

Imperial Oil Company Incorporated/Champion Chemical

Orchard Place Marlboro Township Monmouth County

BLOCK: 122 LOT: 29

Community Relations Coordinator: Mindy Mumford (609) 777-1976

SITE DESCRIPTION/RESOLUTION OF ENVIRONMENTAL CONCERNS:

This site has an extensive history of industrial operations dating to 1912. A chemical plant manufactured arsenic-containing compounds at the site in the early part of the century. In 1950, Champion Chemical Company acquired the property and converted it into an oil reclamation facility. Champion Chemical used filter clay and caustic solutions to remove heavy metals and PCBs from waste oil. Since 1969, the Imperial Oil Company has blended and repackaged unused oil at the site under a lease agreement with Champion Chemicals. USEPA added the Imperial Oil/Champion Chemicals property to the National Priorities List of Superfund sites (NPL) in 1983 after sampling showed that a large waste filter clay pile and the soil at the site were highly contaminated with petroleum hydrocarbons, heavy metals and PCBs. In 1985, NJDEP began a Remedial Investigation (RI) to determine the nature and extent of the contamination at the site. The RI confirmed that both on-site and off-site soils had been contaminated by industrial operations at the facility. In addition, the RI revealed that the underlying Englishtown Aquifer was contaminated and a substantial volume of residual oil product was floating on the water table underneath the waste filter clay pile. Contamination was also found in the sediments of Birch Swamp Brook, which originates near the northeastern border of the site and drains into Lake Lefferts, approximately 1.25 miles away. Due to the size of the property and the complexity of the issues to be addressed, NJDEP has divided the investigation and remediation of the site into several Operable Units (OU): off-site soil that is contaminated with heavy metals and PCBs, and the contaminated sediments in Birch Swamp Brook (OU1); the contaminated ground water (OU2); and on-site soil contaminated with volatile organic compounds, petroleum hydrocarbons, heavy metals and PCBs (OU3). NJDEP performed separate Feasibility Studies (FS) for each OU to evaluate cleanup alternatives and selected the appropriate remedies as detailed below.

Off-site soil and sediments (OU1): In 1990, USEPA issued a Record of Decision (ROD) with NJDEP concurrence for OU1 that required installation of a fence around the off-site area to restrict access to contaminated soils, excavation and off-site disposal of contaminated soils and restoration of the affected wetlands. Soil sampling conducted in 1995 during the Remedial Design revealed an unanticipated sporadic pattern of arsenic contamination, some of which was detected at off-site residential properties. A study by the United States Geological Survey (USGS) concluded that there were multiple sources of the arsenic in the soil, including a minor contribution from natural background, historic application of arsenic-based pesticides and past industrial operations at the Imperial Oil site. The USGS study documented that the arsenic in the soil at four residential properties closest to the site was due to industrial operations. USEPA subsequently issued an Explanation of Significant Differences (ESD) to modify the OU1 ROD to include removal of the arsenic-contaminated soil from four residential properties. Remediation of the arsenic-contaminated soil at the four homes was completed in 1998. In 1998, NJDEP conducted a Focused Feasibility Study (FFS) to determine the nature and extent of the sediment contamination in Birch Swamp Brook. NJDEP and USEPA concluded based on the findings of the FFS that sediments in the brook from the Fire Pond downstream to Texas Road were contaminated with elevated levels of PCBs and petroleum hydrocarbons. NJDEP also determined that soil at two residential properties located adjacent to Birch Swamp Brook and Texas Road was contaminated with arsenic at levels exceeding New Jersey cleanup criteria. USEPA and NJDEP issued a second ESD for the OU1 ROD in 2002 to add remediation of contaminated Birch Swamp Brook sediments and additional residential soil areas to the OU1 remedy. NJDEP completed the Remedial Design for all remedial components of OU1 in 2002 and cleanup activities are scheduled to begin in 2003.

Ground water (OU2): In 1992, after completing the FS for OU2, USEPA issued a ROD with NJDEP concurrence that required installation of an on-site remediation system to extract and treat the contaminated ground water. The Remedial Design for the ground water remediation system was significantly delayed due

to initial site access problems and laboratory analytical interferences that made it difficult to accurately delineate the arsenic plume. After a comprehensive investigation to determine the extent of arsenic in the ground water, NJDEP modified the scope of the Remedial Design to address a smaller contaminant plume that is limited to the site boundary. The Remedial Design for the ground water remediation system is scheduled to be completed in 2003.

On-site soil (OU3): In 1999, after the FS for the on-site contaminated soil was completed, USEPA issued a ROD with NJDEP concurrence for OU3. The ROD required excavation and off-site disposal of an estimated 80,000 cubic yards of contaminated soil and waste pile material and the off-site disposal of 5,000 gallons of oil product recovered from the site. NJDEP is conducting the Remedial Design for OU3.

Interim Remedial Measures: In addition to the work performed by NJDEP to investigate and remediate the three identified Operable Units, USEPA has also implemented four Interim Remedial Measures (IRM) at the site: removal of the heavily contaminated waste filter clay pile in 1991, installation of a recovery system to extract the oil-like floating product layer from the ground water in 1992; demolition and disposal of a dilapidated four-story building in 2000; and removal of contaminated waste material in the wooded area adjacent to Fire Pond in 2002. The floating oil recovery system is currently operating under the supervision of NJDEP. To date, approximately 20,000 gallons of oil have been recovered by the floating oil recovery system and disposed of at an off-site facility.