

Air Dispersal of Historic Contamination in North St. Louis County

USACE FUSRAP

St. Louis Airport Site (SLAPS) and the Hazelwood Interim Storage Site (HISS)



Addressing Community Concerns

- How does contamination spread in air?
- What happened during past severe weather conditions, like drought or tornados?



Background Info: 1999 HISS



Modeling Transport of Contaminated Soil Through Air

- Modeling was conducted to determine where to focus our soil sampling strategy
 - ▶ Was air dispersal a primary means to transport soil?
- We use a computer program called RESRAD to calculate
 - ▶ How much soil could be transported in air to offsite locations in the timeframe that material was stored onsite; and
 - ▶ How does that amount of soil compare to the ROD cleanup levels.



Thorium

- Thorium-230 is the most common contaminant in North St Louis County at SLAPS and HISS.
- Thorium, a heavy element, is found naturally in nearly all soils worldwide. Our work is to look at how concentrated it is in North County.
- Modeling shows how thorium travels as airborne dust in the environment.

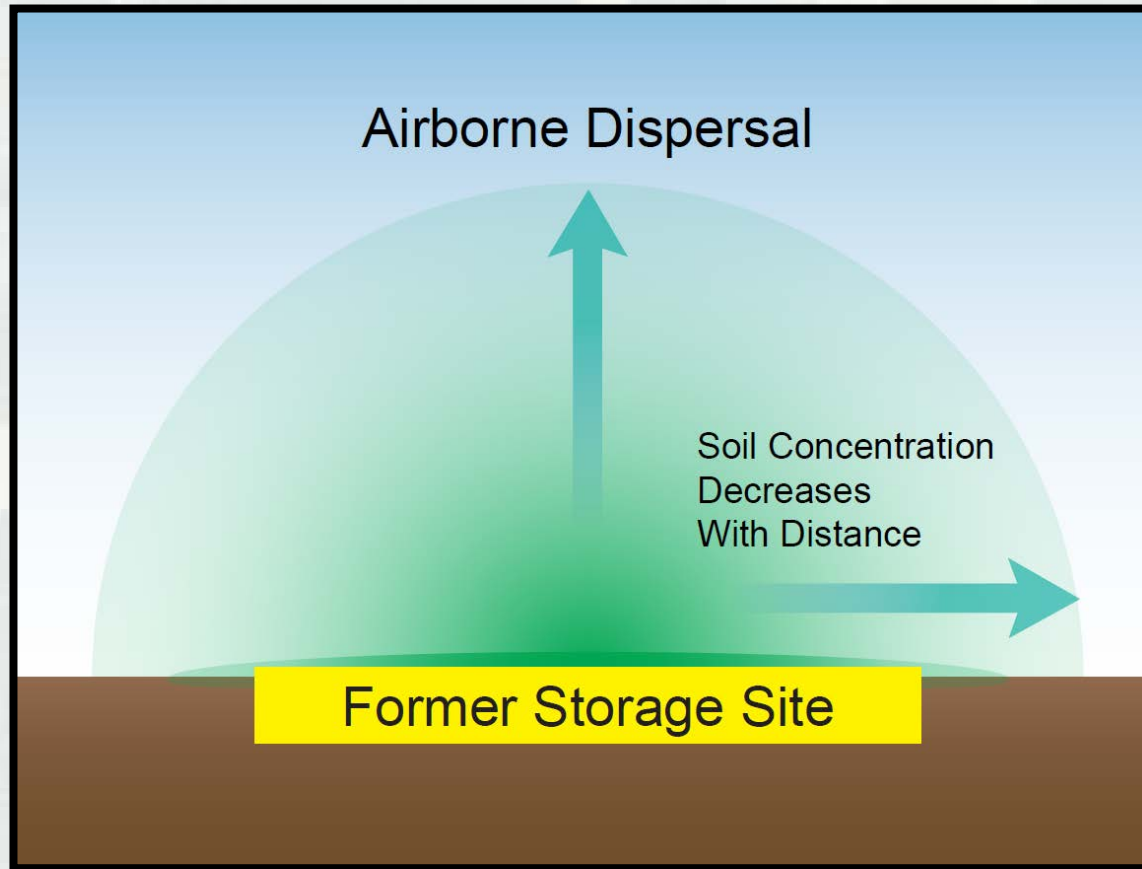


Thorium

- Thorium is a heavy element
- Airborne movement of thorium in dust (or soil) is similar to dust from a gravel road.

