

Water Quality Impacts of Road Salt Storage Along Illinois Rivers



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Salt Production

- BIG 3 Salt Producers



- 2013 IL Salt Contracts

VENDOR NAME	AMOUNT AWARDED (with renewal)
CARGILL SALT DIV	\$82,995,558.00
MORTON SALT, INC	\$22,608,250.00
NORTH AMERICAN SALT COMPANY	\$8,454,410.00
THE DETROIT SALT COMPANY	\$1,250,372.00
	TOTAL: \$115,308,590.00

Salt Transportation

- Producers transport salt to IL by barge via the IL river systems, including the Mississippi, Illinois, Ohio and Des Plaines Rivers, and throughout the Chicago canal system



IL River & Watershed

Source: U.S. Geological Survey

Salt Storage

- Road salt producers contract with 3rd party bulk storage and transportation facilities
- Salt producers retain title to all salt until sold to consumers for road deicing
- Storage facilities build large stockpiles from which trucks load for delivery to consumers
- Salt producers retain responsibility to cover stockpiles

Constituents of Road Salt

- Sodium Chloride (NaCl)
- **Ferrocyanide:** Anti-caking additive
 - Required by IDOT contract specifications
 - Exposure to shallow water and sunlight leads to decomposition that releases free cyanides, which can be extremely toxic to aquatic organisms
 - 2 major forms
 - Sodium Ferrocyanide (“Yellow Prussiate of Soda”)
 - Ferric Ferrocyanide (“Prussian Blue”)

Cyanide Runoff from Stockpile



Threatened Waters

- Surface waters
 - Navigable waters: Illinois, Calumet & Ohio Rivers
 - Tributaries & drainage channels
 - Collection ponds
 - Any nearby surface water
- Ground waters
 - Unconfined aquifers along rivers
 - Sankoty Aquifer under Peoria & Central IL
 - High potential for contamination

So What's the Problem??

- It's all about the QUANTITY
- Stockpiles range from 50,000 to 150,000 tons
- Large-Scale Concerns:
 - Eliminating/reducing storm water contaminated
 - Prevent leaching of contaminated storm water to ground waters
 - Prevent discharge of contaminated storm water to surface waters

