

HEALTH CONSULTATION  
ESCAMBIA WOOD-PENSACOLA/RESIDENTIAL SOIL SAMPLES  
PENSACOLA, ESCAMBIA COUNTY, FLORIDA  
CERCLIS NO. FLD008168346

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Prepared by

Florida Department of Health and Rehabilitative Services  
Under Cooperative Agreement with the  
Agency for Toxic Substances and Disease Registry

## Background and Statement of Issues

The Florida Department of Health and Rehabilitative Services (Florida HRS), through a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR) in Atlanta, Georgia, evaluates the public health significance of Superfund hazardous waste sites in Florida. The U.S. Environmental Protection Agency (EPA) has requested that Florida HRS evaluate the health effects of exposure to contaminants detected in soil samples collected in the neighborhood near the Escambia Wood-Pensacola (AKA Escambia Treating Company) site. These samples were collected in the neighborhood adjacent to the northern border of the site and analyzed for volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), pesticides, metals, and dioxins/furans. EPA has provided Florida HRS with the analysis results of these soil samples (1, 2). We have determined that a health consultation to evaluate the soil sampling data is an appropriate response to the request. The interpretation, advice, and recommendations presented in this report are situation-specific and should not be considered applicable to any other situations.

The Escambia Wood - Pensacola (Escambia) site, also known as the Escambia Treating Company site, occupies about 26 acres at 3910 North Palafox Highway, Pensacola, Escambia County, Florida (Figures 1-3). The site is bordered by Palafox Highway to the west, the Rosewood Terrace subdivision to the north, the CSX railroad yard to the east, and a light industrial area to the south. The facility began treating wooden utility poles and foundation pilings with creosote in 1942. The company switched to the use of pentachlorophenol (PCP) for the wood treatment process in 1963 and used it as the only preservative after 1970 (3, 4). The company employed about 35 people (5). After the company ceased operations in 1982, much of the equipment and materials were salvaged from the grounds. The facility office building, several sheds and the wood treatment wastewater ponds remained (6).

In 1987, the Florida Department of Environmental Regulation (FDER) (now the Florida Department of Environmental Protection (FDEP)) found PAHs and PCP in groundwater on the Escambia site. These compounds were similar to those found in groundwater at another hazardous waste site (Agrico Chemical Company) less than one mile hydraulically down-gradient from the EWP site (6). In 1991, the owners of the Escambia site filed for bankruptcy and abandoned the site. That same year, EPA sampled the groundwater, soil and air at the site and found that soil and groundwater were contaminated with PAHs, PCP, and dioxins/furans (4). EPA determined that removal of the contaminated soil was necessary to prevent further contamination of the groundwater. In October 1991, EPA's Environmental Response Team began excavating contaminated soil and stockpiling it on-site under a secure high density polyethylene liner. EPA completed excavation work and secured the site in early 1993.

During the soil excavation, nearby residents complained about strong odors that caused eye and skin irritation. As a result of these complaints, ATSDR held five public meetings to discuss the health concerns of local residents, document health problems, answer questions, and provide information about plans for a health education program and health evaluation

study. EPA temporarily relocated two residents because of health problems. Based on the recommendations of a health consultation prepared by ATSDR (7), Florida HRS provided a health educator to conduct community education programs to inform residents about health effects from exposure to contaminants at the site. Florida HRS, with support from ATSDR, also conducted four physician education seminars, attended by about 180 physicians, to inform them about the effects of environmental exposure to site-related contaminants.

According to 1990 census data (8), about 925 people live within a one-quarter mile radius of the site and about 4,500 people live within one mile. The neighborhoods around the site are low to lower-middle income. The population within one-quarter mile is 99% African-American. Within one mile, the population is about 71% African-American. There are five daycare centers, one hospital and three public schools within one mile of the site.

The area within one mile of the site is mixed residential/light industrial/commercial. There is an industrial park south of the site, the CSX railroad yard to the east, and commercial businesses along Palafox Highway on the west. Rosewood Terrace, a residential neighborhood, is adjacent to the northern border of the site, and the Escambia Arms apartment complex, a public housing project, is within one-quarter mile north of the site. The Agrico Chemical Company Superfund site is about two-thirds of a mile to the southeast.

In July 1995, contractors for EPA collected and analyzed 70 surface soil (0 - 1 foot) and 18 subsurface soil (2 - 3 feet) samples from locations in the neighborhood near the Escambia site (Figure 4). Samples were analyzed for VOCs, PAHs, pesticides, metals, and dioxins/furans. Table 1, below, presents the highest level of each contaminant of concern found in the surface soil samples. Those contaminants that are known or suspected human carcinogens were evaluated for both carcinogenic and non-carcinogenic adverse health effects.

