Smoky Canyon Mine

The Smoky Canyon Mine is located in T. 8, 9 S., R. 45, 46 E., in Caribou County, Idaho, about 24 air miles east of Soda Springs, Idaho and 6 air miles west of Afton, Wyoming. The J. R. Simplot Company operates the mine on five Federal phosphate leases, I-012890, I-015259, I-26843, I-27801, and I-30369 (Figure 185).

The first reported phosphate exploration activity occurred in October, 1914, when the USGS excavated a trench in the SE¼NW¼ of Section 29, T. 8 S., R. 46 E. The trench was dug at a right angle to the strike of the phosphate ore zone, but had to be offset after excavation had started due to unexpected structure problems. The trench was completed in two sections, 20.5 feet and 117.5 feet in length, and averaging 3.5 to 5.5 feet in depth (Mansfield, 1927).

The next episode of phosphate exploration also was performed by the USGS. In August, 1949, a trench (#1303) was excavated on the west limb of the Boulder Creek anticline in Pole Canyon, in the SW¼SW¼, Section 31, T. 8 S., R. 46 E. (Sheldon and others, 1953; Montgomery and Cheney, 1967; Derkey and others, 1984). This trench uncovered 145.5 feet of the Phosphoria Formation.

On September 29, 1961, Wells Cargo, Inc. filed an application for a Federal phosphate lease with the BLM. The land applied for was determined to be available only for competitive lease and a lease sale was held on April 12, 1962. There were four bidders at the sale, the San Francisco Chemical Company, J. A. Terteling and Sons, Wells Cargo, Inc., and the Ruby Company. The Ruby Company was the successful high bidder and was issued Federal Phosphate Lease I-012890 on October 1, 1962. Upon issuance of the lease, the Ruby Company immediately initiated an exploration program that consisted of drilling 28 exploration holes utilizing a rotary air return drill.

On April 17, 1964, John D. Archer, a prominent and reoccurring name in modern Idaho phosphate, applied for a prospecting permit for phosphate on lands immediately adjacent to the Ruby Company lease. The permit was issued for two years to Archer on February 18, 1965. The permit was extended for an additional two years and was finally explored by three trenches in 1968. Phosphate was discovered on the lands of the permit and Archer applied to the BLM for a Preference Right non-competitive lease on January 3, 1969. The Federal phosphate lease, I-015259, was issued to Mr. Archer on August 1, 1969.

Meanwhile, the Ruby Company continued to explore their lease. In early 1966, the Ruby Company changed their name to Simplot Industries, Inc. Simplot Industries assigned lease I-012890 to the Bannock Chemical Company on June 1, 1966.

On June 1, 1975, John Archer assigned lease I-015259 to a partnership that included Earth Science, Inc. (50%), National Steel Corp. (25%), and Southwire Company (25%). The lease was further

