



SMC

# CORPORATE PROFILE

[www.securemandc.com](http://www.securemandc.com)

# EXPERTISE ACROSS THE **FULL VALUE CHAIN**

SMC is a specialist oil and gas consultancy assisting E&P companies to leverage their engineering, historical drilling, completion and well productivity data to enhance production. SMC has domain expertise in field development and economic modeling, focusing on optimizing well placement for increased production.

## VISION

Our vision is to become the preferred GCC based consultancy known for delivering innovative and cost effective engineering solutions.

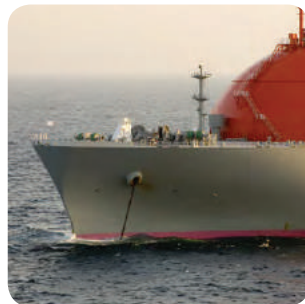
## MISSION

Our mission is to become the best value added service provider to the E&P industry.

## VALUE PROPOSITION

We work as part of 'your team' rather than as an 'independent' service and are equally conversant with Subsurface, Engineering and Commercial disciplines. We leverage our combined strengths of drilling expertise, data interpretation and practical know-how to improve the decision making process.

We work closely with Well Design teams to ensure the results of any study are integrated into future drilling programs and recognize that early involvement helps to maximize the value of any geomechanics involvement. Our work is specifically tailored to individual project requirements, and as such our approach to each project / client is tailored to ensuring a successful engagement.



## Company Profile

SMC is a partnership of O&G industry professionals that provides bespoke, engineering and operationally focused consulting services that can deliver projects from exploration to mature field production optimization.

SMC is headquartered in Abu Dhabi, United Arab Emirates, and was formed by the acquisition of International Consulting A/S out of Bergen Norway. This allowed SMC access to the proprietary work flows and international footprint of International Consulting A/S, whose history dates back to 2011 and whose clients included ConocoPhillips, StatoilHydro ASA and Norsk Hydro ASA.

SMC offers full scale drilling engineering and well construction services as outlined in the scope of services below:

1. Concept Stage Field Development Scenarios with engineer and cost/risk analysis
  - a. Seismic modeling.
  - b. Static and Dynamic reservoir modeling.
  - c. Conceptual Design for Field and Well Architecture.
2. Detailed Stage Field Development Plan after stage gate 1 is past. Feasibility Report
  - a. Subsurface Development Planning.
3. Scheduling for Field Development, Drilling and Production Facilities.
4. Costing and Economics of Project
5. Project Performance Management
6. Drilling
  - a. Geomechanics (pore pressure & wellbore stability assessment)
  - b. Well Planning (trajectory & casing program)
  - c. Wellcat (casing & tubular analysis)
  - d. Drilling Engineering (fluids, drill string, hydraulics, drilling program)
  - e. Drilling Optimization
  - f. Rig selection and contracting
  - g. Completion Modeling.
7. Drilling & Completion Operations
8. Contracts, Procurement and logistics management.

With worldwide exposure including experience gained in the Middle East, Africa, Europe, Latin and North America, SMC through its subject matter experts have a proven track record of helping clients reduce drilling risk, cut drilling costs, optimize the selection of company assets, enhance production and minimize field abandonment risk through the application of geomechanics to the well design process. SMC services cover the entire asset lifecycle from prospect evaluation to field abandonment.

The development of the SMC process, serves as a platform for dramatically reducing drilling costs and production losses due to stuck pipe, lost circulation, and sand production. Insight into fault seal analysis, fracture permeability, sanding, and depletion mechanisms enable production optimization and reduce exploration risk





## SERVICES

We provide specialist consultancy to the petroleum industry, covering the entire asset lifecycle from planning to abandonment. Services include Well Planning including pore pressure and fracture gradient (PPFG) assessment, wellbore stability predictions (WBS), well path planning, anti-collision management, Well Design including casing and tubular program, drilling engineering, drilling optimization, real time monitoring and interpretation, PPFG / WBS monitoring during drilling and post-drilling analyses.

