

**Health
Assessment
for**

**CHEMFORM, INC. SITE
CERCLIS NO. FLD080174402
POMPANO BEACH, BROWARD
COUNTY, FLORIDA
AUGUSY 27. 1990**

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

PRELIMINARY HEALTH ASSESSMENT

CHEMFORM, INC.

POMPANO BEACH, BROWARD COUNTY, FLORIDA

CERCLIS NO. FLD08017402

Prepared by

Florida Department of Health and Rehabilitative Services

Under Cooperative Agreement with the

Agency for Toxic Substances and Disease Registry

BACKGROUND

The Chemform, Inc., site is located at 1410 S.W. 8th Street, Pompano Beach, Florida (see Figure 1). The general area is industrial and the adjacent facility on the east is the location of the former Wilson Concepts of Florida proposed NPL site (see Figure 2). Chemform, Inc., operated from 1967 to 1985. Metalworking equipment was used at the site to manufacture jet aircraft engine parts. The facility was also engaged in the manufacture of metalworking machinery using an acid-based process.

The Florida Department of Environmental Regulation (DER) files indicate compounds such as trichloroethene, Okite oil solvent (a lubricant), and ethylene glycol were in use on the site. Waste-oil sludge was noted on site during August 1984, but the presence or absence of trichloroethene, Okite oil solvent, and ethylene glycol were not addressed in the reviewed information.

Liquid and sludge wastes generated on site were held in stainless steel tanks west of the building (see Figure 2) for transport; however, wastes have not been picked up for three years. The present owner of Chemform stated that Chemform never discharged wastes to either the septic or sanitary sewer system, but indicated Chemform has had four owners since its inception (2). Chemform has not operated since September 1985; but in February 1989, several cars and one person were observed at the Chemform building.

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

1. Document of Hazard Ranking System of Chemform, Inc., Pompano Beach, Florida, Environmental Protection Agency (EPA) Region IV, J.J. Dupont-8/25/87
2. Report Chemform, Inc., Site, Pompano Beach, Florida, Site #B01 ESD Project #85E-130, EPA-1985
3. Site Screening Investigation Report; Appendices, 1986, Chemform, Inc./Wilson Concepts Inc. site; Pompano Beach, Florida, NUS Corporation Superfund Division.

ENVIRONMENTAL CONTAMINATION AND PHYSICAL HAZARDS

On-SITE Contamination

According to the site investigation performed in 1986 by NUS Corporation (EPA, 1986), elevated concentrations of polychlorinated biphenyls (PCBs) and nickel were found in surface and subsurface soils on site; elevated concentrations of chromium, copper, mercury, nickel, and vanadium were found in ground water on site.

<u>MEDIA</u>	<u>Contaminant</u>	<u>RANGE (UNIT)</u>	
Ground Water	Chromium	287 - 725	ug/l
	Copper	180	ug/l
	Mercury	JN 0.5 - JN 6.7	ug/l
	Nickel	16 - 550	ug/l
	Vanadium	6 - 49	ug/l
Surface and Subsurface Soil	Nickel	J 110 - J 48,000	mg/kg
	PCB-1254	330 - J 4,600	ug/kg

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

N = Presumptive Evidence of Presence of Material

Off-Site Contamination

Off-site ground water and soil samples were tested but these samples were not collected downgradient of the site.

Physical Hazards

A site visit was made in February 1989 by DHRS and the Agency for Toxic Substances and Disease Registry (ATSDR) staff. The abandoned drums and machinery and the collapsing roof on the plant building probably would not represent physical hazards for the public because of restricted access. Site access was restricted by a guard dog and a 6-foot high chain link fence, topped with barbed wire.

POTENTIAL ENVIRONMENTAL AND HUMAN EXPOSURE

Potential environmental pathways of concern defined to date are ground water, surface soils, and subsurface soils on site, which may allow movement of contaminants off site where greater numbers of people could be exposed. No surface water bodies are located on or near the site. On-site and off-site air, plants and animals, and off-site ground water and soil may be potential pathways of environmental and human exposure. Although subsurface soil and ground water have been sampled off site, this information is insufficient to rule out soil and ground water as pathways of contaminant migration. Air quality and plants and animals have not been addressed on or off the site.

Ground Water

Ground water is an environmental pathway of primary concern because chromium, copper, mercury, nickel, and vanadium were found in ground water on site at levels likely to be of health concern. Although there is

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Ground water is an environmental pathway of primary concern because chromium, copper, mercury, nickel, and vanadium were found in ground water on site at levels likely to be of health concern. Although there is

limited information on ground water quality off site, off-site ground water cannot be ruled out as a possible environmental pathway for human exposure. The Biscayne Aquifer is the sole source of potable water for this area and supplies all municipal water in Broward County. Quartz sand and the underlying limestone unit comprise this unconfined aquifer at the site. Numerous cavities in the limestone result in high horizontal and vertical permeabilities which facilitate movement of contaminants into ground water as well as movement of contaminated ground water off site.

