

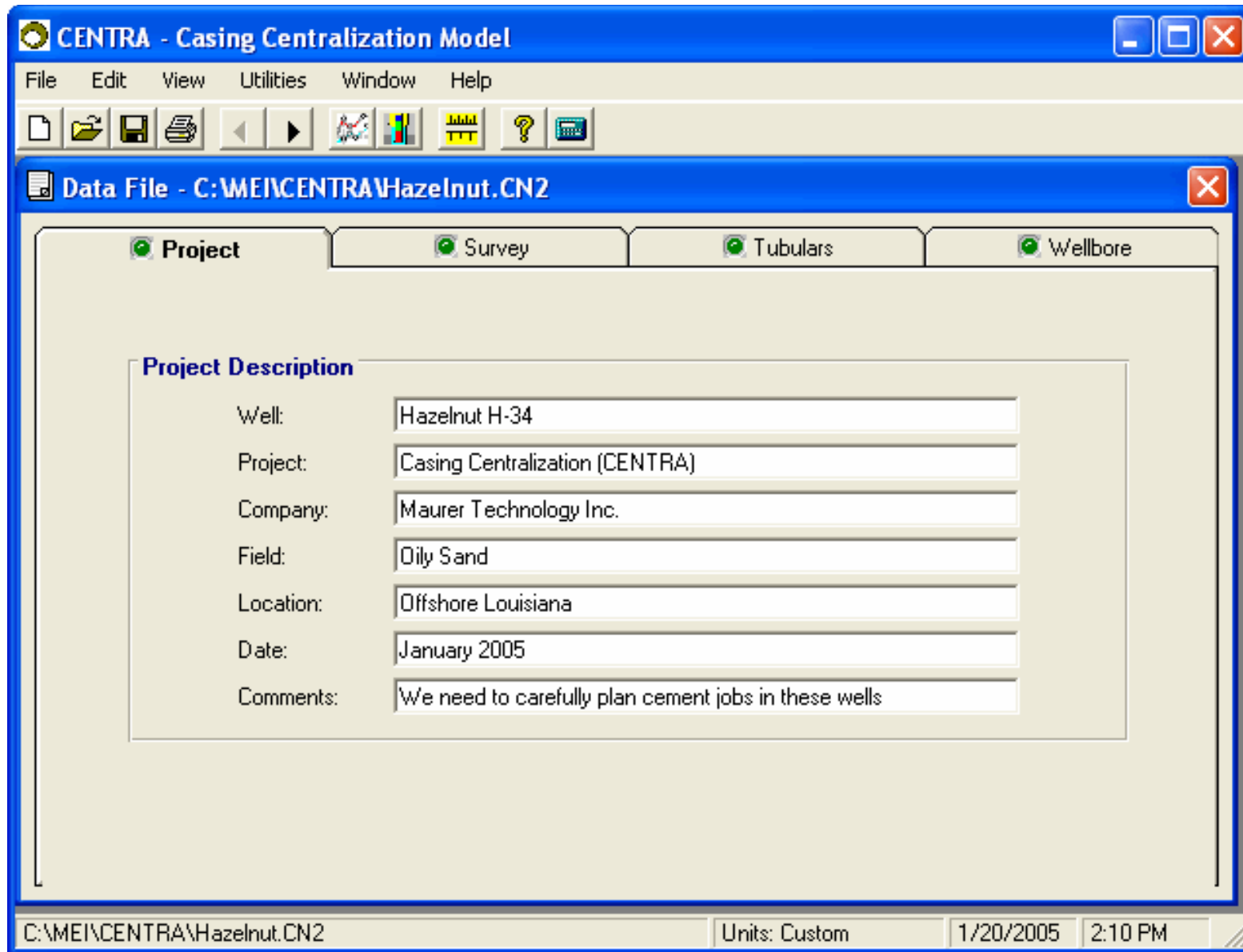
# CENTRA – Casing Centralization Model

allows you to easily design casing centralization in any 3D wellbore based on equal spacing or a minimum stand-off distance. It also calculates hook loads expected during the process of running the casing into the well.