- **Pore pressure & 'fracture gradient' assessment (PPFG)**

When drilling any well, it is necessary to have a good understanding of the pore pressure and 'fracture gradient' conditions to avoid influxes and lost circulation, choose appropriate mud weights and optimize well design. In Deepwater environments, this prediction becomes critical due to the low margin between the pore pressure and the fracture gradient (narrow 'drilling window') in young and under-compacted sediments. The relationship between the pore pressure and 'fracture gradient' is also critical when drilling depleted formations due to the likelihood of 'stress coupling' of the fracture gradient to depletion. We offer a full pore pressure – fracture gradient interpretation and prediction service, including remote real or 'relevant' time monitoring during drilling.

- **Wellbore stability assessment (WBS)**

Where geomechanically 'sensitive' formations are present, uncontrolled wellbore failure (breakout) may lead to drilling, logging and completion difficulties such as tight hole, stuck pipe, packing off, a requirement for significant reaming and/or backreaming, poor quality log data, additional wiper trips or even lost hole sections. The conditions under which those formations will fail, and the likely severity of failure can be predicted by using a geomechanical model, where estimates of key parameters (pore pressure, in situ stresses and mechanical properties) are developed and calibrated against offset well drilling experience to create a predictive tool for planned wells. The resulting geomechanical profile (PPFG and wellbore stability plot) helps inform both the well design and drilling practices with the aim of reducing Non-Productive Time related to hole problems. It is not always necessary to completely prevent wellbore breakout (depending on well objectives), as a limited extent of wellbore failure can generally be tolerated. However, specific drilling, hole cleaning and tripping practices are required to manage the resulting hole conditions. The critical issue is to understand the sensitivity of the formation to changes in wellbore pressure and fully integrate the WBS results into the well design and drilling program.

- **Well Path Planning & Anti-collision management**

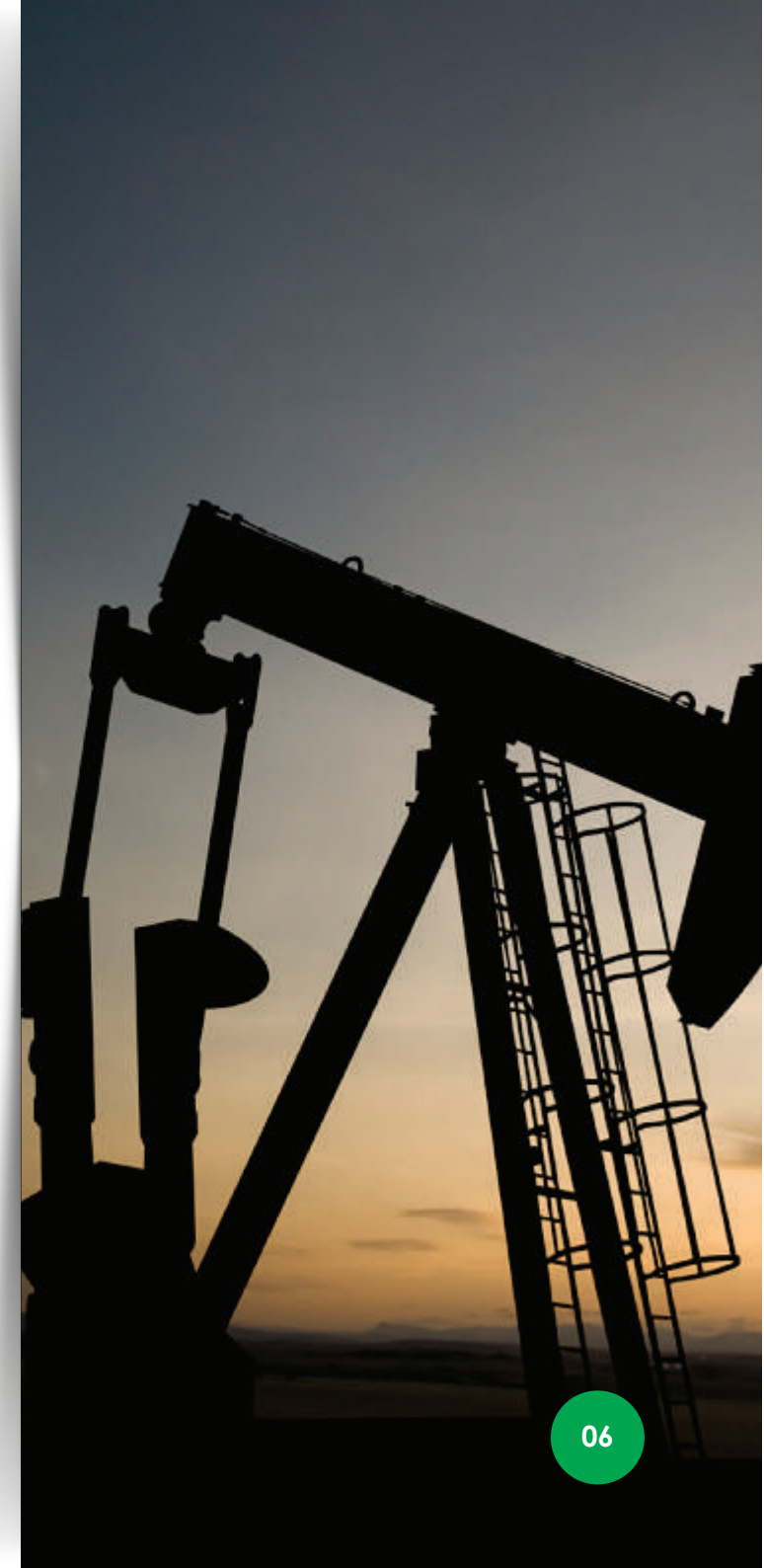
Rock properties, torque and drag, cost, and the location of existing wells can all cause potential problems and affect the optimal well trajectory. Accurate positioning of the wellbore in the target zone is a critical element to maximizing recovery in any well that is drilled. With the rise in the number of complex wells that involve multi-laterals, severe deviations and long horizontals, this becomes even more important. More horizontal wells are being drilled faster, closer together, with thin target zones, and in previously developed fields. We must drill quickly while avoiding geologic hazards and well collisions to steer the bit to the profitable pay zone. To respond, our services includes directional well path planning, survey data management, anti-collision analysis and management using latest ISCWSA survey tool models, In Field Reference modelling and multi station analysis to minimize the positional uncertainty.

