

CORPORATE

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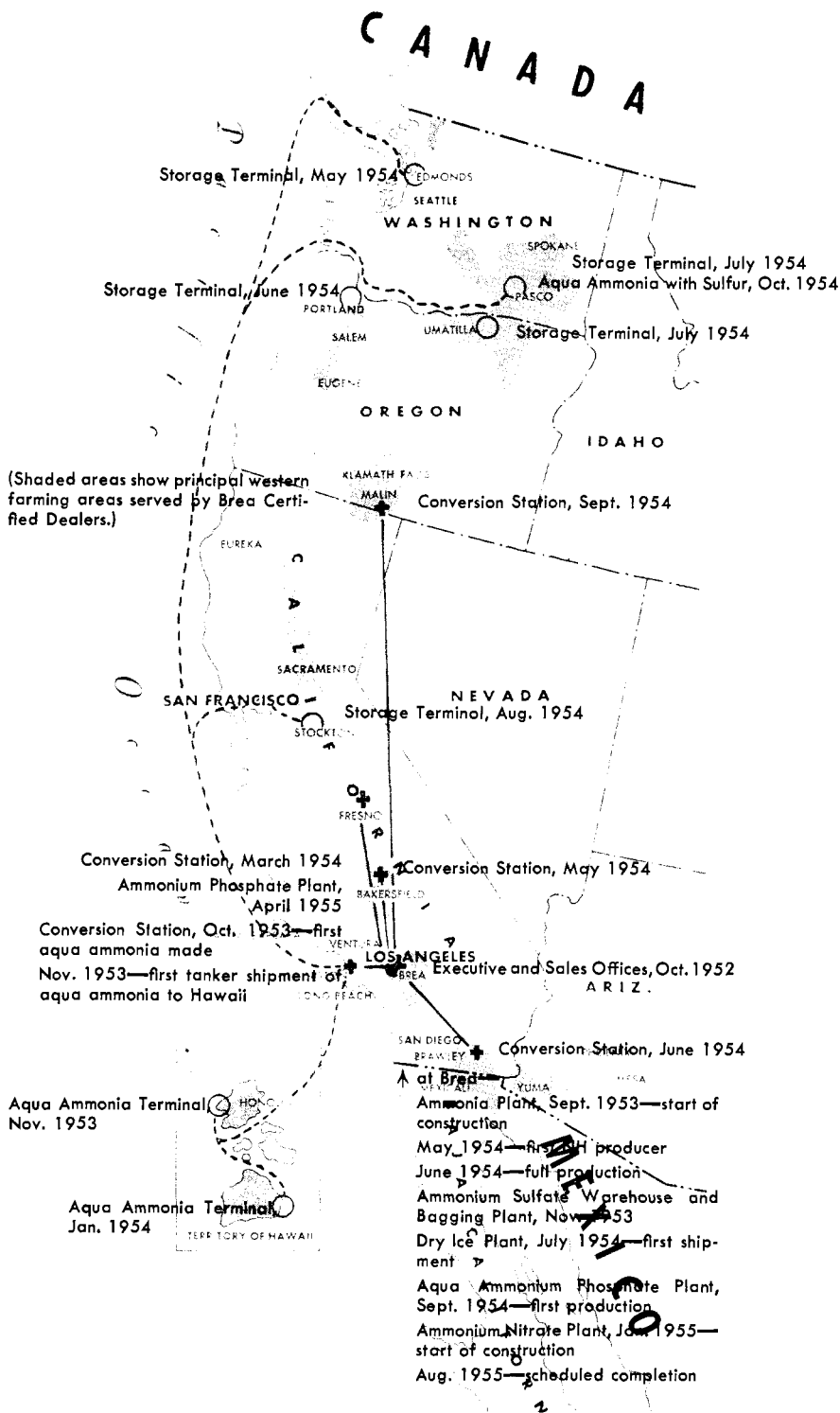
Brea Chemicals was the first big producer to market ammonia in the aqua form. Sales may top \$12 million in 1955, the first full year of plant operation

To a Spaniard the word "brea" means tar. But to a western farmer it means aqua ammonia, a product that has become synonymous with the name of Brea Chemicals, Inc., Union Oil of California's youthful operating subsidiary. Brea pioneered its best known fertilizer (24.5% ammonia in water—20% nitrogen), and today is the second largest ammonia producer west of the Rockies. Its sales volume may top \$12 million in 1955, the first full year of plant operation.

