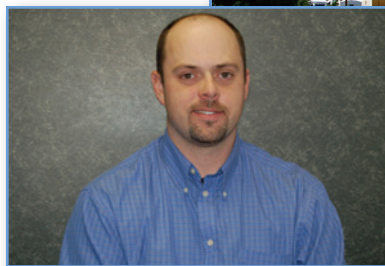


Industry perspective

RETTEW: Natural gas industry reducing its footprint through responsible site reclamation

Since entering into the Marcellus Shale and Utica Shale play, Lancaster-based RETTEW Associates, Inc. has experienced considerable growth. The company's natural gas expertise includes surveying potential drilling sites; fostering inter-agency communication with regulators; and ensuring that well sites are efficiently mobilized. These efforts have earned the company a reputation as shale industry leaders and enabled RETTEW to open several new offices in shale-rich states.

In the Marcellus Shale boom town of Williamsport, PA, RETTEW project manager BJ Batterson oversees a land development group that works on well pad design and permitting, and manages projects that require wetland and stream encroachment. In his role, Batterson can attest that responsible natural gas development doesn't stop when fracking begins. In



BJ Batterson

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■ BJ Batterson, PE, RETTEW Associates, Inc.

fact, every well is closely monitored through its operation to ensure that there is no environmental damage; and when the well begins to produce gas, steps are quickly taken to reclaim the area around the well pad and restore the original ecosystem. Batterson recently explained RETTEW's commitment to environmental preservation through well site reclamation to *Catalyst*.

Catalyst: Define “reclamation” as it applies to the natural gas industry.

Batterson: Reclamation is the science of reducing a natural gas company’s environmental footprint by restoring a gas well to the condition it was originally found in. Thanks to horizontal drilling, it’s much easier to host several wells on single well pad—and the more gas wells on a pad, the more limited the footprint. That’s why many well pads are large—they normally contain four to eight separate wells, but in some cases there can be as many as 12.

Most of the time, reclamation takes awhile to occur because a company will drill a few wells on a well pad at first to get the gas to flow, and then they’ll come back to drill the remainder a year or so later instead of doing it all at once. This reasoning has a lot to do with gas exploration, since companies want to know if the well in a specific area will produce before they begin full-fledged operations there.

Catalyst: Explain how reclamation works.

Batterson: The first step of reclamation is reducing the well pad from an average size of four acres to just one acre. This step needs to be taken nine months after the last well on the pad is drilled and put into production. The reclaimed, one-acre

operating well pad should only be enough space to contain production equipment, tanks to store the liquid component of the gas, and enough room for a truck to come in, unload the liquids and turn around.

After the size of the site is reduced, the area around the one acre of gravel is covered with grass and all contours are returned to their pre-existing conditions. So, for example, if there was a five percent grade side hill before the well pad was built, that needs to be restored. Farmers who lease their land to natural gas drillers would want the area around the reclaimed pad re-seeded.

The only place where reclamation doesn’t need to occur is in the forest, because if companies simply go back in and re-seed, the forest will reclaim itself.

Catalyst: How does the reclamation process benefit the environment?

Batterson: Quite simply, it gets the land back to the way it originally was. And with recent regulatory changes that have been made at the state level, we now have to work to mitigate storm water runoff on the final one-acre pad, in addition to re-stabilizing its vegetative cover.

Relative to other states, the regulations on oil and gas extraction are definitely strict in Pennsylvania; and while they could be streamlined a bit more, the industry is still

able to meet its requirements with a short learning curve. There has definitely been progress made. I have a background in traditional land development and can attest that Pennsylvania’s gas well reclamation requirements are in line with what’s required for other industries—they’re much like having to reclaim an area around a newly constructed store or strip mall.

Catalyst: Is there much reclamation happening now?

Batterson: Since the Marcellus Shale and Utica Shale is relatively new, and because the industry has slowed production a bit due to excess capacity, there isn’t much being done yet in the way of reclamation. I used to work with an oil and gas exploration company and while I was there, we reclaimed one site and they’ve only reclaimed a few since. That hasn’t been typical—I’d say if there are 100 well pads, maybe only 10 of them will have been reclaimed at this point. ♦

■ **BJ Batterson** is a registered professional engineer with more than eight years of experience, which includes his working on land development projects in the residential, commercial and industrial market sectors. His expertise also includes structural engineering, civil engineering and environmental engineering. Batterson received his bachelor’s degree in civil and environmental engineering from Bucknell University.