Conveyor Spillage



Conveyor to First Stockpile



Or Excavator Unloading into Mini Piles



Large Salt Stockpiles



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Little or No Coverage



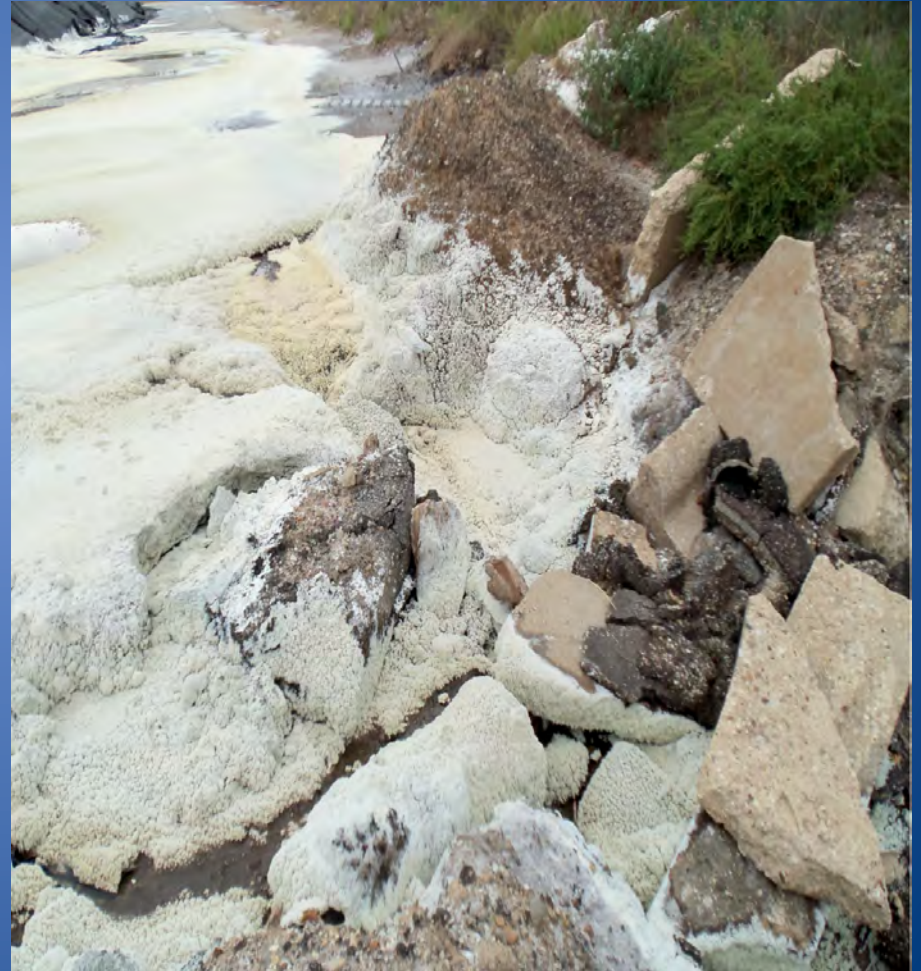
Lack of Perimeter Ballast



Inadequate Storage Pad



Lack of Containment

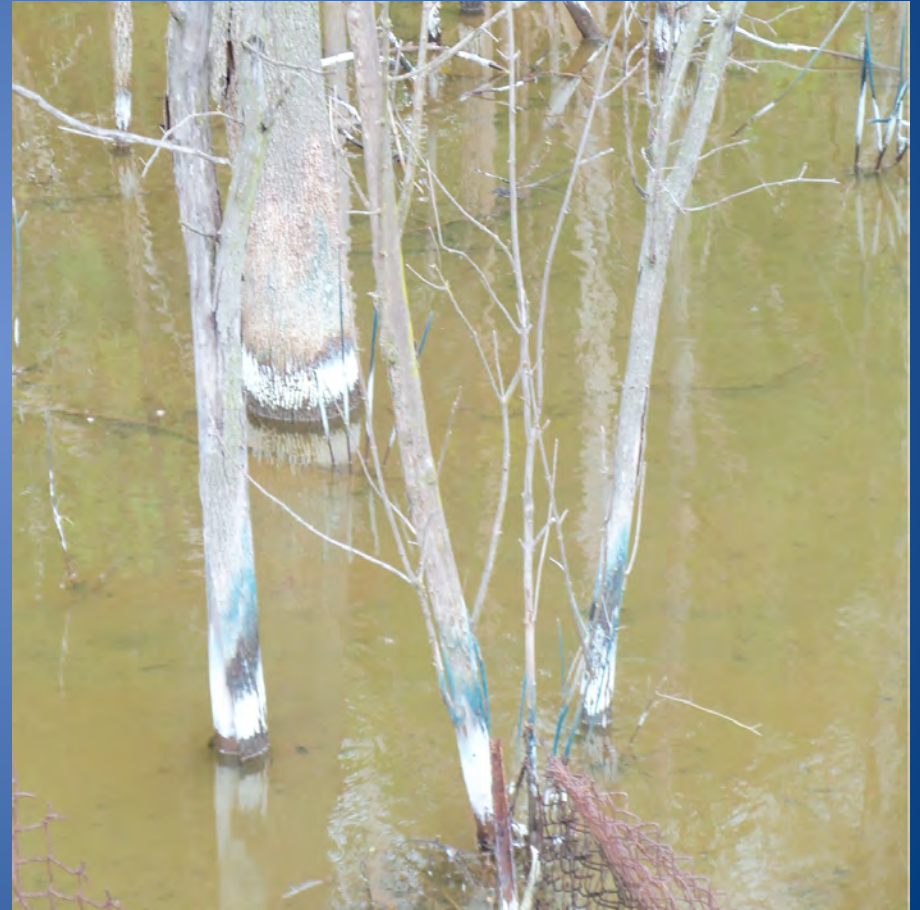


All Lead to Discharges to the Environment

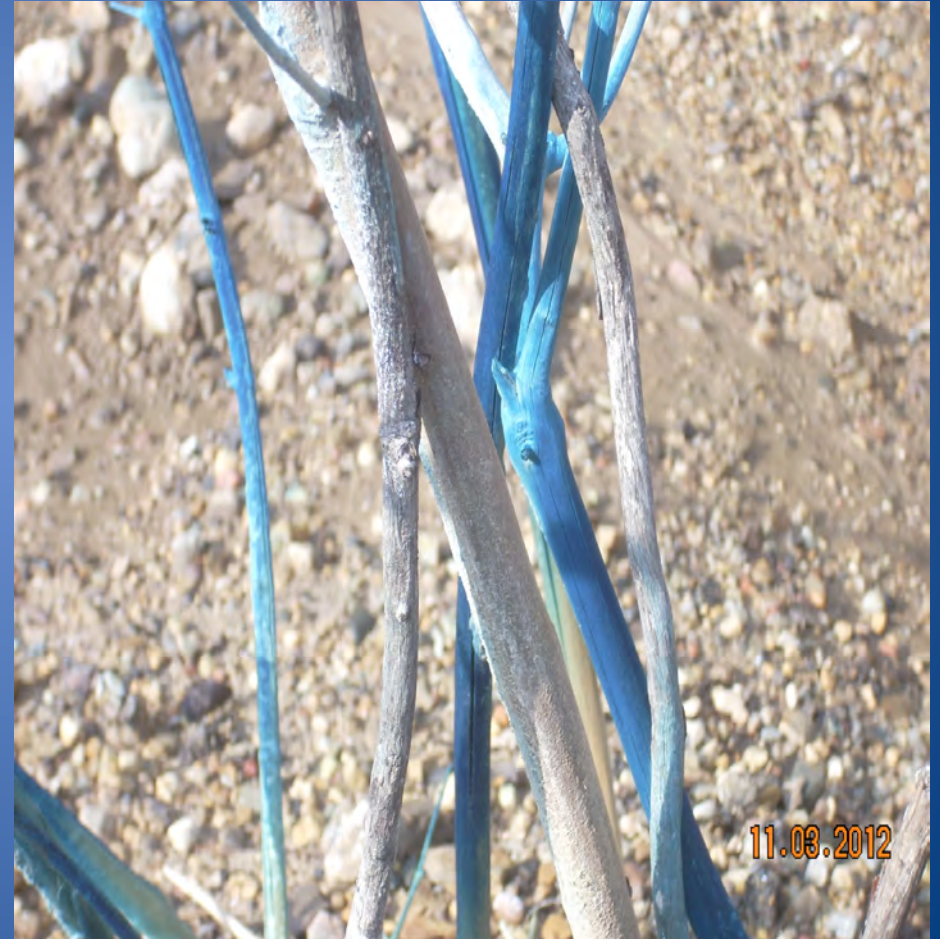


Impacting Receiving Waterways





Prussian Blue Trees



What are our Legal Protections?

Section 12 of the Illinois Environmental Protection Act (415 ILCS 5/12 (2012))

No Person Shall:

- (a) Cause or threaten or allow the discharge of any contaminants into the environment in any State so as to cause or tend to cause water pollution in Illinois . . . or so as to violate regulations or standards adopted by the Pollution Control Board. . . .
- (d) No person shall deposit any contaminants upon the land in such place and manner as to create a water pollution hazard.
- (f) No person shall cause threaten or allow the discharge of any contaminant into the waters of the State . . . without an NPDES permit . . .

Water Quality Standards

- Section 302.208 of the Board's Water Pollution Regulations sets numerical water quality standards for waters of the State:
 - Chloride: 500 mg/l
 - Dissolved Iron: 1.0 mg/l
 - Available Cyanide: 22 ug/l
- Sampling of State waters at enforcement sites have shown:
 - Chloride: ↑ 200,000 mg/l
 - Dissolved Iron: ↑ 2.0 mg/l
 - Available Cyanide: ↑ 8,000 ug/l*

*as analyzed by the amenable to chlorination test pursuant to regulation

How do we enforce our legal protections?

- Storm water permit requirements
