

Introducing PetroFlow



Experts in Oil and Gas Production System Dynamics –
Real-Time Modeling and Flow Assurance Solutions



PETROFLOW
INTEGRATED CONSULTANTS



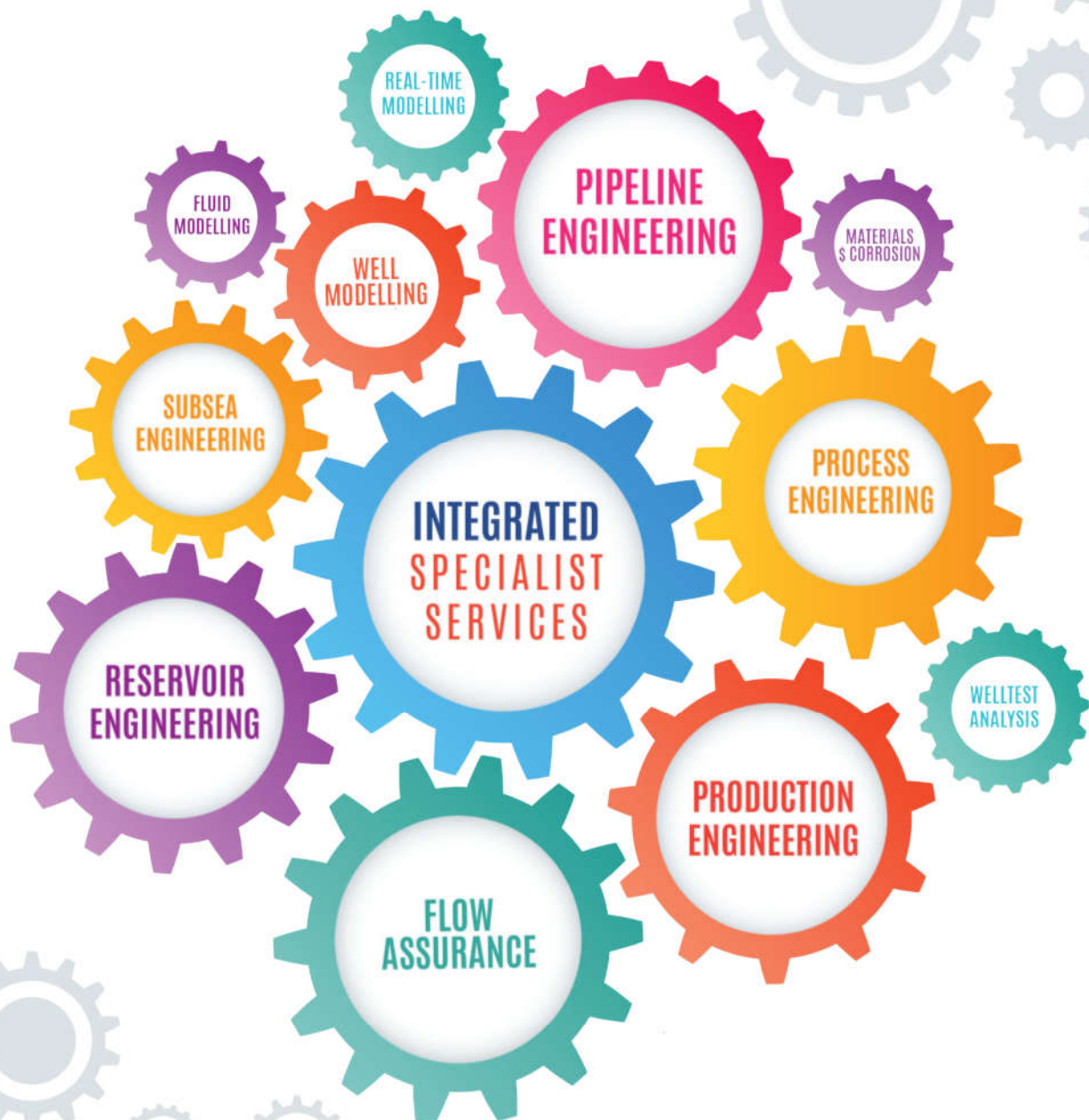
Technical Details

PetroFlow Integrated Consultants Limited is an Engineering Consultancy involved in the provision of specialist services to the oil and gas industry.