Features of **CENTRA** include:

- Considers casing deflection and centralizer compression
- Fixed-end or hinged-end casing bending models
- Analyzes either a complete well or a single section
- Allows mixing centralizer types

**NOTE:** Computer screens within this PDF document may appear slightly distorted. This is due to limitations in the Adobe Acrobat Viewer when displaying graphics. To clearly view details in the graphics, zoom in or print the document.



CENTRA

CENTRA's Project page documents specific project details.

**Single-Span Casing Analysis**

File View

**Casing Deflection Model**

Juvkam-Wold & Wu (Fixed Ends)     
  Lee, Smith & Tighe (Hinged Ends) ?

**Wellbore Data**

Straight Wellbore     
  Build/Drop Wellbore

Hole ID:  (in)  
 Inclination:  (deg)  
 Build Rate:  (deg/100ft)

**Casing Data**

OD:  (in)  
 ID:  (in)  
 Weight:  (lb/ft)

**Centralizer Data**

Spring Bow     
  Rigid

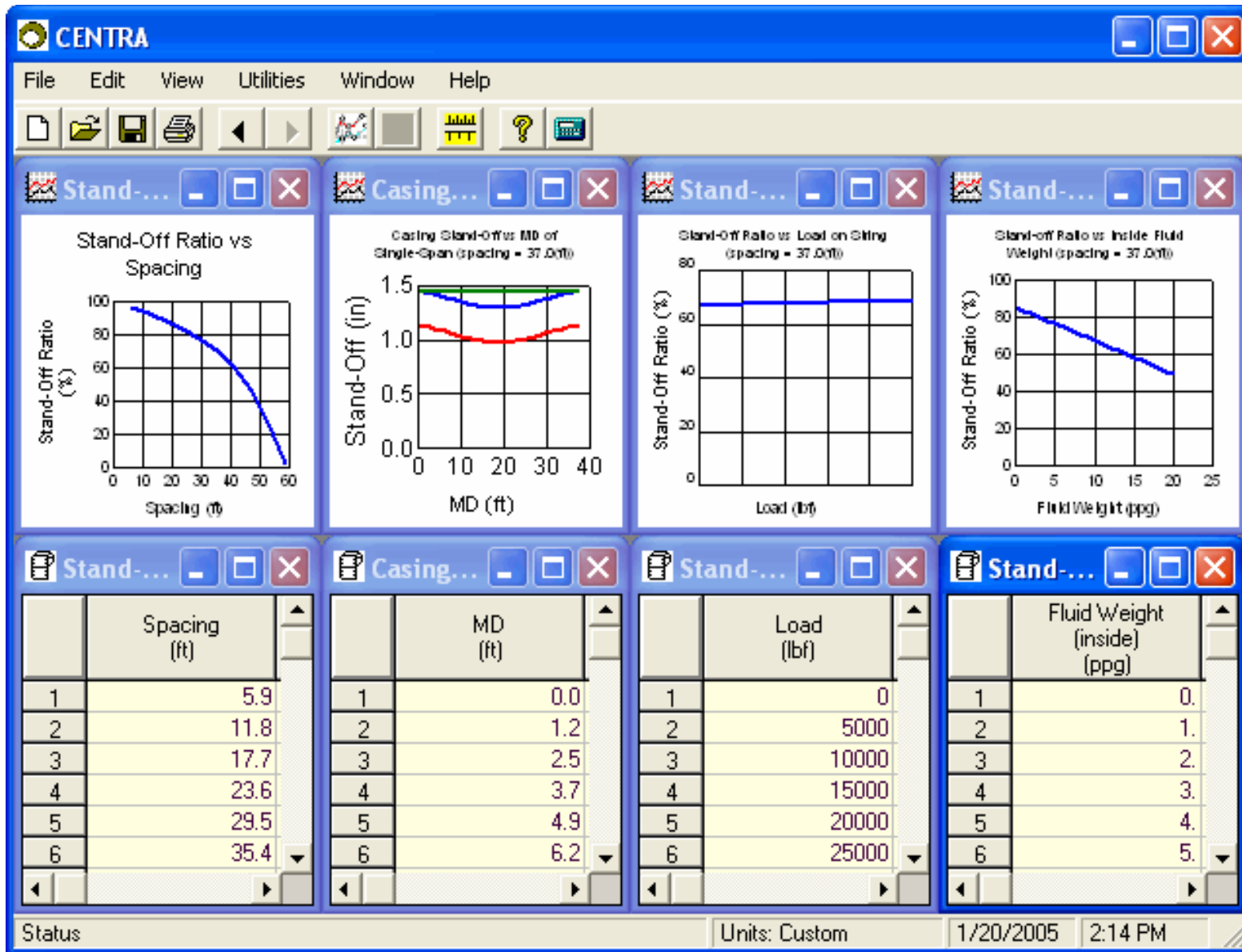
Restoring Force:  (lbf)  
 Max. Diameter:  (in)

