Update on Cabot-Koppers Superfund Site

Alachua County Board of County Commissioners
City of Gainesville Commission

Special Joint Meeting

May 1, 2008

Purpose

- USEPA Region 4 Update
- Communicate local concerns
- Increase local understanding of issues
- Site progress entering critical stage
  - Selection of remediation alternatives
  - Record of Decision (ROD) (remedial plan) planned for 2009

Presenters

Background and Local Issues

- John Mousa, Alachua County EPD
- Rick Hutton, Gainesville Regional Utilities (GRU)

Cabot –Koppers Site Update

- Scott Miller, Project Manager, USEPA Region 4

Participants in Process

Regulatory

- US EPA Region 4 – Site Manager
- Florida DEP
- Alachua County EPD

Principal Responsible Parties (PRPs)

- Beazer East, Inc. – Koppers Site
- Cabot Corporation – Cabot Site

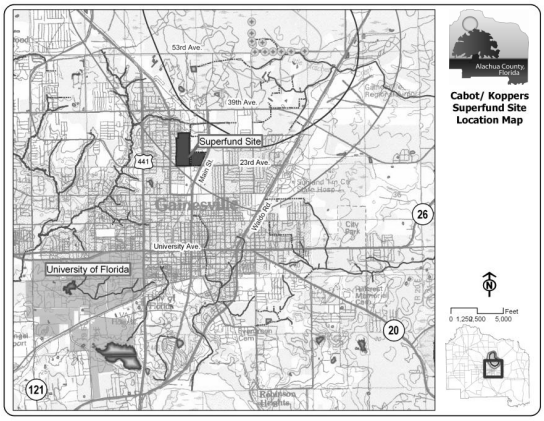
Participants in Process (cont'd)

Stakeholders and Interested Parties

- GRU / City of Gainesville
- Koppers Industries
- AC Health Department
- Surrounding Neighborhoods and Property Owners

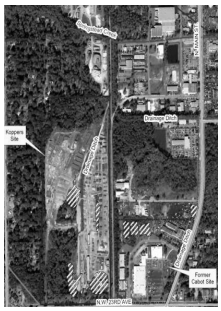
Alachua County's Role

- Technical Review
- Field Audits - EPA grant funded
- Protect groundwater resources
- Protect creeks and surface waters
- Protect surrounding properties
- Provide local environmental input
- Health risk evaluation and monitoring – Health Department
- Periodic oversight -- BoCC



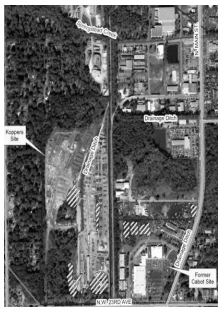
Site History – Koppers (90 acres)

- Wood treating since 1916
- Four source areas
- Superfund Site – 1983
- Beazer buys Koppers ('88)
- Plant sold to Koppers
- Beazer- environmental liability



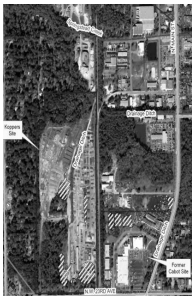
Contaminants at Koppers

- Wood preserving chemicals in soils and groundwater
  - Creosote
  - Pentachlorophenol
  - Arsenic
  - Hydrocarbons



Site History – Cabot (49 acres)

- Pine tar & charcoal prod.
- 3 Process lagoons
- Northeast lagoon (owns?)
- Cabot sold site (1967)
- Discharge to wetlands/creek (70's)
- Sludges mixed with soils
- Odorous leachate - Main St.
- Listed Superfund site 1983



Contaminants at Cabot Site

- Pine processing chemicals in groundwater
  - Phenols
  - Terpenes (pine related)
  - Hydrocarbons
- Mixed wood preserving and pine chemicals in groundwater and soils near Northeast Lagoon

Preliminary Remedial Actions

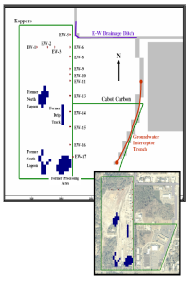
EPA 1990 Remedial Plan (ROD)

Koppers Site

- Boundary extraction wells
- Soil remedy not implemented

Cabot Site

- Interceptor trench Main St.
- Soils non-toxic on main site
- NE lagoon soils partially excavated
- Some contamination remains at NE lagoon



