

VALERO ENERGY

Valero Energy uses LABVANTAGE to Help Standardize Laboratory Best Practices

Company Background



Valero Energy Corporation is a Fortune 500 company based in San Antonio, TX with approximately 21,000 employees and revenues of nearly \$30 billion. One of the top U.S. refining companies, Valero has an extensive refining system with a throughput capacity of almost 2 million barrels per day. In combination with its interest in Valero L.P., Valero has 4,800 miles of refined product and crude oil pipelines as well as refined product terminals, which complement its refining and marketing assets in the U.S. Southwest and Mid-continent regions. Valero has approximately 4,200 retail sites in the United States and Canada, branded as Valero, Diamond Shamrock, Ultramar, Beacon and Total. The company markets on a wholesale basis through a bulk and rack marketing network in 40 U.S. states, Canada and Latin America.

Key Challenges

Because of four new refinery acquisitions in 1997 and 1998, Valero was seeking a superior LIMS application to become the corporate standard. This new corporate-wide solution would replace a variety of legacy LIMS installations at all of its plants. The ideal solution had to meet the following criteria:

- Meet all the functional requirements for a refinery (process) laboratory
- Be able to integrate “seamlessly” in the future with the corporate business and plant manufacturing systems (SAP and Info Plus 21)

System Sought

The LIMS specifications and/or functionality had to meet the following workflow and management functions:

- Automated sample scheduling with label printing
- Ability to submit unscheduled samples
- Capture procurement and date and time of sample
- Track sample pickup and delivery
- Scan from barcode samples when received with date and time stamp
- Schedule work and distribute samples to correct lab area/instrument and to other identified workstations
- Prepare samples
- Perform analysis (measurement) and check against control charts with exception reporting and automation notification of results
- Capture and verify results - whatever the source - with detailed sample analysis
- Automate report and result distribution process with chain of custody reporting

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System Selected

The LABVANTAGE LVL LIMS was selected from a list of 3 vendors. LABVANTAGE met all of Valero's requirements and was able to install and load at the Corpus Christi lab data with over one million result records in just over 2 weeks. This system was then demonstrated to the lab managers and various support staff over a 2-day period.

System Delivered

The LVL LIMS was delivered to Valero in May 1999 for the first installation at the Paulsboro, NJ facility. With the help of a LABVANTAGE Professional Services project manager, Valero went "live" September 1999. LVL LIMS was implemented at 4 other refineries over the next 12 months. The recent acquisition of Ultramar Diamond Shamrock will have LVL LIMS being implemented at 5 additional refineries. The Ardmore refinery implementation was completed in October 2002. LABVANTAGE is used by all laboratory personnel at the refineries in a 7 X 24 operation. The number of laboratory employees ranges from 15 at the Ardmore plant to 54 at the Corpus Christi refinery.

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On average, 40 - 50% of the results are input from the automated instrument interfacing of the gas chromatographs and automatic distillation units. The monthly average for samples and results entered are:

<i>Refinery</i>	<i>Samples/Month</i>	<i>Results/Month</i>
Ardmore	4,700	30,000
Benicia	5,500	65,000
Corpus Christi	19,800	258,000
Houston	5,100	71,000
Knotz Springs	4,300	57,000
Paulsboro	9,200	61,000
Texas City	9,000	148,000

Reports used to support the lab and refinery operations include:

- Daily Completed Samples
- Daily Failed/Waived Results
- Daily Tank Results and Summary
- Missing Results
- Operational Morning Reports for GC Data, Products, and Process Units
- Lab Worksheets

- QA/QC Calibration
- Sample Receipt Status
- Sample Schedule by Test and Time
- Sample Schedule by Sample Point and Time
- Special Sample Count Report
- Template Listing
- Test and Test - Property Listings
- Trace Log

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