



ZERO



CASE STUDY

Bison Oil and Gas

**VAPOR MANAGEMENT SYSTEM PROVIDING
ENVIRONMENTAL PERFORMANCE &
GENERATING REVENUE IN THE DJ BASIN**

May 2024

THE SITUATION

Bison Oil and Gas IV, LLC (“Bison”), an oil and gas producer operating in Colorado and Wyoming, is benefitting from EcoVapor’s Vapor Management System (VMS) in northeastern Weld County, Colorado. To enhance environmental performance, Bison installed their first EcoVapor system in 2023. The skid-based system actively manages tank pressures to reduce the risk of venting. It also purifies the tank vapor to ensure it meets pipeline specifications and can be sold by removing oxygen from the recovered stream, eliminating the need to flare or combust the contaminated vapor.



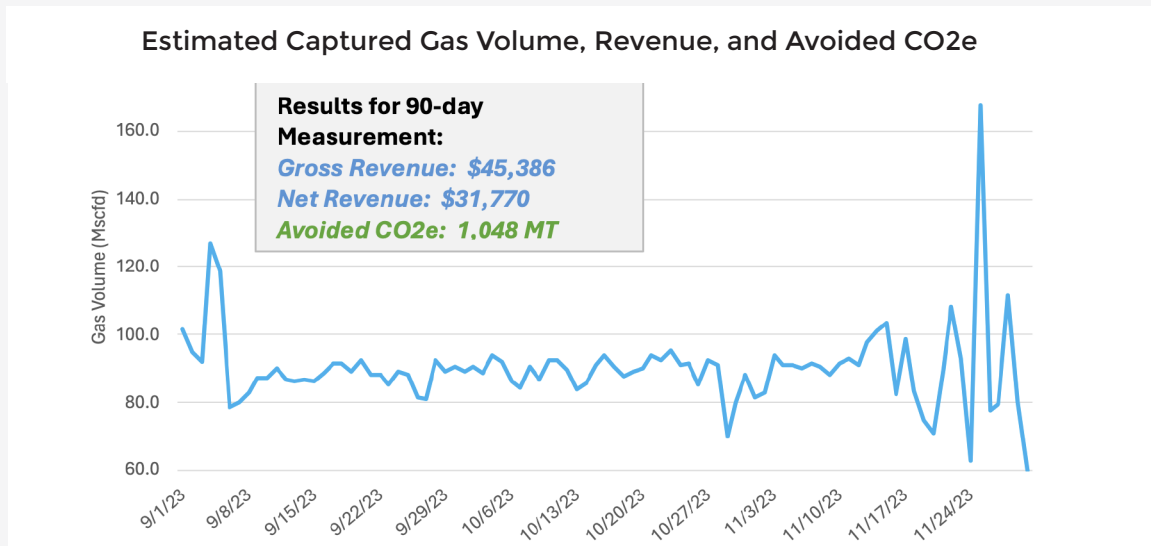
Bison site in Colorado with EcoVapor’s Tank Commander.

The VMS, trademarked as the **Tank Commander™**, is a PLC-operated system that contains two control units: a tank pressure management skid that actively maintains pressures (both positive and vacuum) within a set range and a ZerO₂ skid that removes oxygen so the tank vapor can be captured and sold. A high-pressure blower is used to control rising tank pressure and regulated make-up gas is employed in the event pressures approach vacuum. The combination results in a complete environmental solution for oil and produced water storage tanks by addressing both venting and gas capture. *The Tank Commander VMS is the most reliable, lowest LOE option for 100% capture at sites equipped with VRTs available today.*

The performance of the Tank Commander system is monitored and measured via EcoVapor’s and the operator’s existing SCADA system.

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THE RESULTS



The chart above illustrates the results over a three-month period.

A volume of 8.2 MMscf was captured over the three-month period, avoiding an estimated 1,000 metric tonnes of CO₂e by selling the tank vapor gas instead of combusting it.