 - Storm Water Pollution Prevention Plans (SWPPPs)
- No regulations dictating industry standards outside of setback and recharge zones (Part 616, Subpart L)
- Left to industry to determine how to achieve compliance with permits & pollution prohibitions
- Salt Institute Guidelines provide operational standards to protect product & environment

Enforcement Initiative (as of today)

- 8 sites & all 3 Big Salt producers (+ Central) have received Violation Notices from IEPA
- 3 sites have been referred to IAGO so far
- 2 lawsuits have been filed & have interim orders on file requiring sampling & imposing operational requirements
- Additional facilities have been identified
- Inspections will continue along rivers and throughout State

What We Want

- Diligence in siting evaluation
- Streamlined process reducing exposure time
- Improved conveyors & daily housekeeping
- Engineered impermeable storage pads
- Indoor storage or Diligent coverage
- Containment of contaminated storm water
- Collection of contaminated storm water
- Impermeable liner of any collection ponds
- Proper treatment or disposal

Streamlined Stockpiling



Covered & Sealed Stockpiles



Engineered Impermeable Storage Area



Engineered Containment & Collection



This is a failed attempt at constructing a collection basin

Balancing Public Interests



- Human safety
- Human health
- Environmental impact

ARTICLE XI OF THE CONSTITUTION OF THE STATE OF ILLINOIS

SECTION 1. PUBLIC POLICY

The public policy of the State and the duty of each person is to provide and maintain a healthful environment for the benefit of this and future generations.

SECTION 2. RIGHTS OF INDIVIDUALS

Each person has the right to a healthful environment.