

**VINELAND CHEMICAL
CO., INC.
NEW JERSEY**
EPA ID# NJD002385664



EPA REGION 2
CONGRESSIONAL DIST. 02
Cumberland County
Vineland

Site Description

The Vineland Chemical Company manufactured arsenic-based herbicides from 1950 to 1994 on this 54-acre site in a residential and industrial area of the City of Vineland. The plant site included several manufacturing and storage buildings, a laboratory, several lagoons, and former chicken coops. The majority of the site is covered with vegetation, with the exception of the parking lots and a paved manufacturing area. A security fence surrounds the main part of the plant, including the manufacturing buildings and lagoon area. Prior to 1977, the company stored by-product arsenic salts in open piles and in the chicken coops. As a result of water contacting the exposed piles, arsenic has contaminated the subsurface soils, groundwater, and the nearby Maurice River and Union Lake. The lower Maurice River system extends 26 miles from the lake to the Delaware Bay. By 1982, Vineland Chemical Company, in response to State actions, instituted some cleanup actions and modified the production process. These modifications included: installing a non-contact cooling water system, lining two of the lagoons, installing a storm water runoff collection system, and disposing of piles of waste salts. Also in 1982, Vineland Chemical Company, under a State Administrative Order, began operating a wastewater treatment system to remove arsenic. The treatment system received contaminated process water and groundwater from two lined surface impoundments and discharged treated water to percolation lagoons. However, the treatment system was able to process only 35,000 gallons of contaminated water per day, while an estimated 150,000 gallons left the site daily, and the system had been unable to reduce arsenic concentrations to acceptable levels. Approximately 57,000 people depend on the groundwater system in the area, either through private or municipal wells, for drinking water. Residential areas are located on all sides of the site. Numerous towns and villages are close to the Maurice River.

Site Responsibility: This site is being addressed through Federal actions.

NPL LISTING HISTORY

Proposed Date: 09/01/83

Final Date: 09/01/84

Threats and Contaminants



The groundwater is contaminated with inorganic and organic arsenic, along with some minor amounts of other metals. The surface soil on the site is contaminated with arsenic and small amounts of other metals. The subsurface soil is contaminated with arsenic alone. Arsenic also has contaminated sediments and surface waters of Union Lake and the Maurice River. Results of a health screening study showed that some Vineland Chemical employees had elevated concentrations of arsenic in their blood and urine. Accidental ingestion, direct contact, or inhalation of the contaminants may subject workers or trespassers to an increased exposure to carcinogenic and non-carcinogenic risks. Nearby residents downstream of the plant site using well water also may be subject to health risks. Because of the contamination migrating from the site recreational activities are being monitored in the Maurice River and Union Lake.

Cleanup Approach

The site is being addressed in two stages, immediate actions and four long-term remedial phases focusing on source control, migration management, and cleanup of the rivers and Union Lake sediments which was the subject of a Record of Decision in 1989.

Response Action Status

Immediate Actions: In 1992 and 1993, EPA boarded up the chicken coops and abandoned buildings, fenced off the contaminated areas, and removed hazardous chemicals stored on site.



Plant Site Source Control: The EPA plans to clean up the arsenic-contaminated soil, which is a continuing source of groundwater contamination. In September 2001, EPA issued an Explanation of Significant Differences (ESD) which calls for the excavation and washing of the plant site soils. Also in 2001, a contract was awarded to begin the soil washing work. The construction of the soil washing facility was completed in the fall of 2003. In early 2004, after a start-up and optimization period, the soil washing plant began full scale operations. The on-site soil remediation is expected to last for approximately two-and-a-half years. In 1995, EPA completed demolition work at the site which included the removal and disposal of eight contaminated buildings. The two remaining building on-site are scheduled for demolition in the Spring of 2004.



Plant Site Management of Migration: The EPA plans to clean up the arsenic-contaminated shallow groundwater and stop its migration to the Blackwater Branch, a tributary to the Maurice River. This will involve pumping groundwater at a high flow rate, treatment and discharge to the Blackwater Branch at first, then to the aquifer. The contract for the construction of a 2 million gallon per day pump and treat system was awarded in September 1997. The actual construction of the facility began in March 1998 and it lasted for 2 years. Operation of the new facility began in the spring of 2000 and is ongoing. The pump and treat operation has effectively stopped the flow of arsenic contaminated groundwater from the plant site. The quality of effluent from the

groundwater treatment plant continues to meet the Record of Decision standard. To date, over 1.4 billion gallons of contaminated groundwater has been treated at the facility.



River Areas Sediments: In the Blackwater Branch tributary, the EPA plans to clean up those areas with unacceptably high arsenic concentrations by excavating contaminated flood plain sediments and removing the arsenic. The cleaned sediments will then be redeposited in the flood plain. At the same time, the submerged contaminated sediments will be dredged, cleaned, and deposited in undeveloped areas of the site. The water used to treat the sediment will be treated to remove arsenic, which would then be transported, in the form of sludge, to an off-site hazardous waste disposal facility. This work is expected to begin upon completion of the plant site soil remediation. After the cleanup action is completed, a 3-year period for natural river flushing will then be implemented for the rest of the river areas. The design for this Operable Unit has been completed.



Union Lake Sediments: After the river areas are cleaned, the EPA plans to remediate those areas of the lake with unacceptably high arsenic concentrations by lowering the water level and then dredging. High public access areas, including the public beach and the sailing club, will be cleaned up by treating the contaminated materials with clean water, and then returning the cleaned material to the lake. The extraction water will be treated to remove and convert arsenic to a sludge form for off-site treatment and disposal. The treated water will be returned to the lake.

Site Facts: The EPA is performing environmental studies to evaluate the need to cleanup the river and lake sediments. These long-term studies will use data collected before and during the cleanup activities for the soil and groundwater.

In February 1994 a consent decree to settle liability of the owner and only responsible party, Miriam Schwerdtle, was entered in the court.

Environmental Progress



EPA sealed the chicken coops and abandoned buildings, fenced off the contaminated areas, and removed hazardous chemicals stored on site. Also, EPA completed the demolition and disposal of arsenic contaminated buildings. By completing these actions, the risk to human health and the environment was significantly reduced.

Remedial activities for Operable Unit 1- Plant Site Source Control or on-site soils and Operable Unit 2 - Plant Site Management of Migration or groundwater, are ongoing. This includes the operation of a 50-ton per hour soil washing plant and a large groundwater treatment plant. The on-site soil work is expected to be completed in 2006. The groundwater plant is scheduled to operate for approximately 15 years. EPA is further evaluating options for the Operable Unit 3 - River Areas Sediments and Operable Unit 4 - Union Lake cleanup activities. The site is completely fenced

Site Repositories

Vineland City Library, 1058 East Landis Ave., Vineland, N.J. 08360

Vineland City Health Dept., 7th and Wood Streets, Vineland N.J. 08360