Source: WHI Technical Memorandum No.2

Key Events

- EPA Proposed New ROD in 2001
- Joint City/County meeting June 2001
  - Concern - clay layers under site not barriers
  - EPA Technical Work Group established
  - USEPA requests assistance from ACEPD
- EPA agrees to further investigations
- Extensive investigations since 2001
- Deeper GW contamination found
- City and County Resolutions (March 2004) urge expedited action by EPA

Key Events (cont'd)

- City and County letters to Congressional Delegation Mar 2004
- 5 -Year Review Recommendations
  - Additional Investigation and Information Needed
- USEPA has expedited progress through Beazer toward remedy selection

Key Technical Findings

- Significant creosote in soil source zones ~ 35 feet
- Creosote migration through clay zones occurred
- Creosote found in deeper aquifers ~ 65 feet
- Floridan aquifer contamination on-site ~150 to 200 feet
  - Concern about threat to Murphree wellfield
- On-site boundary soils contaminated above state target levels (dioxin, benzo-a-pyrene)
  - Concern about potential off-site contamination

Key Technical Findings (cont'd)

- Deeper groundwater contamination found on Cabot site near Koppers
- Questions on effectiveness of Main St. trench–Cabot Site

Remaining Issues of Local Interest

- Final clean-up standards – groundwater, soils
- Floridan long term monitoring & wellfield impacts
- Offsite soil risks (sampling)
- Selection of technology and remedies
  - Removal or containment, engineering controls
  - Impacts on land use and surrounding properties
- Completeness of investigation in all aquifers
- Effectiveness of extraction wells and trench
- Investigate deeper contamination at Cabot site

Cabot/Koppers Superfund Site Update

by
Rick Hutton, P.E.
Water/Wastewater Supervising Engineer
Gainesville Regional Utilities

GCC/BOCC Mtg
May 1, 2008

Koppers Site

- **2001**
  - Draft ROD – relied on subsurface clays to contain
  - Geology & contamination not well understood
- **2002-2008**
  - Significant additional investigations
  - Site very complex
  - Contamination deeper than previously thought
  - Floridan contamination
  - Much better understanding of site
  - EPA now progressing toward final remedy plan

GRU Involvement

- **GRU Primary Goal**
  - Prevent contamination from reaching wellfield
- **GRU Consultant Team**
  - World Renowned Experts in DNAPL/creosote
  - Complimentary skills & strengths
  - Reliance on more than one opinion
  - Unbiased, Comprehensive site review
  - Assist GRU in working w/ EPA, FDEP, Alachua County & Beazer

Expert Consultant Team

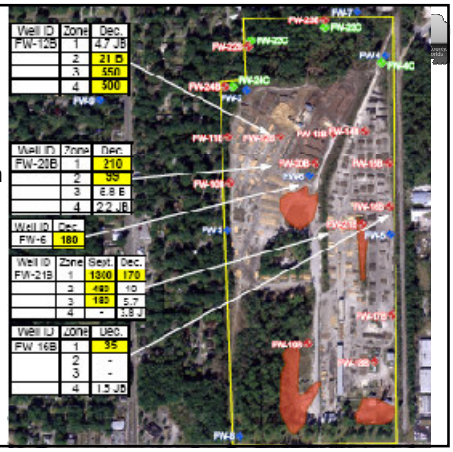
- **Initial Evaluation Recommendations (2005)**
  - Floridan Aquifer Transect Wells (Installed 2005-06)
- **Groundwater Modeling Evaluation (2005)**
- **Review & Recommendation Report (2006)**
  - Additional investigations in surficial, intermediate & Floridan
  - Cabot site additional investigation
  - EPA adopted most of findings into EPA 5 Year Review Report
  - Additional Koppers site testing
  - EPA coordinating w/ Cabot on upcoming testing
- **On-Going Assistance**
  - Review of workplans and results
  - Review Feasibility Study & DRAFT ROD

