

Demonstrating the Operational Benefits of the Powder Splitter

Field Performance Evidence from Dual-Hopper DriFlow Operations

Executive Summary

The powder splitter is a new capability for DriFlow units that enables simultaneous connection to both hoppers on a pneumatic trailer (PT), rather than requiring the unit to draw from a single active hopper at a time. This dual-hopper connection unlocks two key operational benefits:

- **Uninterrupted Operations:** Operators can transition between hoppers on the fly, mid-stage, without pausing delivery. The dual connection allows for uninterrupted frac operations during regular PT swaps and routine hopper calibrations
- **Improved System Robustness:** With two active flow paths instead of one, the unit gains built-in redundancy against single-point failures, including Iron Horse (feeder motor controller) faults and other electrical or mechanical issues within the feeder system, reducing the operational impact when one hopper's feeder experiences an issue.



Figure 1: The powder splitter is a permanent attachment to the DriFlow system, creating dual-path powder delivery enabled by critical feeder system redundancies.

Together, these capabilities are designed to reduce downtime associated with hopper transitions, calibration cycles, and feeder-related faults, while improving the consistency and reliability of powder delivery throughout a frac job.

Background and Operational Challenge

DriFlow operations have maintained a 98% average pumping efficiency across three major North American basins: the Haynesville, Eagle Ford, and Permian. Historically, a majority of the 2% gap has been attributed to a single-path powder delivery method, which left no way to sustain continuous operation during trailer swaps, calibrations, or feeder equipment-related issues. The powder splitter directly addresses this gap by building redundancy into the point of failure that matters most: the feeder system itself. Because each hopper has its own independent feeder system, the splitter gives operators a second, fully functional delivery path that can be switched to instantly if a feeder or hopper-related issue arises, mitigating downtime rather than waiting for a repair to resolve it.

By enabling simultaneous connection to both hoppers, the splitter also removes the operational cost of routine trailer swaps and calibrations as one hopper can be swapped or calibrated while the other continues delivering FR, rather than pausing the job to do so. Together, these two forms of redundancy (at the feeder level and the hopper level) support continuous, reliable FR delivery at the highest level of operational performance.

