



Application Story

Vision 120™ Improves Quality, Saves Time and Reduces Costs

In various process industries such as petroleum, chemical, drinking water, and wastewater, facilities often conduct laboratory tests to determine the unknown concentration of a known reactant within the system, through a quantitative chemical analysis. These measurements require a huge amount of laboratory man power. A lab technician must collect the sample in the field, perform the analysis in the laboratory, and then finally report the results to plant operations so process adjustments can be made.

By automating these measurements with Unitronics' **Vision120™** integrated PLC and HMI, NEXTChem Process Analyzers, Inc. was able to drastically reduce the process time between analyses **from hours to minutes**. Placed in the field near the process, the Vision120™ gave NEXTChem's "ECOChem" analyzer the ability to **automatically** collect the sample, perform the measurement, and report the results electronically to plant operations. With more up to date information, provided by the Vision120™, processes can be more tightly controlled, and ultimately improve quality and reduce costs.



Used for on-line measurements of chemicals such as alkalinity, hardness, chlorine, caustic, ammonia, nitrate, etc., the "ECOChem" analyzer is able to work with the Vision120™ to control these measurements through a built in RS485 serial port, along with a series of analog and digital inputs and outputs.

Digital outputs were used to control chemical sample collection as well as the sample transfer to the system's measurement cell. Digital inputs were used to monitor the reagent level sensors in order to ensure that the analyzer had enough reagents to do the measurements. To help determine the concentration of chemicals in the customer's sample, the RS485 port was used to control a stepper motor which, in turn, activated the reagent pump.

Analog outputs were dedicated to the swift and accurate sending of measurement results to the customer's control room via an "XY" graph monitored through the unit's integrated user interface. Analog inputs were used to bring the measurement probe results into the Vision 120™, and from here, these probe measurements were then used to help determine the chemical concentration of the customer's sample.

Ultimately, Unitronics' product line gave NEXTChem the flexibility to choose a PLC+HMI that would precisely suite their requirements. "The main thing we needed was a small, door

mounted controller that could meet our IO specifications, and provide us with a **price advantage.**" Said NEXTChem President, David Wong: "The Vision 120 was able to meet and exceed all our requirements **in one compact cost effective package.**"

For more information, please feel free to visit Unitronics' website at www.unitronics.com. If your are interested in the NEXTChem product, please contact David Wong at dwong@nextchem-analyzers.com, or visit their website: <http://www.nextchem-analyzers.com>.