**Operation Data**

Fluid Weight:  (ppg)  
 Load on String:  (lbf)  
 Stand-Off Ratio:  (%)

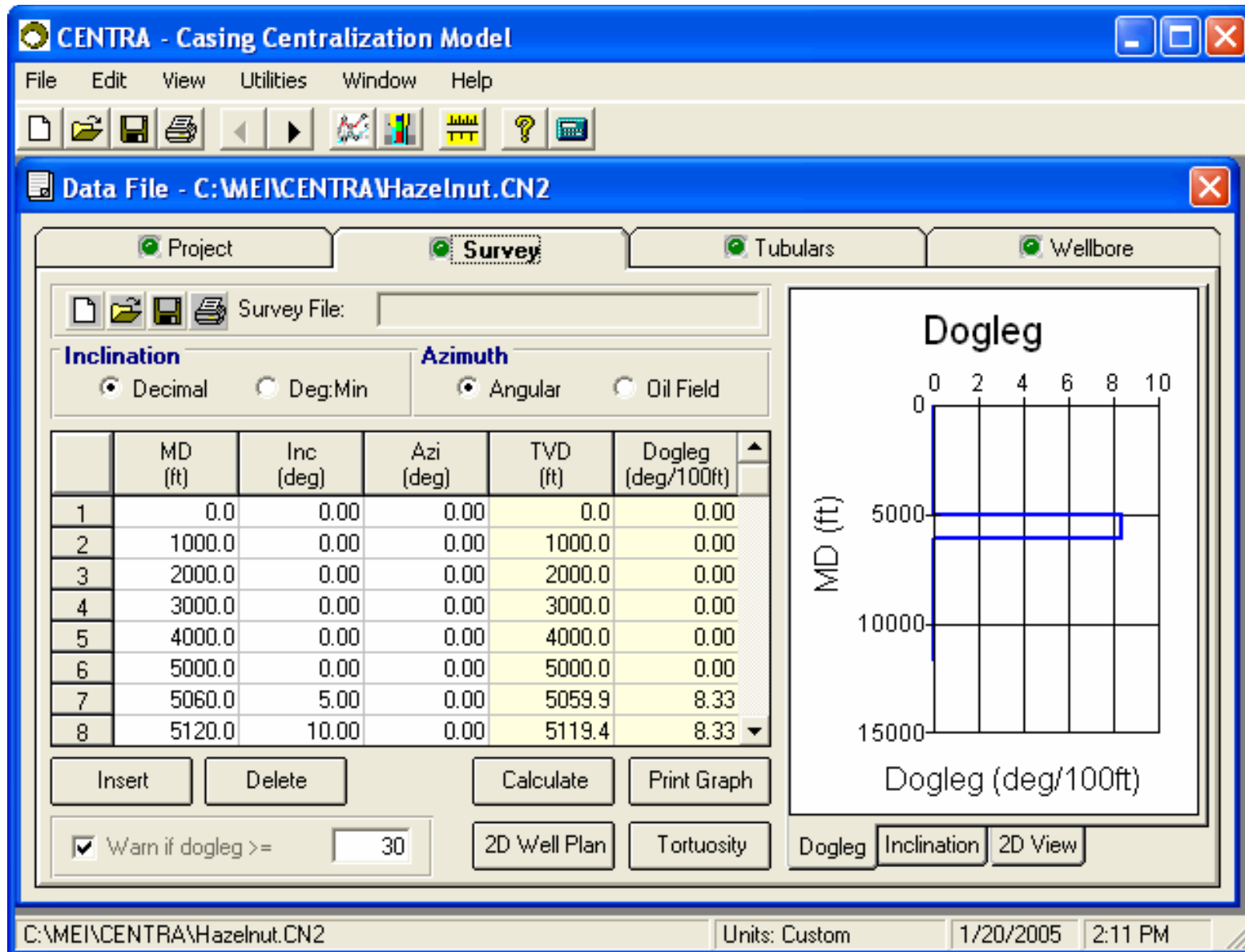
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With a single-span centralizer analysis, you can perform a general engineering evaluation of geometries and material options without having to specify a well trajectory.



