

An American flag graphic with stars and stripes, curved across the top of the page.

CEMENT, CONCRETE & CO2

Editorial by Walter Wulf, COB and CEO originally published in Monarch Pride July 31, 2021

I attended a meeting organized by the Portland Cement Association (PCA), last September which included most of the CEOs of the cement industry. A number of issues were discussed, but CO2 was number one on the list due to the increasing sensitivity to climate change and recent reports that the majority of scientists believe that there is a relationship between manmade CO2 emissions and Global Warming, now referred to by many as Climate Change.

Many of you reading this may already know and understand the facts I am about to relate, but I feel I should restate them to make our company's position clear. The cement industry is very energy intensive, however about 50% of the CO2 we produce is related to the chemical process. Regardless of where in the world Portland Cement is produced, it cannot be produced without driving off CO2. Yet concrete, of which cement is a key ingredient, acts as a CO2 sink and absorbs CO2 throughout its lifetime. We realize that increased scrutiny is in our industry's future and have evaluated the economic viability of several ways to reduce CO2 emissions. Are we a leader in the industry? Probably not. According to the information I received at the meeting I attended last September, 22 states have enacted 77 regulations relating to CO2 emissions. For that reason, producers in those states are ahead of us, forced by legislative mandates. The industry's concern is that state by state regulation of CO2 will create a patchwork quilt of regulation resulting in an uneven competitive playing field. Governor Laura Kelly, on her tour of Monarch, last April, agreed that regulation regarding CO2 emissions should come from the federal level to preserve uniformity.

On the world scale, it's important, in my opinion, to be mindful of the economic impact of regulation on the U.S. cement industry. Otherwise, there is the potential that we will export U.S. jobs to other countries while importing cement from those same countries with the added CO2 emissions that come from transportation into our country. In the industry, we refer to that as "leakage." It's unusual for an industry to invite regulation, but in this case, informed federal oversight, taking economic impact into consideration, and applying scientifically proven technology to reduce CO2 emissions, is preferable to state-by-state regulation.

Monarch has always been a leader in the application of new, yet proven technology. However, we are a one plant operation, and therefore we use our facility only in limited fashion for experimentation. Citing some examples, our preheater kilns, built in 1975 and 1976 were the first built west of the Mississippi. They resulted in less energy consumption and therefore less CO2 emissions. In 2004 and 2005 we added pre-calciners to the preheaters for even greater efficiency. At about the same time, we added the pre-calciners, we decommissioned our number 3 kiln, an old conventional kiln that was inefficient by modern day standards resulting in even greater CO2 reductions. We have looked at sequestration of CO2 contained in the kiln exhaust gases, which does not appear to be economically viable at this time. We are evaluating adding limestone to our clinker, to produce a Type I L Cement. Clinker is formed when a primarily calcium carbonate feed mix is introduced into the kiln. To date, there has not been widespread demand by our customers or the various state departments of transportation for Type I L Cement, but with education and promotion efforts, the cement industry is hopeful to increase acceptance.



Our interest in and awareness of the future regulation of CO₂ is something we are paying close attention to. Future regulation may include credits for offsetting the use of fossil fuels in other parts of our processes or even in other businesses that we are involved in. We are evaluating producing our own electricity through solar and wind. We have taken a position approaching 10% ownership of East Kansas Agri-Energy in Garnett, Kansas. East Kansas is producing a renewable diesel fuel, and the renewable diesel could be used to replace carbon-based fuels in our ready-mix concrete and over the road trucks should carbon emission credits be offered.

The modifications to our kilns mentioned above made both environmental and economic sense. Having lived most of my life under the flume, I can attest, that particulate emissions from process are almost nonexistent compared to where they were in the 1950's. The improvements to the environment have come as a result of committing substantial capital resources to those projects. The conversion to pre-calciners was approximately 18 million dollars, and our capital investment to comply with the New Emission Standards for Hazardous Air Pollutants (NESHAP) was around 20 million dollars. The latter came at a time that the industry was facing its largest percentage decline in cement consumption since the depression of the 1930's.

In summary, we have been preserving capital in order to position Monarch to meet whatever regulations may be forthcoming, and hopefully that will be at the federal and not the state level. Furthermore, we are currently reluctant to deploy capital for which we get no regulatory credit nor economic benefit. Our responsibility to our shareholders and employees is not only to be mindful of the sustainability of the planet, but sustainability of our company.

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