Surface and Subsurface Soils

Surface soil and subsurface soil on site contain high concentrations of nickel and PCB-1254. Since the site is located in a flat area and vegetation is sparse in unpaved areas on site, windblown contaminated dust at Chemform may be an environmental pathway of concern. The receptors of this contamination include workers at the truss plant south of the industrial access road from Chemform.

Contamination of the environmental media identified above results in the following potential human exposure pathways:

1. Inhalation, dermal exposure, and incidental ingestion of contaminated soil due to disturbance of the soil during building, excavation, or removal actions are the potential human exposure pathway of greatest concern. Receptors would be remediation workers, employees of the new firm operating at the (east) adjacent site, and workers at the truss plant south of Chemform.
2. Ingestion, inhalation, and dermal absorption of contaminants from ground water would be of concern for residences within three miles of the site who use private wells for domestic water. This is not a concern to residents using municipal water. The municipal well fields within three miles of the site are not in the flow path of ground water potentially contaminated by chemicals from Chemform.

DEMOGRAPHICS

The site is located in an industrial area of Pompano Beach in northeastern Broward County, Florida. This industrial area is not heavily developed; the Carter and Crawley plant (located in the former Wilson Concepts of Florida building) and a truss factory appear to be the only active businesses in the immediate area. The city of Pompano Beach's Palm-Aire well field, Eastern Pompano Beach well field, and the Broward County District 1B and 1C well fields are located at least partially within a 3-mile radius of the site. Water from two currently active well fields, plus two standby site well fields, is supplied to approximately 93,000 people.

EVALUATION AND DISCUSSION

Elevated levels of nickel and PCB-1254 in soil; and chromium, copper, mercury, nickel, and vanadium in ground water on site indicate a possibility of future off-site migration. Further investigation should be conducted to characterize the full extent of soil and ground water contamination.

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 possible exposure to hazardous substances via ingestion of contaminated ground water, and inhalation or dermal exposure and incidental ingestion of contaminated dust. On-site and off-site air, plants and animals, and off-site ground water and soil may be potential pathways of environmental and human exposure. These pathways cannot be ruled out until they have been further addressed by sampling. In the event that remediation work, building, or excavation work are initiated on site that disturb soil, the population at risk includes site workers at the former Wilson Concepts of Florida site nearby and employees of the truss factory south of Chemform.

Ground water on site contains copper, mercury, nickel, chromium, and vanadium at potential health concern levels. High horizontal and vertical permeabilities of the unconfined Biscayne Aquifer, which immediately underlies the site, suggest that off-site ground water should be further tested, especially downgradient. Since a trailer park and other residences are located within a 1-mile radius of Chemform, a private well survey should be conducted. Identified wells should be monitored for metals, metalloids, and solvents, especially trichloroethene, ethylene glycol, and the degradation products of trichloroethene and ethylene glycol.

In accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended, the Chemform, Inc., Site, Pompano, Florida, has been evaluated for appropriate follow-up with respect to health studies. Although there are indications that human exposure to on-site and off-site contaminants may possibly be currently occurring and may have occurred in the past, this site is not being considered for follow-up health studies at this time because no exposed population had been identified (the area is mainly industrial). However, if data become available suggesting that human exposure to significant levels of hazardous substances is currently occurring or has occurred in the past, ATSDR and the Florida Department of Health and Rehabilitative Services will reevaluate this site for any indicated follow-up.

When indicated by public health needs, and as resources permit, the evaluation of additional relevant health outcome data and community health concerns, if available, is recommended.

PREPARERS OF REPORT

Environment and Health
Effects Reviewer:

Connie Garrett, M.S.
Environmental Specialist III
Toxicology and Hazard Assessment

Health Implications
Reviewer:

Andrew Reich, M.S., M.S.P.H.
Biological Administrator III
Toxicology and Hazard Assessment

ATSDR REGIONAL REPRESENTATIVE

Regional Representative:

Chuck V. Pietrosewicz
Senior Public Health Advisor
Regional Services, Region IV

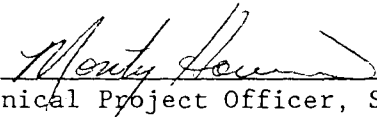
ATSDR TECHNICAL PROJECT OFFICER

Project Officer:

Max M. Howie, Jr.
Environmental Health Scientist
Division of Health Assessment and
Consultation

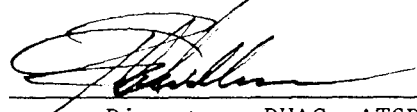
CERTIFICATION

This health assessment 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 assessment was initiated.



