



FOR IMMEDIATE RELEASE

LWR'S NPK SENSOR NAMED WATER MONITORING INNOVATION OF THE YEAR

Real-time, lab-grade NPK data for more confident nutrient application.



*Concept rendering.

CALGARY, ALBERTA — AUGUST 20, 2026 — Livestock Water Recycling's (LWR) real-time NPK sensor has been named **Water Monitoring Innovation of the Year** in the **2026 AgTech Breakthrough Awards**. Developed by LWR in collaboration with researchers at the University of Calgary and with support from Alberta Innovates Agri-Food and Bio-Industrial Innovation Program, the sensor is designed to give producers real-time nutrient data from manure and digestate.

Manure is one of agriculture's most valuable nutrient resources, but its composition can vary from farm to farm, pit to pit and day to day. Traditionally, knowing what is in a tanker load has meant collecting a sample, sending it to a laboratory and waiting days for results that describe a moment already past. That can leave producers making nutrient application decisions without precise, timely information at the point of application.

LWR's sensor is being developed to close that gap. Using microwave and RF sensing, the non-contact system measures manure and digestate to estimate nitrogen, phosphorus and potassium concentrations in real time. The goal is to give producers better information when and where application decisions are being made — helping improve nutrient use, protect water quality and get more value from nutrients already available on farm.

The real-time nutrient data is also expected to play an important role in LWR's developing water credit program by providing measurable, field-level information to help quantify and verify improved nutrient and water management outcomes.

Prototypes have demonstrated repeatable frequency responses across agriculturally relevant nutrient ranges. The technology is currently being piloted in real-world agricultural applications. A patent was filed in December 2025, with early access availability planned for the beginning of 2027.

THE SENSOR AT A GLANCE

REAL TIME

Results at the point of decision, not days later

NON-CONTACT

Wireless sensing — no sampling, no probe in the flow

CHIPLESS & PASSIVE

Low maintenance, built toward battery-free operation

N, P AND K

Multi-resonance design separates the three macronutrients

IN-LINE OR PORTABLE

Reads inside pipes, or as a handheld chip in the field

VOICES BEHIND THE INNOVATION

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To have our sensor recognized in the AgTech Breakthrough Awards as Water Monitoring Innovation of the Year is a proud moment for our lab. We took on a problem the industry had long considered too difficult — measuring nitrogen, phosphorus and potassium in manure in real time without ever touching the sample — and we're proving it can be done.

Dr. Zahra Abbasi

Associate Professor, Electrical and Software Engineering, Director of the Calgary Sensor Lab

University of Calgary, Calgary Sensor Lab

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The real value of this innovation is not just the data. It is what the data can help producers do. Nutrient levels can vary from farm to farm, but application decisions are often based on lab samples taken days earlier. Having reliable NPK information in real time can help producers apply with more confidence, get more value from the nutrients they already have, and take some of the guesswork out of nutrient application.

Hailey Poole, MSc

Manager Chemistry Development
Livestock Water Recycling, Calgary, AB.

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We're engineering this sensor to detect multiple nutrients continuously and in-line. This award is an exciting recognition of the work underway to turn that science into a practical tool for the field.

Dr. Mehri Ziaee

Lead Engineer and Postdoctoral Associate

University of Calgary, Calgary Sensor Lab

ABOUT LIVESTOCK WATER RECYCLING

Award-winning Canadian cleantech company transforming livestock manure and biogas liquids into valuable resources through patented nutrient recovery technologies. Founded 2015, Calgary, Alberta.

● [MANURE.AI](https://manure.ai)

ABOUT CALGARY SENSOR LAB

University of Calgary lab developing advanced smart sensor technologies for real-time detection and intelligent monitoring in challenging environments.

● [SENSORLAB.CA](https://sensorlab.ca)

ABOUT ALBERTA INNOVATES

One of Canada's largest research and innovation agencies, supporting this sensor's R&D at the University of Calgary and its UK expansion through Tech 2 Farm.

● [ALBERTAINNOVATES.CA](https://albertainnovates.ca)

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