

## Paving Company Controls Aggregate Supply with Crusher and Quarry Purchase

Central Paving, a company based in the Wichita suburb of Benton, KS., covers a three-county area with its asphalt paving division. Serving a broad mix of customers in the municipal, state and private sectors, this family-owned paving business looked for - and found -



Central Paving began producing RAP and recycled concrete with a Pioneer 4030 Recycler (portable HSI crushing plant) and a Kolberg Model 241 Screening Plant. After the company purchased a quarry, they added a Pioneer CS 2436 jaw crusher and upgraded the Kolberg Model 241 screening plant with a Pioneer 5 x 16 screen.

the most competitive way to get the various types of aggregate necessary to create pavement base and meet specification asphalt mixes: get into the aggregate business.

### All In The Family

Central Paving became its own supplier in a natural progression which started when founder Eddie Edson purchased a drum mix asphalt plant in 1993. In 1998, as Edson began to prepare his children for his eventual retirement, they followed his example of autonomy - first buying a portable crushing and screening setup to produce RAP and recycled concrete, and then purchasing an abandoned quarry and a larger primary jaw crushing setup to produce virgin aggregate, as well.

"We had been purchasing and using all native stone in our asphalt mixes before last spring," says Bryan Edson, Secretary/Treasurer of Central Paving. Bryan Edson is currently in charge of all operations at Central Paving, while his brother-in-law Steve runs the asphalt plant

---

*"We're allowed to use up to 25% RAP in most mixes ... and we can use recycled concrete as a base under the asphalt in our paving operation. We just felt that in order to be truly competitive, we needed to begin producing this material ourselves."*

---

and crushing side. His sister Sherry oversees accounting and office management. "We're allowed to use up to 25% RAP in most mixes, however, and we can use recycled concrete as a base under the asphalt in our paving operation. We just felt that in order to be truly competitive, we needed to begin producing this material ourselves," he says.

### Selecting The Right Equipment

Sherry, Steve and Bryan put their heads together with their father in early 1998 and began to look for a portable crusher and screening plant that would best serve their needs. Not familiar with crushing equipment, the Edson family traveled with local dealers and viewed different crusher models in action around the state. They chose to purchase a Pioneer 4030 Recycler (a portable horizontal shaft impact crushing plant), along with a Kolberg Model 241 Screening Plant and two Kolberg Series 2 Stackers, all manufactured by Kolberg-Pioneer, Inc., of

Yankton, SD, An Astec Company.

"We felt the Pioneer crusher and the Kolberg screening and stacking equipment provided the best fit for us for several reasons. We saw, first, that they manufacture high-quality equipment, and, second, that we would receive all the support we needed from the factory and from their local dealer, Berry Tractor," Edson says.

The Pioneer 4030 Recycler was chosen in particular because of its portability and the fact that it was developed especially for recycling applications. Central Paving's All-Mix asphalt plant is portable, and travels to various locations within the three counties. The Pioneer 4030 Recycler is a horizontal shaft impact (HSI) crusher with a 40" x 27.5" rotor. With a 12'9" travel height and a tandem axle, the 4030 is portable without permits in the continental United States and Hawaii. It can be set up, ready to crush, in under two hours. Because of its low feed height - just 9' - the 4030 does not need a ramp to load the hopper. In addition, it has the highest discharge height in the industry - 11' - allowing for stockpiling directly under the discharge conveyor. The 4030 Recycler is ideal for tight workspaces, with an operating length of just 44'. Other unique features of the 4030 include hydraulic adjustment for upper and lower aprons and an upper cover that opens past center for easy access to the impactor.

The Kolberg Model 241 Screening Plant is designed for efficiency in all types of material. The self-relieving hopper has 70° side walls and a 90° front wall, which

minimizes material bridging and increases material flow. A patented scissors action grizzly design further minimizes material wedging, effectively scalping oversize material.



*Central Paving purchased portable equipment that could travel with its asphalt plant. On a closed circuit, the Pioneer 4030 Recycler is used as a secondary crusher, or it can be used as a stand alone plant configuration to crush RAP or recycled concrete.*

By spring of 1998, the crushing setup was running at Central Paving's asphalt plant, producing RAP and recycled concrete for its road bases and asphalt mixes. "Then we began toying with the idea of also producing our own virgin stone," says Edson.

## Expansion Into The Quarry Business

In July 1998, Central Paving purchased an abandoned quarry that came up for sale at auction within the metro Wichita area. The Edsons realized they needed a primary jaw crusher to produce native stone from the quarry, so they again looked at all available options before purchasing a Pioneer CS 2436 Jaw Crusher, and trading their Kolberg Model 241 Screening Plant for a Pioneer 5 x 16 screen. They kept the Pioneer 4030 to use as a secondary crusher and to continue crushing their RAP.

As a primary jaw, the highway portable Pioneer CS 2436 has several features which make it ideal for gravel or hard rock applications. For example, a close bearing spacing minimizes bending forces on the eccentric shaft - a common problem in hard rock. Spherical, self-aligning bearings are designed to withstand both side thrust and heavy radial loads. A heavy duty cast pitman provides for increased strength without added weight, an important feature for a portable jaw. The precise angle and placement of the toggle plate optimize crushing action through the full range of closed side settings, in addition to protecting bearings, shaft and pitman if any non-crushable material enters the chamber. The eccentric

shaft on the CS 2436 is extra-heavy duty, machined from chrome molybdenum steel to withstand the enormous shockloads of hard rock crushing. The stroke of the shaft is the largest possible for maximum crushing pressure and high volume production.

The Edsons, again, preferred to purchase portable crushing equipment that can travel with their asphalt plant. "We have continued to keep our crushing and screening operation at the asphalt plant site, and we use backhoes to pull out the shelf stone in the quarry and transport it to the crushing setup" Edson says. "We do this because the quarry is close to the current asphalt plant site, plus we're in the metro Wichita area and we didn't want to have to deal with getting zoning for blasting." Edson explains that the quarry has numerous reserves of shelf stone from which the company can draw.

## Optional Crusher Configurations

"We can close the circuit and use the 4030 as a secondary crusher, or we can utilize the 4030 by itself within the configuration to still crush our RAP and recycled concrete. The 4030 is preferable for RAP because the asphalt can gum up a jaw crusher," he adds.

With the new CS 2436 primary jaw on closed circuit, the Edsons can now crush their native stone and then screen it with the Pioneer 5 x 16 screen for oversize material, which then goes to the Pioneer 4030 HSI and back to the screen. Properly sized material is sent to the stockpiles using the two Kolberg Series 2 stackers.

"We have been very happy with the equipment," Edson says. "There has not been much downtime with it at all to date - and what downtime we experienced was related more to the learning curve we're experiencing in processing the old concrete and asphalt before they're fed into the 4030 HSI. It's good equipment and we're getting good support both from the factory and from our dealer."

## Measuring The Results

Edson says the crushing equipment has helped them to quickly realize their goals. "With the setup we have currently, we use at least 90% of the aggregate we crush," he says. "We may sell more in the future, but for now, we're able to use almost all we crush. This was our intention all along, though - to make ourselves more integrated, more autonomous and more competitive, rather than to produce the crushed aggregate and recycled material simply in order to sell it."