other state parks

Project Support & Evaluation

- National Center for Asphalt Technology (NCAT): provides training, mix design, and performance evaluation services.

Additional RMA Projects

Coffee County

Lake Yahou

Injection Carbon Optimization SSAB Alabama

Project

- **Company:** SSAB Alabama, Inc (Electric Arc Furnace, Axis, AL)
- **Goal:** Use crumb rubber as a partial replacement for petroleum coke (pet coke) in steelmaking
- **Benefits:** Provides a safer, environmentally responsible alternative carbon source and promotes scrap tire recycling
- **Process:** Substituted crumb rubber for pet coke while monitoring steel quality, furnace efficiency, emissions, and operational impacts
- **Results:** No negative impact on steel quality; furnace efficiency maintained; emissions within acceptable levels

Injection Carbon Optimization SSAB Alabama

- SSAB Alabama Inc. was awarded over $360,000 for a Scrap Tire Marketing Grant
- The project period for the grant is December 2021 through November 2026
- Grant monies were used to purchase the crumb rubber and specialized equipment to inject the material into the EAF

Crumb Rubber from Scrap Tires

Injection Carbon Optimization SSAB Alabama

Trial Results

- **Testing:** 51 trial heats with crumb rubber substitutions from 5%–30%
- **Monitoring:** Slag, steel, and emissions
- **Emissions:** Oxygen (O2), Carbon Monoxide (CO), Carbon Dioxide (CO2), Sulfur Dioxide (SO2) and Nitrogen Oxide (NOx) were monitored — no major variations detected between scrap tire crumb rubber heats and base line heats using conventional carbon
- **Conclusion:** There were no detrimental findings observed with utilizing the crumb rubber material. Steel quality was not impacted in any negative way and the furnace efficiency performed suitably

Value & Potential

- **Current Usage:** ~7,000 tons inject carbon + 25,000 tons charge carbon annually
- **Potential Offset:** 350 – 2,100 tons crumb rubber annually (5%–30% offset)
- **Environmental Impact:** Adds value to discarded tires, encouraging proper disposal and recycling.

End-Use Market Development Program

Established in ADEM Regulations on August 12, 2024

- **Goal of Program**

  •Promote the growth of scrap tire markets and beneficial end-use.
  •Funded by the Scrap Tire Environmental Fee

- **Program Purpose**

  •Provides partial reimbursement for processing scrap tire materials in Alabama

- **Eligibility requires**

  •Tires must have been generated in Alabama.
  •A contract must be in place for the sale of the processed material

End-Use Market Development Program

Reimbursement Priority Order – Scrap Tire End-Use Market Development

1. Converted to an ultimate product
2. Beneficially used (other than crumb rubber)
3, Converted into chipped tire material for beneficial use
4. Beneficial use (exceptions for crumb rubber reimbursement)
5. Produced for beneficicial use
6. Processed into tire-derived fuel (TDF) for energy recovery/production

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