

Health Assessment for

INDUSTRIAL LATEX CORPORATION

CERCLIS NO. NJD981178411

WALLINGTON BOROUGH, BERGEN COUNTY, NEW JERSEY

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

THE ATSDR HEALTH ASSESSMENT: A NOTE OF EXPLANATION

Section 104(1)(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.

HEALTH ASSESSMENT
INDUSTRIAL LATEX CORPORATION
BERGEN COUNTY
WALLINGTON BOROUGH, NEW JERSEY

Prepared by
New Jersey Department of Health (NJDOH)
and
Division of Science and Research
New Jersey Department of Environmental Protection (NJDEP)

Prepared for
Agency for Toxic Substances and Disease Registry (ATSDR)

OBJECTIVES

The Industrial Latex site was the subject an expanded site investigation and characterization conducted by the U.S. Environmental Protection Agency (USEPA) in 1987. The main Remedial Investigation and Feasibility Study (RI/FS) is in the second year of the work plan. The objectives of this Health Assessment, based on the current stage of site investigation and remediation, are to:

- * Assess the nature and magnitude of health effects associated with the site and determine the site's degree of public health concern;
- * Identify, if necessary, immediate actions necessary to minimize exposure to hazards and contamination associated with the site;
- * Identify, if necessary, deficiencies in information and data relating to the site;
- * Review remedial activities within the context of potential public health implications;
- * Document the concerns of the community with regard to the site;
- * Assess whether additional health study or investigation of the site is warranted.

SUMMARY

Industrial Latex site is presently an inactive site situated in Wallington, a metropolitan area of northern New Jersey. It is bounded by residential, industrial and recreational areas, and occupies

approximately 9.7 acres. When in operation from 1951 to the early 1980's, Industrial Latex manufactured chemical adhesives and synthetic rubber formulations. Evidence of extensive use, storage, spillage, and leakage of aromatic and chlorinated solvents has been documented at the site. Significant environmental pathways are associated with the soil and groundwater media. A polychlorinated biphenyl (PCB) and products of PCB combustion (furans and dioxins) have been found in surface soils. A cancer cluster investigation performed for Wallington showed incidence consistent with State averages. The Industrial Latex Corporation site was added to the National Priorities List (NPL) in March 1989, and is ranked 97 of 108 NPL sites in New Jersey. ATSDR and NJDOH consider the Industrial Latex site to be of public health concern. This site is being evaluated for follow-up health study and/or evaluation.

SITE DESCRIPTION

The Industrial Latex Corporation site is located at 350 Mount Pleasant Avenue, in Wallington, New Jersey. From 1951 until 1983, chemical adhesives and natural and synthetic rubber compounds were formulated at this location. Industrial Latex is presently an inactive facility. The site consists of 9.7 acres in an area of intensive industrial and residential development. It is adjacent to a Conrail/New Jersey Transit rail line, an outdoor recreation area and the Jefferson Elementary School.

The Industrial Latex property has an average elevation of 60 feet above sea level and is in a small valley. The property has an 8.2 percent slope to the east toward the railroad tracks. Surface drainage is along the tracks toward the Saddle River, about one mile to the north.

There are two buildings on the site. There are 300-400 drums stored in front of one of the buildings; many drums are leaking and in poor condition. Additionally, there are four tractor trailers on-site which were used to store drums. It is alleged that on-site septic systems were used to dispose of chemical wastes.

In 1980, the New Jersey Department of Environmental Protection (NJDEP) conducted an initial site inspection and documented evidence of contamination. Concern centered on soil contamination resulting from leaking and overturned drums, and the potential for groundwater contamination due to the alleged practice of disposing chemical wastes into septic systems. In 1983 and 1985, the NJDEP obtained samples from on-site drums. In 1986 the EPA-Emergency and Remedial Response Division (EPA/ERRD) submitted a Preliminary Site Assessment Report and recommended that a removal action be initiated under CERCLA. During the period from 1986 to 1987, the EPA/ERRD removal action was conducted. In 1987, a USEPA contractor, the NUS Corporation conducted an expanded site inspection. The main Remedial Investigation/Feasibility Study of the site is currently in the second year of the workplan.

SITE VISIT

The perimeter of the site was visited in April 1989 by NJDEP. The fence was in good repair and warning signs were evident. Two people walking dogs were observed at the boundary. One individual reported that he did not see children playing in the area, but did request that air sampling be conducted at Jefferson Elementary School, located across the street from the site.

