

## **SHELL DEER PARK'S STORY**

Just before the Great Depression, Shell Oil Company became the first manufacturer to call Deer Park home in 1929. At that time, Deer Park had no other businesses or buildings in what is now a bustling community about 20 miles east of downtown Houston.

The original 800-acre refinery site was carefully chosen for its location along the Houston Ship Channel. In the 1940s, Shell added a chemical plant. Between 1945 and 1950, the site completed major expansions that added to the refining and chemicals operations.

Today, Shell Deer Park covers 2,300 acres and is a fully integrated refinery and chemical plant with about 1,500 employees and to 1,200 contractors.

The site operates 24 hours a day and is a unique combination of processing equipment, control rooms, storage tanks, environmental protection equipment, office buildings, shops and warehouses – all run by highly skilled, well-trained and experienced employees. Shell Deer Park has its own security staff, medical facility, fire stations and utilities, as well as railroad, marine docks and pipeline networks.

Shell Deer Park's location near major crude oil and products pipelines – in addition to extensive dock facilities – is one of its most important assets. This provides the site with numerous transportation advantages and significantly increases efficiency when delivering or receiving products.

Annually, an average of more than 2,500 vessels are loaded or off-loaded at the site, which represents about 100 million barrels (4 billion gallons) of crude oil and products for the refinery and chemical plant. The dock facility ranks (in volume of materials) as one of the 25 largest ports nationwide.

## **DEER PARK REFINING L.P.**

The refinery is among the largest in the U.S. with a crude oil capacity of 340,000 barrels a day. It operates as Deer Park Refining Limited Partnership, a 50-50 joint venture formed in 1993 between Shell Oil Company and Petroleos Mexicanos, or Pemex.

The refinery's assets are managed and operated by Shell Oil Company through the Shell Deer Park Refining Company. Since 1993, the Shell-Pemex partnership has made significant investments in refinery upgrades, providing an increase in refining capacity and flexibility as well as increased opportunities to market a wide range of oil products throughout North America.

Deer Park Refining L.P. processes predominantly sour crude oil, and Mexico imports more than half of the crude oil processed. The site also processes crudes from Africa, South America, the U.S. and other countries. Products made in the refinery include gasoline, aviation fuels, diesel fuels, ship fuel and petroleum coke.

Major processing units and facilities include:

- **Distilling** – There are two distilling or “crude” units at Shell Deer Park. These literally boil crude oil until it vaporizes. The various hydrocarbons rise inside a column until they cool and become a liquid. The lightest range of hydrocarbons are gases like propane and butane, the middle range includes gasoline, kerosene and diesel fuel, and the heavier range hydrocarbons go into asphalt and other products.
- **Fluid Catalytic Cracker** – “Cat cracking” is a process that uses heat and circulating catalyst to make gasoline.
- **Selective Hydrocracker** – This unit partially converts diesel-range material into gasoline, propane and butane through a chemical reaction with high pressure hydrogen.
- **Delayed Coker** – This unit converts petroleum pitch into gas oils for processing in other units, which ultimately produce gasoline, jet fuel and diesel fuel. The coker also generates petroleum coke, which electric utilities use for power generation and cement companies use as a fuel source in kilns and in gasification units.
- **Catalytic Gasoline Hydrotreater** – This enables the refinery to meet EPA regulations for low-sulfur gasoline by reducing the sulfur content by more than 95 percent.

**DEER PARK CHEMICALS**

The chemical plant started operating in the 1940s and has expanded several times over the years. Shell Chemical L.P. – one of several Royal Dutch/Shell Group companies in the chemicals business – owns the plant.

The plant makes very few final consumer products. Instead, it manufactures base chemicals or raw material chemicals and sells them to other chemical companies that turn them into thousands of consumer products.

The Shell Oil Refinery and Chemicals plant is integrated in order to safely and efficiently manufacture upgraded fuels and chemicals that enable our modern world. Our chemicals enable a higher standard of living for those who use our products. We strive to power progress in communities across the country – every day.

Most chemicals from Deer Park are shipped via pipelines, but the site also uses ships, barges, rail cars and trucks to supply customers in the U.S. and foreign countries.

Key chemical plant business categories include:

- **Aromatics** – benzene and xylene for direct uses in aspirin, carpeting, electrical insulation, paint and many other products.
- **Light Olefins** – ethylene, propylene and butylenes for plastics, pharmaceuticals, insecticides, antifreeze, detergents, etc.
- **Heavy Olefins** – isoprene, butadiene and piperylene for latex paints, adhesives, tapes, wire coating, synthetic rubbers, ink, etc.
- **Phenol** – phenol and acetone for plastics, wood preservatives, dyes, antiseptic products, agricultural chemicals and other products.