

# Diamond Alkali Co.

## New Jersey

EPA ID#: NJD980528996

### EPA REGION 2 Congressional District(s): 13

Essex  
Newark

#### NPL LISTING HISTORY

Proposed Date: 9/1/1983

Final Date: 9/1/1984

## Site Description

The Diamond Alkali Superfund Site includes the former pesticides manufacturing plant and surrounding properties at 80 and 120 Lister Avenue in Newark, New Jersey, the Lower Passaic River Study Area, the Newark Bay Study Area and the extent of contamination. The Lower Passaic River Study Area includes the 17-mile tidal stretch of the river from Dundee Dam to Newark Bay, and tributaries. The Newark Bay Study Area includes Newark Bay and portions of the Hackensack River, Arthur Kill and Kill Van Kull. Because the problems posed by the upland part of the site are significantly different from those in the Passaic River and Newark Bay, the site was divided into three operable units: the 80 and 120 Lister Avenue properties, the Lower Passaic River Study Area, and the Newark Bay Study Area. The area is both densely populated and heavily industrialized.

From 1951 to 1969, the Diamond Alkali Company (subsequently known as the Diamond Shamrock Chemicals Company) owned and operated a pesticides manufacturing plant at 80 Lister Avenue in Newark. The property has been used for manufacturing by numerous companies for more than 100 years. The mid-1940s marked the beginning of the manufacturing operations related to the current site conditions, including the production of DDT and phenoxy herbicides. Subsequent owners used the property until 1983, when sampling at the site and in the Passaic River revealed high levels of dioxin. Dioxin (also known as 2,3,7,8-tetrachlorodibenzo-p-dioxin or TCDD) is an extremely toxic chemical and an unwanted byproduct of the manufacture of certain chemicals which were produced at the site. Since Occidental Chemical Corporation (OCC) is a successor to the Diamond Shamrock Chemicals Company, OCC is required to perform remedial activities at the 80 and 120 Lister Avenue properties and the Newark Bay Study Area under the Superfund program.

For the Lower Passaic River Study Area, a more innovative approach is being taken. In 2004, EPA formed a partnership with the U.S. Army Corps of Engineers (the Corps), New Jersey Department of Transportation (NJDOT), U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA) and New Jersey Department of Environmental Protection (NJDEP) to conduct a joint study of the Lower Passaic River. The joint study is an integration of a Remedial Investigation/Feasibility Study (RI/FS) under Superfund and a Feasibility Study under the Water Resources Development Act (WRDA). A group of 43 potentially responsible parties (PRPs), including OCC, is required to provide funding for the Superfund portion of the integrated study. In May 2007, a group of 73 PRPs, including the above 43, took over the performance of the Superfund portion of the study, under EPA oversight.

Site Responsibility: This site is being addressed through a combination of Federal, State, and potentially responsible party actions.

## Threat and Contaminants

Dioxin, pesticides and other hazardous substances have been found in the soil at 80 Lister Avenue and, to a lesser extent, at 120 Lister Avenue. Other properties in the area were also contaminated by dioxin, but cleanup work has been completed at these properties (landfill containment, on-site). Dioxin, pesticides, volatile organic compounds (VOCs) and other hazardous substances have been found in groundwater at the site. Persons who have contacted or ingested the contaminated soil may be at risk. Although groundwater is not used as a source of drinking water, groundwater migrates toward the Passaic River and Newark Bay where it may add to the contamination of fish and shellfish. However, the containment system now prevents flow of groundwater into the river. Dioxin has also been found in sediment samples taken from the Passaic River, Newark Bay and nearby waterways. The Lower Passaic River and Newark Bay are under fish and shellfish consumption advisories, issued by NJDEP based on polychlorinated biphenyl (PCB), dioxin and/or mercury contamination. EPA and NJDEP posted fishing advisory signs within the study area and beyond.

# Cleanup Approach

The site property is being addressed in several stages: immediate actions, an interim remedial action and a more permanent long-term remedy. A 17-mile stretch of the Passaic River, from Dundee Dam to Newark Bay, including tributaries, is being evaluated under an integrated Superfund RI/FS and WRDA Feasibility Study for potential long-term remedies and restoration. In addition, an early action for the lower eight miles of the river is being evaluated. Newark Bay and its tributaries are also being evaluated under a Superfund RI/FS for potential long-term remedies.

## Response Action Status

**Immediate Actions:** The dioxin discovery led to the 80 Lister Avenue property being secured by a fence and by twenty-four hour security guard service. Exposed soils on the property were covered with geofabric to prevent potential migration of contamination. At other properties, dioxin-contaminated soils and debris were removed by excavation, vacuuming, and other means, and were transferred to 120 Lister Avenue for storage. This work was initiated by the EPA and NJDEP in 1983 and was taken over by the Diamond Shamrock Chemicals Company under State Administrative Consent Orders.

**Interim Remedy:** In 1987, EPA selected an interim remedy for the 80 and 120 Lister Avenue properties that included (1) construction of a slurry wall and flood wall around the properties, (2) installation of a cap over the properties, and (3) pumping and treating of groundwater to reduce the migration of contaminated groundwater. Under a 1990 Consent Decree with EPA and NJDEP, OCC and Chemical Land Holdings (CLH) submitted design plans to EPA for construction of the interim remedy. Prior to approving the design plans, EPA, at the request of the local community, explored the potential for implementing an alternative to the interim remedy selected in 1987. EPA considered innovative technologies as well as on-site and off-site thermal treatment options, but due to the nature of the material to be remediated, new technologies were deemed inappropriate at that time, and no off-site option was available. One alternative, on-site incineration, was deemed technically feasible, but the local community expressed opposition to on-site incineration in public meetings throughout the summer of 1998. Therefore, EPA approved the design plans for the interim remedy. CLH, now known as Tierra Solutions, Inc. (TSI), selected its construction contractor after approval of the design plans and specifications. Construction began in April 2000 and was completed in December 2001.

