



[McELROY.COM](http://McELROY.COM) | [PRODUCT SPOTLIGHT](#) | [AROUND THE WORLD](#) | [NEWS & EVENTS](#) | [RECENT POSTS](#) | [LINKS](#)

## University of New Hampshire Turns to HDPE for ECOLine Project

It shouldn't be surprising that an institute of higher learning would make a smart decision. In 2007, the University of New Hampshire (UNH) made a huge decision to move from natural gas to landfill gas as the primary fuel source for the school's five-million square foot campus.

The purified and compressed landfill gas is piped in from nearby Rochester, New Hampshire. Completed in the summer of 2008, the pipeline that carries the gas is high-density polyethylene (HDPE) pipe, and is the backbone of a project called ECOLine.

The University of New Hampshire, in partnership with Waste Management of New Hampshire, Inc. and the company's Turnkey Recycling and Environmental Enterprise (TREE), created the ECOLine project to pipe in the gas. At the TREE facility in Rochester, the methane gas by-product of landfill decomposition is captured via a collection system comprised of more than 300 extraction wells and miles of collection pipes.



In areas without wetlands, open-cut methods were used to install the pipeline.  
*Photo courtesy of R.H. White*

For ECOLine, the University of New Hampshire required a 12.7-mile pipeline to connect the campus to the TREE landfill facility. The 12-inch DriscoPlex® 8300 Series SDR 9 pipeline installed by contractor R.H. White Construction Company of Auburn, Mass., runs underneath roadways, wetlands and into the UNH cogeneration plant. At the school's cogeneration heat and power plant, commercial natural gas has been replaced by landfill gas as the primary fuel of the campus, with up to 85 percent of the campus electricity and heat coming from the TREE facility.

The \$49 million project made the University of New Hampshire the first university in the nation to use landfill gas as its primary fuel source.

To the school, the project was a down payment on the future. UNH has a climate action plan to reduce the school's greenhouse gas emissions 50 percent by 2020 and 80 percent by 2080, with the goal of achieving climate neutrality. While being environmentally responsible, the project also is fiscally responsible.

Before engaging in the ECOLine project, UNH realized energy costs that had doubled over five years and were growing at an 18.9 percent clip annually. The use of landfill gas stabilized the school's escalating energy cost.



The 12-inch SDR 9 is faced off in a TracStar 412.  
Photo courtesy of R.H. White

The financial benefits didn't stop at reducing energy costs. UNH started selling renewable energy credits (RECs) in 2009. According to the Environmental Protection Agency, a REC represents the property rights to the environmental, social and other non-power qualities of renewable electricity generation. A REC, and its associated attributes and benefits, can be sold separately from the underlying physical electricity associated with a renewable-based generation source. UNH plans to use the revenue from RECs to help finance the costs of ECOLine and to invest in additional energy efficiency projects on campus.

To start realizing the environmental and fiscal benefits of the ECOLine project, UNH put a design-build project proposal for the pipeline out to bid. The project came with certain criteria, including the need to cross environmentally sensitive wetlands and quick installation speed.

R.H. White took the project on, knowing from experience that they could handle the needs of the client. As an annual contractor for several gas utility companies, the contractor installs miles and miles of HDPE distribution piping each year. With that much experience, the company was aware of recent changes to federal regulations that allowed for the use of HDPE at the 100 PSI pressure required for the transmission main. The pipe material's flexibility created the opportunity to use horizontal directional drilling under the wetlands, keeping the drilling below a level for federal permitting and causing no permanent disturbances to the

wetlands, easing the state permitting process.

Of the 18,000 feet of directionally drilled piping, 5,000 feet were in rock. The longest drill was approximately 2,000 feet of soil and 1,550 feet of rock. The team found that each drill had specific challenges.

To meet the tight deadline challenges, R.H. White staged fusion crews at locations along the project, fusing pipe into lengths more than 1,000 feet long. Project manager Paul DiLorenzo put three TracStar® 412s, a TracStar 618 and four PolyHorses into the field. Approximately 1,400 fusion joints were required on site, and by averaging an hour per fusion joint, only 1,400 crew hours were required to complete the fusion operations on the site.

McElroy TracStars offer mobility and maneuverability on job sites because of dual-speed tracks that can navigate grades up to 30 percent. The self-contained, self-propelled, all-terrain TracStar allows the fusion technician to fuse pipe without needing a generator or separate hydraulic power unit for the fusion machine. With railroad beds, wetlands, suburban environments and other unique terrains, the TracStars' ability to maneuver in a variety of conditions helped speed the construction of the pipeline.

"There was a requirement in the RFP (request for proposal) to look for additional machines to keep up with the productivity of the installation crews," said DiLorenzo. "The TracStars were very mobile along pipeline routes where the terrain was not easily manageable. The utilization of the PolyHorses allowed us to keep production high and also cut the overall cost per fusion joint."

The PolyHorse™ is a pipe-handling system that consists of a series of adjustable racks to store and help install pipe on the job site. The system can reduce labor expenses and enhance productivity, which helped on site in New Hampshire. The PolyHorse is set up next to the fusion machine, where lengths of pipe can be off-loaded from the delivery truck directly onto the racks. From there, the fusion operator rolls the pipe down the rack and onto the integral pipe rollers where it is easily loaded into the fusion machine.

Thanks to the project, UNH is reducing their carbon footprint. Their students continue to study and work hard, even burning the midnight oil before big tests. Only now, that midnight oil comes from an environmentally and fiscally responsible resource.

Sincerely,

Tyler Henning