

Idaho's Phosphate Industry, 1994 Update

Idaho's phosphate industry has been the largest contributor to the state's nonfuel mineral production for several years. In 1990, for example, fertilizer and elemental phosphorous production in the state was worth over \$585 million or 2½ times the combined output from all minerals. At the same time, significant changes have occurred in this sector of the mining industry since first reported in 1986 in GeoNote 8, *Idaho's Phosphate Industry*. That GeoNote contains valuable background to this update and is recommended to the reader.

Two primary phosphate commodities are still produced in southeast Idaho, phosphoric acid for fertilizers and elemental phosphorous for a variety of uses. Simplot Company and NuWest Industries make the acid. FMC Corporation and Monsanto Company operate elemental plants.

According to the latest figures, FMC — the major company in the state's mining industry — is also the industry's largest employer. FMC has 550 workers at its Pocatello plant and another 100 at the mine. Among the other companies, Monsanto has a combined work force of about 480 at its mine and plant. NuWest employs about 250 people at Conda. Rhone Poulenc has about 60 at its mine. The total of 1,440 employed by these companies is down considerably from the 2,600 of 1986. It represents, as it did for 1986, just over half of those in all mining ventures in Idaho. Workers in the mining sector are still the highest paid industrial employees in the state.

Federal phosphate leases provide bonus revenue to the state. Half of the lease money is returned to the state and is earmarked for schools and roads. Of this, ninety percent goes to the state proper and ten percent is apportioned among the impacted counties. In 1991, Idaho's share of the funds amounted to \$3.7 million, far more than the \$2.3 million returned to Idaho from the grazing leases on federal land.

Environmental Matters

Recently, phosphate producers have faced stricter environmental regulations as have many other industries in the United States. Monsanto, FMC, and Simplot

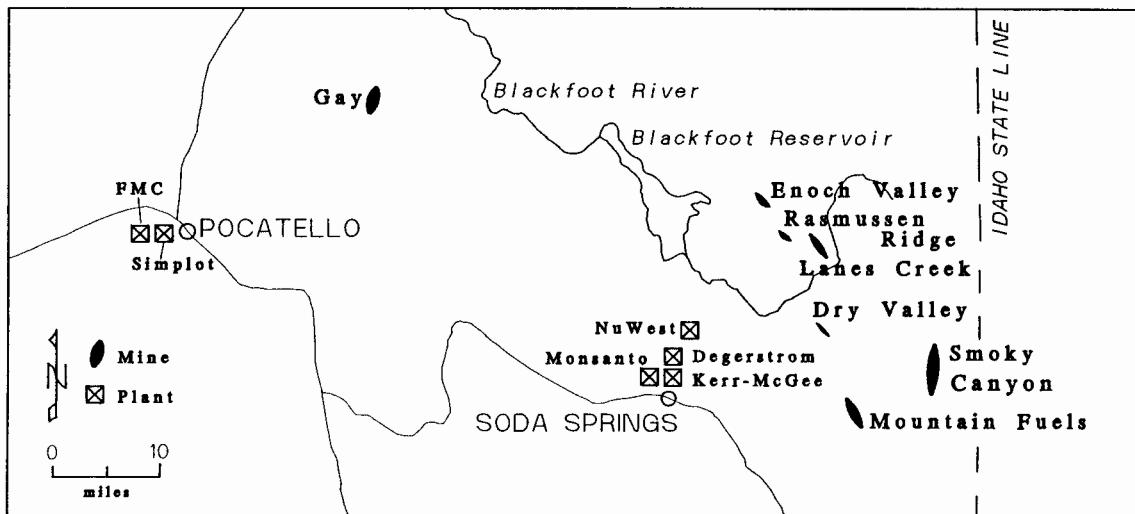
have spent many millions of dollars complying with air-quality standards established under ever more restrictive government guidelines. Many problems with compliance relate to the emissions from calciners, which are used in the plants to dry and remove organic material from the ore. In addition, the companies have had to address water quality problems at Pocatello and on the Fort Hall Indian Reservation. Furthermore, the by-product use of slag as a general aggregate has also come under scrutiny because of the slag's slight radioactivity. In its natural state, phosphate ore contains uranium as well as other metals in trace amounts.