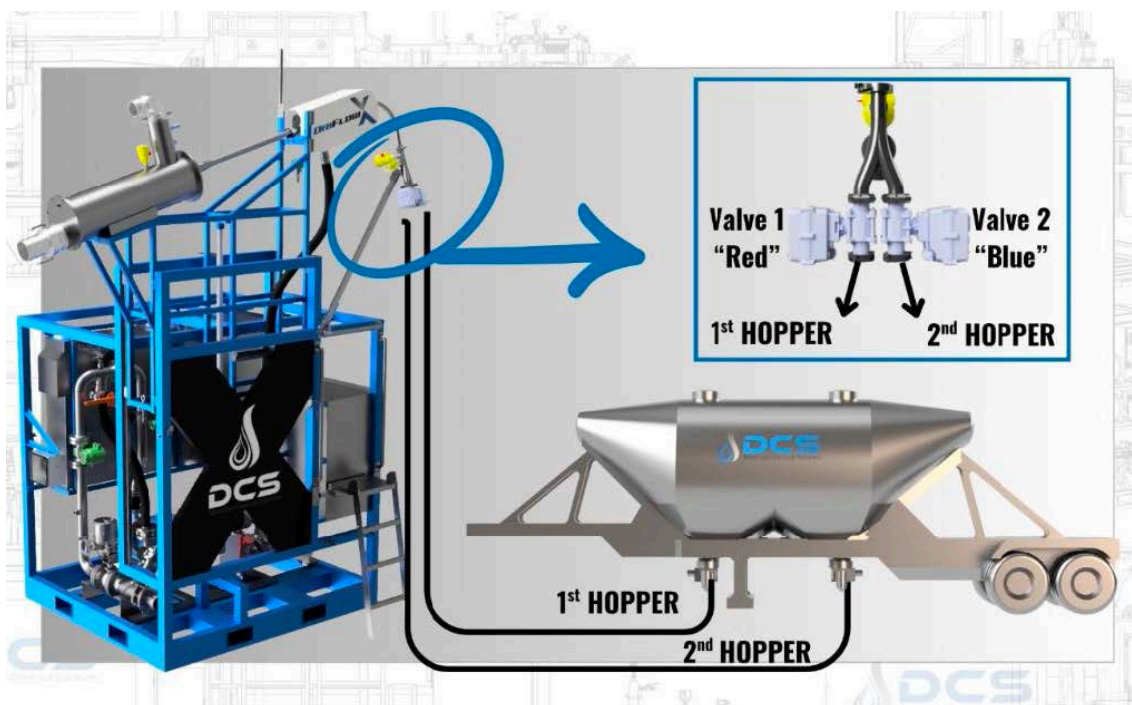


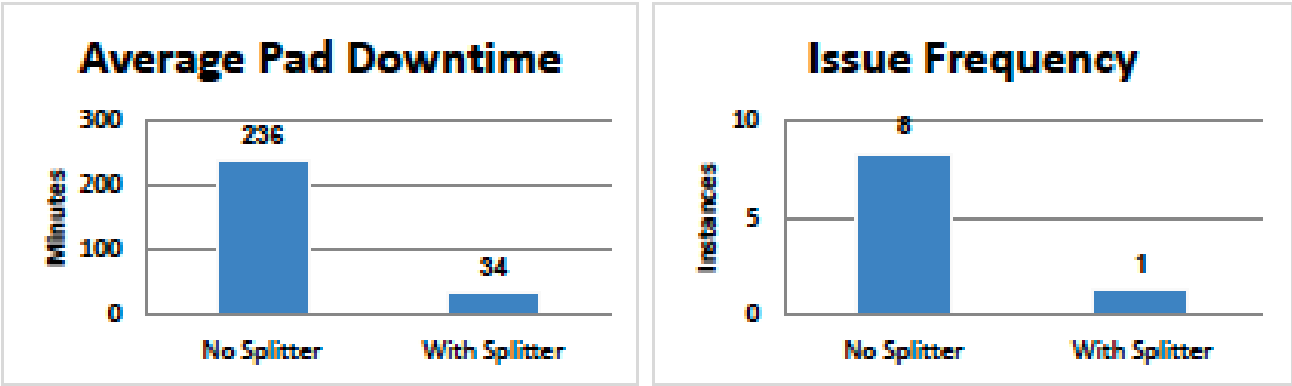
Figure 2: The DriFlow unit is connected to two independently operated hoppers via the powder splitter, providing an on-the-fly solution to combat interruptions due to delivery-related issues (i.e. PT swaps, calibrations, equipment failures).

Field Results: PT Swap and Calibration Downtime

To evaluate the powder splitter's impact on the specific challenge described above, DCS compared downtime logs from six pads pumped for a single operator client by the same frac fleet over the past year: three pads were run on standard DriFlow units and three on splitter-equipped units. The analysis isolates downtime directly attributable to PT swaps and feeder calibrations, which is the exact type of interruption event the splitter is designed to eliminate.

Results:

Metric	No Splitter (avg/pad)	With Splitter (avg/pad)	Change
Total Downtime/Pad	236.3 min	34.0 min	-85.6%
No. of Occurrences/Pad	8.33	1.33	-84.0%
Avg Duration/Occurrence	28.4 min	25.5 min	-10.1%



Downtime from PT swaps and calibrations dropped by over 85% on splitter-equipped pads. As with the earlier comparison, the reduction is driven almost entirely by frequency. Splitter-equipped pads saw far fewer swap/calibration events cause any downtime at all, rather than each event resolving meaningfully faster. One of the three splitter-equipped pads recorded zero downtime from swaps or calibrations over the entire logging period.

Key Benefits of the Powder Splitter

The results above confirm two core operational benefits of the powder splitter:

Downtime from PT swaps and calibrations dropped by 85.6% per pad. Splitter-equipped pads averaged 34.0 minutes of downtime per pad from this category, compared to 236.3 minutes per pad on standard units, directly validating the splitter’s core design goal of removing the need for swaps and calibrations to interrupt powder delivery.

The number of downtime-causing events dropped by 84%. Splitter-equipped pads averaged just 1.33 downtime instances per pad in this category, versus 8.33 on standard units. The benefit from the powder splitter is not that swaps and calibrations become faster, but that these events are mostly removed as a source of downtime at all. One of the three splitter-equipped pads recorded zero downtime from swaps or calibrations over its entire logging period.

Taken together, these results support the core benefits of the powder splitter: uninterrupted operations and improved system robustness. While this represents a limited sample of six pads, the consistency across all three splitter-equipped pads lends confidence to these findings.

Improved Hopper Utilization (Anticipated): Because both hoppers can be drawn down simultaneously, each could be run to a lower minimum before a trailer swap is needed. Current field protocol still specifies the same swap-trigger minimum used on non-splitter units, so this benefit has not yet been realized or field-validated. Once this protocol is updated to take advantage of the splitter's dual-hopper capability, DCS expects this to translate into greater product utilization per trailer and fewer trips to location over time.

Conclusion

The powder splitter addresses a long-standing constraint in DriFlow operations: the inability to sustain powder delivery through routine PT swaps and feeder calibrations. By enabling simultaneous dual-hopper connection, it removes the operational cost of these unavoidable events while adding meaningful redundancy against single-point feeder failures.

The field data bears this out. Splitter-equipped pads saw an 85.6% reduction in downtime and an 84% reduction in downtime-causing events tied to swaps and calibrations. In practice, that's roughly three fewer hours of downtime per pad, which is time frac crews would otherwise spend running a backup product or standing by while waiting on a trailer swap or calibration to finish.

As splitter-equipped units expand across operational basins, DCS expects this performance record to grow, further strengthening the case for the splitter as a standard feature across the DriFlow fleet.

