Floating Island Technology for Livestock Water Remediation

Remediation Technology

H-Flumes have been installed at each pond's input channel. The H-flumes are situated near the pond to allow the runoff water to flow through the flume. Ultrasonic sensors are installed on the H-Flumes to measure water level (flow volume) and to trigger the automated samplers. ISCO Automatic Samplers collect water samples during runoff (rain or snowmelt) events.

In-Situ Aqua Troll 600 Sondes are deployed in floating buoys in the feedlot ponds. These Sondes measure and collect water quality parameters each hour, and are uploaded to a cloud-based website once a day. These parameters include temperature, pH, ORP (oxidation-reduction potential), dissolved oxygen, electrical conductivity, total dissolved solids and chlorophyll a.

YSI ProDSS is a multiparameter handheld meter that measures temperature, ORP, conductivity, pH, total dissolved solids, salinity, barometric pressure, turbidity and depth. This data is collected once a week by technicians who throw the meter from the shore at 3 different spots at each pond.

Partnering with Southern Alberta Institute of Technology (SAIT), **Drone Technology** provides bathymetry information of each pond. **In-Situ Rugged Troll Level Loggers** provide the water level of each pond and are used in conjunction with bathymetry data to calculate the pond's volume.

Arable Mark 2 Weather Stations are installed at each of the 4 feedlot pond sites to collect climate data such as wind direction and speed, net radiation, temperature, humidity, and precipitation.

This information is important for many factors, including monitoring pond evaporation.