Mine reclamation has been the industry's success story. Companies have had an exemplary record for many years and continue to win awards for their efforts in restoring the mined land to its nearly original state. Yet, another operating factor — rising energy costs — may limit production for even the big companies like Monsanto and FMC, the largest customers respectively of Utah Power and Light and Idaho Power. In the decade ahead, the plants face a challenge to strong production from higher operating costs in energy consumption and more stringent environmental parameters.

Company Changes Since 1986

Beker Industries declared Chapter 11 bankruptcy in 1986. The following year, a new company, NuWest Industries, bought out Beker's interests. Washington Construction was the mining contractor for NuWest at the Mountain Fuels and Champ leases, both of which are now about exhausted. NuWest soon had financial problems of its own due to rapid expansion. The old Beker and NuWest were mining partners with the Canadian company, Western Cooperative Fertilizer, in a venture called the Conda Partnership. NuWest bought out Western's interest in 1991 and now owns the entire Conda plant.

In 1993, NuWest reached a mining agreement with Rhone Poulenc Basic Chemicals Company. Rhone Poulenc will provide phosphate ore for the Conda plant from a new mine at South Rasmussen Ridge. This mine replaced the exhausted Wooley Valley mine, which was operated until 1985 by Stauffer Chemical. Not mentioned in the previous GeoNote was the purchase in 1985 of Stauffer's phosphorous operations by Chesbrough-Ponds, which was acquired in 1986 by



Phosphate mines and plants in Idaho.

Unilever N.V. Unilever sold the mine and plant in 1986 to Imperial Chemical, who then sold the operation in 1987 to Rhone Poulenc. Like Stauffer, Rhone Poulenc ships phosphate ore from Idaho to its elemental phosphorous plant at Silver Bow, Montana.

Monsanto still does its own mining (Dravo-Soda Springs, the contractor) but moved to the Enoch Valley mine in 1992 after the Henry mine shut down in 1991. The company's plant at Soda Springs can make annually about 225 million pounds of elemental phosphorous.

The Gay mine, which was named for J.R. Simplot's only daughter, closed in 1993 after 47 years of production. The Simplot Company mined at the Gay, located on the Fort Hall Reservation, for both its own and FMC's plants. The company now gets all of its ore from the Smokey Canyon mine. Simplot pumps slurried ore through an 87-mile-long pipeline from Smokey Canyon to Pocatello. The line was completed in 1991 at a cost of about \$50 million. This ore transport method has greatly reduced dust emissions from the fertilizer plant. About 1.5 million tons of ore is pumped through the line annually.

With the closing of the Gay, FMC will mine its own phosphate for the first time from its lease in Dry Valley. Ore from Dry Valley will feed the elemental phosphorous plant at Pocatello. This facility is the largest of its kind in the world. It has a capacity for

producing annually about 260 million pounds of elemental phosphorous.

Kerr-McGee Corporation still extracts vanadium from ferrophosphorous metal, a by-product of the elemental phosphorous operations. Its plant near Soda Springs is the largest vanadium producer in the United States and is located across the road from Monsanto's plant.

In 1991 N.A. Degerstrom built a plant at Soda Springs to extract gallium and silver from treater dust, another by-product of the elemental phosphorous process. The facility never operated due to low metal prices and design problems.

Overall, Idaho's phosphate industry has fared well since 1986. In contrast to silver and gold, phosphate has remained a profitable commodity under current mining methods and ore grade. Though companies have downsized, the phosphate industry has not undergone the widespread mine and plant closures of the precious metals industry.

A sample of phosphate ore is available upon request.