

# Thermo Scientific LIMS drives competitive energy delivery at ENAP

## ENAP

Empresa Nacional del Petróleo (ENAP) is a public company owned by the State of Chile. ENAP's main line of business is the exploration, production, refining and marketing of hydrocarbons and their by-products. ENAP explores and produces hydrocarbons through its subsidiary, Enap Sipetrol S.A., and refines, transports, stores, and markets petroleum-based products through Enap Refinerías S.A. ENAP operates in three countries: Chile, Argentina and Egypt with its head office in Santiago, Chile.

ENAP aims to ensure a competitive supply of energy both in price and quality, delivering value to its customers. The company is a commercial and logistics leader, working efficiently and reliably and to the highest safety standards. ENAP's collaborative and committed team are recognized as leaders in sustainable development who respect the local communities and environments in which they operate.

## Introduction

For ENAP, like many oil and gas and petrochemical companies, the management of their laboratory was hampered by older, inefficient technology which was unable to automate data capture and analysis. By eliminating manual processes, ENAP believed they could improve product quality and ensure compliance with increasingly complex industry standards and environmental regulations. As a result, ENAP chose to implement a Laboratory Information Management Systems (LIMS) across their laboratory workflow to improve their productivity, compliance and profitability.



Before they implemented their LIMS, ENAP relied on an older system that was not centralized and developed differently in the various plants across the company. This meant there was no consistent data structure or management of the master data. There was also no integration, much less a standardization, which made comparison and aggregation of data across sites difficult. ENAP chose to implement Thermo Scientific™ SampleManager LIMS™ software to integrate and automate their processes.

One of the unique challenges at ENAP was the remote nature of some of their facilities. According to Cesar Farias González, Director of Quality Control, “[ENAP’s] quality control samples are collected and tested across all of Chile and in some of the most remote areas in the world.” ENAP manages all quality control testing across Chile, even from locations like Easter Island and Tierra del Fuego. All testing is performed at one of their three central laboratories: Viña del Mar, Biobío and Punta Arenas.

“When we compare SampleManager LIMS software with the other options in the market, we do not find another product with the same advantages.”

– Cesar Farias González, Director of Quality Control

### Selecting a LIMS to fit the needs of the entire business

ENAP took the LIMS selection process very seriously and spent approximately two years choosing the right vendor. ENAP felt that most of the suppliers could meet the requirements of the laboratory, but not their total business. In parallel to the LIMS selection process, ENAP started harmonizing and optimizing their own processes for laboratory testing, refining and distribution of fuel.

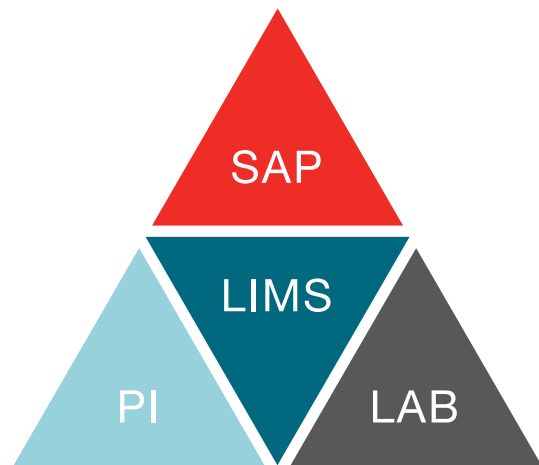
ENAP implemented SampleManager LIMS software across all laboratories at its three refining plants in Chile, standardizing laboratory practices to further achieve the company's business objectives. ENAP use SAP™ for their Enterprise Resource Planning (ERP) system and OSIsoft PI™ to manage strategic information – their quality control operations and laboratory data are managed through the LIMS. Thermo Fisher's experience and expertise in the oil and gas industry, including regulatory compliance and laboratory best practices, was crucial in the selection of a LIMS supplier, allowing ENAP to hit the ground running from day one.

### Quality Control and laboratory infrastructure

ENAP Laboratories are responsible for the quality certification of fuels in Chile, as well as controlling the refining processes such as production, distribution and delivery of fuels through terrestrial and sea routes throughout the country. By implementing SampleManager LIMS software, ENAP is able to improve their laboratory operations, standardize and integrate their quality control processes in alignment with their long-term strategy.

This project has allowed ENAP to integrate their instruments and equipment with the LIMS, considerably reducing the potential risk of transcription errors, improving quality and moving towards a paperless environment. Cesar added, “The native integration with SAP and PI is a great advantage of SampleManager LIMS software, enabling constant adjustments to be made to production controls, improving product quality.”

ENAP has begun to modernize its technologies to improve competitiveness both nationally and internationally, moving from obsolete technologies to advanced industrial solutions, such as SampleManager LIMS software. The LIMS provides the framework to meet national and international regulations while enabling ENAP to achieve significant efficiency improvements across all its operations.



### The key benefits to ENAP operations are:

- Technological and operational harmonization across all laboratories as well as integration with existing business systems
- Compliance with national and international regulations
- Compliance with regulations of the Chilean Superintendence of Electricity and Fuel (SEC) which require oil and gas companies to register quality data and provide traceability through a Laboratory Information Management System (LIMS) to support compliance with ISO 17025
- Electronic Methodology (Laboratory Information Management System) to provide a certificate of origin of products and a chain of custody for all samples

## Strategic partnership was the formula for success

This project had a transformative impact on ENAP. When ENAP started trying to improve their processes, it was evident that they needed a new informatics infrastructure that would enable their plans for digitalization and automation of their processes, improving their ability to serve their customers. SampleManager LIMS software benefits not only the laboratory, but all aspects of their operations making it one of the most critical systems in the company. The LIMS facilitates compliance with regulatory processes and enables significant improvements in product quality. The system integrates supply, distribution, maritime and terrestrial delivery, refining equipment, trading and other processes through quality control data. SampleManager LIMS software connects the processes and master data, which is critical to enable digital transformation.

The success of the project was driven by the partnership and common goals of the implementation team. Cesar Farias, tasked with designing the strategy and guidelines of the quality control process in ENAP, explained that this was “more than a supplier-merchant relationship. ENAP and Thermo Fisher formed a single team where we partnered with the common goal of making ENAP a benchmark for our industry”.

This is only the beginning of ENAP’s use of SampleManager LIMS software. ENAP is planning to expand their operations and use of the system to their other locations. The LIMS can be adapted easily to meet the changing requirements of global regulators.



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