

# Site Discovery in North Carolina

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Examples of Successes

Summary of Tools Used

Detective Work Methods

Plans for the Future

## **First Discovery Activities**

Pre World War II Fertilizer  
Facilities --

Sanborn Fire Insurance

Maps Showed

Lead Acid Chambers

## **Lead Chamber Fertilizer Sites Contain**

Lead - 20,000 ppm

Arsenic

Sulfur

Low pH groundwater - 2









# From Reactive to Proactive

Or

How To Locate and  
Investigate Sites with the  
Greatest Potential for  
NPL Listing



## Getting Started - Learn

- History of industry in NC
- Associated contaminants
- HRS and new SCDM

Lead acid chambers were used to make sulfuric acid.

Petroleum refineries were the largest consumer of sulfuric acid.

It is likely that old refineries contain similar contaminants.

## Think Dirty

List Types of Industries  
Represented on the NPL

Look at similar industries

## List of Resources

- Sanborn Maps
- NPL List
- NC Manufacturing Firm Directories
- Old USGS Topo Maps

## List of Resources

- Old SIPS
  - many errors found in 1993-1994 SIPS
  - Be aware that new SCDM may change former SIP decisions

## Industrial Practices

University Libraries -- older books:

*-Inorganic Chemical Technology, 1928 and 1941.*

*-Man-made Fiber Fact Book, 1967.*



## Select Industries, Compile Data

- Business Name
- Include all NPL Sites
- Industry Type (SIC code)
- County and City
- Address (if available)
- Size / # employees
- Reference

## Read Name of Firm

- Atomic Paint
- Winston Lead Smelting on Battery Dr.
- California Spray Chemical

## Think Big

Look at the Largest,  
Longest Operating  
Facilities First

(# Employees Gives Size,  
References give years of operation )



Not Every  
Site will be  
NPL

Know the Potential of This Process

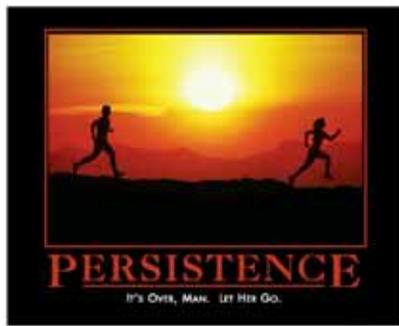
## Methodology

- Compare NPL sites with similar sites not on NPL
  - View EPA's web site, look at SIPs
  - Look at RCRA sites online
  - Review Other Program files
  - Review Inactive Hazardous sites files

## Important Elements

\*Know Your State's  
Regulators, Regulations and  
Programs

\*Diplomacy



Persistence Counts

## Categories Investigating

- **Fertilizers**
- **Pesticides**
- **Asbestos**
- **Textile dyeing & finishing**

## Categories Investigating

- **Bleach manufacturing (Hg):**  
**Alkali & Chlorine Plants for the**  
**Paper, Rayon, and cellophane**  
**industries**
- **Electrical Equipment,**  
**Transformers, switches**

## **Categories Investigating**

- **Batteries (1° and 2°)**
- **Metal Plating**
- **Plastics Plants**
- **Rubber Plants**
- **Wood Preserving**

## **Status**

- Sanborn Map review completed & inventoried
- Data Entry from Directories underway
- NPL / NPL-caliber sites listed in database

## Significant Findings from List

- 90 Fertilizer sites (up to 1964)
  - NPL caliber - 7
  - Several have undergone cleanup under voluntary or state programs
  - Many were also pesticide mixing sites
  - Expect most to be non-sites
  - may result in 8 - 10 additional sites

## Significant Findings from List

- 29 Pesticide sites on List (up to 1964)
  - 6 are on the NPL
- 14 Wood Preserving sites
  - 2 are on NPL
  - 3 are NPL caliber

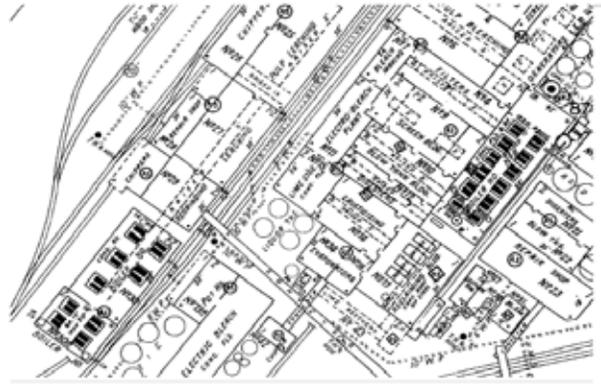
## Chloralkali Bleach Plants

Canton, NC  
Reigelwood, NC  
Roanoke Rapids, NC  
Plymouth, NC  
Brevard, NC  
Others?