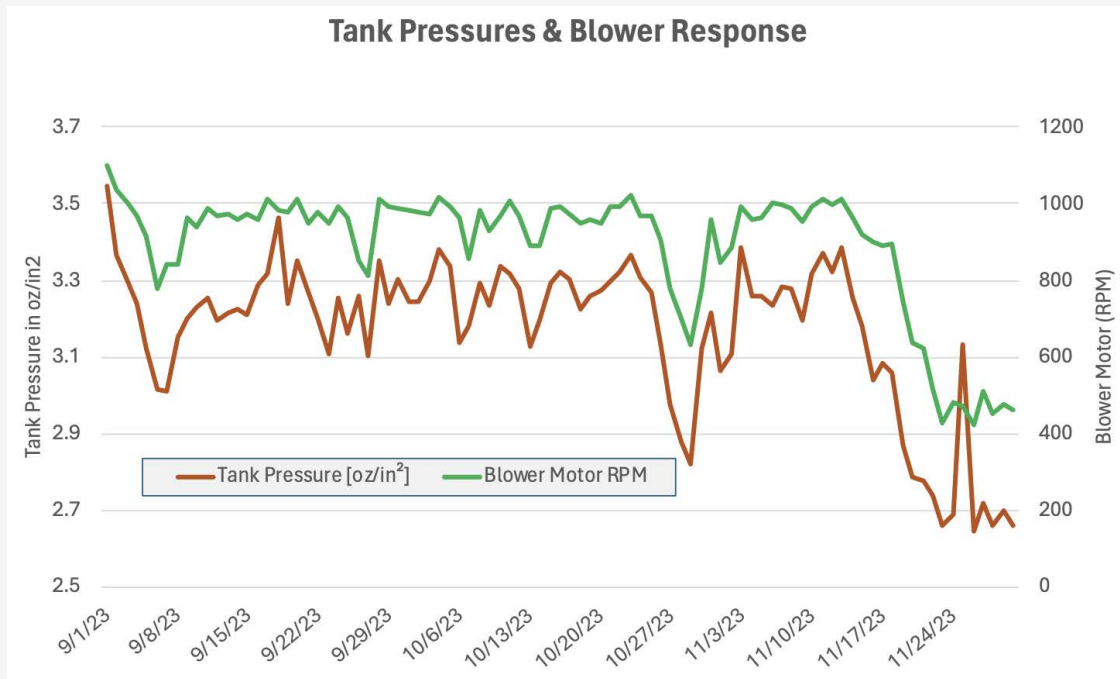
Bison's actual gas realizations are confidential, and the following is for illustrative purposes only. Gross revenue was estimated using Henry Hub spot with a 2x Btu adjustment. Tank vapor typically ranges from 2,400 to 2,800 Btu/scf – much higher than the 1,000 Btu specification assumed in the NYMEX price. Further assumptions to estimate net revenue include:

- hub differential of 5%;
- severance and ad valorem taxes of 7%;
- fuel lost and unaccounted for of 8%; and
- gathering fees at \$0.60/Mcf.

This estimate is based on a 2x Btu premium and does not fully recognize the value of the NGL content present in condensate tank vapor. In addition to the incremental revenue generated by monetizing this rich stream, mitigating flaring results in a substantial improvement in environmental performance.

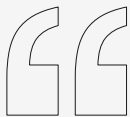
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The next chart illustrates the variability of tank pressures in ounces per square inch (oz/in² – left scale) compared to the blower motor rate as measured by revolutions per minute (rpm – right scale). Tank pressures were maintained within 2.5 to 3.5 oz/in² over the three-month period. Makeup gas was used when required to maintain tank pressures above 2 oz/in².



This dataset confirms the conditions leading to venting from the battery never occurred as the result of actively managing tank pressures well below the tank battery’s pressure relief setpoints. The sale of the gas captured from the tank battery was facilitated by eliminating oxygen found in the recovered stream and consistently maintaining oxygen content within pipeline specifications. Oxygen content of the gas sold over the 90-day period averaged 0.3 ppm O₂ with a standard deviation of 0.8 ppm.

Bison commented on the performance of the vapor management system:



“We have been able to reduce the risk of venting while increasing gas capture at the site since installation of the EcoVapor equipment in 2023. After a trial period, we made the decision to install additional units at other company sites in Colorado.”



Other operators have adopted the Tank Commander VMS, most recently one of the larger operators in the Bakken region. Deployment count in the continental US is now in the double digits.



ABOUT ECOVAPOR

EcoVapor Recovery Systems, a DNOW Company, provides solutions to pressing oil and natural gas production problems. EcoVapor's technical team has extensive expertise in vapor recovery processes, and includes world-class engineers with an innovative approach to industry challenges. In over 120 installations in all major US basins, our patented ZerO₂[™] oxygen removal solution helps oil and gas producers meet their air emissions and regulatory compliance goals by converting waste streams into revenue. EcoVapor is headquartered in Denver, Colorado and has field locations in Greeley, Colorado and Midland, Texas.

**Contact us today at 1-844-NO-FLARE (844-663-5273)
to see if Tank Commander[™] VMS is right
for your oil & gas operation.**