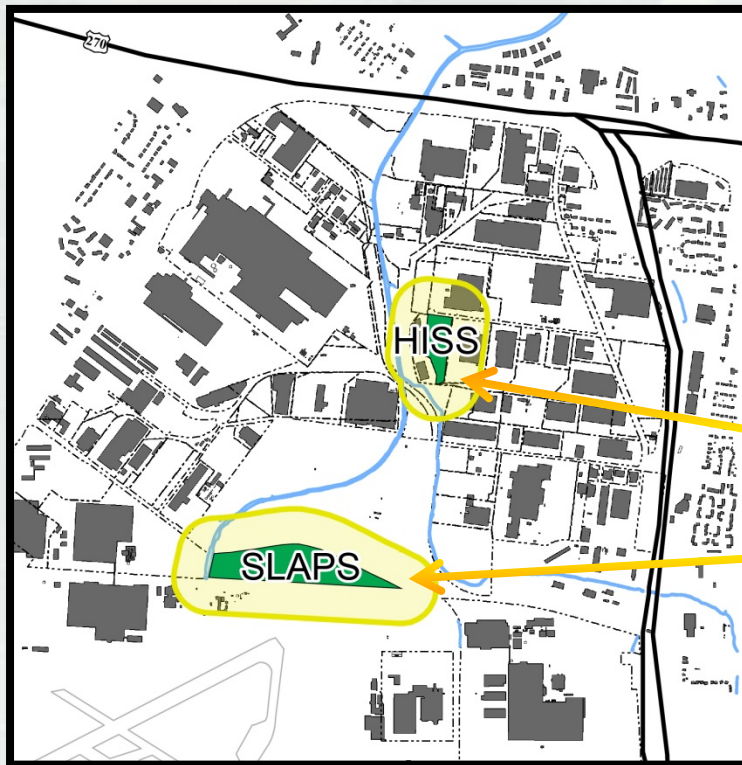


Air Dispersal



Air Dispersal Modeling

Comparison to ROD Remediation Goal



Modeling assumed worst-case conditions.

- ▶ Thorium concentration
- ▶ Wind speed and prevailing direction
- ▶ 60 years of transport

Only areas within about 100 feet of SLAPS or HISS could have had soil levels which exceed cleanup levels from air dispersal alone.

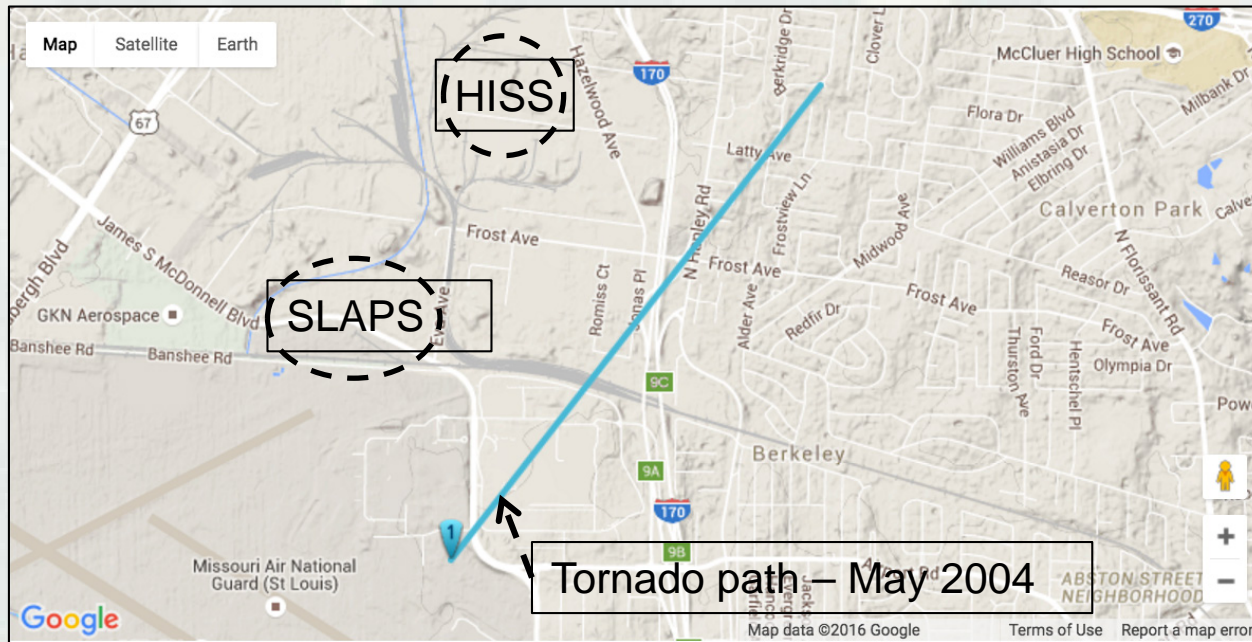


Reducing Air Dispersal

- Dust reduction
 - ▶ Vegetative cover
 - ▶ Man-made cover (liner)
 - ▶ Rock, gravel, concrete
 - ▶ Water truck spray
- SLAPS and HISS were primarily covered during material storage



