

**PRELIMINARY  
Health  
Assessment  
for**

WOODBURY CHEMICAL COMPANY

CERCLIS NO. FLD004146346

PRINCETON, FLORIDA

MAY 31 1990

Agency for Toxic Substances and Disease Registry  
U.S. Public Health Service

## THE ATSDR HEALTH ASSESSMENT: A NOTE OF EXPLANATION

Section 104(i)(7)(A) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, states "...the term 'health assessment' shall include preliminary assessments of potential risks to human health posed by individual sites and facilities, based on such factors as the nature and extent of contamination, the existence of potential pathways of human exposure (including ground or surface water contamination, air emissions, and food chain contamination), the size and potential susceptibility of the community within the likely pathways of exposure, the comparison of expected human exposure levels to the short-term and long-term health effects associated with identified hazardous substances and any available recommended exposure or tolerance limits for such hazardous substances, and the comparison of existing morbidity and mortality data on diseases that may be associated with the observed levels of exposure. The Administrator of ATSDR shall use appropriate data, risk assessments, risk evaluations and studies available from the Administrator of EPA."

In accordance with the CERCLA section cited, this Health Assessment has been conducted using available data. Additional Health Assessments may be conducted for this site as more information becomes available.

The conclusions and recommendations presented in this Health Assessment are the result of site specific analyses and are not to be cited or quoted for other evaluations or Health Assessments.

PRELIMINARY HEALTH ASSESSMENT

Woodbury Chemical Company

Proposed National Priorities List Update #7 Site

Princeton, Florida

Prepared by:

Florida Department of Health and Rehabilitative Services

Under Cooperative Agreement with the

Agency for Toxic Substances and Disease Registry



## Background

The Woodbury Chemical site occupies three acres along the west side of U.S. Route 1, in southeast Dade County, approximately 0.5 mile southwest of Princeton, Florida. It is a currently operating facility. Since 1975, the company has blended technical grade materials in 50-gallon vats to produce pesticides and fertilizers. The finished products are sold in the on-site sales office.

The site consists of seven buildings, including two residences (Figure 1). The assistant plant manager resides in a home west of the site, and the receptionist for Woodbury Chemical resides in a home on site. Each building on site has its own well except for Building 1 (the plant office).

Water from the majority of the wells is used for numerous purposes, excluding drinking and cooking. The only exception is water from the well of Building 5, which is chlorinated for use as a drinking water source (Figure 1).

This property was acquired in the early 1970s. Previous activities at this site included a tomato and potato repacking house, and a labor camp for farm workers. Currently, the site is almost completely paved. Drainage at the site flows to a sump located between Buildings 3 and 4. Two storms occurred during the site reconnaissance and subsequent sampling investigation. Both times the sump was unable to drain the area quickly enough to prevent flooding of the area between the two buildings. It takes approximately 1 to 1 1/2 days for the lot to drain after heavy storm events. Flow to or from this drain goes through the grating and is then absorbed directly into the soil. This type of drainage system is common in the Dade County area.

The following documents were reviewed by the Florida Department of Health and Rehabilitative Services:

1. Homestead AFB Well Fields/Population Served - Telenote: Lt.R. Marchioni and W. Smitherman, 1/13/87.
2. Report Woodbury Chemical Company, Site Number - D37(D99), Florida Project, ESD Project #85E-102, Dade County, Florida, U.S. EPA, Region IV, 1985.
3. Document of Hazard Ranking System of Woodbury Chemical Company Princeton, Florida. U.S. EPA, Region IV, W. Smitherman, 1/4/87.
4. Comments on the Proposed Listing of Woodbury Chemical Company (Princeton plant) on the National Priorities List. Woodbury Chemical Company, J. M. Barkett, 8/22/88.
5. Sampling sites and results for ground water samples taken from monitoring wells installed by the State of Florida Department of Transportation along the F.E.C. rail line, 1988.

6. Woodbury Chemical Company Preliminary Soil Chemical Analysis. M. P. Brown & Associated, Inc., J. Barkett, 12/20/88.
7. NUS Corporation, 1986, Woodbury Chemical Company Site Sampling Investigation, Analytical Results, TDD No. F4-8601-02. NUS Corporation, U.S. EPA, Region IV, Atlanta, Georgia.

