

## BEEHIVE COKING OVENS

Beehive coking ovens were once a fairly common sight in southern Santa Fe County. They are now all but gone. The ovens – stone, brick or adobe dome-shaped structures – were used to produce a fuel called coke. Coke burns hot and clean, which puts it in high demand for certain metallurgical operations, such as smelting, as well as for the production of steel.

Beehive ovens are a simple, labor-intensive means of producing coke. In the United States all beehive ovens were replaced in the early 20th century by cheaper, more mechanized processes. The last U.S. beehive coking ovens were built in Bretz, West Virginia, in 1903, by the Elkins Coal & Coke Company. This particular factoid is of interest to New Mexicans because this is the same Stephen B. Elkins who had been the New Mexico Territorial representative in Congress, and who was also the first kingpin of the notorious Santa Fe Ring. In 1903 Elkins was the U.S. Senator from West Virginia.

Back in 1891 Senator Elkins had sold a portion (20,000 acres) of his Ortiz Mining Grant in Santa Fe County to the AT&SF Railroad. Those coal-rich lands that he sold had been called the Cerrillos Coal Banks, but in the sale the parcel was redesignated the Madrid Tract. Starting in 1892 the AT&SF, through some subsidiary companies, developed the coal mines of the Madrid Tract, and built the town of Madrid. In the middle 1890s they constructed 50 beehive coking ovens at Waldo to produce fuel for their affiliated steel-making plants in Pueblo, Colorado, and El Paso, Texas.

Coke is to coal what charcoal is to wood.

The natural fuel is partially burned in an enclosed, oxygen-poor environment – a beehive oven – so that the volatile and undesirable components, such as naturally-occurring sulfur in the coal, are driven off. The resultant product, coke, is light and porous, and when later on used as fuel in an oxygen-rich environment, it burns rapidly, at high temperature, and very cleanly. The Bessemer process for the manufacture of steel requires coke, and air blown into the Bessemer furnace to facilitate combustion is why it is called a blast furnace. The Bessemer process for making steel requires lots of coke.

The glory days of the Waldo coke ovens were 1895 to 1906, the years when the Colorado Fuel & Iron Company controlled all the mining at Madrid. By mid-1895 one hundred railway cars of coke per month were coming out of the Waldo coke ovens. This represented nearly a quarter of the total production of bituminous coal at Madrid. (Coke is made from bituminous coal.)

An article in the New Mexican of January 25, 1900, states that thirty men were regularly at work at the ovens at Waldo, all drawing good wages. Ramon Sandoval was in charge, and Jose S.

Gonzales was his assistant. The output was three car loads of coke daily. The men worked under the task system, and generally finished their tasks in six or seven hours, when they knocked off and got pay for a full day's work. The article does not mention that the work – coal shoveled in, coke shoveled out – was noxious, backbreaking and extremely dirty.

That level of production at Waldo didn't last. Other, closer, cheaper sources, coupled with general industry strife (at Ludlow, Colorado, for example) led, in the first years of the 20th century, to the abandonment of all coking operations at Waldo.

The Waldo coke ovens sat derelict until the late 1930s, when a Madrid miner by the name of Chago and the young Bill Henderson, under a contract with Oscar Huber, tore them down to salvage the bricks. Many of those bricks were then used by Mr. Huber to construct the Huber Motor Company building in Madrid, now the Johnson's of Madrid Gallery. Some of the bricks also went into the construction of the garages behind that motor company.

The Big Copper smelter at San Pedro, two miles southeast of Golden, was an early and constant consumer of Cerrillos Coal Banks coke. Many years before the AT&SF Railroad arrived, and before the town of Madrid even existed, local entrepreneurs were coking coal at Keeseville (Rogersville) and Cerrillos Coal Banks, and transporting the coke by wagon to the San Pedro smelter. When Colorado Fuel & Iron gained control of Madrid they monopolized all of the production, leaving others users to scramble. The demands for coke at San Pedro encouraged the development of the coal deposits at Omara, east of the Ortiz Mountains, and at Hagan, in Sandoval County. Beehive coking ovens were built and operated at San Pedro, and some of those structures survived intact there until the 1950s.

Lamy Junction got into the act as well. Though more famous for its lime kilns, brick kilns, charcoal ovens, and stone quarries, coke was produced in beehive ovens at Lamy too, with most of the raw coal coming from Omara. In contrast to the masonry ovens at Waldo and San Pedro, the evidence indicates the Lamy ovens were built largely of adobe. Today they are long gone.

A hundred years ago beehive coking ovens might have been a fairly common sight in this part of New Mexico. Of those once-numerous domes we have now some crumbling foundations, old albums of yellowed photographs, and a few faded memories.

[waldo cokesBW] satellite view, north is top

[San Pedro ovens] southeast of Golden