With access to a vast resource of technical consultants, we guarantee to deliver targeted and robust solutions to our clients by working closely with them.

We have provided Flow Assurance, Dynamic Simulation and Production Optimisation solutions in The UK for over a decade on numerous projects.

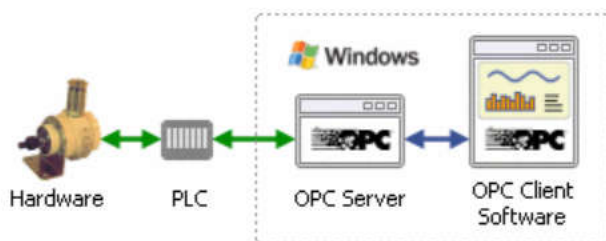
Technical Components



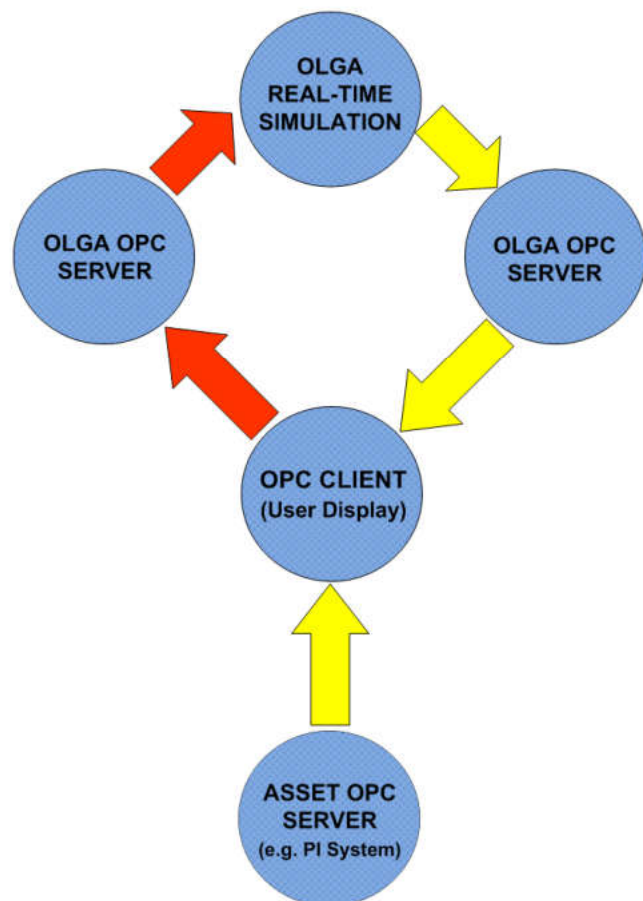


Real-time Production Monitoring and Optimisation

Our real-time monitoring services are tailored to clients' specifications and enables risks to be managed with proactive decision and action. Smarter, faster decisions result in performance improvement and production optimisation of oil and gas assets.