Environmental Contamination and Physical Hazards

On-Site Contamination

Ground water analyses done by NUS in 1986 and M. P. Brown & Associates in 1988 did not reveal any contaminants at levels likely to be of health concern, all contaminants were below federal, state and county Maximum Concentration Levels (MCLs). Both the NUS and M.P. Brown & Associates data sets indicated that surface soils from beneath the pavement contained polynuclear aromatic hydrocarbons (PAHs), and toxaphene. M.P. Brown & Associates composited samples and NUS did not composite samples. The NUS data also included a background sample. The background sample contained no pesticides or PAHs above detection limits. Data from these two sampling episodes is listed below. Surface water, air and edible plants and animals were not addressed in the information reviewed for this site.

<u>MEDIA</u>	<u>CONTAMINANT</u>	<u>RANGE (mg/kg)</u>	<u>FREQ.</u>	<u>RANGE (mg/kg)</u>	<u>FREQ.</u>
Surface and Subsurface Soils	Aldrin	3.3 *	1/1		
	Benzene	0.013 *	1/1		
	Heptachlor	0.002 J*	1/3		
	Dieldrin	3.0 C	1/3		
	Chlordane	1.9 J - 180 C	2/3		
	Toxaphene	1.8 CJ - 38.0 CJ	3/3	.065 - 792	2/2
	Total PAHs	0.093 J - 9.51	2/3	.006 - .080	5/5

J = Estimated value, NUS supports use of values for data evaluation.

C = Confirmed by gas chromatograph/mass spectrometer.

\* = Contaminants were only detected in one sample.

Off-site Contamination

Off-site testing was not addressed during the M.P. Brown & Associates (1988) site investigation. However, the samples taken by the Florida Department of Transportation (DOT) along the rail line in 1988 indicated that the south monitoring well located east-southeast downgradient of Woodbury contained 5.5 ug/L benzene, a level that could be of human health concern (assuming long-term, daily usage) if private potable wells



downgradient of this area contain similar benzene levels. Samples taken in 1986 revealed toxaphene in soil at 1.6 mg/kg just outside the northwest corner of the site.

#### Physical Hazards

A site visit was made by Florida Department of Health and Rehabilitative Services and Agency for Toxic Substances and Disease Registry staff in February 1989. No physical hazards were seen at the Woodbury Chemical site.

#### Potential Environmental and Human Exposure Pathways

Based on soil testing performed in 1986 and 1988, on-site and off-site surface and subsurface soils have been shown to contain toxaphene. Low levels of aldrin, heptachlor, dieldrin and chlordane detected during 1986 sampling were not confirmed by later sampling in 1988. A potential environmental pathway of concern is migration of contaminants in surface and subsurface soils in the Biscayne Aquifer. Human exposure via ingestion could occur in the future because a private well is located 250 feet east of the surface soil sample that contained 1.6 mg/kg toxaphene just outside the northwestern corner of the site. Three municipal wells are located within a three-mile radius of the site, but none are down gradient from the site.

The surface water pathway may become a concern at the Woodbury site in the future, because the high permeability of quartz sand, which overlies the highly transmissive limestone of the Biscayne Aquifer will allow surface water run-off to carry contaminants into ground water.

Off-site ground water testing by DOT indicated that benzene was found in a monitoring well located east-southeast downgradient from the site; however, this contaminant may not be from the Woodbury Chemical site.

#### Demographics

The Woodbury Chemical Company is located at southwest 248th Street and U.S. Route 1 in southern Dade county amidst an agricultural area consisting of 80,000 acres. This region produces 50% of the winter vegetables grown in the United States. The site is located 1/2 mile southwest of Princeton. The population of Princeton is approximately 20,000 and farming is the major business. The Homestead Air Force Base is located approximately 2.5 miles south of the Woodbury Chemical site.

#### Evaluation and Discussion

Soil analyses to date indicate the are north of the formulation plant may be the main area of concern (Figure 1), although data from 1986 and 1988 were not in agreement, possibly because different sampling methods were chosen for soil testing.

### Conclusions and Recommendations

Based on the available information, this site is considered to be of potential public health concern because of the risk to human health from the possibility of exposure to hazardous substances via ingestion of contaminants in soil, or in ground water if contaminants enter it from the soil. The high vertical and horizontal permeabilities of the quartz sand overlying the transmissive limestone of the local portion of the regional Biscayne Aquifer would allow surface water that penetrates the soil to carry contaminants into ground water. Potential exposure pathways that were not addressed by the data reviewed for this assessment include air, surface water and edible plants and animals.

Ground water samples taken by DOT in 1988 indicated that off-site ground water at the east-southeast location (downgradient) from the site was found to contain benzene at concentrations higher than the federal Maximum Contaminant Level for drinking water. Because gasoline, is a possible source of benzene contamination, a further investigation and a private well survey for benzene and related fuel constituents should be considered at Woodbury and the southwest area of Princeton (west side of U.S. Route 1). Soil containing elevated levels of toxaphene north of the formulating building identified by the preliminary assessment and site-related health concerns will be re-addressed as more information becomes available through the Remedial Investigation and related site activities.