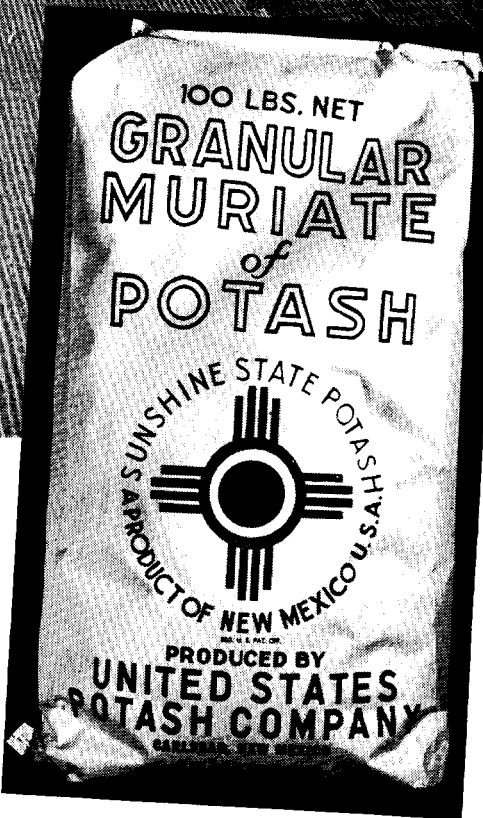
Brea entered the picture in October 1952. Its immediate function was to serve as a chemicals outlet for Union Oil's refinery by products: methyl and ethyl mercaptans, ammonium sulfate, sulfur, and a few others. But over the long term Brea was to be a full fledged chemical company, free to make and sell any product, petrochemical or not, for which its management felt there was a profitable market. For some months before Brea was formed, a Union Oil group headed by Homer Reed (now Brea president) had been probing the market possibilities of several products, chiefly and quite naturally, in the petrochemicals field. First to be considered was a production program that included benzene, toluene, xylene, propylene, phenol, and by-product ammonia.

But before this big, new petrochemicals scheme reached a fully concrete stage, two other major producers entered actively into the West Coast petrochemicals industry, which thus lost some of its attractiveness for Union. There was still ammonia, however, and after further deliberation the company decided to make this product its first major venture, and in this venture to cast its lot with agriculture. One month after its birth, then, Brea Chemicals engaged C. F. Braun & Co. to build a \$13 million ammonia (from natural gas) plant at Brea, Calif. (It was Braun's first ammonia plant as well as Brea's.) In June 1954, barely eight months after construction began, this plant reached full capacity. 235 tons per day of anhydrous ammonia.

This was a major move, but even more important was the decision to market ammonia in the aqua form. Aqua had an outstanding advantage, Brea felt, in its handling characteristics. Storage equipment could be built for about one fifth the cost of similar equipment for anhydrous ammonia, and further substantial savings could be effected as aqua moved from storage into the ground. Brea saw here a practical way to provide extensive field storage capacity and thus to level-out in part the seasonal distribution pattern that has plagued the fertilizer industry for years. Before it had any ammonia for sale the company decided to go the "aqua route," and established a distribution system



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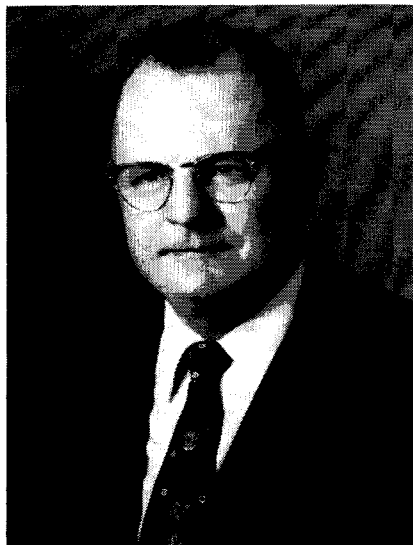
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that exploits the materials handling advantage to the fullest.

Point of Use Is the Key

The basic pattern was to set up point-of-use conversion and distribution terminals in the major farming areas that Brea intended to serve. Ammonia would move from the plant to these ter-



Homer Reed

Major power in three years

minals as anhydrous or aqua, depending upon shipping economics; from the terminals it would move by truck and in the aqua form to dealers' field tanks or directly to the consumers. Today, Brea has 13 such point-of-use terminals (including one at Brea, Calif.) with a total storage capacity of 24 million gallons of aqua ammonia, equivalent to 38 million pounds of nitrogen.

