

**SITE REVIEW AND UPDATE**

**NASCOLITE CORPORATION**

**MILLVILLE AND VINELAND, CUMBERLAND COUNTY, NEW JERSEY**

**CERCLIS NO. NJD002362705**

Prepared by:

New Jersey Department of Health  
Environmental Health Service

Under Cooperative Agreement with the  
Agency for Toxic Substances and Disease Registry

## SUMMARY OF BACKGROUND AND HISTORY

The Nascolite Corporation site is located on the municipal boundary of the cities of Millville and Vineland, Cumberland County, New Jersey, on Doris Avenue just west of the intersection of U.S. Route 55 and Wheaton Avenue (Figures 1 and 2). The Nascolite Site occupies an area of approximately 17.5 acres, over half of which is wooded. The site includes the Nascolite manufacturing facility, the adjacent Nascolite-owned residential areas south and east of the facility, and wetland areas to the southwest (Figure 3). Six buildings served as the production facility, laboratory, and office for the company. Manufacturing and waste disposal activities were conducted on approximately seven acres.

The Nascolite Corporation, formerly known as the National Solvents Company, moved from Elizabeth, New Jersey, in the early 1940's, to its present location in 1952. At the Millville location the Nascolite Corporation was a manufacturer of poly methyl methacrylate (MMA) sheets, commonly known as acrylic or plexiglas. In its production of poly MMA, Nascolite used both scrap acrylic and liquid MMA monomer. The facility operated from 1953 to 1980. Currently, it is an inactive site.

The acrylic in the scrap material was reclaimed through a depolymerization process using a molten lead heat exchange furnace. Waste residues from the various distillation processes were stored in several buried tanks in the northern area of the plant to be burned later with other waste oils and solvents as fuel in the plant's boiler. Non-contact cooling water from the cracking process was piped to the resident plant owner's swimming pool, where it was cooled and returned to cool the heat exchangers. Waste waters from the non-contact cooling water and other on-site sources were discharged to a ditch southwest of the plant along Conrail railroad tracks.

Possible environmental concerns at the site were first brought to the attention of the Cumberland County Department of Health, in October 1979, when complaints were received from the Cumberland Recycling Company on Delsea Drive concerning odor problems with their well water. The New Jersey Department of Environmental Protection (NJDEP) began investigating the site and issued an Administrative Order in February 1980 requiring the Nascolite Corporation to stop discharging waste waters onto soils. In September 1981, an Administrative Consent Order (ACO) was signed, and the NJDEP Division of Water Resources (DWR) began in-depth investigations at the Nascolite site. Subsequent investigations of the Nascolite site revealed that hazardous wastes were improperly handled and stored on-site, and the soil and groundwater were contaminated. During the plant's operation, both surface runoff and waste water were discharged into a ditch that runs along the western boarder of the site near the railroad tracks. As a result of this practice, contaminated water eventually reached a small area of wetlands located in the southwest corner of the site.

The principle soil contaminant identified at the site was lead. Methyl methacrylate (6,000 to 32,000 ppm) was identified as the primary groundwater contaminant. The soil was also found to be contaminated with volatile and semi-volatile contaminants.

In May 1982, NJDEP personnel supervised the removal of ten cubic yards of soil contaminated with oil, plastic and other debris from the drainage ditch. The underground storage tanks for the distillation residues were excavated in 1983 and left lying on the ground north of the plant. When these tanks were removed it was noted that they had been slotted on their bottoms.

The Nascolite site was listed on the National Priorities List (NPL, a.k.a. Superfund) in September 1983.

A Removal Action conducted by the USEPA in November 1987 included identification and removal of over one hundred 55-gallon drums and several other underground storage tanks for proper off-site disposal. Some of the drums were removed by the Nascolite Corporation. The removal action by USEPA also included installing tarpaulins to cover soil contaminated with lead, covering remaining asbestos pipe installations, and securing all unsecured wells. In addition, the site was secured by a fence.

An initial Remedial Investigation/Feasibility Study (RI/FS) was conducted in November 1984 by TRC Environmental Consultants, Inc. At the conclusion of this RI/FS there was enough information to make a decision with respect to contaminated groundwater (Operable Unit 1) and a Record of Decision (ROD) was signed on March 31, 1988 by USEPA. OU1 consists of the following components: Groundwater extraction with on-site treatment and reinjection of treated effluent; additional studies to determine the appropriate remedial measures for the contaminated soils and on-site buildings; and provision of an alternate water supply for potentially affected residents.

A residential water-line was constructed by several Potentially Responsible Parties (PRP's) in June 1989 to provide the residents of Doris Avenue with a permanent potable water source in accordance with the ROD for OU1. It is important to note that these residential wells were never found to be contaminated.