### Preparers of Report

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### ATSDR REGIONAL REPRESENTATIVE

Regional Representative:	Chuck V. Pietrosewicz Senior Public Health Advisor Field Operations Branch Region IV
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### ATSDR TECHNICAL PROJECT OFFICER

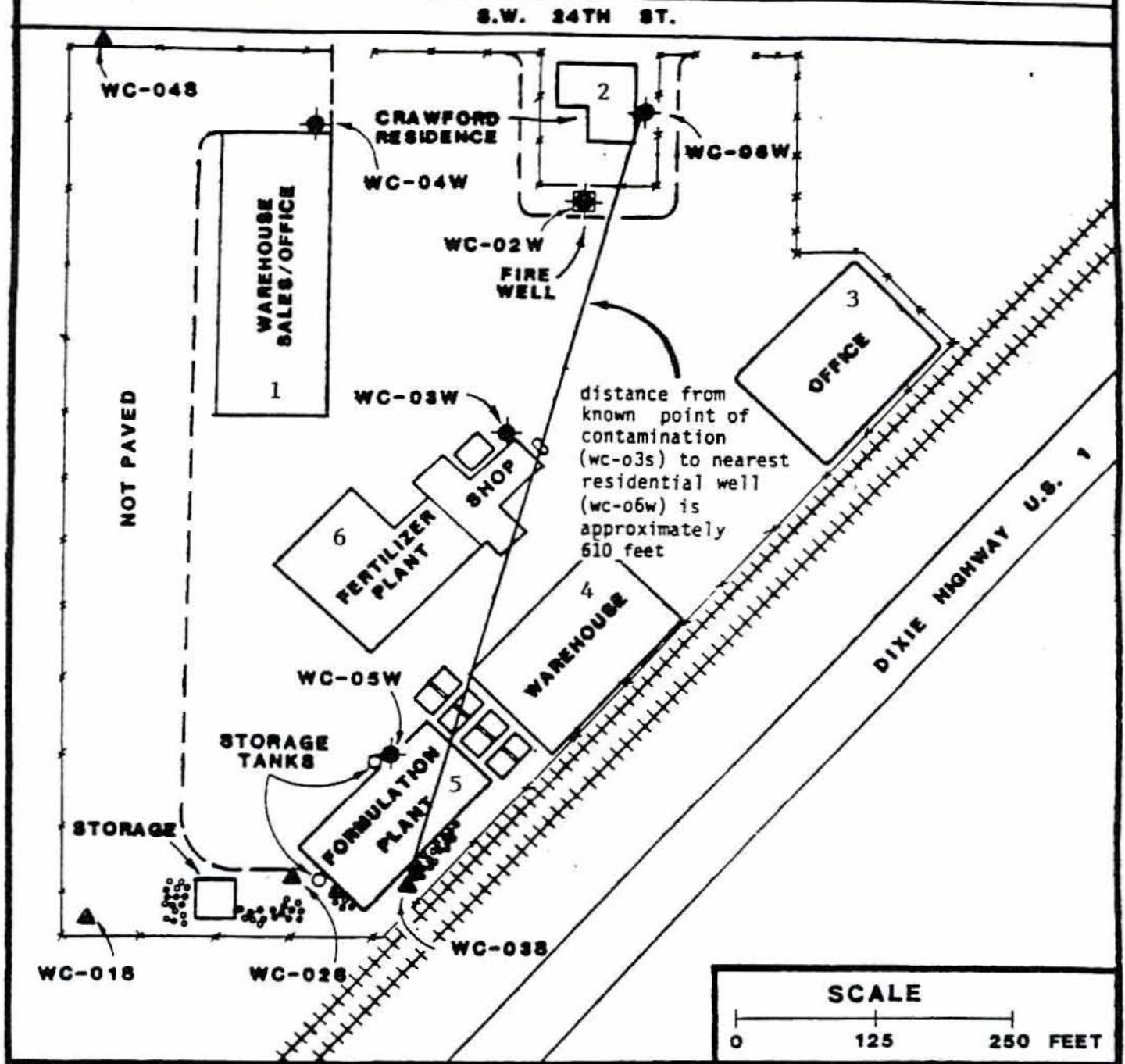
Project officer:	Max M. Howie, Jr. Environmental Health Scientist Division of Health Assessment and Consultation
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Appendices