2001

Floridan Aquifer Wells

2008

Floridan Aquifer Wells



Well ID	Zone	Dec.
FW-12B	1	4.7 JB
	2	21 B
	3	550
	4	500

Well ID	Zone	Dec.
FW-20B	1	210
	2	55
	3	6.8 E
	4	2.2 JB

Well ID	Dec.
FW-6	180

Well ID	Zone	Sed.	Dec.
FW-21B	1	1300	170
	2	490	10
	3	160	5.7
	4	-	3.8 J

Well ID	zone	Dec.
FW 16B	1	35
	2	-
	3	-
	4	1.5 JB

GRU's Primary Concerns

- **Surficial & Intermediate Aquifers Remediation/Source Removal**
  - Contaminants likely to continue leaching down if no action

GRU's Primary Concerns (cont'd)

- **Floridan Contamination**
  - High levels of contamination at some locations in interior of site
  - Results to date – limited contamination at boundary
  - Travel time to wellfield uncertain
  - More wells needed (& are being proposed)

GRU's Primary Concerns (cont'd)

- **Containment/remediation of Floridan Contaminated areas**
- **Long-Term Floridan Monitoring**
- **Contingency Plans**
- **Cabot Site Investigation**

Cabot/Koppers Superfund Site Update

Gainesville, FL
Joint City/County Commission Meeting
May 1, 2008

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Presentation Outline

- Activities Since 2001
- 2006 Five-Year Review recommendations
- Koppers Feasibility Study (FS) development
- Further Hawthorn investigation – former Cabot Site

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Presentation Outline (continued)

- Future land reuse possibilities

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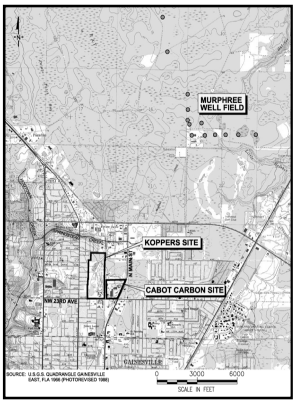

Site Location

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Site Layout

- Charcoal from pine no longer in operation 50 acres mostly redeveloped (Cabot)
- Wood treating facility in active operation since 1916 (Koppers) – 90 acres
- Murphee Wellfield – GRU water supply 2 miles north
- Superfund Site combines both operations (Cabot-Koppers)

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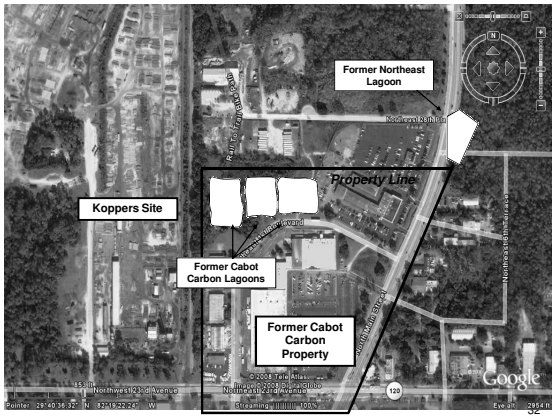

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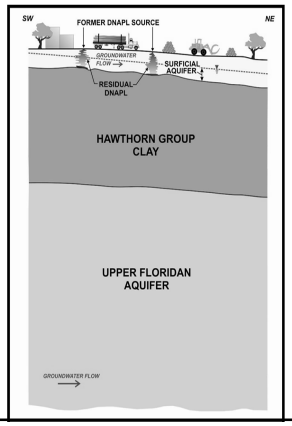

Old Conceptual Model

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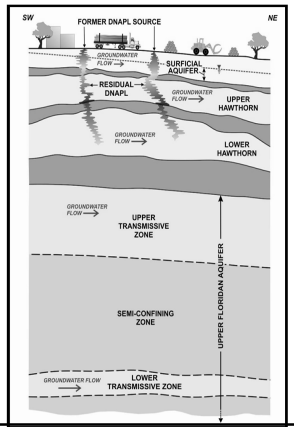

Current Conceptual Model

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Five Year Review Recommendations

#1: Re-evaluate Koppers Surficial Aquifer extraction system

- Re-evaluation complete
- Beazer submitting plan for extraction near source areas, consistent with revised conceptual site model
- New extraction system to be fully implemented within 6 months

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Five Year Review Recommendations

#2: Sample water and sediment in ditch that runs through Koppers and discharges to Springstead Creek

- On-site ditch sediment sampling completed
- Limited off-site sampling of ditches and Springstead Creek has been conducted by Alachua County

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Five Year Review Recommendations