Tornado Activity



<http://www.tornadohistoryproject.com/tornado/20040530.29.40>

- Four tornadoes occurred: 2004 tornado during cleanup
- Active air monitoring at time of 2004 tornado
- RESRAD modeling applied



Worst Case Scenario Findings

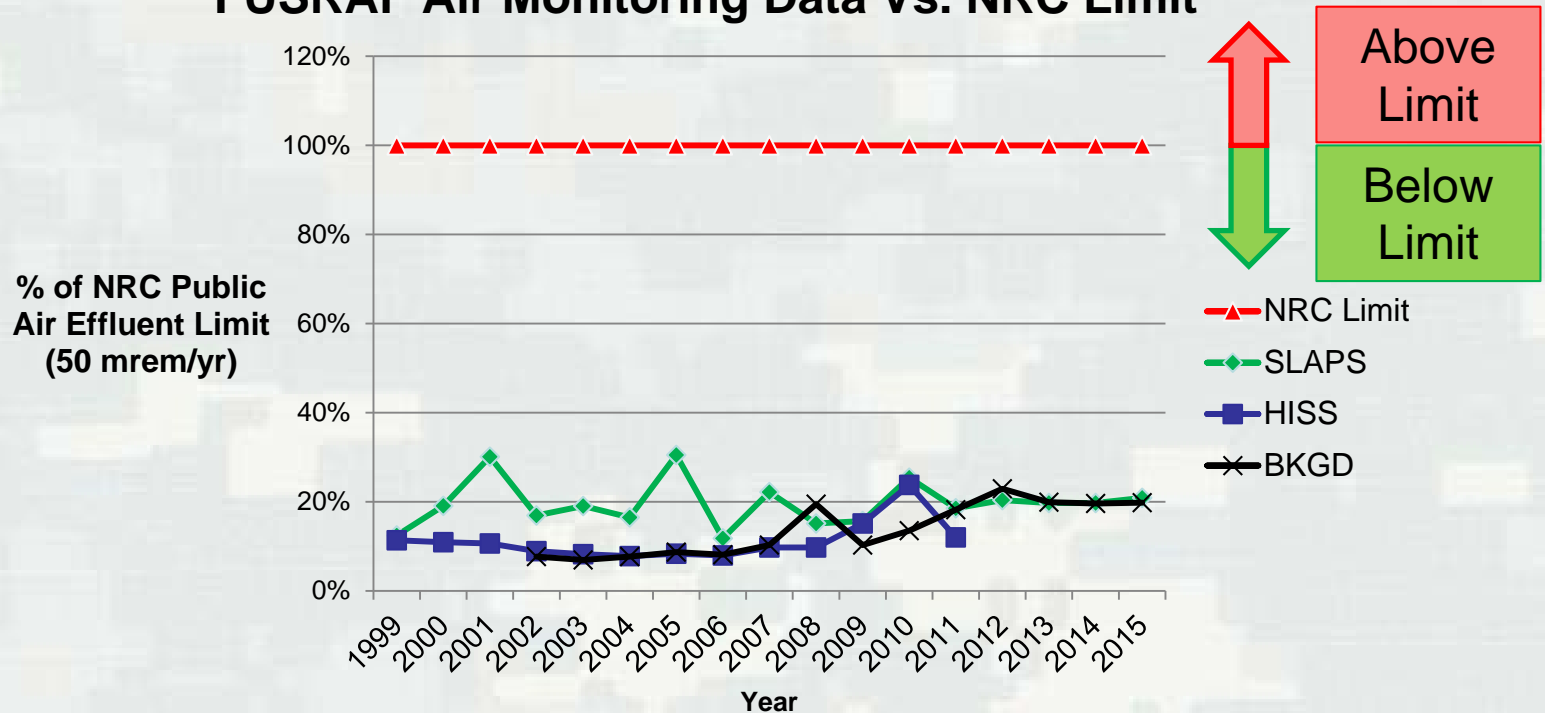
Wind dispersal **was not** a primary transport mechanism.

- For tornado conditions,
- For very windy and dusty conditions,
- For modeling maximum storage times,
- And for modeling the highest soil concentrations.



USACE Findings and Federal Limits

FUSRAP Air Monitoring Data Vs. NRC Limit



Over 22,000 air samples collected during cleanup activities.



For questions and information

- For more information on the St. Louis FUSRAP sites visit <http://www.mvs.usace.army.mil> or <http://bit.ly/FUSRAPstl>
- For questions and comments concerning the St. Louis FUSRAP Sites please call Public Affairs at 314.331.8000.