**Table 1. Maximum Concentrations in Surface Soil Samples**

Contaminants of Concern	Maximum Concentration (mg/kg)
Aldrin	0.08
Antimony	21
Arsenic	7
Benzo(a)pyrene	0.79
Chlordane	0.83
Dieldrin	0.14
Dioxin (TEQ)	0.0025
Heptachlor	0.27
Heptachlor Epoxide	0.19
Lead	120

mg/kg - milligrams per kilogram

Source: (1, 2)

## Discussion

To evaluate health effects, ATSDR has developed Minimal Risk Levels (MRLs) for contaminants commonly found at hazardous waste sites. The MRL is an estimate of daily human exposure to a contaminant below which non-cancer, adverse health effects are unlikely to occur. ATSDR developed MRLs for each route of exposure, such as ingestion, inhalation, and dermal contact, and for the length of exposure, such as acute (less than 14 days), intermediate (15 to 364 days), and chronic (greater than 365 days). ATSDR presents these MRLs in Toxicological Profiles. These chemical-specific profiles provide information on health effects, environmental transport, human exposure, and regulatory status.

To estimate the maximum likely daily exposure to each contaminant of concern in surface soil, we used the maximum level of each contaminant, a standard incidental soil ingestion rate of 200 mg/day for children and 100 mg/day for adults, and a standard body weight of 15 kg for children and 70 kg for adults.

ATSDR has developed MRLs for aldrin, arsenic, benzo(a)pyrene, chlordane and dieldrin (9, 10, 11, 12, 9). The estimated maximum daily dose for each of these chemicals does not exceed the respective MRL. Therefore, adverse non-carcinogenic health effects from

exposure to them are unlikely. Each of these chemicals is a known or possible human carcinogen. However, lifetime exposure would result in an insignificant increase in the risk of cancer.

No ATSDR MRL is available for antimony, heptachlor or heptachlor epoxide (13, 14, 14). However, an EPA oral reference dose (RfD) is available for each. The estimated maximum daily dose of each of these chemicals does not exceed the respective RfD. Therefore, adverse non-carcinogenic health effects from exposure to them are unlikely. Antimony has not been classified for cancer effects in humans. Therefore, we do not know if lifetime exposure would result in any increased cancer risk. Heptachlor and heptachlor epoxide are possible human carcinogens. However, lifetime exposure would result in an insignificant increase in the risk of cancer.

ATSDR has developed an MRL for dioxin (15). The likely maximum daily dose of dioxin exceeds the MRL for children and slightly exceeds the MRL for adults. Although only a few soil samples collected in residential yards along the border of the site had elevated dioxin levels, incidental ingestion of surface soil containing these levels of dioxin may impair the immune system or affect liver enzyme levels.

The U.S. Public Health Service and EPA are currently reviewing the data on the cancer risk from exposure to dioxin. Because of the uncertainty involved in estimating the cancer risks from exposure to dioxin, we are currently unable to determine the cancer risks from exposure to dioxin for residents in the neighborhood north of the Escambia site.

There is no ATSDR MRL or EPA RfD available for lead (16). However, the estimated maximum likely daily dose of lead from incidental ingestion of surface soil is below the level at which adverse health effects have been observed in both humans and animals. Therefore, adverse non-carcinogenic health effects from exposure to lead are unlikely.

Although exposure to lead has been shown to cause cancer in animals, there is inadequate evidence for the carcinogenicity of lead in humans (16). Therefore, we do not have enough toxicological information to estimate what, if any, cancer risk may exist from exposure to lead at the levels found in surface soil in the neighborhood north of the Escambia site.

## Conclusions

Based upon the information reviewed, Florida HRS concludes that, except for dioxin, exposure to contaminants in the surface soil from the neighborhood near the Escambia site are unlikely to cause adverse health effects. Dioxin in a few surface soil samples is at a level that may cause adverse non-carcinogenic health effects in children or adults, such as immune system impairment or liver damage. Lead and dioxin are both possible human carcinogens. However, we do not have enough toxicological information to determine what cancer risk there may be from exposure to lead and dioxin. If additional information becomes available indicating exposure at levels of concern, Florida HRS will evaluate that

information to determine what actions, if any, are necessary.

### Recommendations

Florida HRS recommends that EPA limit exposure of residents to surface soil containing elevated levels of dioxin. We also recommend that ATSDR continue efforts to develop guidance for assessment of the health risks to humans from exposure to dioxin and lead.

