



Agrium®



Borger

Nitrogen Operations



Thanks in part to the dedication of our employees worldwide, Agrium continues to nourish our growing world as one of the leading providers of inputs for plant growth; in turn, creating value for each of our stakeholders.



Agrium Wholesale

Agrium Wholesale produces, markets and distributes nitrogen, phosphate, potash and sulphate-based products for agricultural and industrial customers around the world. We have production and distribution facilities in North America, South America and Egypt, with additional distribution in Europe.

We have a production capacity of approximately 10 million product tonnes of the major crop nutrients: 6 million tonnes of nitrogen, 3 million tonnes of potash, and 1 million tonnes of phosphate. We also produce approximately 0.3 million tonnes of ammonium sulphate. These crop nutrients are produced at 12 major production facilities, 2 mines and a number of smaller regional upgrade facilities.

Manufacturing Excellence

Agrium Manufacturing is committed to operating at a standard of excellence, enabling us to produce quality nutrients for Agrium to help feed the world. Our mission: "Engaged employees driving safe, reliable production at a competitive cost."

In order to safely, effectively and efficiently produce quality nutrients, there are six key focus areas that drive how we operate and achieve our goals – Environment, Health, Safety and Security (EHS&S), Process Safety, Reliability, People, Projects and Cost. By excelling in these six areas, we are operating safely, reliably, and competitively, and with that, production comes naturally. We are continually looking for ways to optimize our production to ensure sales and marketing can get the right amount of nutrients where it needs to go, when it needs to get there.

Fertilizer Products

Agrium produces 4.7 million tons (4.3 million tonnes) annually which is 20% of North American production of anhydrous ammonia. About 1.8 million tons (2 million tonnes) is sold directly as fertilizer or to the industrial sector. The remainder is used as raw material to produce 3.3 million tons (3 million tonnes) of urea and over 1.1 million tons (1 million tonnes) of other fertilizer products.

Borger Nitrogen Operations produces 500,500 tons (453,000 tonnes) of ammonia and 674,000 tons (612,000 tonnes) of urea annually. In addition, the site also produces Diesel Exhaust Fluid (DEF) grade prilled urea.

Anhydrous ammonia is manufactured using natural gas, water and air. The water comes from nearby city-owned wells and natural gas is purchased from local producers. Farmers inject ammonia into the soil as a nutrient supplement for most crops. It can also be used for industrial purposes, such as the promotion of bacterial growth in waste treatment plants, and as an efficient refrigerant.

By reacting ammonia and carbon dioxide at high pressure and temperature, urea is formed. This urea (either solid granules or prills) is used to fertilize farmland, forest and lawns.

One of the few nitrogen facilities in the US with the flexibility to make urea in both prilled and granular forms, Borger serves fertilizer dealers as well as animal feed suppliers. The facility is equipped with a granulator to produce uniform sized fertilizer grade product and a prill tower for the production of micro-prilled urea that is specially sized to mix in animal-feed supplements.

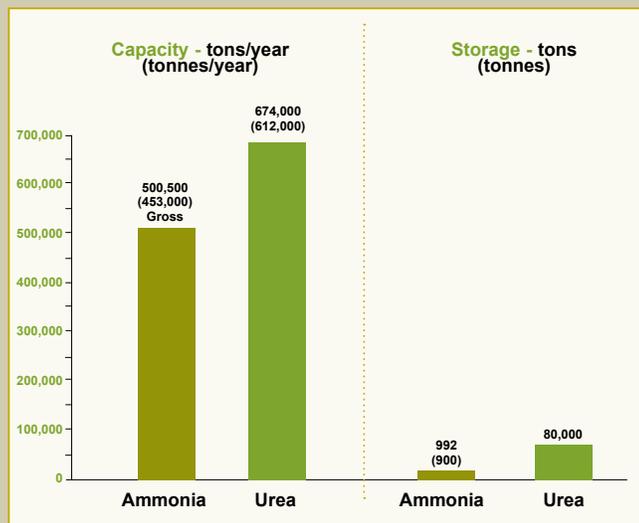
Borger Nitrogen Operations



The Borger Plant, built in 1968, is located on 290 acres (118 hectares) near the community of Borger, Texas, 47 miles (75 kilometres) northeast of Amarillo. The plant produces and market three primary groups of nutrients: ammonia, urea, and Diesel Exhaust Fluid (DEF). The plant employs 97 people.

Borger Nitrogen Operations

Production and Storage Capacities



"Gross" means total ammonia production. "Net" means the amount of product available for sale after deducting the ammonia used in the manufacture of urea and other products.

Production Processes

AMMONIA — NH_3

Natural gas reacts with steam over a catalyst to form hydrogen and carbon dioxide. Hydrogen and nitrogen from the air react over another catalyst at a high temperature and pressure to produce gaseous ammonia. The gaseous ammonia is then condensed, cooled, and stored as a pressurized liquid.

Liquid anhydrous ammonia is colorless and characterized by its pungent odor. At atmospheric pressure it is a liquid at -33°C . It contains 82% nitrogen.

UREA — $\text{CO}(\text{NH}_2)_2$

Waste carbon dioxide from the ammonia process is reacted with ammonia at high pressure and temperatures to produce urea in a water solution. Process evaporators remove the water and the remaining urea is granulated in a process developed by Agrium in the 1960's. Free flowing white granules and prills are made in different sizes for different uses. Urea contains 46% nitrogen.

Distribution and Markets

A 900-mile (1,440 kilometres) pipeline, owned and operated by a third-party, moves anhydrous ammonia to nine distribution terminals and storage sites throughout the Midwest. The world's first long-distance common carrier pipeline for transporting ammonia enables Agrium to supply product dependably and economically. Truck loading terminals for direct delivery to dealers are located in Texas, Oklahoma, Kansas, Nebraska, Iowa and Minnesota.



