



# The Bourn Identity

Environmental firm brings GNSS technology to bear in stream restoration project — *with impressive results*



Established in 2014, Bourn Environmental is the brainchild of Christopher Perry, a U.S. Army veteran of two tours in Iraq and one in Afghanistan, and holder of a BS in environmental science from West Point and an MS in environmental planning and management from Johns Hopkins University. After first working for a larger firm, he formed Braun Environmental with a focus on wetlands mitigation.

From the outset, Bourn’s company had performed its work using traditional techniques: survey stakes and a laser level for layout, and a small excavator to handle the earthmoving facets of the job.

“However, I thought the time had come give a dozer with machine control a try for earthmoving,” he said. “Having a major project like the one at Piney Run seemed the ideal opportunity to do so.”

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## Company

Bourn Environmental, Mitchellville, Maryland

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## Project

Remediation of more than three miles of Piney Run tributary

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## Topcon Products

X-53i excavator system and 3D-MC<sup>2</sup> GNSS machine control

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## Topcon Dealer

Jesco, Inc., South Plainfield, New Jersey

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With that in mind, Perry contacted the team at JESCO, Inc., the local Topcon dealer, from whom they'd been renting their machine, levels, etc.

“JESCO started the conversation about what GPS in an excavator could do for us,” he said. “They brought a machine equipped with a Topcon X-53i system out for us to demo and our guys loved it to the point of arguing over who got to use it. We placed our order for a second machine on the spot. Today, we have that same system on a pair of John Deere 245G excavators and can't imagine doing another project without it.”

Bourn's work at Piney Run involved literally burying the old channel and are carving a new one through the flood plain.

“In addition to raising the stream bed and lowering the plain so that water can empty onto it more easily like it was meant to do, we also built a series of structures throughout the course of the project that will affect the direction and velocity of the stream in different ways,” he said. “Our excavator operators have really taken to the Topcon solution in making those structures happen.”



In the case of accurately placing larger boulders, which generally weigh 3-4 tons, Bourn's excavators dig deep into the stream's subbase so the top of the structure can hold grade and create a pool after it, according to Steve Griffin, Bourn's foreman.

“Our operators would measure two rocks that stacked well on top of each other, subtract that from final grade on the system to get that number on the screen, and then simply dig to that subgrade,” he said. “It's fast and reliable and has worked out great.”

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After being 40 days behind schedule at one point, Bourn's team was able to reduce that by 25 days using the new solutions.

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“That's an impressive amount of time to make up,” said Perry. “We gained in so many areas, including efficiency in creating the new flood plain with the GNSS dozer, as well as from the excavators streamlining the material movement and placement operation. When we are done, the new design will hold back nutrients and sediment, but it will also create a better environment for trout to spawn in. And we're proud to be making it happen.”

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