## Paper Mill in Canton, NC



Note “Electro-bleach” Plant in Center

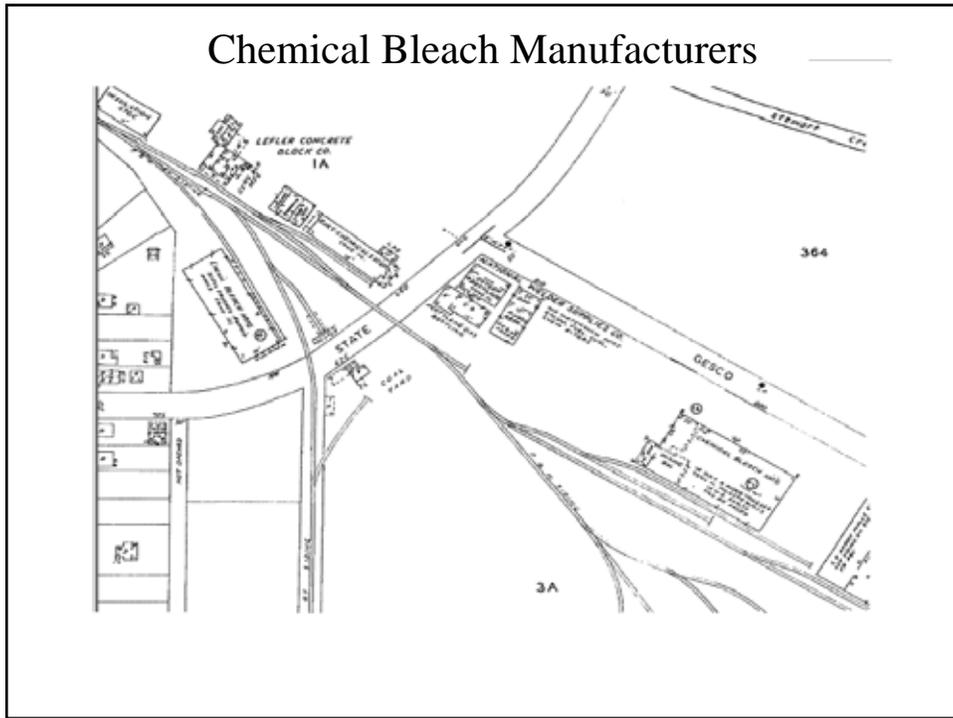


## **Chloralkali Facilities**

**Mercury Contamination - Tons**

**Paper, Rayon, and Cellophane Industry  
Relied on Bleach Manufactured by  
Process This Process**

# Chemical Bleach Manufacturers





# Asbestos Facilities

Soil Exposure Concern  
Nearby Schools, Residential?

## Asbestos Plants in NC -- 1938 - 1964

County	City	Facility name	employ#	Ref.
Mecklenburg	Davidson	Carolina Asbestos	125	1, 7, 8, 9
Mecklenburg	Charlotte	Southern Asbestos	475	1, 7
Mecklenburg	Charlotte	Southern Friction materials	75	7, 9
Mecklenburg	Charlotte	Thermoid Co.; H. K. Porter Co., Thermoid Div (8)	375 (7, 8)	2, 3, 7, 8, 9
Union	Marshville	Carolina Asbestos Co.; Union Asbestos & Rubber (1956, 1960)	30; 175(7, 9)	1, 7, 8, 9