**Long-term Remedy:** Under the 1990 Consent Decree, the interim remedy is required to be reevaluated every two years (after approval of the construction completion report) to determine if it remains protective of human health and the environment. The construction completion report was approved on July 24, 2006. Pursuant to the Consent Decree, a Remedy Evaluation Work Plan was submitted 90 days later and is undergoing review.

**Lower Passaic River Study Area:** Under an Administrative Order on Consent (AOC) executed on April 20, 1994, CLH, on behalf of OCC, started an RI/FS in a six-mile stretch of the Passaic River. The objectives of the study were to determine: (1) the spatial distribution and concentration of dioxins, furans, PCBs, polycyclic aromatic hydrocarbons (PAHs), pesticides and metals, both horizontally and vertically in the Passaic River sediments; (2) the primary human and ecological receptors of contaminated sediments; and (3) the transport of contaminated sediment within the Study Area.

The sampling results from the six-mile stretch investigation and other environmental studies showed that sediments contaminated with hazardous substances, and potential sources of hazardous substances, exist along the entire 17-mile tidal stretch of the Passaic River, from Dundee Dam to Newark Bay. As a result, EPA expanded its investigation to include that 17-mile portion, also known as the Lower Passaic River, and its tributaries. At the same time, the Corps, with NJDOT as local sponsor, was authorized to conduct a study of restoration opportunities along the 17-mile Lower Passaic River. EPA, the Corps and NJDOT formed a partnership to conduct a joint Superfund-WRDA study of the Lower Passaic River watershed. The three partner agencies are working closely with the Natural Resource Trustees (the National Oceanic and Atmospheric Administration, U.S. Fish and Wildlife Service and NJDEP) to cover common data needs and develop a joint solution that will bring each agency's legal authorities to bear on the complex environmental problems of the Lower Passaic River.

During the course of the 17-mile study, the sediments of the lower eight miles of the river were found to be a major source of contamination to the rest of the river. Therefore, a Focused Feasibility Study was developed to evaluate alternatives for an early action to control this major source of pollution. The early action is intended to take place in the near term, while the 17-mile study is on-going. A draft of the Focused Feasibility Study was reviewed by a group of stakeholders and their comments are being incorporated. A Proposed Plan is expected to be released for public comment by October 2008.

**Newark Bay Study Area:** In a separate action, EPA also found that hazardous substances are present in Newark Bay. Therefore, on February 13, 2004, EPA and OCC entered into an AOC for TSI to conduct an RI/FS in Newark Bay and its tributaries.

## Enforcement Status

In 1984, NJDEP and Diamond Shamrock Chemicals Company entered into two Administrative Consent Orders, the first for the investigations and immediate response work at 80 Lister Avenue and the second for investigations and immediate response actions at other properties including 120 Lister Avenue. A Consent Decree was filed in 1989 among OCC, CLH, the State and EPA requiring OCC and CLH to undertake cleanup activities at the site. The U.S. District Court approved the Consent Decree in November of 1990. This work is being conducted under EPA oversight. In addition, CLH, on behalf of OCC, entered into an AOC on April 20, 1994 with EPA. Under this AOC, CLH conducted extensive sampling in a six-mile stretch of the Passaic River, the results of which have been incorporated into the current 17-mile Lower Passaic River Study.

On February 13, 2004, EPA and OCC signed an AOC for TSI to perform an RI/FS for Newark Bay, including portions of the Hackensack River, Arthur Kill and Kill Van Kull. The AOC allows EPA to maintain oversight of the Newark Bay work and to ensure that it is conducted consistently with the Lower Passaic River study.

Effective June 22, 2004, EPA entered into an AOC with 31 potentially responsible parties (PRPs) to fund the RI/FS portion of the joint Superfund-WRDA study of the Lower Passaic River (i.e., the 17-mile, tidal portion of the river, from Dundee Dam to Newark Bay, and tributaries). The Corps and NJDOT are cost-sharing equally the WRDA portion of the joint study. Effective November 9, 2005, EPA's June 2004 administrative settlement has been amended to include 12 additional companies that will share in the estimated cost of the RI/FS portion of the Lower Passaic River Restoration Project. A key benefit of the amendment is that all of the companies (both the new parties and the earlier settlers) have agreed to pay EPA \$750,000 in additional funding for the RI/FS if such additional funds are needed to complete the study. On May 8, 2007, EPA entered into another AOC with 73 PRPs (including the 43 PRPs who signed the previous AOCs), for them to take over the RI/FS work, with EPA oversight. Coordination of the RI/FS with the WRDA portion of the study will continue through EPA.

## **Cleanup Progress**

The interim remedy has reduced risks associated with the 80 and 120 Lister Avenue properties.

## **Site Repositories**

Newark Public Library, 5 Washington Street, Newark, NJ 07102

Elizabeth Public library, 11 South Broad Street, Elizabeth, NJ 07202