The outdoor recreation area on the southern border of the site appeared to be in use. The railroad tracks on the east side of the site are easily accessible from this location. The ditch along the tracks is where surface run-off or seepage from the site would travel. Standing water, algae and grasses were observed in this ditch. PCBs have been detected in sediment of the ditch. The residential backyards on the other side of the tracks appear to be well below the elevation of the site.

The Saddle River, which is about one mile north of the site and receives run-off water from the site, was examined upstream of the discharge (near Felician College). The banks were steep and the current swift. There seemed to be little possibility of recreational use of the River at that location.

COMMUNITY CONCERNS

Concerns which have been raised by the local community with regard to the Industrial Latex Corporation site focus upon two general issues:

- * The site's perceived contribution to the general groundwater contamination of the area.
- * The possibility of site contaminants threatening nearby schools and residential areas.

The municipal wells of Wallington Borough were closed due to contamination in 1986. Since then, the municipality has been served by an alternate public water supply. Although the site may have contributed to the groundwater contamination problem, it is seen as one of many sources of contamination. Local health authorities report that private wells in the area are still used for non-potable purposes. There is public concern over the potential health effects of past long-term use of contaminated water for potable purposes.

In 1986 and 1988, citizens expressed concerns regarding the impact of the site upon air quality in the vicinity of nearby schools and private residences. Airborne particulates and volatilized organic chemicals are perceived as a viable threat by local citizens.

ENVIRONMENTAL CONTAMINATION AND PHYSICAL HAZARDS

Significant environmental pathways at the Industrial Latex site are associated with groundwater and on-site soils. The site has been contaminated by on-site disposal of chemical process wastes, leaking drums of chemicals, underground storage tanks, and by-products of burning PCB contaminated waste oil. Approximately 1600 drums, 22 below ground storage tanks, and 30 production vats were identified on this site by various inspections from 1980 to 1986. The hazardous waste quantity was estimated to be 83,450 gallons (Hazardous Ranking Report). Removal of the drums and tanks containing most of this waste was carried out from April 1986 to January 1987 by the EPA ERRD.

Limited soil sampling has occurred on the site to date. The main contaminants of concern at the site are PCBs, furans, and dioxins. Surface soil samples were collected in May 1987 by EPA and found to contain Aroclor 1260 in 43 of 45 samples. The concentrations of Aroclor 1260 ranged from trace to 2490 mg/kg (Final Expanded Site Inspection Report). Dioxin and furan are presumed to have resulted from the burning of PCB contaminated waste on site. Analysis of five surface soil samples for these contaminants were conducted. Levels of 2,3,7,8-tetrachlorodibenzo-furan (TCDF) were found as high as 341 and 338 nanograms per kilogram. No 2,3,7,8-tetrachlorodibenzo-dioxin (2,3,7,8-TCDD) was detected.

Volatile organic chemicals (VOC's) have been detected at low levels on the site. Table 1 presents concentrations of volatile organic chemicals that were detected at over 1 mg/kg in samples taken by EPA in 1986 (Expanded Site Inspection Report).

The off-site contaminants most clearly associated with the site are Aroclor 1260 (a PCB) and bis(2-ethylhexyl) phthalate. Both chemicals were found in sediment samples taken along the path of surface water run-off hundreds of feet from the site in the hundreds of parts per million range.

A 1985 NJDEP study of dioxin in aquatic biota and sediments detected a 2,3,7,8-TCDD concentration of 108 mg/kg a few miles from the site (Belton, et.al., "A Study of Dioxin in Aquatic Animals and Sediments"). This study identified an area of unexplained 2,3,7,8-TCDD (dioxin) contamination in carp near the confluence of the Saddle River and Passaic River. Recreational fishing, however, has not been observed in this area (Belton, et al.). A link between the dioxin in this segment of the River and its source has not been established. Furthermore, it is unlikely that the dioxin contamination in the River, at that location, is associated with the site because of the distance of the site from the confluence of the Saddle River and Passaic River and the failure to detect high concentrations of dioxin between the site and the River.

High concentrations of VOC's have been detected in off-site monitoring wells. The concentration of VOC's in the groundwater below the site is relatively low and there are other sources of VOC contamination in the area (Expanded Site Investigation Report, pg. 4-34). It is highly unlikely that the off-site VOC groundwater contamination is exclusively from Industrial Latex. The maximum concentration of groundwater contamination in the vicinity of the site is presented in Table 2.