- **Well Design**

Casing, Liner and tubing strings are a significant cost and safety component of a well construction. At SMC we use state of the art application to design casing and tubing for the well which fulfill the requirement of safety meanwhile reducing the cost of well tubulars. Tubular program are developed while considering casing wear limits, tri-axial and working stress design for burst, collapse and axial installation, and service- life loads to maximize the use of the most cost-effective casing for each particular section. Our services also includes casing & tubing designing for HP/HT environments such as deep water and heavy oil. Calculation of downhole temperature and pressure profiles, pipe body movement analysis, casing and tubing load analysis, annular pressure buildup and wellhead movement evaluation.

- **Drilling Engineering & Optimization**

Casing, Liner and tubing strings are a significant cost and safety component of a well construction. At SMC we use state of the art application to design casing and tubing for the well which fulfill the requirement of safety meanwhile reducing the cost of well tubulars. Tubular program are developed while considering casing wear limits, tri-axial and working stress design for burst, collapse and axial installation, and service- life loads to maximize the use of the most cost-effective casing for each particular section. Our services also includes casing & tubing designing for HP/HT environments such as deep water and heavy oil. Calculation of downhole temperature and pressure profiles, pipe body movement analysis, casing and tubing load analysis, annular pressure buildup and wellhead movement evaluation.





- **Completion Modeling**

Modeling fluid flow through the complex completion being used now a days is beyond traditional reservoir simulation and nodal capabilities because it should combine an accurate reservoir inflow with highly detailed wellbore model. To address this at SMC we use state of the art software which uses 2D mesh of nodes (same as reservoir simulators) to simulate flow along the pipe instead of 1D topology. This technique reduces the gap between reservoir simulation and lift design modeling by creating a continuous highly detailed flow map between the reservoir and tubing.

- **Completion stability assessment ('Sanding')**

Designing a well / field development for the worst-case of sand production has a significant impact on the field development plan, type of completion, well productivity/injectivity and overall costs. A completion stability assessment can help optimize both completion and facility design, reducing unnecessary costs and maximizing productivity. Where field re-development is planned (conversion to gas storage, for example), additional analyses may be performed to determine the impact of cyclic loading on rock fatigue to help determine overall project viability. The behavior of injector wells is a specific case, where thermal and pressure transient effects may cause significant formation failure and solids production.

