



WellConstructor: Expandable Tubular Solutions

“Allows Well Engineers to gain an insight into the post expansion properties of steel tubulars...”

Expandable tubulars are increasingly being used in the oil and gas industry for drilling, completion and repair of wells. Because of the highly non-linear nature of the problem, it is not easy to establish one set of standard design rules for engineers wishing to use the expandable tubulars. Some of the important parameters which a well engineer must know are the post-expansion properties of the tubular like the collapse strength, change in length, wall thinning etc. Computational techniques like the finite element (FE) method will be used by experts to simulate the expansion process and to predict post-expansion properties.

- www.technica-nnc.com/wellconstructor
- Design Optimization
- Operations Screening Tool
- Fast and Accurate
- Cost Effective

This predictive technique requires specialist software and highly skilled analysts. Technica-NNC has overcome this technical challenge by developing a web based consultancy service 'WellConstructor' that can be used over the Internet by well engineers to specify the input and output parameters for computer simulation of a tube expansion problem.

WellConstructor Inputs and Outputs

Inputs

- Expansion system configuration
- Fluid densities
- Pressures
- Temperatures
- Field stresses
- Lithological column
- Pour pressure gradient
- Temperature profile
- Well geometry

Outputs

Weight/grade of pipe
Best options of standard pipe
Tri-axial stress
Uni-axial stress
Hoop stress
Torsional vibrations
Installation loads
In-service loads
Safety factors



Advanced Technology Solutions

Technica-NNC Limited
Banchory Business Centre
Hill of Banchory Business Park
Burn O'Bennie Road
Banchory
Aberdeenshire
AB31 5ZU

t: +44 (0) 1330 826510
f: +44 (0) 1330 820920
e: solutions@technica-nnc.co.uk
w: www.technica-nnc.co.uk

“Technical Excellence Supporting the Oil & Gas Industry...”

WellConstructor is a combination of: -

- An easy to use web enabled interface into which engineers enter data that describes their expandable scenario in terms of tube geometry, tube material, expansion tool geometry and formation properties
- An accurate and efficient solving engine based on advanced computational techniques, running on state of the art multiprocessor silicon graphics workstations, which are able to compute the analyses in a short turnaround time
- An efficient problem definition process based upon model parameterisation that converts client data into a detailed numerical model with the minimum of effort. Technica- NNC passes on these cost savings to our clients providing them with economic and effective solutions
- Hotline support for all clients that is provided by experienced engineers/analysts in the form of telephone and e-mail

WellConstructor is a high-level well-engineering tool which is based on Technica-NNC's capabilities and expertise in analysing expandable tubulars and well engineering expertise. WellConstructor is designed to: -

- Bring hi-tech computational simulation within easy reach of well engineers
- Increase the exposure and utilisation of the expandable technology
- Provide a high-level screening and design optimisation tool for well engineers
- Improve the understanding of the expansion process and the post-expansion properties
- De-risk any field trials
- Deliver cost-effective and timely solution to well engineers

Technica-NNC will perform the consultancy work under a mutually agreed confidentiality agreement. Solutions to standard problems will be provided within fixed timescale and at fixed cost. Further information can be obtained from our website:

www.technica-nnc.co.uk

Or directly via

www.technica-nnc.com/wellconstructor

***UK - Aberdeen & London • Canada - Halifax & St John's
USA - Houston • Far East - Singapore***

“Technical Excellence Supporting the Oil & Gas Industry...”

WellConstructor can provide well engineers with the information in the following areas: -

- Expandables for Open Hole and Close Hole
- Completion design
- Zonal isolation
- Expandable sand screen (ESS) - Gravel pack vs use of ESS
- Collapse of ESS
- Liner for Side Tracks
- Well bore stability
- Expandables for multi-lateral holes
- Connection integrity and qualification

WellConstructor can be used in conjunction with Technica-NNC's Risk Management Software tool, WellFocus. WellFocus is a risk based guiding tool designed by Well Engineers for Well Engineers, which can be used for risk based economic modelling operations and contingency planning.

Technica-NNC is a subsidiary of NNC Holdings Limited, an international engineering and project management service provider, employing around 1300 people. As an organisation, we are able to provide solutions from a wide range of industrial and commercial backgrounds including defence, nuclear and the upstream and downstream oil and gas sectors. Combining industry expertise, we deliver consistent technological and economic advantage to our clients through a wide range of project environments and application technologies.

For further information on WellConstructor please contact us on: -

solutions@technica-nnc.co.uk

Technica-NNC Limited
Banchory Business Centre
Hill of Banchory Business Park
Burn O'Bennie Road
Banchory
Aberdeenshire
AB31 5ZU



t: +44 (0) 1330 826510
f: +44 (0) 1330 820920
e: solutions@technica-nnc.co.uk
w: www.technica-nnc.co.uk



INVESTOR IN PEOPLE

***UK - Aberdeen & London • Canada - Halifax & St John's
USA - Houston • Far East - Singapore***