A contractor hired by the PRP's, working under the guidance of the USEPA, is currently conducting design work for the remediation of contaminated groundwater. The final design for the groundwater pump and treat system received final USEPA/NJDEP approval in June 1995 (NJDEP, Personal Communication).

A ROD for the second operable unit (OU2) for the soils and source area was signed on June 28, 1991. OU2 deals specifically with the following: Structure demolition; excavation and solidification/stabilization of unsaturated and wetlands soils contaminated above cleanup standards; replacement of solidified soils on the site; restoration of affected wetlands; and appropriate environmental monitoring to ensure the effectiveness of the remedy.

Past public health and community concern about the Nascolite site has focused on the quality of area groundwater. In addition, there have been numerous complaints about odors emanating from the terminal building.

A Preliminary Health Assessment (PHA) for the Nascolite site was prepared for the Agency for Toxic Substances and Disease Registry (ATSDR) on June 3, 1987. The PHA noted that potential human exposure pathways were associated with inhalation of contaminated air, ingestion of contaminated surface and subsurface soil, and ingestion of contaminated groundwater. The PHA reported that contaminants of concern at the site consisted largely of volatile organic compounds, semi-volatile organic compounds, and metals. In addition, the PHA noted that radioactive materials had been found on site.

In its final conclusion, ATSDR categorized the Nascolite site to be of potential public health concern because human exposure to hazardous substances, at concentrations of concern, may occur. This potential exposure was thought to be particularly true regarding future remedial activities at the site.

The previous Health Assessment recommended the following:

- 1) Restrict access to the site.
- 2) Insure that residents do not come in contact with lead-contaminated soil off-site near the railroad tracks (western edge of the site).
- 3) Further characterize the full extent of the radioactive contamination in on-site environmental media and, if necessary, sample adjoining off-site areas in the migration pathway for possible radioactivity.
- 4) Resample for methylene chloride in monitoring wells.
- 5) Provide assurance that residents are not using well water from wells WP-6 and WP-10 for potable purposes.
- 6) Provide proper personal protective equipment and training to on-site workers removing hazardous materials.

### **CURRENT SITE CONDITIONS**

On November 1, 1994, J. Pasqualo and J.J. Winegar of the NJDOH visited the Nascolite site accompanied by a representative of an on-site contractor, Foster Wheeler Environmental Services. In addition, the New Jersey Department of Health visited the Nascolite Corporation Site on January 22, 1991, accompanied by representatives from NJDEP, the Cumberland County Health Department as well as the former caretaker for the Nascolite Corporation site. The following observations were made during the November 1, 1994 visit:

- The Nascolite site appears to be a "run down" industrial area of about 26 acres. It was overgrown, partially wooded, and about two-thirds of the site were wetlands (Figure 2). The

main production buildings were surrounded by a chain link fence installed by USEPA. The fence appeared to be in good repair and would make trespassing in this section difficult.

- Inside the fenced area were numerous buildings, offices, and a laboratory. Several process vessels/storage tanks were observed. One of the tanks removed from the ground had a series of slots apparently cut in the bottom. There were numerous 55 gallon drums and salvage drums staged near the main (fenced) entrance to the site.
- Much of the ground surface of the site was covered with small (< 1 in.<sup>2</sup>) chips of the scrap MMA used in the former manufacturing process. Small piles of scrap MMA chips were observed on the ground, particularly on the Northern side of the site.
- There were numerous physical hazards noted at the site including: broken down buildings; old manufacturing equipment; debris on the ground from the buildings, and whole and smashed acrylic sheets in large storage racks inside the old main plant building.
- A USEPA contractor, Foster Wheeler Environmental Services, was finishing an on-site evaluation a new groundwater bioremediation technology developed by second company (Zenon). This project was completed by the end of November 1995.
- There is a small group of residences located 200 to 300 feet west of the site on Doris Avenue.

Conditions at the Nascolite site, since the 1987 Preliminary Health Assessment, have not changed physically. However, significant amounts of new environmental sampling has been performed at the site since that time. These data were collected as part of a 1990 Supplemental RI/FS conducted for the USEPA, and served to further characterize the geophysical and environmental conditions of the site. This work filled many of the data gaps identified in the earlier environmental investigations and led to the signing of a second ROD for the second OU in June 1991.

The previous Health Assessment raised concerns about gross alpha radiation detected in one of the monitoring wells (MW-8S) during early 1985. It was uncertain whether the level measured was due to radioactive contamination of residue materials or to naturally occurring radioactive levels. More recent studies (June 1987) which included additional groundwater sampling and analysis, including MW-8S, have showed the level of alpha radiation to be below the detection limits.

