U.S. Steel-Producer of Coal Chemicals

As the first large steel producer to enter the coal chemical field, U. S. Steel has had a wide and varied experience in producing chemicals that originate with coal. Production facilities are located at Clairton and Fairless, Pennsylvania; Lorain and Cleveland, Ohio; Gary, Indiana; Duluth, Minnesota; Fairfield, Alabama; Provo and Geneva, Utah.

In 1906, United States Steel sent a delegation of top operating executives to Europe to study the coking methods and processes being used there. The group visited coking operations in Germany, Belgium and England.

In early 1907 they returned to the United States with a report of European practices and the success they were having. At this early date their interest in the chemicals was only secondary. Even these men of vision and imagination did not anticipate the future impact of coal chemicals.

Shortly after their return to this country, an invitation was sent to Henrich Koppers, a German Engineer and designer of the Koppers coke oven, to come to this country to discuss the possibilities of installing ovens at U. S. Steel plants.

Coke Ovens Erected

After discussions with Koppers, it was finally decided that 270 ovens would be erected at the Joliet, Illinois Steel Works. Each of these ovens was capable of producing 8½ tons of blast furnace coke every 24 hours. On September 15, 1908, the first coke was pushed.

The only chemicals recovered in this initial operation were ammonia and tar. Eight years later a benzene plant was added and went on stream June 4, 1916.

During the following fifty years many changes took place in the coal chemical picture at U. S. Steel. The number of plants producing chemicals continued to grow, while the processes for producing the individual products were improved and expanded.

The result is that today U. S. Steel is a major producer of chemicals.

But this growth is only the beginning. Increasing population, expanding industry, and new products and new processes are creating a constanly growing market for these chemicals.

Synthetic Ammonia

At its Geneva Utah, plant, United States Steel has taken a dramatic step forward and is the first integrated steel producer in this country to recover hydrogen from the coke oven gas stream.

The hydrogen thus produced is combined with atmospheric nitrogen to form anhydrous ammonia and nitric acid using Montecatini processes, prilled ammonium nitrate and 83 per cent ammonium nitrate solution..

The process employed at the U. S. Steel Geneva plant is necessarily a complicated one. Simply stated the following takes place during the process:

1. Hydrogen is removed from the coke oven gas stream ,after the light oils have been recovered.
2. Nitrogen is removed from air.
3. The hydrogen and nitrogen are synthesized (or combined) to form anhydrous ammonia.
4. Nitric acid is produced by oxidation of anhydrous ammonia and absorption in water.
5. Ammonium nitrate solution is produced by neutralization of nitric acid with anhydrous ammonia.
6. Ammonium nitrate prills are produced by spraying a concentrated solution (approximately 96 per cent) into the top of a 200 foot tower. The droplets fall and form small spheres or prills.

USS nitrogen products find wide use in agriculture and industry.

Bad manners can be fatal if they occur behind the wheel of a car, warns the Automobile Club of Southern California. The discourteous driver who tries to get away with something in traffic too often succeeds only in hurting himself and innocent victims. Drive the way you'd like others to drive. Traffic control begins at your wheel. Common courtesy pays off in safe driving.

Dominquez Water Pumping to Rancho Area for 48 Years

The Dominguez Water Corporation, first organized as a mutual company, has been in continuous operation since 1911. Its purpose was to provide a dependable water supply for the lands of the Rancho San Pedro. At that time, there were more than 20,000 acres of the original grant still remaining in the possession of the Dominguez heirs, extending westward from the Los Angeles River to Redondo Beach.

Modern Development

The original company was reorganized in 1937 as the Dominguez Water Corporation, subject to regulation by the State Public Utilities Commission. During the past 20 years, the volume of business has increased steadily, due to the continued growth of industry in the surrounding area.

This has brought a change in water use. In earlier years, aside from the domestic needs of the Torrance area, the greater part of the water supply was used for irrigation of farm lands. Today, agricultural needs represent barely seven per cent of total sales, two-thirds of the current output going to industrial plants. The area served presently exceeds 30 square miles, involving a population of 60,000.