- **Real / 'Relevant' Time Pore Pressure and Geomechanics monitoring for drilling operations**

This service allows implementation of geomechanics-based recommendations, and involves monitoring of conditions during drilling using a web-based information system. Direct streaming into a 'live' model is possible, with regular updates provided to the client, both in report format and during attendance at meetings such as the Morning Call.

- **Post-drilling geomechanics assessments**

This is a key part of the 'Lessons Learned' process, and should be included in the End of Well report. Existing geomechanical models can be updated for future wells and data deficiencies highlighted and incorporated in forward planning.

- **Contractor supervision / monitoring & peer reviews / assists**

We can help you gain the maximum value from existing / ongoing geomechanical studies by monitoring your contractors and providing advice on the interpretation and implementation of third-party study results.

## TEAM

### **Principal Geomechanics Specialist & Technical Director**

Geomechanics expert with more than 20 years oil and gas experience. Fully conversant with all aspects of geomechanics workflows from study definition and inception to delivery and integration into drilling programs and field development plans, and places particular emphasis on the integration of geomechanics and wellbore stability assessment into the well design and execution process. Regions of experience include Europe, Africa, Middle East and North / South America.

### **Drilling Team Lead (Management)**

Drilling Expert with more than 30 years of experience in Oil and Gas industry, supervising Drilling Engineering Team. Involved from the initial well design to testing, completion and abandonment. Establishing a healthy relationship between within team members, meanwhile running drilling operation in cost effective and safe manner. Regions of experience include Middle East, Asia, Europe and Africa.

### **Drilling Engineering (SME)**

Drilling Engineering expert with almost 15 years of experience in detail well planning for both injectors and producers for ERD wells in Europe and Middle East. Fully acquainted with latest industry drilling technologies and state of the art software applications available in the industry including DecisionSpace, Landmark D&C applications. Full command on planning and successful execution of well with special emphasis on safety and implementing all HSE standards.

### **Reservoir Geology Specialist & Business Development Director**

Expert level knowledge of geology and geo-steering applications gained over a period of 20 years in the industry.

### **Petroleum Engineering Specialist & Commercial Director**

Expert level Petroleum Engineering knowledge gained over a period of 14 years in the industry and supplemented by an MBA from a top tier institution. Regions of experience include Latin America, North America, Middle East and Africa.

### **Drilling Operation Supervisor**

More than 25 years of experience of supervising drilling crew and daily drilling operations in almost all over the globe. Overseeing the efficient execution of drilling activities to ensure operations run smoothly. Responsible for ensuring proper use and maintenance of equipment. Developed revisions or enhancements to solve and troubleshoot drilling problems. Fully familiar with standard concepts, practices, and procedures within a particular field.







### **Completion & Workover Engineering SME**

20 years of experience in Completion or Workover engineering. Worked closely with other groups to assure the programs are based on all available information from nearby wells. Application of standard operations procedures, best practices and lessons learned, Progress time and cost charts for the Completion or Workover phase, De-Completion program (well killing, tubing pulling, plug setting) for Workover, Christmas tree, tubing and down hole completion equipment to meet expected conditions and well integrity, Coiled Tubing applications, Stimulation program, Completions fluids program, Well testing program, Well evaluation program, Perforating program.

### **Reservoir Engineering Advisor**

More than 25 years of experience of reservoir engineering duties related to gathering and analysis of data, appraisal and monitoring of well and reservoir performance, estimating reserves and predicting future performance to ensure optimum recovery. Evaluation all workover and drilling activities and coordinating with various teams for project development according to production guidelines. Utilizing the available computer facilities/applications to perform assigned duties in an efficient manner.

### **Structural Geology Advisor**

About 30 years of experience in structural geology. Specializing in 2D, 3D seismic interpretation to build fault structural model, fracture analysis on cores and bottom hole image logs, evaluation of regional tectonic frame work, performing fault seal analysis and developing uncertainty ranges using industry standard methods. Lead the projects to establish technology centers for different client including equipment and software evaluation related to structural geology and geomechanics.



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