1. Figure #1: Site Map of Woodbury Chemical Company, Princeton, Florida
2. Figure #2: Canals and well fields in the vicinity of the Woodbury site



FIGURE 1: WOODBURY CHEMICAL COMPANY SITE MAP  
PRINCETON, FLORIDA



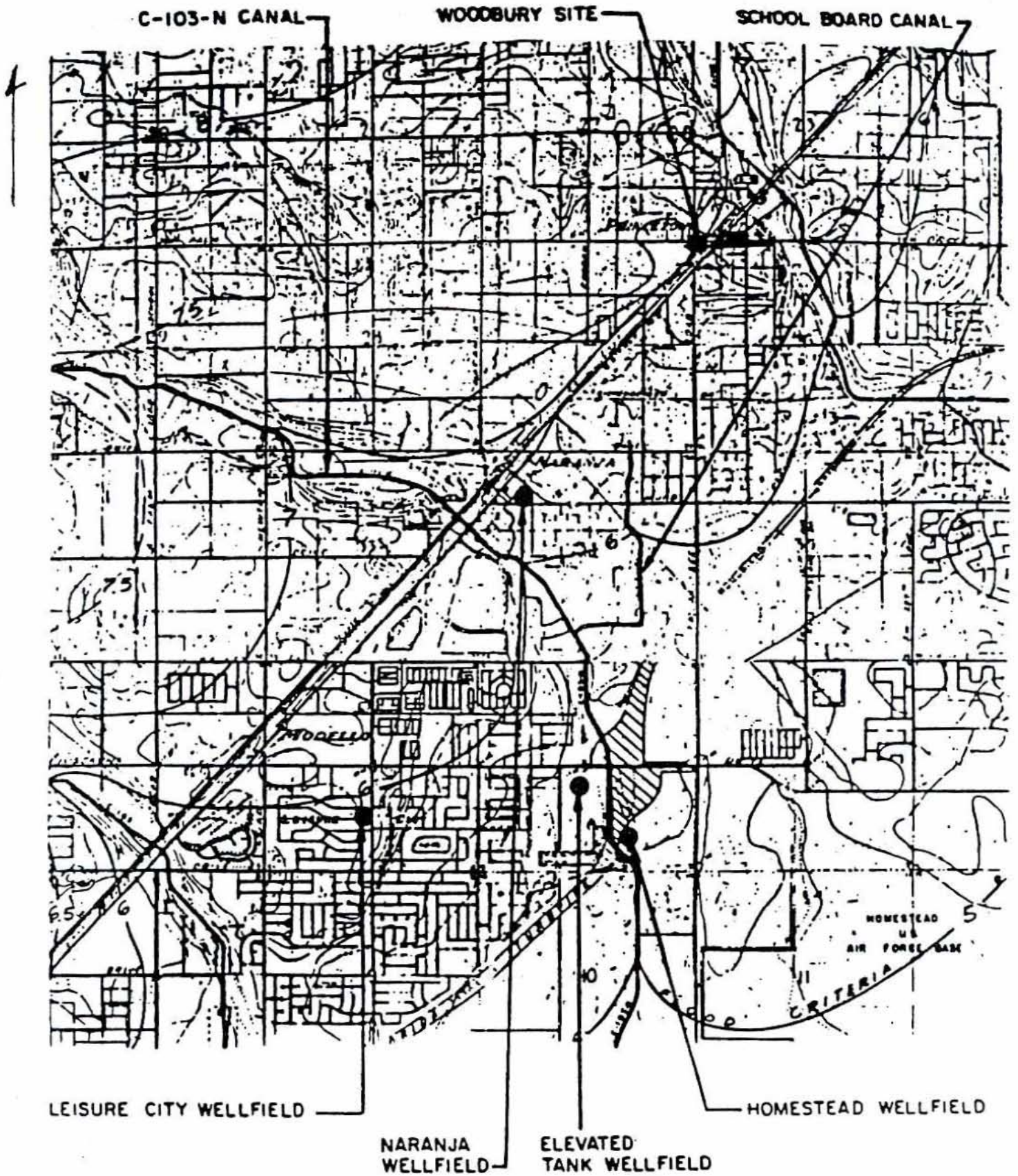
LEGEND

- ◆ - GROUNDWATER SAMPLES
- ▲ - SURFACE SOIL SAMPLES



A Halliburton Company





FROM DADE COUNTY ENGINEER  
TOPOGRAPHIC MAP, 1955

0 1000 2000 3000 FEET

FIGURE 2  
CANALS AND WELLFIELDS IN THE VICINITY OF  
WOODBURY SITE