GUIDED ULTRASONICS LTD.

APPLICATION NOTE

Increasing Distillate Yields with gPIMS® Monitoring

Supporting Diesel Yield Optimisation through Guided Wave Monitoring

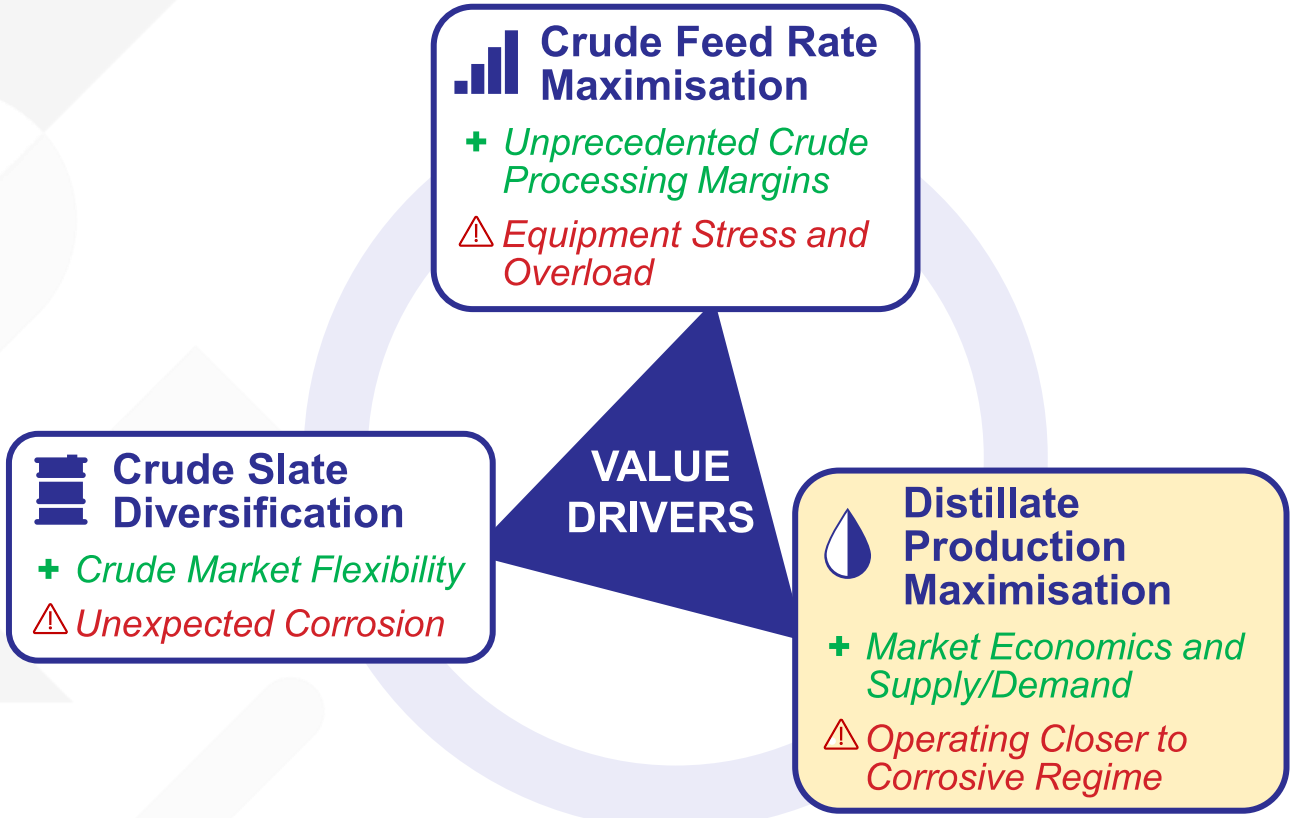
2026



OPPORTUNITY

INCREASING HIGH-VALUE DISTILLATE PRODUCTION

- Refineries maximise value from crude distillation by increasing throughput, broadening crude flexibility, and improving distillate yields.
- Lowering overhead temperature helps shift production towards higher-value distillates, such us **diesel** and **jet fuel**, but may also increase corrosion risk.
- This application note considers how corrosion feedback can support that operating strategy.



Each strategy can maximise distillation value, but each also carries operational risk.