#3: Delineate groundwater impacts in the Hawthorn Group – Koppers and Cabot

- Koppers (Beazer): Completed Hawthorn investigation (8 new wells + 27 pre-existing wells), 1 additional well being installed
- Cabot: Workplan submitted

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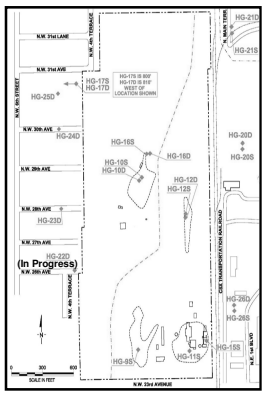

Hawthorn Group Wells

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Five Year Review Recommendations

#4: Delineate potential groundwater impacts in the Floridan Aquifer

- New multi-port wells installed for horizontal and vertical delineation: 19 wells with 90+ sampling ports
- Quarterly monitoring since installation

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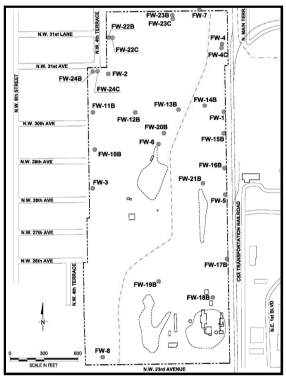

Upper Floridan Aquifer Wells

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Five Year Review Recommendations

#5: Evaluate Interim Remedial Measures at source (NAPL) areas; implement if feasible

- Currently collecting NAPL manually with bailers
- Currently Pilot Testing an active NAPL recovery technology
- Implementing Pilot Test for stabilization using sodium permanganate solution
- Beazer to implement source-area groundwater containment as an interim measure

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Five Year Review Recommendations

#6: Delineate NAPL Sources; evaluate migration pathways through Hawthorn Group

- Extensive Source Delineation Report completed
- Detailed mapping of Hawthorn Group layers completed

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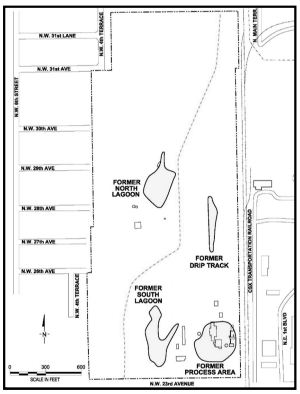

Source Delineation

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Five Year Review Recommendations

#7: Investigate arsenic contamination, especially in Floridan Aquifer

- Studies completed; arsenic is naturally occurring in Floridan Aquifer
- Elevated levels in Surficial

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Five Year Review Recommendations

#8: Re-evaluate effectiveness of Cabot interceptor trench

Groundwater interceptor trench
appears to be effective
Confirmation data to be collected

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Five Year Review Recommendations

#9: Redevelop and sample Surficial Aquifer Wells

- Redevelopment and sampling completed
- Report issued
- Continued monitoring planned

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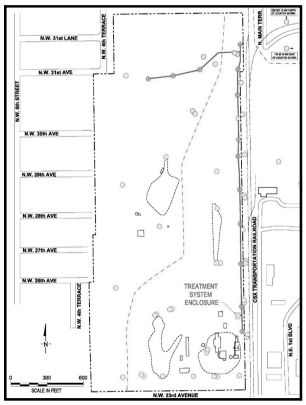

Surficial Aquifer Sampled Wells

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Five Year Review Recommendations

#10: Monitor air quality at Cabot lift station; implement treatment changes as needed

- Cabot evaluated and added exhaust filters followed with air sampling

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Five Year Review Recommendations

#11: Re-evaluate remedial goals

- New site-specific risk assessment in process for groundwater and soil
- New data in use to develop site-specific clean-up criteria for groundwater and soils
- Florida RBCA chief driver

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Five Year Review Recommendations

#12: Delineate soil impacts

- Detailed on-site soil sampling completed for 90-acre Koppers property
- Soil contamination on Koppers Site

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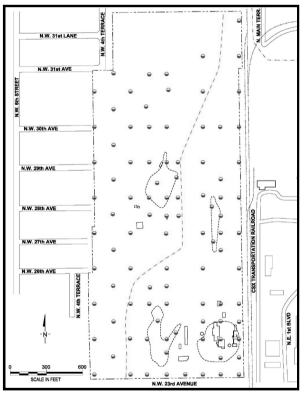

Soil Sampling (2006)

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Collaborative Feasibility Study Process

- Collaboratively develop FS
- Goal to select comprehensive remedy for Koppers Site from possible approaches and technologies
- Final FS and Record of Decision (ROD) amendment targeted for 3/09

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Joint FS Results to Date

- Developed (7) alternatives of site technology applications for on-site (FDEP, Beazer, EPA)

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Old Cabot Property

- Further investigation of Hawthorn Group ongoing

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What approaches may be used in final remedy?