### References

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12. Agency for Toxic Substances and Disease Registry. Toxicological Profile for Chlordane. ATSDR: Atlanta. May 1994.
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14. Agency for Toxic Substances and Disease Registry. Toxicological Profile for Heptachlor/Heptachlor Epoxide (Update). ATSDR: Atlanta. April 1993.
15. Agency for Toxic Substances and Disease Registry. Toxicological Profile for 2,3,7,8-Tetrachloro-Dibenzo-p-Dioxin. ATSDR: Atlanta. June 1989.
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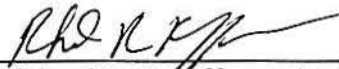
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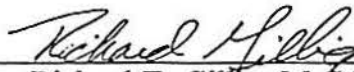
## CERTIFICATION

This Escambia Wood-Pensacola/Residential Soil Samples Health Consultation was prepared by the Florida Department of Health and Rehabilitative Services under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the health consultation was begun.



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The Division of Health Assessment and Consultation, ATSDR, has reviewed this health consultation, and concurs with its findings.



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Figure 1. State Map Showing Location of Escambia County

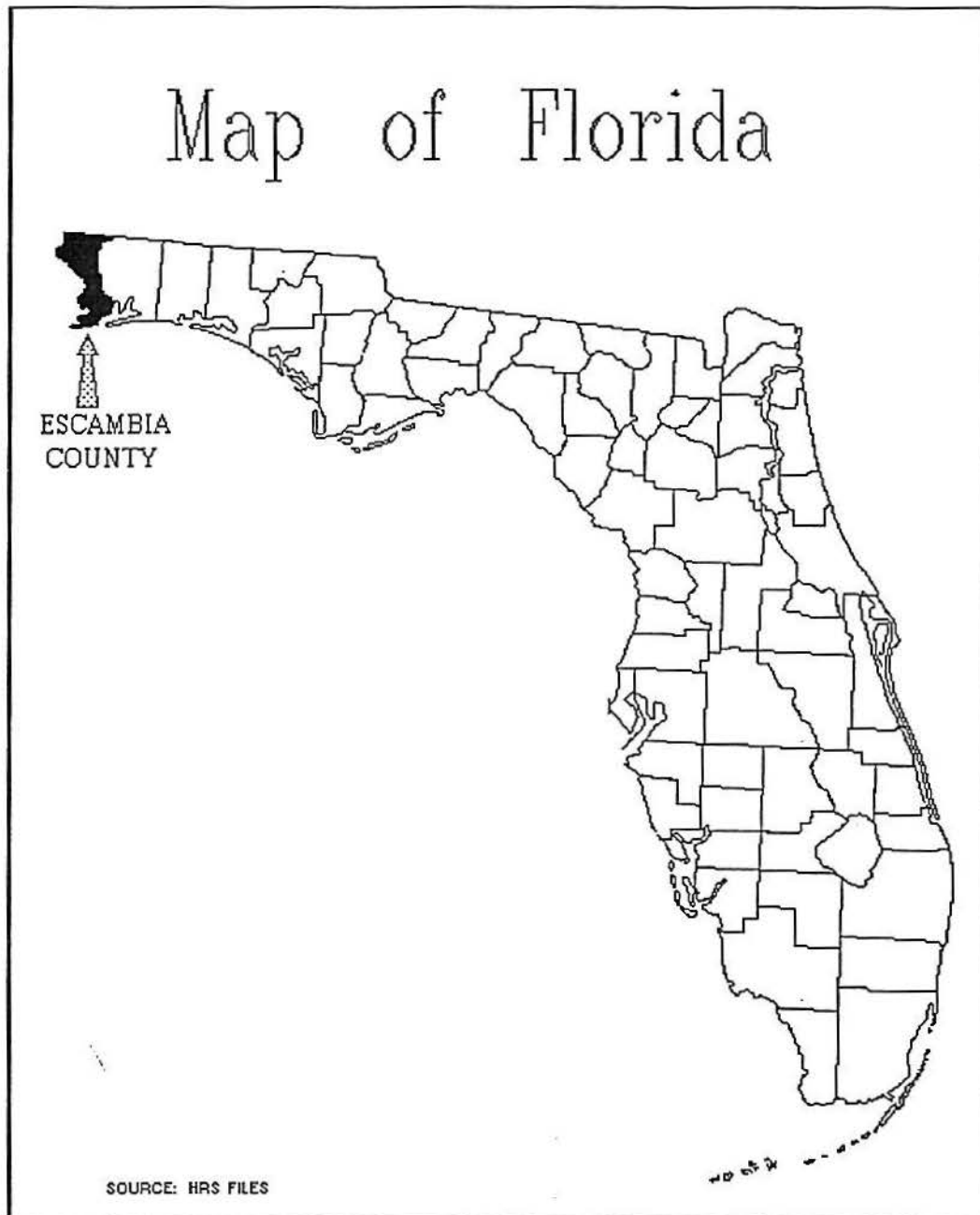


Figure 2. Location of Pensacola in Escambia County

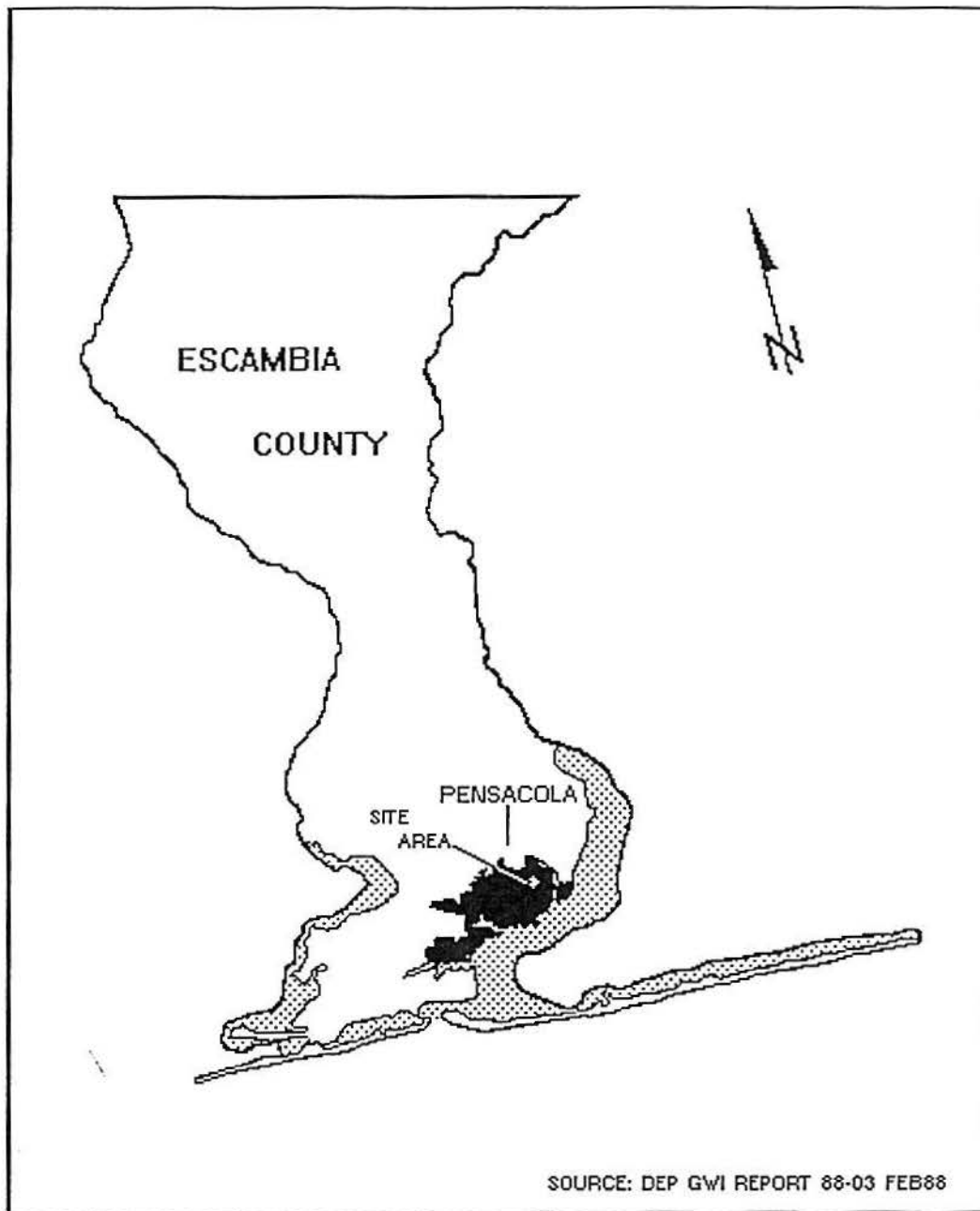


Figure 3. Location of Escambia Wood-Pensacola Site in Pensacola



Figure 4. Detail of Escambia Neighborhood