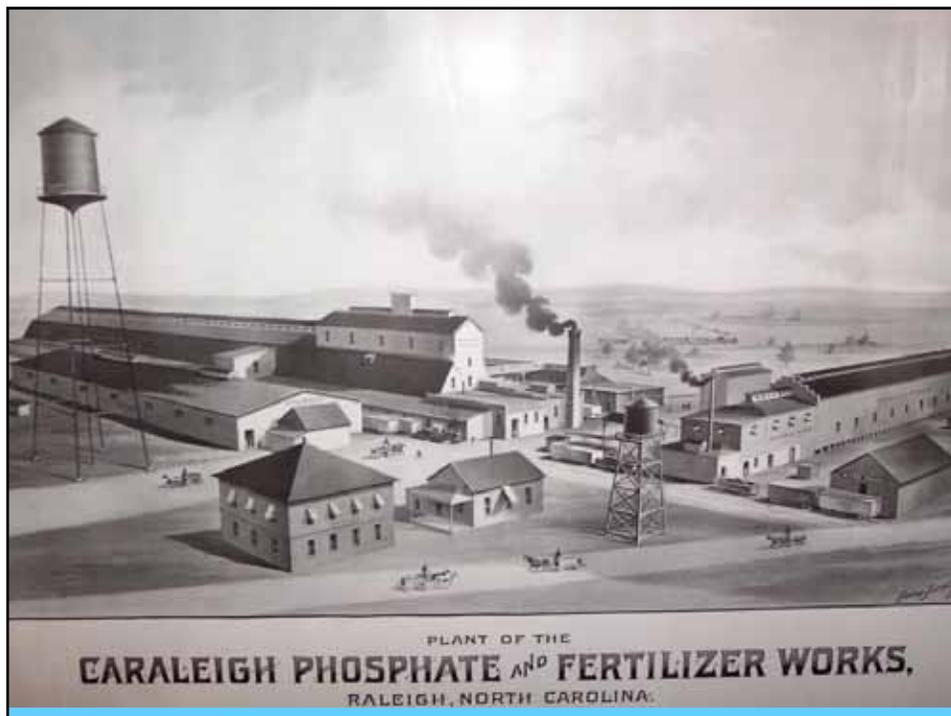
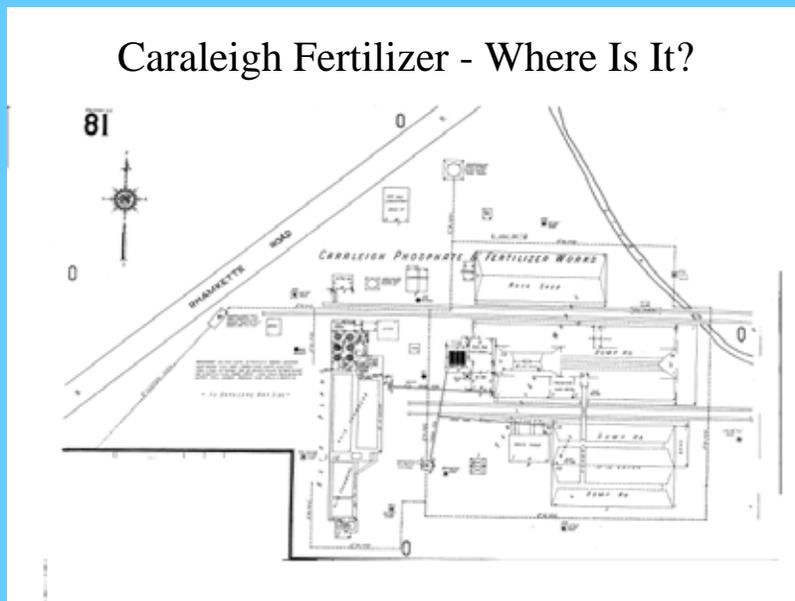
Asbestos Facility adjacent to residential neighborhood in Charlotte, NC



## **Caraleigh Fertilizer**

*found using*  
Sanborn Map  
&  
Serendipity

## Caraleigh Fertilizer - Where Is It?







## Think Again

- New SCDM may change former SIP decisions
- New SCDM may indicate investigation into new industry category

## New Chemicals on SCDM

- Hexabromobiphenyl (PBB) -  
- Foam Plants
- Lead Chromate -- Pigment in  
paint, rubber, plastics

