

CERBERUS™ SIMULATION SOFTWARE

Trican uses the Cerberus package for simulating and designing jobs which allows our engineers to model the job in the office prior to arriving on location. This package contains:

- Tubing Force Analysis:** The Tubing Force Analysis component calculates numerical and graphical predictions of:
- Lock up depth
 - Surface weights during tripping in and out
 - Minimum and maximum surface weight limits
 - Maximum weight which can be applied at the end of the tool string
 - Maximum pick-up force which can be applied at the tool
 - Helical buckling load
 - Axial force and stress on the tubing

The software is particularly useful when designing reach on horizontal wells or when keeping within operating limits on high pressure wells.

- Fatigue Analysis:** The Fatigue Analysis component calculates fatigue and remaining life on the coil as the job progresses. This gives operators a real time display of wear points in the string and ensures a safe high quality job. All data is also recorded in a job log for future use.

- Hydraulic Simulator:** The hydraulic simulator predicts all flow rates and pressures in the well with single or 2-phase flow. It is an essential design tool for our engineers in many different types of jobs. It is particularly useful in predicting flow rates for underbalanced drilling, sand and fill removal and stimulation treatments.

- Weight on Bit Modelling:** Trican's software package allows us to model the weight at the bottom of a tool string in any well configuration. This feature is very useful when designing drilling jobs to ensure that the optimum weight is set down on the drilling assembly.

- Syphon String Modelling:** Many wells either have too low of a flow rate or too high of a liquid rate to produce efficiently up conventional casing and tubing. It is often an advantage to run coiled tubing into these wells to reduce the flow area and improve liquid removal from the well. Trican's syphon string analysis program ensures that the optimum size of a coil is run in the well. This results in liquids being removed without inhibiting or "choking" back production.



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