LoRaWAN®

2023 CASE STUDY

Monitoring Oil Field Tanks with LoRaWAN® to Improve Efficiencies and Reduce Costs

Smart Industry | North America | Gateway Provider

SITUATION

Chevron's San Joaquin Valley business unit (SJVBU) in California, USA, produces more than 140,000 barrels of oil ~ 18,000 wells across 260 square km.
As part of its commitment to safety, operational efficiency and the environment, Chevron rolled out radio frequency (RF) monitoring devices, including **new LoRaWAN® Smart Lids**, to help manage thousands of 950-litre tanks that support well health, prevent corrosion, and add treatments to the wells and flowlines to optimize production.
Until then, oil tanks were checked using manual dipsticks. The stranded assets were determined to be cost prohibitive to connect and automate.

SOLUTION

Chevron rolled out **LoRaWAN® Smart Lids** to take automatic tank level readings, and transmit data through a private LoRaWAN® network, using nodes with 10-year batteries that can transmit over 10 miles. LoRaWAN® devices are connected to MultiTech Conduit® gateways, each gateway supporting thousands of end points. MultiTech LENS® allows easy and efficient deployment and management of the network. It provides centralized management for LoRaWAN® end devices, and configuration and control of MultiTech gateways.

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RESULTS

LoRaWAN® meets Chevron high standards for **security**, which is paramount for this critical infrastructure. LoRaWAN® offers long-range communication across a noisy oil field to low-power end points powered on batteries for years: a single MultiTech Conduit® gateway can connect thousands of end points. This allowed Chevron to cover the entire Joaquin Valley using a minimal number of MultiTech gateways. Using LoRaWAN® is more cost-effective than cellular alone.

MultiTech LENS® is a toolset for secure, distributed, scalable LoRaWAN® enterprise networks, designed to enable easy and efficient deployment and management of private LoRaWAN® networks at scale.

Chevron achieved a **significant return on investment (ROI) within the first year** and **reduced drive time**, while **optimizing the supply chain** and using easily deployable technology. Chevron was able to operate its oil tanks **more safely, reliably and efficiently; reduce costs; recover more resources; and better manage risk**.

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