CUSTOMER STORY

Better gas plant operations through data-driven plant balancing.

CUSTOMER

A Western Canadian midstream company focused on natural gas processing, liquids upgrading, storage and transportation, and marketing. With more than 20 facilities, it strives to provide enhanced egress solutions to realize full scale value across the entire North American energy value chain.

Improved efficiency and speed of execution production account and operations teams.

CHALLENGE

A lack of visibility to product quality

The company's natural gas processing facilities had been wrestling with plant imbalances for a number of years. The lack of balance created friction amongst the company and its customers, natural gas producers, that depended on the company to process their raw natural gas. It faced inconsistent recovery rates and allocations back to the natural gas producers.

The operations issues also caused internal challenges. The monthly closing process was time intensive and hectic for the production accounting team as forecasts did not match actual production totals. The company also did not have a verifiable means to reject "off-spec" product from the producers; as a result, it was overpaying its producers due to bad or incorrect data.

At the root of the production issues was a lack of visibility to the actual composition and quality of the natural gas inputs. This lack of visibility also made addressing the root cause of the plant imbalance challenging to identify and address. Different operations teams were also working with different datasets that made alignment amongst teams difficult.

APPROACH

Digitizing plant operations

Using its Product Data Cloud, Validere helped the company collect, aggregate, and validate all of the data sources relevant to determining product quality. The oil and gas industry has unique data format and types that can include Excel spreadsheets, SQL databases, PDF documents, and vendor-specific data formats. Using its data engineering and industry expertise, Validere was able to collect all of the disparate data types into a single location in the AWS cloud.

The raw data then needed to be aggregated into a consolidated business record. For example, five data points for the same attribute may have been taken over time but only a single record of that attribute can be used by the business. Validere automated the translation of multiple measurement data points into a single business record in a way that is trackable and auditable. Validere also provided insights using analytics of what translation methods were the most accurate versus what traditionally had been done.

Lastly, the data must be validated and augmented. The sensitive scientific instruments that take measurements are often prone to data errors. Gaps in the data may also exist as not every possible sensor needed for every type of measurement may have been deployed. Validere used its physical and data science expertise to cleanse and validate the data to get to the truth. It also used ML models that have been trained using industry-wide data sets to fill in data gaps. By executing these three steps, Validere enabled the company to produce a single system of record for its product data.

Key to enable its product data cloud and advanced analytics were AWS S3 and Lambda services. By building out a cloud native data pipeline, Validere is able to extract, transform and load data in real time. AWS S3 provides low-cost storage of raw data, and event triggered serverless Lambda functions allow for immediate data transfer without having to run a dedicated server.

The Validere platform is built using AWS cloud native services including AWS RDS and multi-node EC2 containers. This architecture allows for immediate scalability of the platform to handle any sudden increase in traffic and load.

With an accurate and consolidated set of data, Validere helped the company optimize its plant operations at a system level that allowed it to identify the true causes of the plant imbalance and address them in real-time.

OUTCOME

Better business outcomes

With its plants now balanced, the customer was able to remove the previous friction with its customers by delivering consistent recovery rates and allocations. Internally, it improved the efficiency and speed of execution of its production account and operations staffs. It was also now in a position to verify the quality of raw incoming raw natural gas and avoid paying hundreds of thousands per month for product that was off-spec.

Talk to a Validere expert

Learn how Validere can transform your business.
Email **contactus@validere.com**