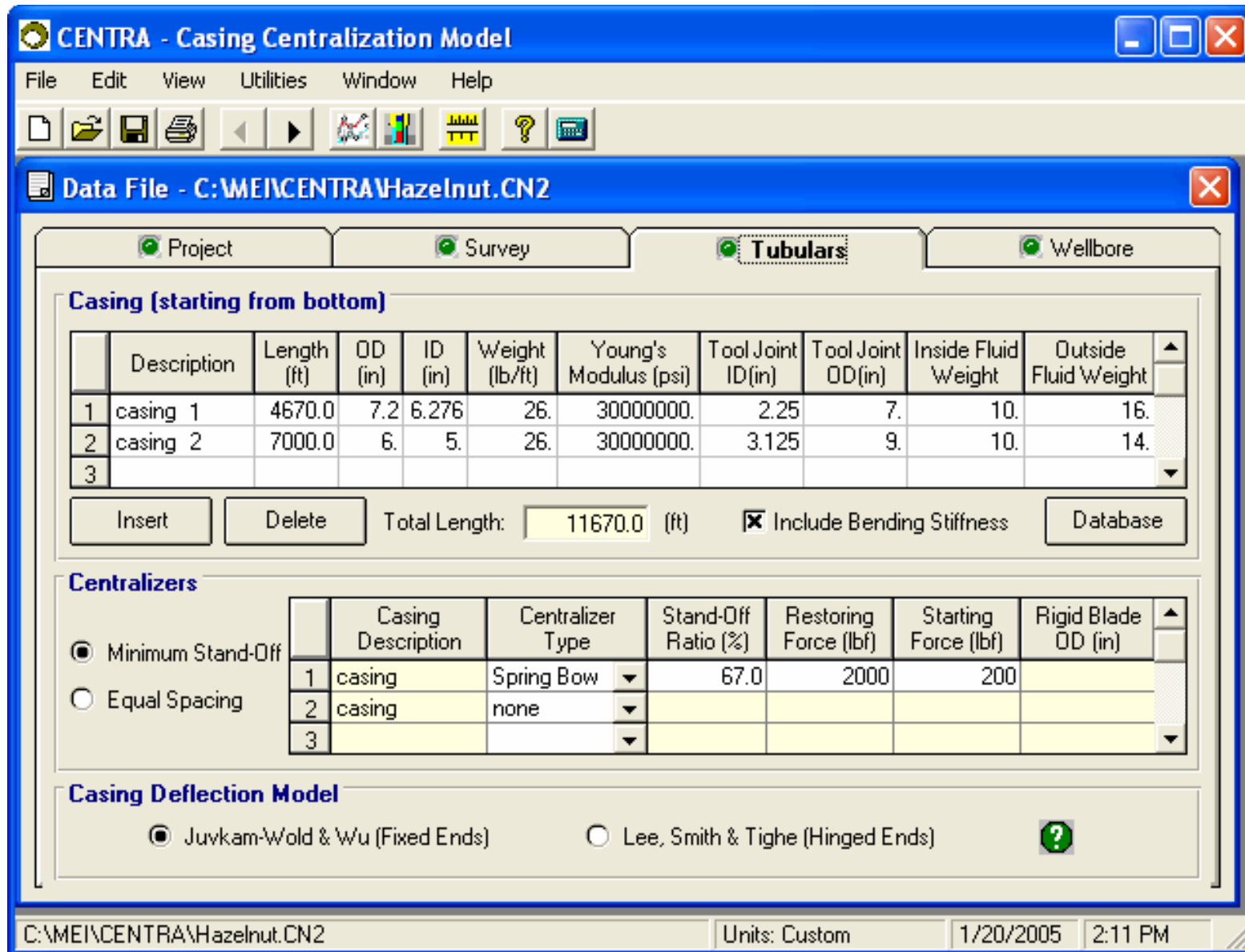
Single-span results are displayed in several graphs and tables. Each of these can be enlarged, reviewed, saved, and/or printed.

