# HYDROCARBON CLEANUP

## A new Electric Cuttings Dryer turns oil-drilling waste into reusable products

The treatment and disposal of drill cuttings is becoming an increasingly important part of any drilling operation. That's especially true of cuttings that contain oil-based drilling mud that must be processed and treated before disposal.

Electric Horsepower of Nisku, Alberta, is a new company in the throes of developing and patenting portable equipment for the oil and gas industry. Recently the company launched an Electric Cuttings Dryer (ECD) with a patented flameless thermal technology that optimizes the processing, transportation, and disposal of drill cuttings in oil-based fluid applications. Using electric power, the ECD system safely incinerates hydrocarbons and other hazardous waste from the drill cuttings and eliminates the requirement for stabilization agents, like sawdust, reducing waste volume.

Oil released by the heat is recovered and can be reused or resold as drilling fluid. The remaining component of the cuttings — broken bits of natural rock, soil, and sand — can be safely disposed of at the drilling site or applied to nearby roads or spread on land.

The ECD consists of two 12-meter (40-foot) portable skids that can be placed at the site of the drilling rig. The system includes a sound-attenuated office and a fully enclosed 365-kWe John Deere–powered generator that powers the cuttings dryer and electronic controls. The system also features a proprietary filtering system that removes particulates and smoke from the exhaust air.

A housed Electric Cuttings Dryer incinerates drill cuttings at Secure Energy Services in Canada.

Ben Desrosiers, Electric Horsepower's vice president of operations, says a preliminary test reveals the ECD extracts a high yield of oil and dramatically reduces waste volume. "The ECD can be set up to recover approximately two barrels (318 liters) of oil for each cubic meter (35 cubic feet) of oil-based mud," says Desrosiers. "It also reduced drill cuttings by a third by both weight and volume."

Desrosiers says the ECD shows promise of reducing the carbon footprint and costs for companies as the need for trucking the material off-site may be reduced or removed completely. "This technology is key to improving the process of recovering oil and removing hydrocarbons from shale. Also, land-spreading clean material safely back on land means that material isn't being trucked to a dedicated landfill that could be hundreds of miles away."

Preliminary estimates show the dryer processes up to 5 cubic meters (177 cubic feet) of drill cuttings per hour. Once drill cuttings have passed through the dryer system, no additional processing is required.

The ECD is portable and used in remote locations, powered by a Frontier generator set driven by a PowerTech Plus™ 13.5L engine. Space limitations required a narrow footprint, skid, and cooling package.

**Frontier Power Products in Edmonton designed and built a custom generator that fit the space constraints of the Electric Cuttings Dryer.**

