



Green and Sustainable Remediation in Georgia

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Green Remediation

- ✦ Not widely practiced in Georgia
- ✦ Driven by CERCLA remedial alternatives evaluation criteria (a small universe in Georgia)
- ✦ May be easiest to realize when environmental agency is hiring the cleanup contractor (e.g. vehicle specifications)

Challenges

- ✦ No statutory driver
 - ◆ Not required by state or federal law
 - ◆ Could be viewed as “extra” requirements
- ✦ Resource constraints
 - ◆ Staff reductions have increased workloads
 - ◆ Little money available for training
 - ◆ No state money for cleanup contracts
- ✦ Examples (and metrics) are needed

Cleanups Under State Law

- ✦ UST cleanups closest to green remediation best practices
 - ◆ minimal soil excavation and groundwater extraction
 - ◆ Use of monitored natural attenuation as finishing steps
- ✦ HSRA, Brownfields, and VRP do not require alternatives evaluations that favor green remediation
- ✦ Statutory preference for “active” remediation under HSRA

“Greenish” Cleanup Features

- ✦ In-situ treatment methods approved at many sites
- ✦ Runoff prevention required
- ✦ Vapor controls required
- ✦ Monitored natural attenuation gaining acceptance as a treatment method

How “Green” is Brownfields Remediation?

- ✦ Most common soil remediation method is till “dig and haul” (because it’s fast)
- ✦ Demolition is common because redevelopment often drives the cleanup
- ✦ Not able to certify concrete recycling costs as “eligible brownfields costs” for purposes of the tax incentive

On the Greener Side...

- ✦ Incentives for cleanup are provided
- ✦ Integration of site development with soil remediation is encouraged thereby lowering emissions and overall energy use
- ✦ Groundwater left in-situ unless wells are nearby

Re-use of Treated Groundwater

- ✦ On-site re-use of treated groundwater has been approved on a case-by case basis
- ✦ Re-use for irrigation must be considered carefully in conjunction with EPD
- ✦ Re-injection of treated groundwater requires Underground Injection Control permit

Segregation and Reuse of Non-Contaminated Soil

- ✦ Has been approved at some sites
- ✦ Requires thorough pre-excavation sampling
- ✦ Staging issues can affect applicability
- ✦ Balancing the time and sampling costs against hauling, disposal and replacement costs also an issue

Green Demolition

- ✦ Metal recycling is common because of the market for scrap
- ✦ On-site concrete recycling is increasingly common
- ✦ EPA involvement may be necessary in cases involving PCBs
- ✦ Georgia provides lists of C&D waste recyclers through the Sustainability Division

Technical Assistance

- ✦ Georgia DNR's Sustainability Division (formerly the Pollution Prevention Assistance Division) provides confidential, non-regulatory technical assistance in pollution prevention, resource conservation, waste reduction, by-product reuse, and recycling.
- ✦ The service is paid for by hazardous waste fees, and is free to the public.

“Green” Brownfield Examples

✦ Aerotropolis (Former Ford Assembly Plant)

- ◆ Extensive soil cleanup
- ◆ Scrap metal from structures recycled
- ◆ Uncontaminated concrete segregated and crushed on-site for re-use
- ◆ Redevelopment plan includes “green energy” generation

✦ Streets of Buckhead

- ◆ Segregated non-contaminated soils for re-use
- ◆ On-site re-use of dewatering fluids approved

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