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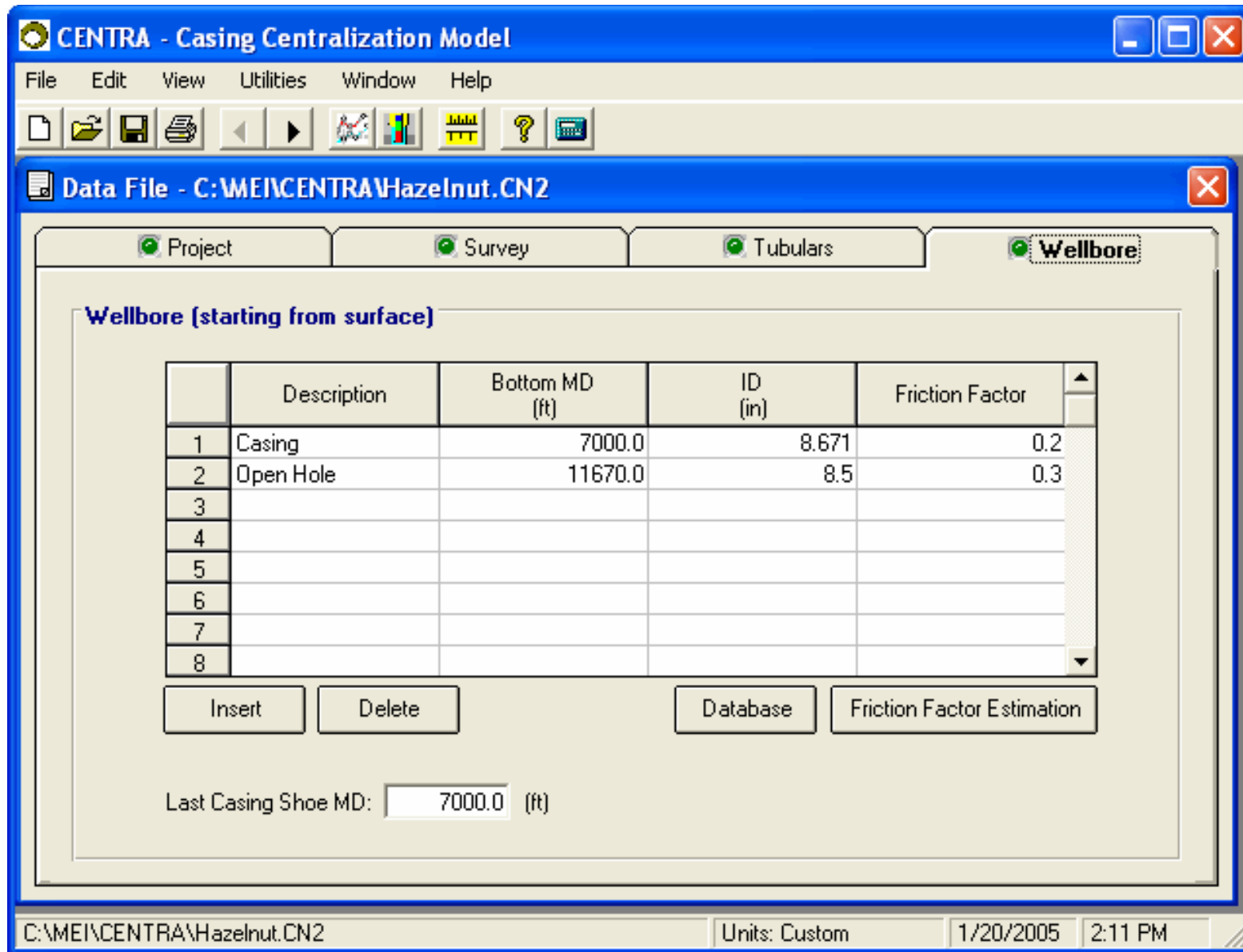
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For a whole-well analysis, a complete wellbore trajectory is needed. This is entered and reviewed on the Survey page. All types of survey files are compatible.