Groundwater contamination has impacted drinking water quality in the area. Numerous VOC contaminants have been detected in Wallington's municipal wells. As a result, starting in February 1986, Wallington has purchased all of its water from the Passaic Valley Water Commission. Contaminants have not been detected by periodic samples analyzed under the New Jersey Safe Drinking Water Act (A-280) in Wallington's potable water since they started their total bulk purchasing of water. In 1985 and 1986, the maximum concentration (in ug/L) of the following chemicals were detected in raw or distribution well samples from Wallington municipal well water supply system: tetrachloroethylene (37), benzene (4), trans-1,2-dichloroethylene (1,148), trichloroethylene (89), 1,1-dichloroethane (12), 1,1,1-trichloroethane (14), 1,2-dichloropropane (23), 1,1-dichloroethylene (12), 1,2-dichloroethane (4.7), vinyl chloride (3), methylene chloride (3), chloroform (9.7), and bromodichloromethane (3.5). These wells are no longer used as a source of drinking water. Two production wells located 0.5 miles from the site have shown total VOC concentrations of about 200 ug/L and 1,2-dichloroethene at up to 150 ug/L (Expanded Site Investigation Report).

QUALITY ASSURANCE/QUALITY CONTROL

At least seven laboratories have been involved in sample analyses at this site. Work performed as part of the Field Investigation Team Activities and the Industrial Latex Removal Action has been under the authority of the USEPA, and subject to established standards and procedures. Specific quality assurance/quality control data was not available for review or evaluation.

DEMOGRAPHICS

There are approximately 26,000 people and eight schools located within one mile of the site (Final Expanded Site Investigation Report). An estimated 71,000 people obtain potable water from groundwater within three miles of the site (Expanded Site Investigation Report). Well records filed with the New Jersey Department of Environmental Protection identify 27 groundwater wells within three miles of the site, including wells to the northwest (downgradient) of the site. Although water from the Passaic Valley Water Commission is currently supplied to all homes in the area, it has not been clearly established whether any of the private wells are still used for potable and/or lawn-watering purposes.

There are homes and an outdoor recreation area adjacent to the site. Residential developments of four 1-family homes per acre border the east and west of the site. A multi-family housing complex is 0.25 miles to the south, and three schools are within 0.5 miles of the site.

ENVIRONMENTAL DATA GAPS

The Remedial Investigation and Feasibility Study (RI/FS) has not been completed on the Industrial Latex site. The following data and information needs are identified as desirable in formulating a comprehensive health assessment.

Limited on-site samples have been taken to date and most of the analyses have been run on composite samples, rather than discrete samples. Additional on-site soil investigation, therefore, is needed to fully characterize and delineate the contamination. Of particular importance is the need to better characterize PCB, VOC, and dioxin contamination, to identify and characterize areas that may contain potential "hot spots" (e.g. buried drums), and to better characterize the groundwater below the site.

The soil in the backyards of those residents on the opposite side of the railroad tracks from the site and of the outdoor recreation area needs to be sampled. It is unlikely that the groundwater contamination off-site is entirely due to the operation of Industrial Latex. A clearer understanding of groundwater use in the area is necessary. Although it is known that private wells and production wells exist in the area near Industrial Latex, it is not known how many, if any, of these wells are still in use. Because of the high level of contamination in groundwater near the site, (but probably not site-related) groundwater sources used for drinking may need to be sampled. However, further investigation is needed to define the source of the groundwater contamination off-site.

The extent of PCB migration off-site needs to be further evaluated. The potential for direct human contact and/or uptake by aquatic organisms are two concerns for PCB migration via surface water. The potential for PCB migration off-site via airborne particulate matter or through volatilization needs to be evaluated.

EXPOSURE PATHWAYS

The primary potential human exposure pathway associated with the Industrial latex site is the domestic and potable use of contaminated groundwater. Significant exposure may also occur through direct contact with or on-site soils (on-site soils have not yet been comprehensively characterized) although the site is presently fenced and there is no apparent public access.

Prior to February 1986, exposure to high levels of volatile organic chemicals in the drinking water was documented. Exposure to volatile organic chemicals in drinking water could occur via ingestion, inhalation, and dermal absorption. A well inventory was performed as part of the 1988 expanded site inspection conducted by NUS Corporation for USEPA. Existing wells within 1 mile of the site were identified, together with their use depth and geographic location. There are 3 domestic wells downgradient and within 1 mile of the site. However based upon existing groundwater data, no distinct contamination plume has been defined at the Industrial latex site.