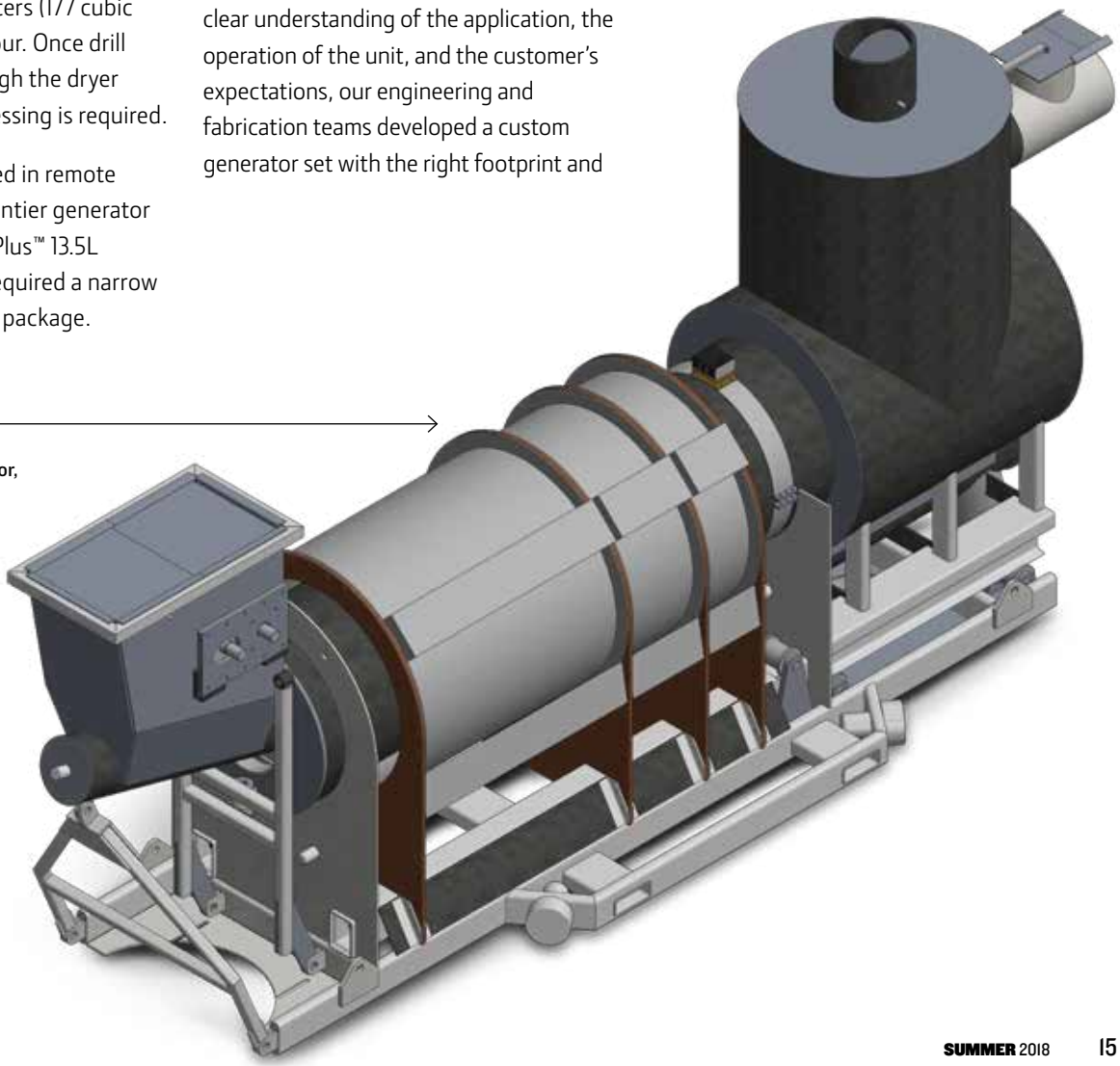
Working with Electric Horsepower's team, Frontier Power assessed the requirements and agreed to build a custom generator.

Using 3-D modeling, Frontier Power Products in Edmonton engineered a generator set that met the size constraints and still offered acceptable serviceability. "With a clear understanding of the application, the operation of the unit, and the customer's expectations, our engineering and fabrication teams developed a custom generator set with the right footprint and integrated it with the customer's controls — all with a fast turnaround time," says Alexei Pavlov, territory manager for Frontier Power Products.

Electric Diesel's first skid-mounted unit is currently processing cuttings for Secure Energy Services in western Canada. Desrosiers says future ECDs will be trailer mounted and powered by John Deere Final Tier 4/Stage V engines.

"Electric Horsepower is an innovative technology-based company, and we are all about building equipment that adds efficiency to operations," Desrosiers says. "The Frontier Power package definitely fits the bill for us. We couldn't be successful without a good power plant."

**Distributor: Frontier Power Products in Delta, British Columbia, Edmonton and Calgary, Alberta; *www.frontierpower.com***



**Using electric power from a John Deere—powered generator, the Electric Cuttings Dryer incinerates and/or separates hydrocarbons and other hazardous waste from drill cuttings.**