CHALLENGE

OVERHEAD TEMPERATURE AND CORROSION RISK

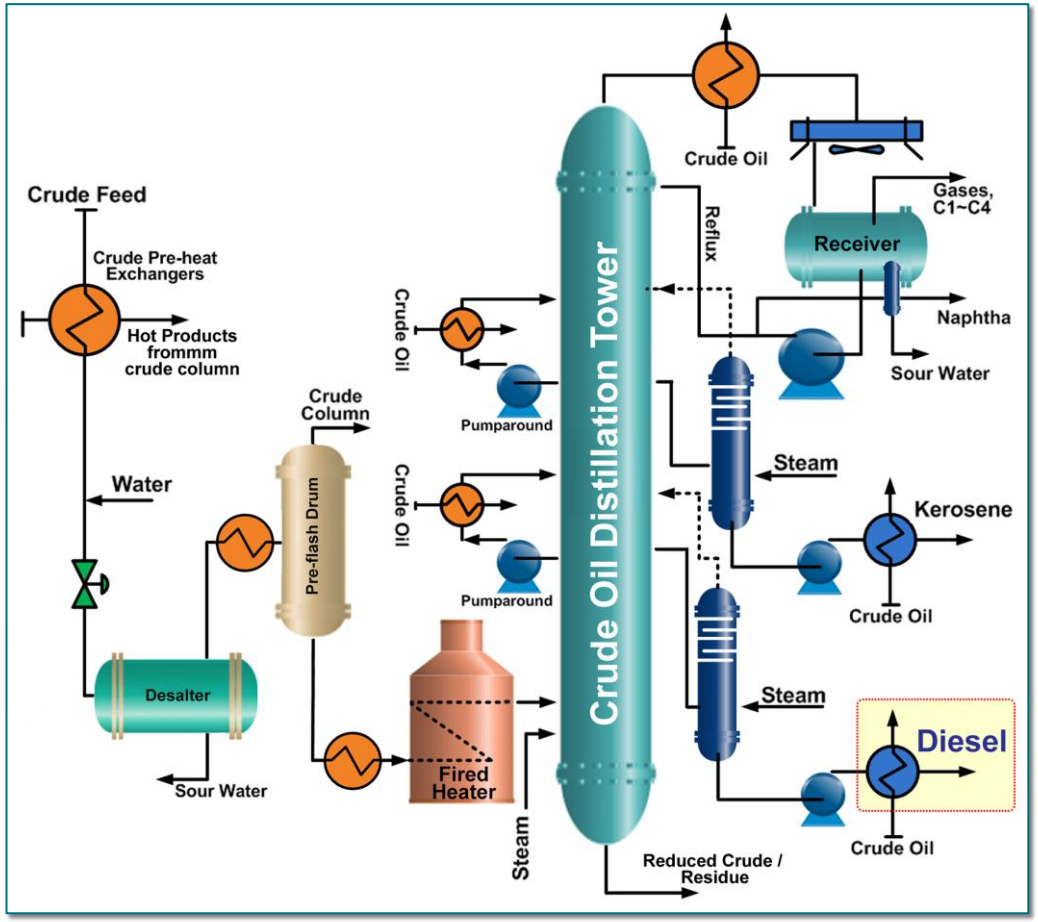
- Favourable global middle distillate market spreads make diesel production more financially attractive than gasoline.
- Lowering the crude tower overhead temperature shifts production towards diesel rather than naphtha/gasoline.
- A 1 to 2°C reduction can generate millions of dollars annually through increased diesel or jet fuel production.

However, lowering overhead temperatures:

- Moves operating conditions closer to the water dewpoint or salt deposition temperature.
- Reduces the safety margin against potentially catastrophic corrosion associated with water vapour condensation and deposition of salts from hydrochloric acid and amines.

Modelling can help predict dew points but cannot establish what is happening inside the lines and vessels.

Crude Oil Distillation Unit – Process Flow Diagram



SOLUTION

CORROSION FEEDBACK WITH gPIMS® MONITORING

GUL Monitoring - gPIMS® Capabilities

- 360º wall thickness & corrosion rate information, including detection of salt deposit build-up at the sensor location.
- Remote detection of corrosion and salt deposits, with 100% coverage for isolated changes along the monitored pipe length.
- Quick deployment with a range of communication options.

Strategic Monitoring

- Mount at critical locations where corrosion may occur, particularly crude overhead lines and heat exchanger inlets.
- Monitor actual corrosion rates and/or salt deposit build-up.
- Identify remote corrosion locations before they become critical.

Process Feedback

- Work with our partners to correlate monitoring data with process parameters and support optimisation of the refining process.



BENEFITS

HIGHER DISTILLATE YIELDS, MANAGED CORROSION RISKS

Improved corrosion visibility

GUL Monitoring provides information on overhead pipework condition beyond what process modelling can predict.

Earlier identification of corrosion

Detect developing corrosion and investigate affected areas before they become critical.

Better-informed operating decisions

Correlate corrosion data with process parameters to assess the effects of changes in operating conditions.

Greater confidence in distillate optimisation

GUL Monitoring supports operators to manage integrity risks while pursuing increased diesel and jet fuel production.

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Run harder with confidence!

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