On long, overland hauls, ammonia moves most economically in the anhydrous form, and so Brea ships it in this form by rail or truck to inland terminals at Bakersfield, Brawley, and Fresno, Calif., and Malin, Ore. Here it is converted to aqua and stored or distributed as desired. But aqua can be shipped economically by water, and so at the Wilmington, Calif., terminal but a short distance from the main plant, Brea converts anhydrous to aqua which is then carried by ocean going tanker directly to terminals at Hilo and Honolulu, Hawaii, Portland, Ore., and Edmunds, Wash. And terminals at Stockton, Calif., Umtilla, Ore., and Pasco, Wash., are reached by river barges which transship aqua from the tankers originating at Wilmington. Over water shipment got its first major test in November 1953 when a tanker of Brea aqua (made from purchased anhydrous ammonia) arrived in Hawaii for use on the Hawaiian sugar cane fields. The test

was successful, and Brea now ships aqua by sea to Puerto Rico and other export markets as well as to Hawaii.

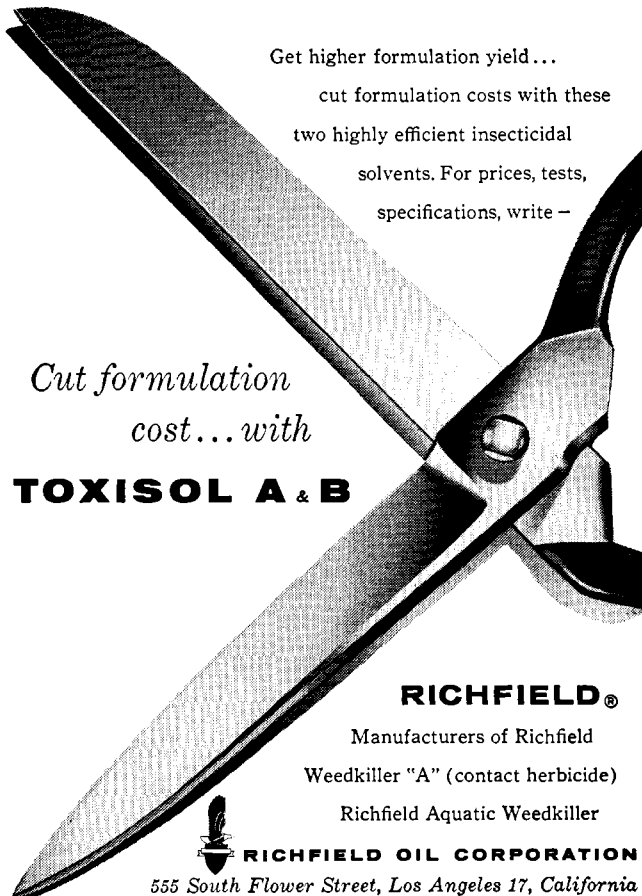
From the distribution terminals, Brea markets aqua through selected, independent dealers, each of whom supplies his own handling and application facilities. Such equipment requires a substantial capital investment which in effect protects the individual dealer from fly-by-night competitors. Aqua ammonia was a relatively new product in many respects, and while most of the dealers selected had been already established in the field of agriculture, considerable education was necessary. This was equally true at the consumer level, and so early in the aqua program Brea established its agricultural technical service to fill this need. Proper equipment was essential to the success of the new product, too, and Brea now has an equipment division which works with manufacturers on the development of newer and more efficient equipment for applying aqua directly in the ground or in irrigation water.

No sooner was the aqua program firmly on its feet than Brea moved further into liquid fertilizers in the form of ammonium phosphate solutions. Two, 25,000-ton-per-year plants are now making this product at Brea and Fresno, Calif., and capacity could be increased by one third with little additional capital investment. While Brea has emphasized fertilizer solutions to date, it has marketed some ammonium sulfate. And it will be well into the solid fertilizer business by late summer, when ammonium nitrate prills from the new, 50,000-ton-per-year nitric acid and ammonium nitrate plant at Brea, Calif., are expected to reach the market. Built at a cost of more than \$2 million, this will be the first major plant in the West to make ammonium nitrate for agriculture.

Industrial Chemicals Not Neglected

In the industrial field Brea is the biggest marketer of dry ice in the West and also ships a significant amount of aqua ammonia to pulp and paper mills.

In less than three years, then, Brea Chemicals has become a power in the highly competitive western fertilizer industry. It has gone into industrial chemicals to some extent and has a major research program under way to develop new chemicals for both industry and agriculture. The company's "operating committee," headed by president Reed, is young—average age is 38—and expansion minded, and plenty of space, natural gas, and other hydrocarbons (from Union refineries) are available at the Brea, Calif., plant site. Past performance indicates that Brea Chemicals' next moves, whether into industry or further into agricultures, are likely to be interesting.




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