Technical Project Officer, SPS, RPB, DHAC

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



Director, DHAC, ATSDR

Appendices

1. Figure 1 - Site location map of Chemform Inc. and district well fields 1B and 1C.
2. Figure 2 - Site map and sampling locations at Chemform, Inc., Pompano Beach, Broward County, Florida.

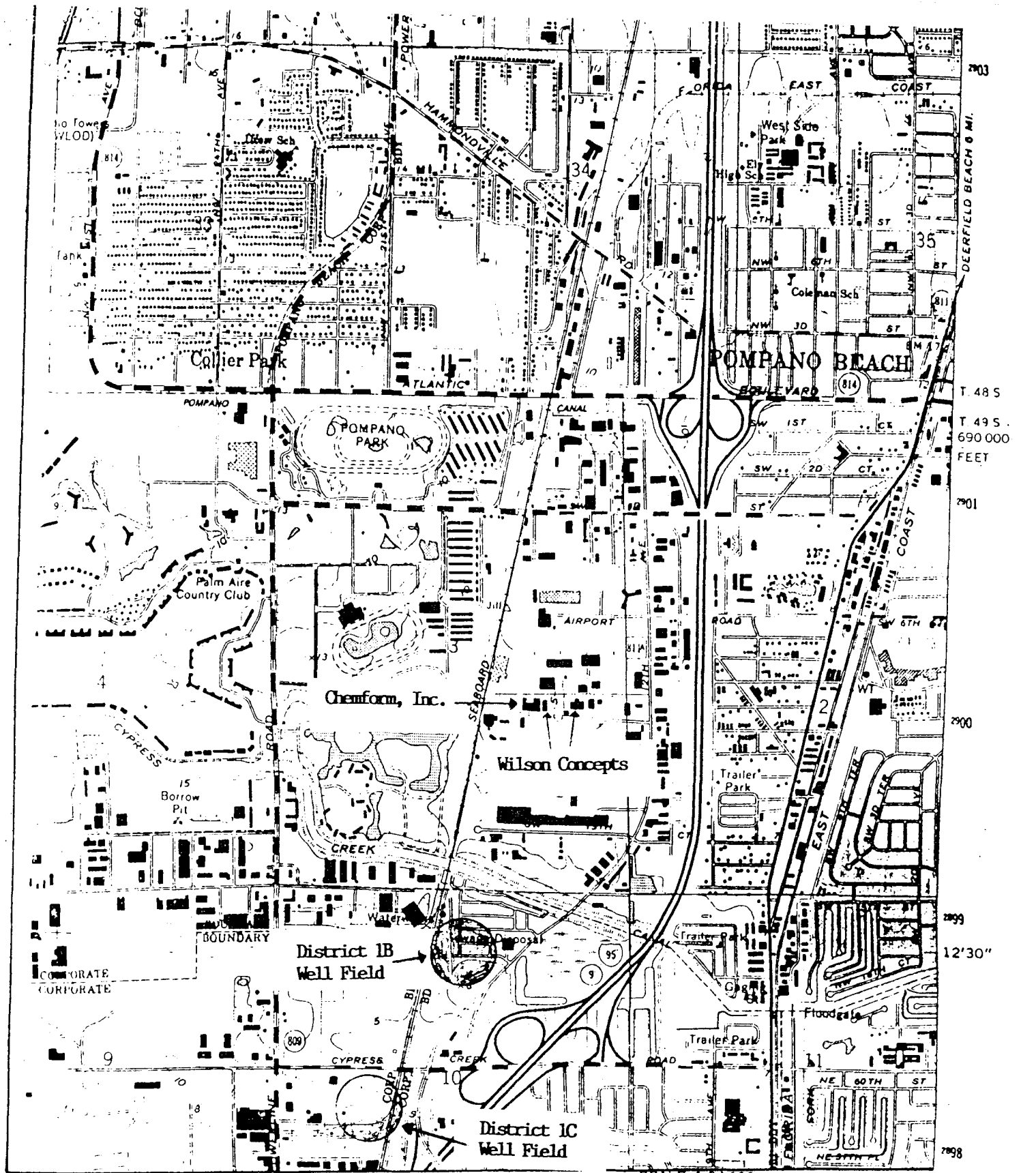


FIGURE 1. SITE LOCATION MAP OF CHEMFORM INC., WILSON CONCEPTS AND DISTRICT WELL FIELDS 1B AND 1C

A GRID AND 1983 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