The extent of downgradient groundwater contamination from the Nascolite site has not been fully delineated. It is known that the majority of the contaminants in the plume are VOC's and are located between the site and the Petticoat Stream, a distance of approximately 1 mile off-site toward the southeast. Residential drinking water wells in the area have not been impacted by the site.

It is important to note that none of the off-site potable wells have ever contained any detectable organic chemicals except methylene chloride, which is a common laboratory contaminant. One well

(WP-6) contained lead which ranged from 68 ppb to 78 ppb which is above the New Jersey drinking water action level of 15 ppb and the USEPA maximum contaminant level goal (MCLG) of zero. It is known, however, that this lead contamination is not site related since the well is located one mile upgradient of the site. Soon after this contaminated well was discovered, the owners were advised by the Cumberland County Health Department to discontinue usage of the water for potable purposes. Since June, 1989 area residents have been connected to the municipal water supply.

## **CURRENT ISSUES**

When the original ATSDR Preliminary Health Assessment (PHA) was written, there was concern regarding off-site ground water contamination. At the time, it was thought that site contaminants had been impacting residential well water quality. Data collected at the Nascolite site since that PHA report have demonstrated that there is extensive on-site groundwater and soil contamination at the site. It was, however, determined that the originally discovered off-site contamination, in a residential well north of the site, was not caused by the Nascolite site. Past public health concerns about exposures to groundwater contaminants, from the Nascolite site, have been negated by these recent findings. Sampling of an on-site potable well which supplied water to the old Nascolite office building revealed contamination with several VOC's including benzene, trichloroethylene, and MMA. This well is no longer in use for potable purposes and its past use as a drinking water source is unknown.

Groundwater contamination at the site is still of potential concern. While most of the MMA contamination in the groundwater has remained on-site, low levels of VOC's have been moving steadily toward the southwest. At this time, no known potable water sources are near the plume. It is of concern that the City of Millville has a potable well two miles downgradient of the site. This is currently at least a mile from the edge of the plume. USEPA has placed additional monitoring wells to define the leading edge of the plume.

Public health concerns about current human exposure to surface soils no longer remains a valid concern. As with the groundwater contamination, the soil contamination lies almost entirely within the boundaries of the Nascolite site. The potential for any human exposure to contaminated soils at the site has been greatly reduced by the USEPA through the installation of the perimeter fence during it's 1988 removal action.

One area of contaminated soil is located outside the fenced area. During the RI for OU1, surface soil samples taken in the ditch area between the site and the rail road tracks contained lead at concentrations as high a 13,000 ppm. Subsequent studies (RI for OU2) found lower lead levels; maximum of 1,420 ppm in the wetlands and 10,700 ppm in the ditch. This small area of contaminated surface soils would be accessible to trespassers, however, exposure is unlikely for the following reasons: (1) according to the USEPA, trespassing is limited at the entire site and, in particular, not common near any of the lead contaminated areas of the wetlands, or along the ditch next to the

railroad tracks--These areas are remote and not attractive to trespassers; (2) a partial removal action took place along the railroad tracks to further reduce the chance of human exposure to contaminated soil; and, (3) the USEPA has placed plastic tarpaulins over the remaining areas of highest lead contamination.

There are no documented on-going human exposures to site related contaminants. Past exposures to contaminated soil can not be ruled out, but because it would be difficult to define a contaminant dose or identify an exposed population, no toxicological evaluation of this pathway will be performed.

The remedial design for the second operable unit was completed in February 1995. Remedial construction at the site is scheduled for September 1995.

## CONCLUSIONS

Conclusions that were made in the 1987 ATSDR Preliminary Health Assessment, regarding the site being of potential public health concern, remain only partially valid. The most important health threat identified in the original Health Assessment report was based on human exposure to contaminated groundwater. It is clear, from the most recent site data, that the groundwater contamination plume at the Nascolite site, while impacting off-site groundwater quality, is not currently impacting any known residential water system. Currently, and since June 1989, area residents have been connected to municipal water supplies.

The City of Millville's well is the only known potable water sources threatened by the contaminant plume. This well is two miles downgradient of the site and, currently, it is at least a mile from the edge of the plume.

The conclusion in the Preliminary Health Assessment that humans may be exposed to on-site surface soil is no longer valid. The heaviest contamination is inside the fenced area and it is unlikely, under current site conditions, that trespassers would have access to these areas. The drainage ditch on the western side of the site and the wetlands area of the site are unfenced and could be accessible to trespassers. These are areas of documented soil contamination (e.g., lead). The area of highest contamination outside of the fenced area (1420 ppm lead in the wetlands area) has been covered with a plastic tarpaulin since 1988. The current levels of lead contamination, the tarpaulin covering, and the limited amount of trespassing, if any, make this area unlikely to be a serious health risk.