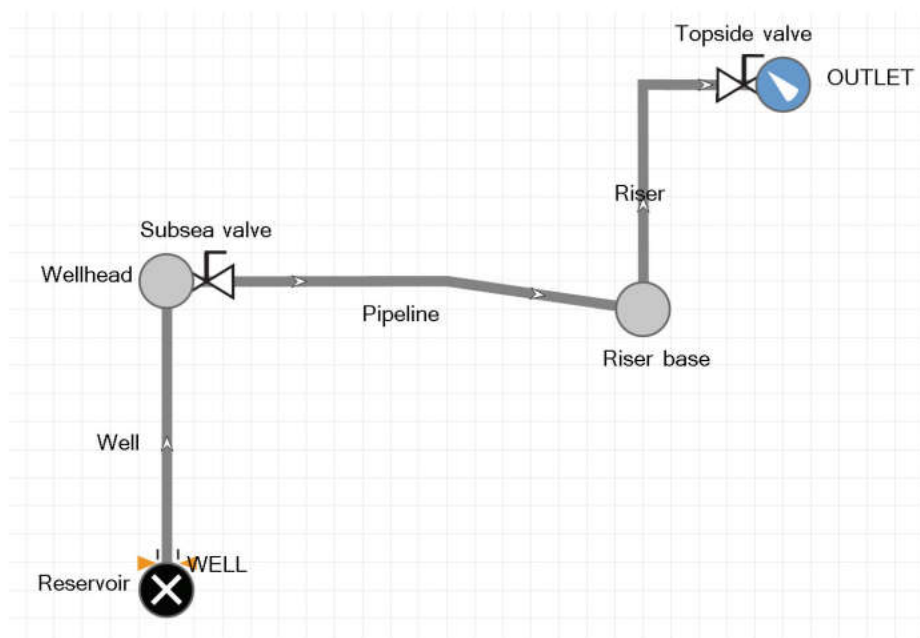
- Determine key pipeline parameters based on real-time operating conditions. Apply for liquid, hydrate, wax and slugging management and reduce downtime
- Optimise operations by making informed decisions in real-time and reduce costs
- Technology based on well established OPC universal interface (e.g. PI data system), fully dynamic model of subsea system and simple customised user interface
- Model can be quickly and easily applied for evaluating the impact of future events and changes in production variables on production operations



Production System Dynamic Simulation

A detailed representation of the production system incorporating the well, flowline and topsides process equipment in an integrated dynamic model is developed and applied for system modification assessment, optimisation, de-bottlenecking studies, etc. Applications of this service includes:

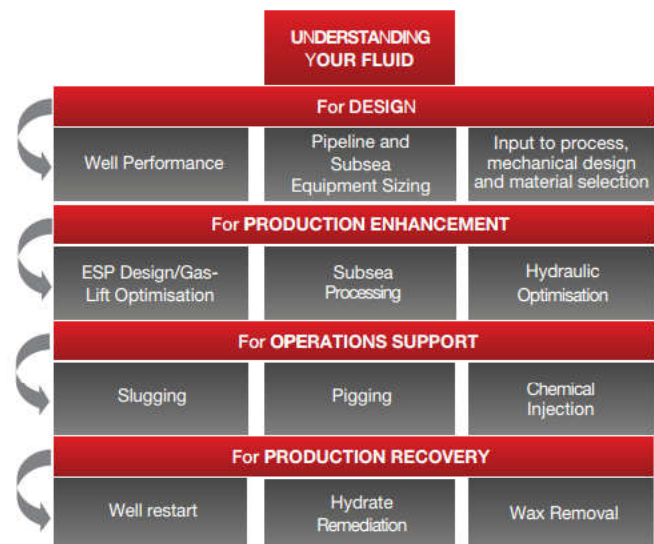
- Production system performance evaluation
- Production system diagnostics and de-bottlenecking
- System operability assessment
- Asset expansion
- Cost estimation



Flow Assurance Services

Flow Assurance expertise based on a firm understanding of the principles of fluid flow, heat transfer, production chemistry etc., combined with a broad knowledge of field operations to support assets from design to operations. Specific expertise includes the following:

- Fluid Analysis
- Steady-state and Transient analysis
- Operating flow regime over field-life
- Production shutdown/cooldown study
- Pipeline blowdown
- Production start-up
- Slugging study
- Chemical injection studies
- Hydrate and wax management
- Corrosion studies
- Pipeline erosion study



