

## What is petroleum coke?

Petroleum coke or “pet coke” is a black coal-like, nearly pure carbon byproduct of the crude oil refining process. In the refining process, crude oil is heated to produce lighter fuels such as gasoline and liquid petroleum gas; medium-weight products such as kerosene, and diesel and jet fuel; and heavier products such as lubricating oils. At the “bottom of the barrel” is a tar-like substance that is further refined into pet coke.

Pet coke is used as an energy or carbon source. Coke is burned to produce energy in the making of cement and other industrial applications. Another form of pet coke is used in the making of aluminum and steel.

In 2003, more than 3 million metric tons of coke were shipped through Long Beach, making Long Beach the nation’s second leading port for coke exports after only Houston. The coke shipped through Long Beach goes to countries such as Australia, Japan, Belgium, China, South Africa and South Korea.

### Images:

On this page, two bulk cargo vessels dock at Pier G, where a new, larger ship loader will help to reduce the escape of petroleum coke dust into the air.

On the opposite page, left, the new ship loader is ready to load petroleum coke into a bulk cargo vessel. On the right, a new street sweeper cleans the streets around the coke terminals.



# CLEARING THE AIR

## NEW BULK-CARGO SHIP LOADER TO REDUCE PETROLEUM COKE DUST

Until a few years ago, if a car were regularly parked outdoors and downwind of the San Pedro Bay ports, it probably would be covered with a light black film of petroleum coke. That was then...

In March, the Port of Long Beach completed the installation and commissioning of a new \$9 million ship loader at its Pier G bulk-cargo terminal – the last of \$30 million in major air quality improvement projects aimed at complying with state and local edicts to control petroleum coke dust.

“This is a major milestone in the Port’s efforts to improve air quality,” said Long Beach Harbor Commission President John Hancock. “I want to thank our customers, Port staff and the other government agencies for helping us to control this problem.

“I don’t know if we can clear the air of all the coke dust, but we’re going to try to eliminate as much as possible.”

Petroleum coke is a coal-like byproduct of the refining process. Southland refineries ship coke by truck and train to the ports of Long Beach and Los Angeles, where it is one of the ports’ leading exports. In transporting coke from the refinery to the ship, coke dust previously escaped into the air, settling not only on vehicles but also on patio furniture and much of the waterfront. There also were concerns that coke dust posed a health risk.

### Steps Taken to Reduce Dust

In a 1996 study, coke dust accounted for 21 percent of the black particulates collected at Long Beach’s Downtown Marina. Sand made up 60 percent and the remaining 19 percent was largely tire dust from local cars and trucks.



The South Coast Air Quality Management District amended its 1158 bulk-cargo handling rules in 1999, imposing stricter measures. The state passed Assembly Bill 1775, introduced by Assemblymember Alan Lowenthal, D-Long Beach, setting a tight timetable for completing the new control measures.

### Regular Sweeping Schedule

The measures required the private operators of the ports' coke exporting terminals to begin a fixed schedule for sweeping roads and paved areas in and around their facilities with vacuum sweeping trucks. Before the amended rules, these areas were swept weekly. With the new rules, they had to be swept every four hours or after every 100 truck moves. The Port of Long Beach also acquired a \$130,000 vacuum sweeper to clean the streets between the coke terminals and the entrance of the Port, off the Long Beach (710) Freeway.

There were new measures throughout the coke transportation network. Trucks had to be covered. At the cargo-handling terminals, truck-dumping facilities were renovated and enclosed. New enclosures were added to the network of conveyor belts already housed within winding tubes that resemble the rides at a water theme park. The Port of Long Beach paved and rebuilt a bulk-cargo rail yard.

### Outdoor Storage Banned

The new measures included the total elimination of uncovered storage. At the end of December 2000, more than 35,000 metric tons of coke were loaded aboard two hastily chartered ships from two open storage piles – marking the end of openly stored coke at the Port of Long Beach. The two ships were chartered at the last minute because another chartered vessel, a larger ship, was delayed by a typhoon. With the shipments to Japan, the Port and its tenants met Lowenthal's Jan. 1, 2001, deadline to end the uncovered storage of coke.

The Port of Long Beach's final project was construction, installation and commissioning of a new ship loader to replace a loader that was too small to reach completely into the hold of today's larger vessels.

With the earlier measures, the percentage of pet coke collected at the Downtown Marina already had dropped dramatically from the 21 percent in 1996 to between 3 to 8 percent in recent surveys.

With the new loader now operational, air quality should improve even more.

“ I don't know if we can clear the air of all the coke dust, but we're going to try to eliminate as much as possible. ”

John W. Hancock  
Harbor  
Commission  
President