Stewardship

The Borger Plant has implemented a project to utilize effluent wastewater from the City of Borger's wastewater treatment plant. Agrium financed the purchase and installation of a pipeline from the city's wastewater treatment plant to use the wastewater for Agrium's cooling water system. This is reducing the amount of water discharged from the city's treatment plant and also reduces Agrium's cooling water costs.

The Borger Plant uses modern pollution control methods. Plant upgrades have enabled Borger to conform to Agrium's high environmental standards and to government regulations.

Because a reliable supply is critical to customers, the plant underwent one of the company's most extensive upgrades to increase its capacity and ensure continuous operation of the facility. The renovation improved gas use efficiency; reducing the amount of natural gas used to make anhydrous ammonia and thus conserving a valuable natural resource. In addition, the upgrade enabled the operation to reduce its waste water production by one-third through recycling. A second upgrade was also completed in 1995 to increase the capacity of two process compressors and remove other bottlenecks for reliable production.

The plant is equipped with scrubbers, desorbers, strippers, and a flare system to suppress or eliminate emissions of atmospheric pollutants.

The Borger Plant is a "zero" discharge facility and other projects are being investigated to recycle more of the plant's industrial process water.

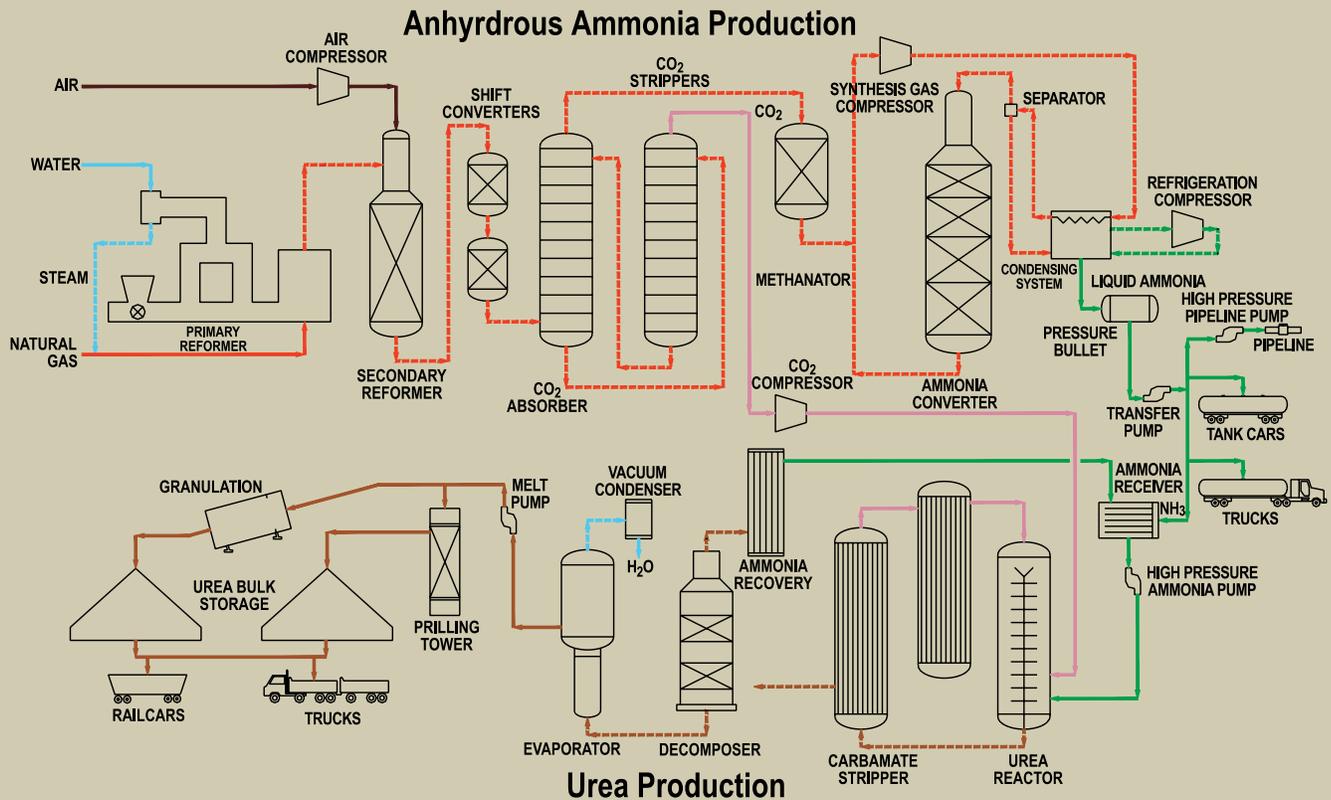
The groundwater and soil throughout the plant and the surrounding ranch land is regularly monitored.

Safety

Safety isn't just a priority at Agrium, it is a core value. We care about the personal health and safety of our employees and our customers and our impact on the environment. Our commitment to Environment, Health, Safety and Security is in everything that we do and is a fundamental driver in helping us achieve our mission to help *Feed the World*.



Our Production Process



Impact on Local Economy

Our Borger Nitrogen Operation spends millions of dollars in Texas for raw materials, goods, services and equipment. Agrium is one of the largest taxpayers for the Borger Independent School District and Frank Phillips College.

Borger Nitrogen Operation participates actively in the community in which we operate. We are an active member of the Chamber of Commerce and an industry leader for the United Way. We're providing support, helping those in need, and working in partnership with others to build stronger communities.

Some of the organizations we support include:

- High Plains Helping Hands
- HOPE
- United Way
- Hutchinson County Cares
- Frank Phillips College
- Youth sports and leadership
- LEPC
- Snack Pak 4 Kids



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