In addition to the environmental contaminants inside the fenced area, injuries would be possible to any trespassers breaching the fence due to the remaining physical hazards. There were numerous physical hazards noted at the site including: broken down buildings; old manufacturing equipment; debris on the ground from the buildings, and whole and smashed acrylic sheets in large storage racks inside the old main plant building.

Past concerns about gross alpha radiation detected in one of the monitoring wells has been investigated and found to be unfounded. Recent data collected at the site show the level of alpha radiation in area groundwater to be below detection limits.

Air emissions from the site are currently quite low, but may, at times, be sufficient to cause a nuisance odor problem. This will be particularly true if emissions are not controlled during the proposed remediation.

Most of the recommendations in the preliminary health assessment have been addressed: 1) Site restriction; USEPA has attempted to restrict and post most of the contaminated areas of the site; 2) The environmental data gaps noted at the site have been filled including a characterization of the radiation hazard; 3) The two potable wells, WP-6 and WP-10, are no longer in use.

The preliminary health assessment recommendation to prevent human contact with lead-contaminated soil off-site near the railroad tracks (western edge of the site) has been partially addressed by covering some contaminated areas with tarpaulins.

The recommendation to provide proper personal protective equipment and training to on-site workers removing hazardous materials is an OSHA issue and should be routinely addressed in the site safety plan presented by the contractor to the USEPA.

The on-site potable well at the Nascolite site (WP-10), which supplied water to the old Nascolite office building, revealed contamination with several VOC's including benzene, trichloroethylene, and MMA. Workers at Nascolite may have been exposed in the past to contaminated drinking water from well WP-10, however, the use of this former well as a drinking water source is unknown. This well is no longer in use for potable purposes.

The completed and potential exposure pathways at the site cited in the 1987 Preliminary Health Assessment currently represent no apparent public health hazard. Future health risks from the site should be alleviated as long as site conditions do not change and site is remediated as planned.

## **RECOMMENDATIONS**

Recommendations made in the original health assessment which are still valid include:

1. Continue efforts to restrict public access to contaminated areas of the site, including the areas not presently fenced (e.g., the lead-contaminated soil off-site near the railroad tracks and the wet lands).

2. Residents in the surrounding area should continue to use the public water supply. Any private wells near the site still being used for potable or non-potable purposes should be regularly monitored for contamination.

New recommendations based on current site conditions include:

1. The progress of the plume towards the Millville wells should be monitored and the City of Millville should continue to monitor the water quality of its municipal wells to ensure they have not been influenced by the contaminant plume.
2. Utilization of optimal dust control measures and nuisance odor control during site remediation is desirable due to the nature and extent of soil contamination.

New environmental, toxicological, health outcome data, or changes in conditions as a result of implementing the proposed remedial plan, may determine the need for other additional actions at this site.

#### **RECOMMENDATIONS OF THE HEALTH ACTIVITIES RECOMMENDATIONS PANEL (HARP)**

The data and information developed in the Site Review and Update for the Nascolite site, Cities of Millville and Vineland, Cumberland County, New Jersey, has been evaluated to determine if follow-up actions may be indicated. No further HARP public health actions are indicated at this time.

## **DOCUMENTS REVIEWED**

- 1 . Record of Decision, OU1, Nascolite Site, Cities of Millville and Vineland, Cumberland County, New Jersey, USEPA Region II, March 1988.
- 2 . Record of Decision, OU2, Nascolite Site, Cities of Millville and Vineland, Cumberland County, New Jersey, USEPA Region II, June 1991.
3. Agency for Toxic Substances and Disease Registry, Health Assessment for the Nascolite Site, Millville, New Jersey, June 3, 1987.
4. Ebasco Services Inc., Final Remedial Investigation Report for Nascolite Corporation Site, Cumberland County, Millville, New Jersey, September 1990.
5. Ebasco Services Inc., Draft Baseline Risk Assessment, Supplemental RI/FS, Nascolite Corporation Site, Cumberland County, Millville, New Jersey, July 1990.
6. TRC Environmental Consultants, Inc., Final Draft Report for of the Task 2 Site Investigation at the Nascolite Corporation Site, Millville, Cumberland County, New Jersey, June 1986.
7. Eckenfelder Inc., Remedial Design/Five Percent Submittal/First Operable Unit for the Nascolite Superfund Site, Millville, New Jersey, July 1994.
8. Agency for Toxic Substances and Disease Registry. Toxicological Profile for Lead. Atlanta: ATSDR, April 1993.

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