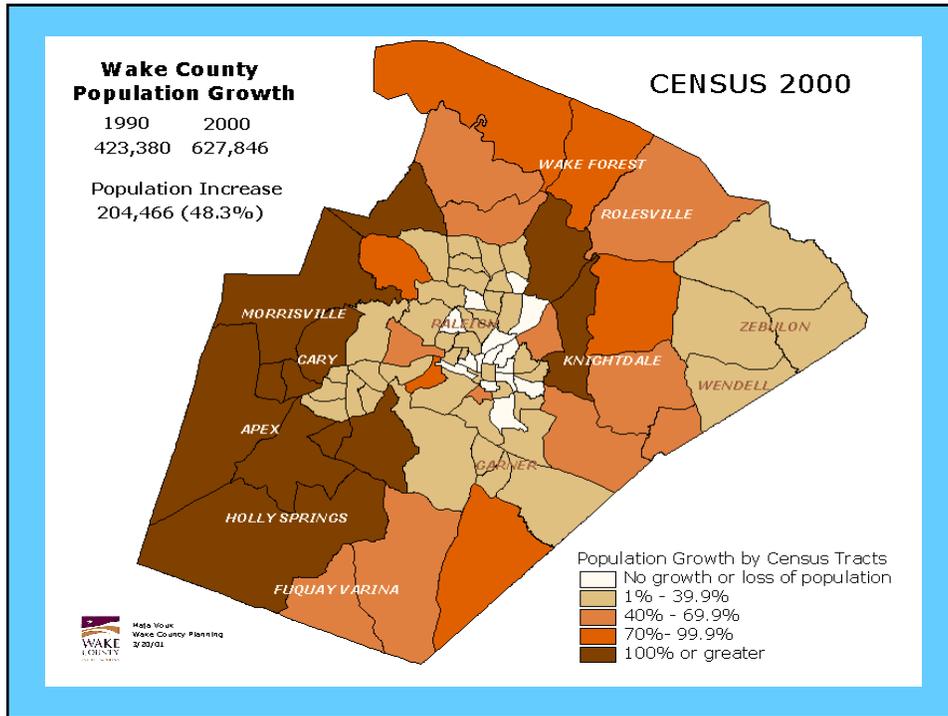
## Plans

- Continue Focus on Industries with greatest  
NPL Potential:
  - Pesticides
  - Wood Preserving
  - Fertilizer
  - Chloralkali (bleach) facilities
  - Transformers, electrical equipment

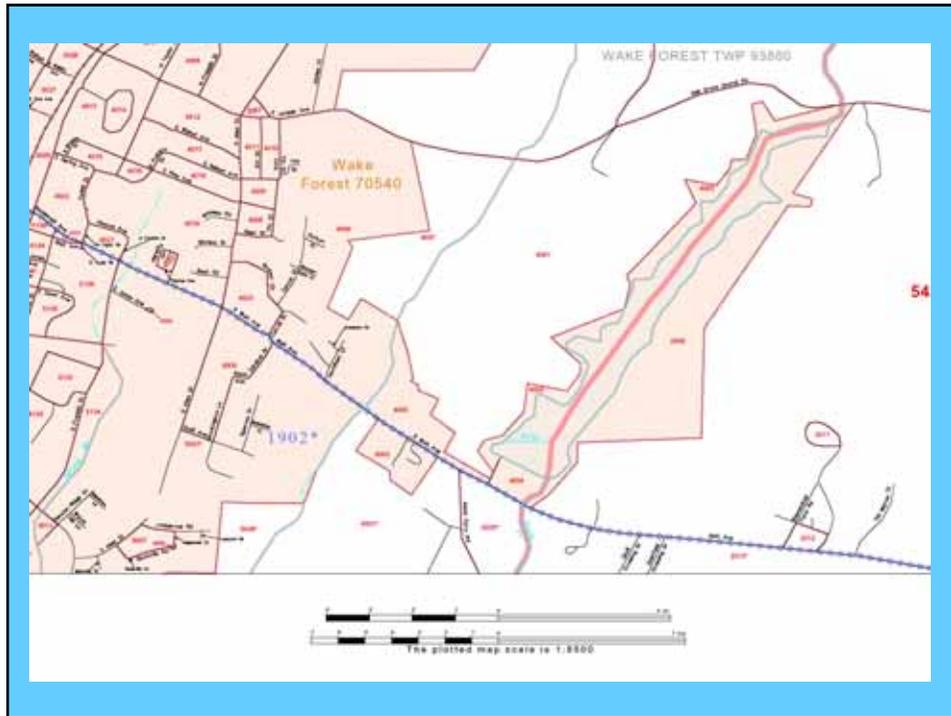
## Strategy

- Database Building - one day/week
- Site Screening - one day/week
- Windshield Surveys - Provide List to Staff planning visit to geographical area
- Regular duties

NC and Region 4 have begun a project to prioritize review of archived sites by population growth, through GIS comparison of 1990 and 2000 census data.



We will make comparisons at three different scales, using census data for the census block, block group, and tract containing each site. Note census block scale.



The first goal of the study is to understand the best measures for prioritizing, using different types of census data (block, tract, or various radial distance categories). Selected high growth counties will be looked at first