There is no definitive data or information implying surface water or aquatic biota has been impacted by the site. Those pathways associated with surface water such as dermal contact, ingestion, or consumption of contaminated fish are therefore not of primary concern based upon existing information.

PUBLIC HEALTH IMPLICATIONS

Groundwater contamination by volatile organic chemicals has been documented in the area. While known contaminated supplies have been removed from service, all potential potable and domestic users may not have yet been identified. Exposure to volatile organic chemicals via contaminated groundwater has occurred in the past. Some of the volatile contaminants identified are suspected human carcinogens. The cumulative impact of this past exposure upon the public health is presently impossible to accurately assess.

Contact with PCBs may occur in areas where they have migrated off-site. The potential for PCB exposure via air and surface water also exists. Health effects from exposure to low concentrations of PCBs have not been documented. At higher concentrations of exposure (i.e., occupational situations), PCBs have been noted to cause skin irritations and liver damage. PCBs are currently listed as Class B2 (suspected human) carcinogens.

The nature of the documented contaminants on-site together with their close proximity to schools and residential areas represent a public health concern.

CONCLUSIONS AND RECOMMENDATIONS

Based upon information reviewed, ATSDR and NJDOH have concluded that this site is of public health concern because of the potential risk to human health resulting from possible exposure to hazardous substances at concentrations that may result in adverse health effects. As noted in the Environmental Contamination and Physical Hazards section above, human exposure to volatile organic compounds and polychlorinated biphenyls may be occurring and probably occurred in the past via the potable and domestic use of contaminated groundwater or direct contact with on-site soils.

Comprehensive evaluation of potential human exposure pathways will be dependent upon the data generated within the ongoing RI/FS. Of particular importance is investigation of possible soil contamination of adjacent residences and outdoor recreation areas, air sampling for PCBs, an investigation of the groundwater contamination in the area, characterization of soil/sediment receiving site drainage, and additional information on private well use in the area.

Future remedial activities at the site should be conducted in a manner which minimizes the adverse impact to the nearby sensitive populations and facilities. According to USEPA, air sampling has been performed at the Jefferson Elementary School in response to community concerns; however, this information was not available for review and evaluation as part of this Health Assessment.

In accordance with CERCLA as amended, the Industrial Latex site has been evaluated for appropriate follow-up with respect to health effects studies. Since human exposure to on-site and off-site contaminants may currently be occurring and has probably occurred in the past, this site is being considered for follow-up health effects studies. After consultation with regional EPA staff and State and local health and Environmental officials, the Division of Health Studies, ATSDR, and NJDOH will determine if follow-up public health actions or studies are appropriate for this site. ATSDR will be considering sites for inclusion in the benzene subregistry, and this site will be included in the consideration.

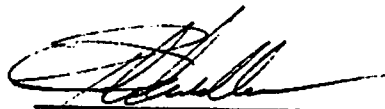
When indicated by public health needs, and as resources permit, the evaluation of additional relevant health outcome data and community health concerns, if available, is recommended.

CERTIFICATION

This Health Assessment was prepared by the New Jersey State Department of Health 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 (DHAC), ATSDR, has reviewed this Health Assessment and concurs with its findings.


Division Director, DHAC, ATSDR

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REFERENCES

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- United States Environmental Protection Agency (USEPA), Hazardous Ranking Report: Industrial Latex Corporation, 1987.
- USEPA, Final Expanded Site Inspection Report: Industrial Latex Site, January, 1988.
- USEPA, "On-Scene Coordinator's Report: Industrial Latex Removal Action", USEPA Region II, August, 1988.

File Reviews:

NJDEP Division of Hazardous Waste Management.

Interviews:

NJDEP Bureau of Groundwater Protection.

NJDEP Site Manager.

NJDEP Technical Coordinator.

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Table 1 -On-Site Surface Soil Contamination; Industrial Latex Site.

Compound	Concentration Range (mg/kg)
Methylene chloride	0.35 - 4.7
1,1-Dichloroethene	0.17 - 1.9
Benzene	1.9
4-Methyl-2-Pentanone	0.22 - 5.5
Toluene	0.11 - 13.5

Table 2 -Off-Site Monitoring Wells Contamination; Industrial Latex.

Chemical	Concentration (ug/L)	MCL (ug/L)
Benzene	5,290	1
Tetrachloroethene	24,000	1
Trichloroethene	22,300	1
Trans-1,2-Dichloroethene	64,000	10
1,2-Dichloroethane	2,010	2

MCL = Maximum Contaminant Levels (New Jersey Safe Drinking Water Act)