Pipeline Capacity and System Deliverability

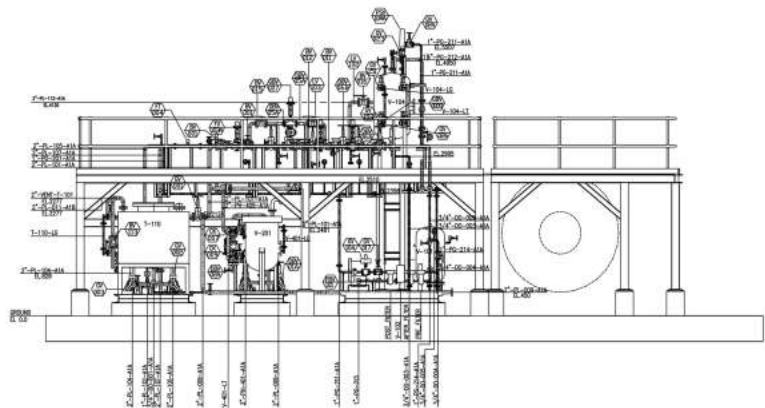
The pipeline capacity and system delivery expertise will maximise recovery rates and improve project economics. Specific activities include:

- Pipeline sizing and steady-state thermo-hydraulic studies
- Pipeline network analysis for optimal production delivery
- Erosional velocity studies
- Production optimisation studies
- Well hydraulic studies

Engineering Design and Management

We provide in-house engineering design expertise to perform or manage the delivery of the following engineering design projects/activities including:

- Feasibility Studies
- Concept Selection
- Pre-FEED Engineering
- FEED Engineering
- Detailed Engineering
- Commissioning/Startup



The following expertise will be provided to manage engineering services:

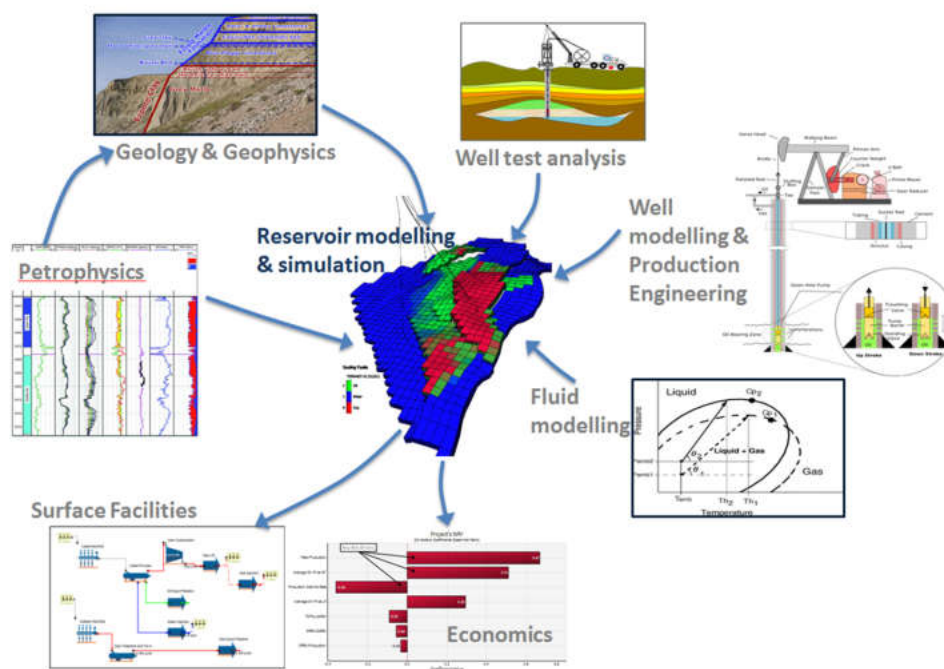
- Engineers (Mechanical, Electrical, Civil, Structural, Petroleum, Process, Flow Assurance)
- Project Managers
- Instrumentation & Controls Engineers/Technicians
- Automation & Systems Engineers
- Construction Project Management
- Facilities Engineering



Integrated Field Development Studies

We perform full field development studies which involves a detailed technical review of development options to determine the most cost effective solution for the entire life of the field - an option that maximises returns and minimises risks.