17 Wells Pumping

Through the 48 years of operation, 26 wells have been drilled. Of these, 17 are in operation at present, with water pumped from depths of 1200 to 1600 feet. The transmission system includes more than 175 miles of pipelines. From an initial daily production of a few thousand gallons, more wells and improved equipment have increased the volume to a possible maximum of more than 66 million gallons a day. The current storage capacity totals 32 million gallons. A large reservoir and elevated tank, the latter recently completed, are located in northwest Torrance.

Water Safeguard

A visit to the main plant of the Dominguez Water Corporation, with its modern offices, reveals many more interesting facts connected with the production and proper safeguarding of water for human consumption. A high degree of neatness and sanitation is evident. One is impressed by the complicated equipment required in the pumping, measurement, testing, treatment, and distribution of this vital necessity of life.

Special devices collect and test water samples continuously; the results being recorded on graphic charts. Other electronic instruments constantly adjust the treatment of the incoming water flow, based on signals from the testing devices. All water both at the main plant and in the reservoirs, is treated to eliminate bacteria, algae and odors. The basic quality of the water, as it comes out of the well, is much above average in softness.

Controlled Electronically

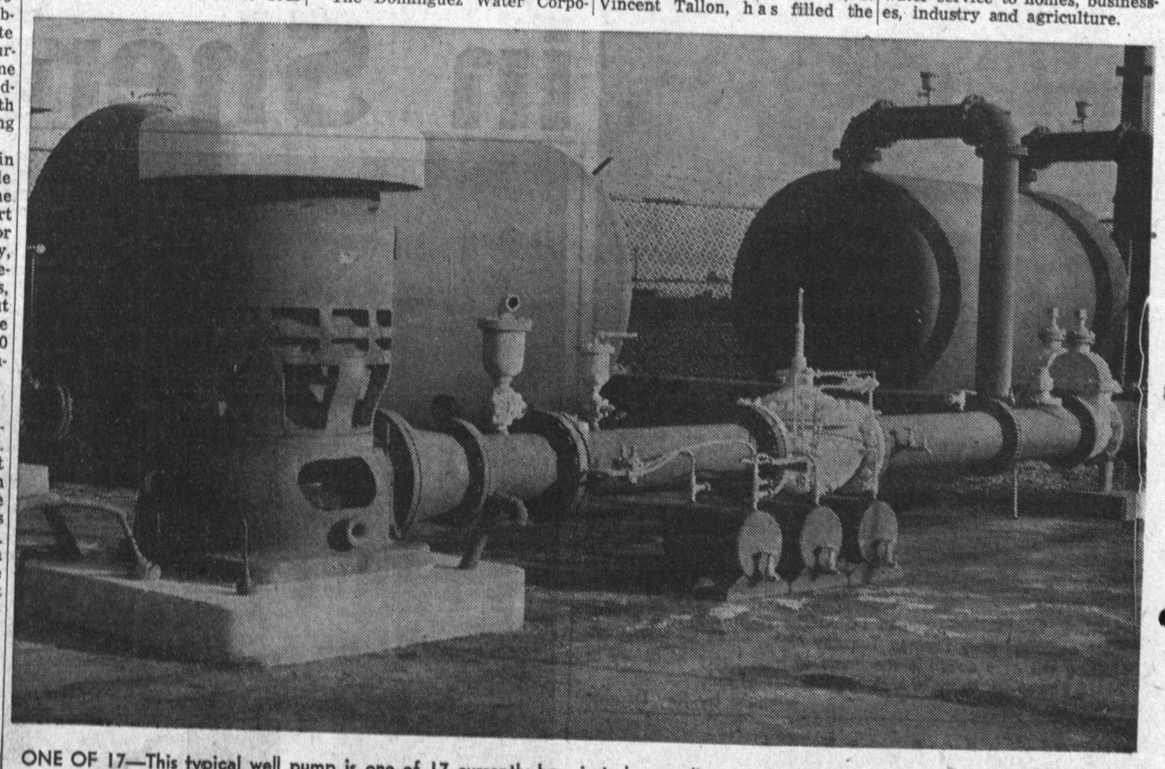
The pumps at the several wells, some of which are two to four miles distant, also are regulated from the central control board at the main plant. Through the marvel of electronics, they can be turned on and off automatically, depending on changes in pressure and the amount of water needed. They can be adjusted to take on the pumping load in rotation or in any order desired, with no undue strain on any one well. This permits regular maintenance of all wells without interruption of service.