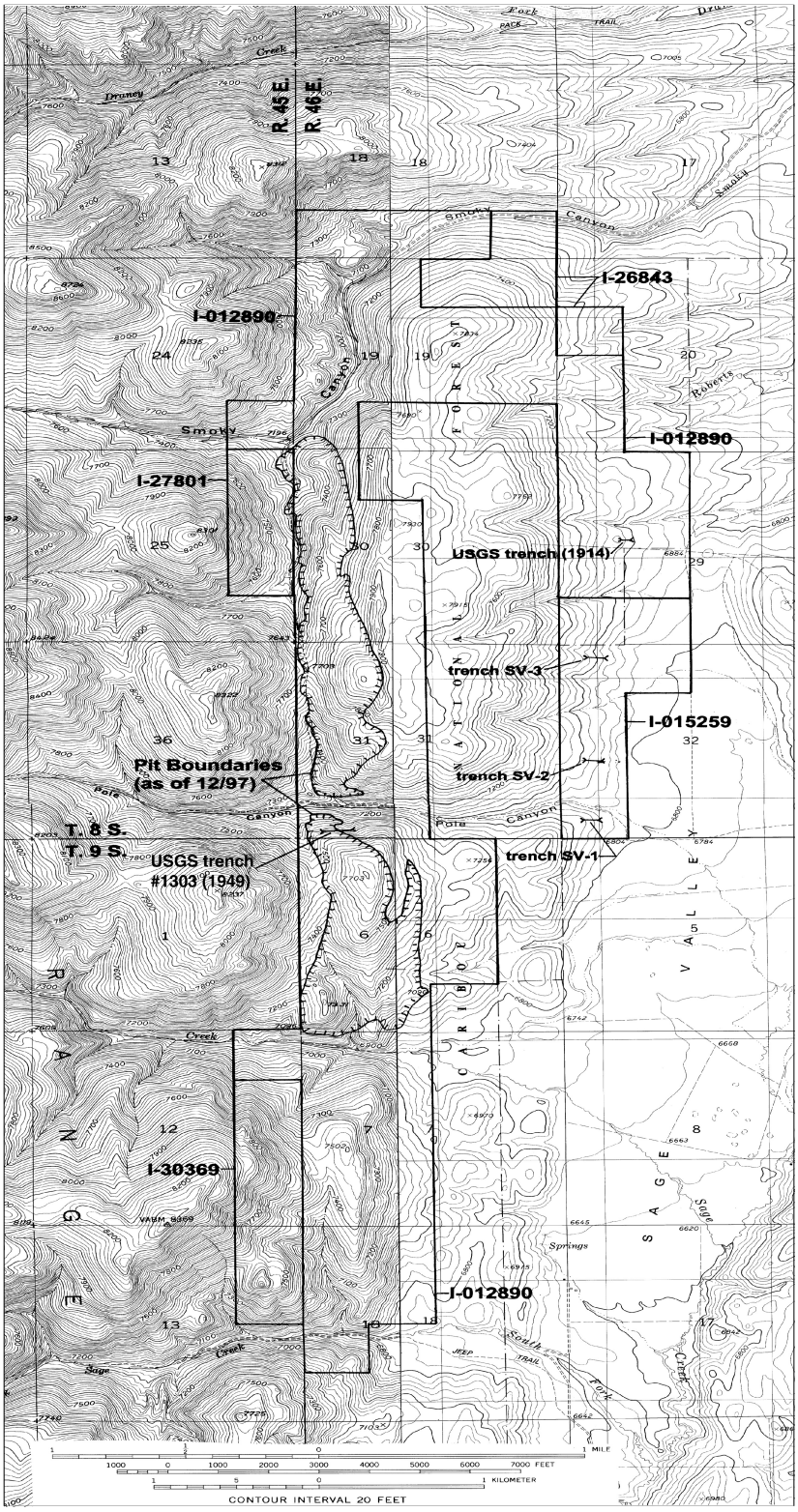

Figure 185. Map showing the location of the Smoky Canyon Mine, Caribou County, Idaho.

assigned to Alumet Company on December 1, 1975. Alumet was a formalization of the 3-way partnership.

The two leases were actively explored by the respective lease holders throughout the late 1970s and early 1980s. The Bannock Chemical Company drilled 12 exploration holes in 1977 and excavated four trenches in 1981, utilizing a D7 Caterpillar bulldozer. Exploration on lease I-012890 indicated that phosphate ore could be found outside the bounds of the existing lease. On February 1, 1983, the lease was assigned to the J. R. Simplot Company. Also on February 1, 1983, the Simplot Company made a application for a fringe acreage lease to add additional ore to their proposed mine. That lease, I-26843, was issued to the Company on September 1, 1989.

Construction of the Smoky Canyon Mine began in the summer of 1982. Construction of an on-site mill was started in 1983. The Smoky Canyon Mine was initially designed to be unique among the modern southeast Idaho phosphate mines inasmuch as the mined ore was to be milled and beneficiated at the mine site. The Smoky Canyon Mine complex consists of an open-pit mine (Figure 186), an ore beneficiation plant, including a flotation circuit, a phosphate concentrate slurry line, a tailings thickener and tailing pipeline system, and a tailings impoundment. At the mine design stage, various transportation issues were examined and a slurry pipeline was decided upon. No other Idaho phosphate mine had

Figure 186. Smoky Canyon Mine, June 27, 1996. Photo by the author.

used this form of ore shipment before. Construction of the first section of the 8-inch inside diameter slurry pipeline was completed to the Simplot plant facility at Conda, Idaho, a distance of about 27 miles, in about 3 months, from late spring to early fall, 1983.

The Smoky Canyon Mine was brought online early in 1984 (Anonymous, 1989) as a truck/shovel operation utilizing a P & H 2300 electric shovel (Figure 187), 170-ton Lectra Haul trucks, and 130-ton Caterpillar trucks for hauling both ore and waste. The pipeline went into operation in May of that year. After the ore was processed and slurried, it was sent on its way to the Simplot Conda facility. At Conda, the ore was dewatered and part of the ore was calcined. The calcined ore was then shipped by rail to a Simplot plant in California for further processing. The uncalcined ore was shipped by rail to the Simplot plant at Pocatello for manufacturing into fertilizer products (Dillard, 1992). The Conda calciner was eventually shut down in 1985 and all ore was rail shipped to the Pocatello facility.

Figure 187. Truck-shovel operation, Smoky Canyon Mine, June 27, 1996. Photo by the author.

Exploration continued on the Simplot leases throughout the 1980s. Six holes were drilled on the leases in 1985, six more in 1986, and 16 more in 1987. The Simplot Company, ever watchful for opportunities for additional ore reserves, entered into an agreement with the Alumet Company in 1987 to conduct an exploration program on the Alumet lease I-015259. The Simplot Company reopened the three 1968 Archer trenches, renamed them SV-1, -2, and -3, and resampled the phosphate ore. Exploration drilling continued on the Simplot leases with 14 holes in 1988, and 23 holes in 1990. All of

this exploration drilling led the Simplot Company to apply for another fringe acreage lease on July 16, 1990. Federal phosphate lease I-27801 was issued to the Simplot Company on August 1, 1991. Also in August, 1991, construction of the final phase of the slurry pipeline was completed, taking 3½ months and extending it 59 miles from Conda to the Simplot plant at Pocatello. Total distance for the pipeline is 86 miles. A booster pump facility was installed at Conda.

The Simplot Company applied for a third fringe acreage lease on November 18, 1993. Phosphate lease I-30369 was issued to the company on October 1, 1995. The final piece of the Smoky Canyon Mine leasehold occurred on June 1, 1996 when the Simplot Company acquired the Alumet Lease I-015259. Simplot now controlled all of the leases in the immediate area of the mine. As of the writing of this report, mining continues on the west limb of the Boulder Creek anticline.