- DNAPL Recovery
- Surficial extraction system
- Containment
- Soil solidification, capping, cover, excavation
- Long-term monitoring/contingency plans

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Ground-Water Cleanup Standards or Goals

- For contaminants with drinking-water standards, the cleanup standard will be the drinking-water standard
- For contaminants without drinking-water standards, the cleanup goal will be risk-based and site-specific

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Ground-Water Cleanup Standards or Goals

- The point of compliance for contaminants with drinking water standards is outside of any area where waste is managed (such as a capped lagoon)
- The point of compliance for contaminants with risk-based cleanup goals is site-specific and based upon potential exposure to the ground water

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Soil Risks and Final Clean-Up Standard

- Risk-based corrective action (RBCA) standards and Superfund requirements based on contaminants attributable to Site operations
- Florida RBCA standards require less than one-in-a-million lifetime cancer risk
- Site-specific risk assessment for soil risks on and off-site under way

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Soil Risks

- Primary risk drivers from Site soil are incidental ingestion and dermal contact
- October 2007 Soil Sampling Report Used for Onsite Risk Assessment
- Approach currently under development for off-site soils

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Soil Standards

- On-site to be remediated to industrial standard (future industrial worker scenario)
- If necessary, Koppers off-site to be remediated to current land use (i.e. residential and commercial)

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Site Reuse Possibilities

- If future use changes, EPA work with new developer to ensure residential protections
- Common occurrence where old industrial property converted to residential/mixed use

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Site Reuse Examples

- Koppers Charleston Site is part of proposed 218-acre multi-use development Magnolia Park
- Three Superfund Sites included (Columbia Nitrogen and Ashepoo Phosphate Fertilizer Works)
- Current groundwater remediation taking place

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Koppers Charleston

- Developer is including residential-level protections in design such as:
  - Backfilling areas
  - Vapor intrusion barriers
  - Engineered soil covers
  - NAPL System Recovery Modification/Relocation

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Site Background Information

- Wood-Treating Operations Began, Early 1900's
- Koppers Purchased and Operated, 1940 through 1977
- Property Sold and Subdivided, 1978
- Beazer Acquired Koppers, 1989
- Final ROD Issued, 1998
- Remediation Started in 1999
- Handout for Planned Magnolia Project

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Atlantic Station

- Old Atlantic Steel Site in Atlanta, GA
- Developer installed upgraded remedy to enable mixed-use development
- Homes, shopping, office
- Fill dirt and capping through sidewalks, asphalt
- Active GW treatment system on-site

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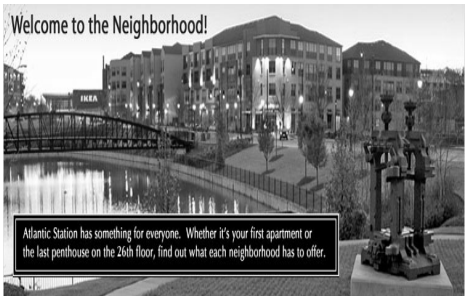
Atlantic Station



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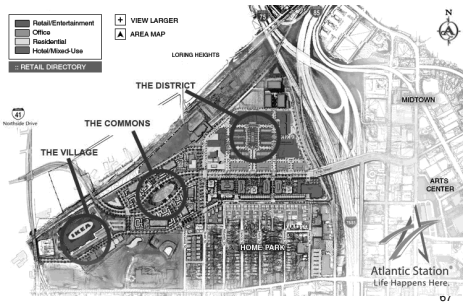
Atlantic Station



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Conclusion

- Interim groundwater measures implemented - September 2008
- Implement Koppers site-wide GW monitoring - July 2008
- Clean-up standards issued – July 2008

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Conclusion (continued)

- Draft ROD Amendment – December 2008
- Public comment period – January 2009
- Final ROD Amendment issued – March 2009

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