- Production system performance evaluation
- Production chemistry and fluid characterisation
- Pipeline and pipeline-network thermo-hydraulics
- Production enhancement
- Flow assurance
- Topsides process engineering
- Reservoir engineering

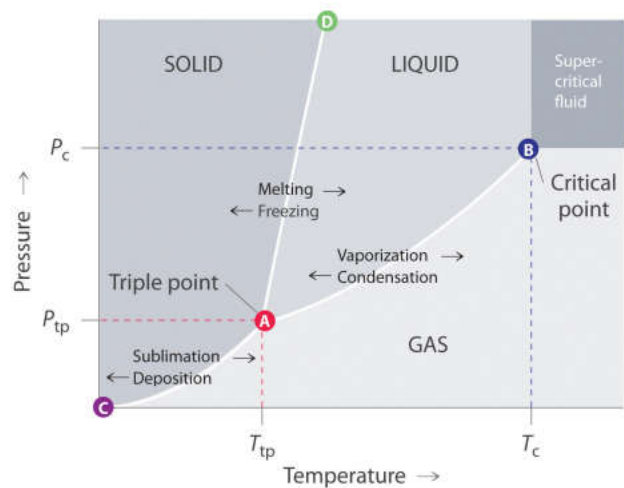


Reservoir Engineering and Simulation

Our reservoir engineering team is equipped with the necessary skills and equipment required for field management and reserves optimization in oil, gas or condensate reservoirs all over the world.

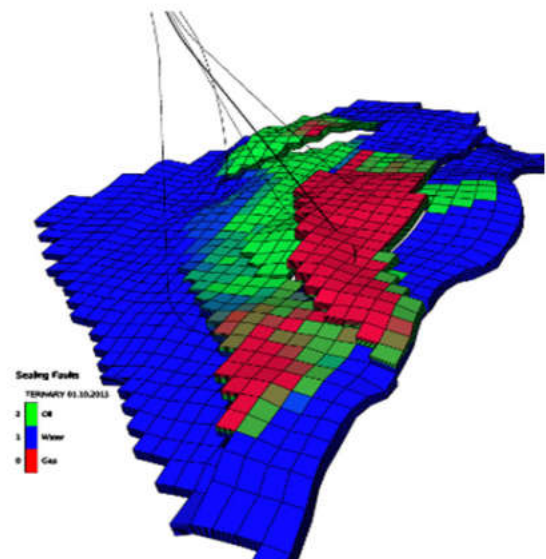
Analytical Reservoir Engineering

- Material Balance Applications
- EOS Modelling/Tuning
- PVT Studies and Correlations
- Decline Curve Analysis
- Transient Well Test Analysis
- Pressure Data Analysis



Reservoir Simulation

- Integrated Field Development Studies
- Field and Reservoir Management
- Black-oil Simulation
- Compositional Reservoir Simulation
- Secondary and Tertiary Recovery Processes
- Fast/Efficient Streamline Based Simulation





In-House Training and Capacity Building

In-house training to provide engineers an opportunity to enhance and sustain an adequate level of knowledge and embrace current technology and initiatives.

The courses are designed to guide engineers in the workflow concepts and fully equip them to work effectively in multidisciplinary teams. Courses that can be provided include:

- Petrophysics
- Field Development and Integrated Reservoir Studies
- Basic Reservoir Engineering
- Well Test interpretation and analysis
- Productions and Well Performance
- Fluid modelling
- Flow Assurance

Our Clients

Our clients engage us in a number of ways and push our boundaries. We in turn, work both diligently and intelligently to ensure we meet their needs **CONSISTENTLY**.



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