Family Ownership

The Dominguez Water Corporation has been fortunate in having sound management throughout its entire history. Essentially a family ownership, its principal officers in 1959 are James P. Bradley, president; J. V. Carson, executive vice president; and Mrs. Florence Shaefer, secretary-treasurer. In earlier days, the chief responsibility for active supervision of the plant and its operation was delegated to E. P. Tallon, who served more than 30 years as superintendent and chief engineer. Since 1943, his son, T. Vincent Tallon, has filled the same position. Personnel currently employed averages slightly more than 60 persons.

Total assets of the corporation are in excess of $7,000,000. Industrial growth of the community has necessitated additions of about $1,000,000 per year to the facilities of the water corporation.

Forty-eight years of service to this community is just the background for the future of this corporation, whose product is water service to homes, businesses, industry and agriculture.



ONE OF 17—This typical well pump is one of 17 currently being operated by the Dominguez Water Corporation. The water is pumped from depths of 1200 to 1600 feet. The pumps are operated electronically from a control board. They can be adjusted according to changes in pressure and amount of water needed. Regular maintenance can be accomplished without any interruption of service because the pumps can be used in rotation or in any order desired.

Torrance Water District Plans for City Growth

Keeping an eye on the rapid growth of Torrance in various areas is Angus E. McVicar, Superintendent of the Torrance Municipal Water District No. 3. Together with the City Council and other municipal offices, the water district is planning well ahead of actual building an anticipating needs in areas of potential construction.

Plans are being made and construction completed to enable Torrance Water District to deliver water where and when it is needed. "The situation is well in hand. Water will be available as growth takes place," stated McVicar.

New Construction

A one million gallon tank was installed at Ocean ave. and 226th st. ($50,000), together with a booster station ($12,000), to better serve that area.

In Lomita Blvd., between Crenshaw blvd. and Hawthorne blvd., a 16" feeder main was laid to increase pressure on the west side of town ($50,000).

Additional capacity to serve Torrance was acquired by the completion of a new 16" Metropolitan Watera District connection and a 24" main in Pacific Coast Highway between Walnut st. in Lomita and Crenshaw blvd. ($138,000).

Industrial Tract Served

Several different water companies serve Torrance, but the municipally owned Torrance Water District furnishes water to 16,000 customers, or about 65% of Torrance. The Torrance Water District has only 30 employes, relatively low for the amount of customers and area served.

Water Replenishment Needs

Although most of our water is obtained from the Metropolitan Water District, McVicar warned that our local source of water, the two vast subterranean reservoirs which lie under southeastern Los Angeles County have been dangerously depleted. To protect this natural resource from salt water invasion, water must be added by direct flow method, water must be forced into the underground in certain limited areas to prevent infiltration of salt water, and pumping should be curtailed to prevent further loss.

The Water Replenishment District Committee, sponsored by water companies in the area, is circulating petitions so that action can be taken on this problem. Volunteers are needed to obtain more signatures. More information and petitions can be obtained at the Torrance Water District office. Petitions can be signed there also, or at the Torrance City Hall, and several industrial plants.

WATER MAINS—Torrance Water District No. 3 continues to improve facilities to give good service to its customers. Above are two of the new water mains laid this year to bring water to new areas or improve service to areas already served.