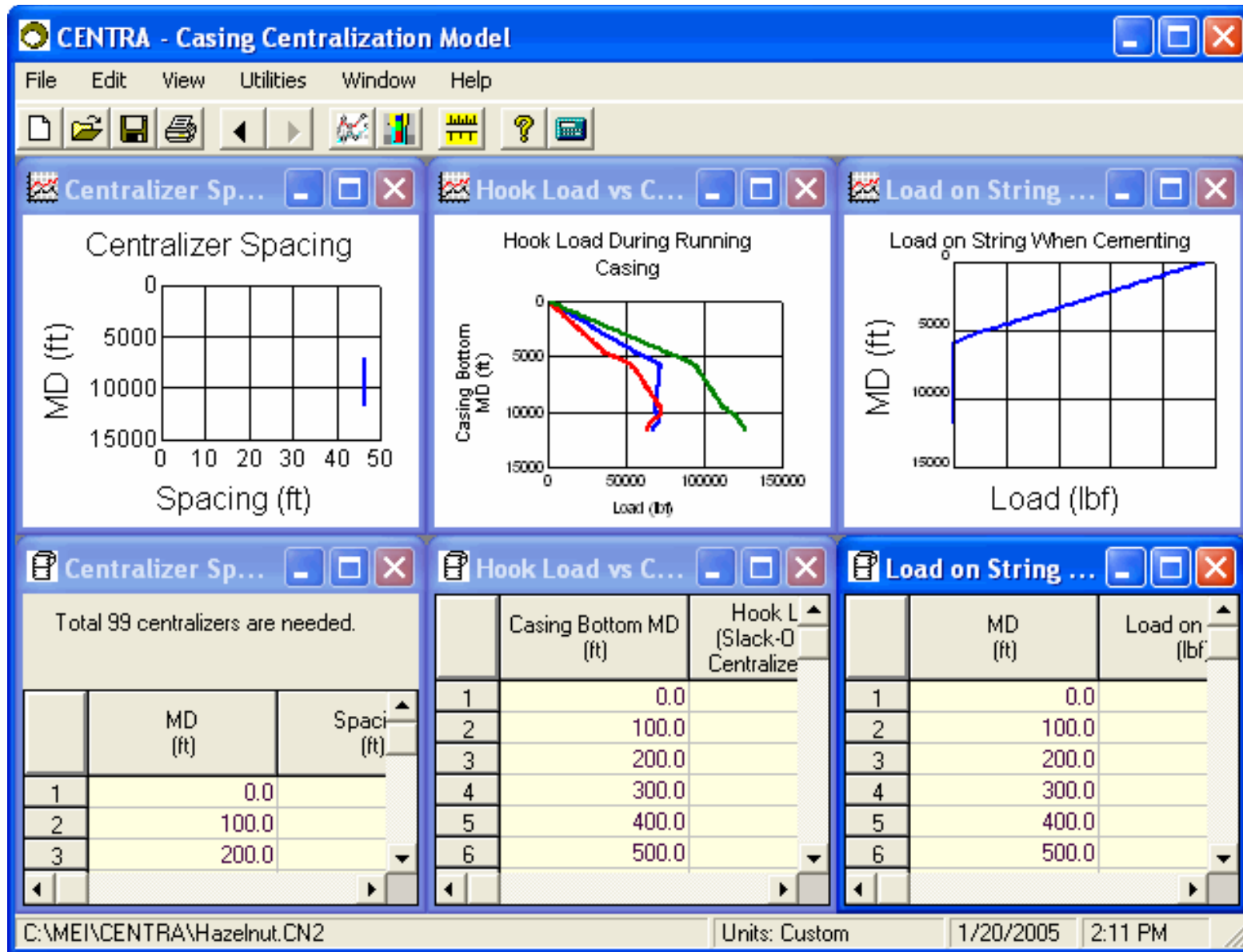
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On the Tubulars page, casing data specify the location and size of each casing string. The presence and properties of centralizers along the well are also defined. Select your preferred centralizer spacing criterion and casing-deflection model.



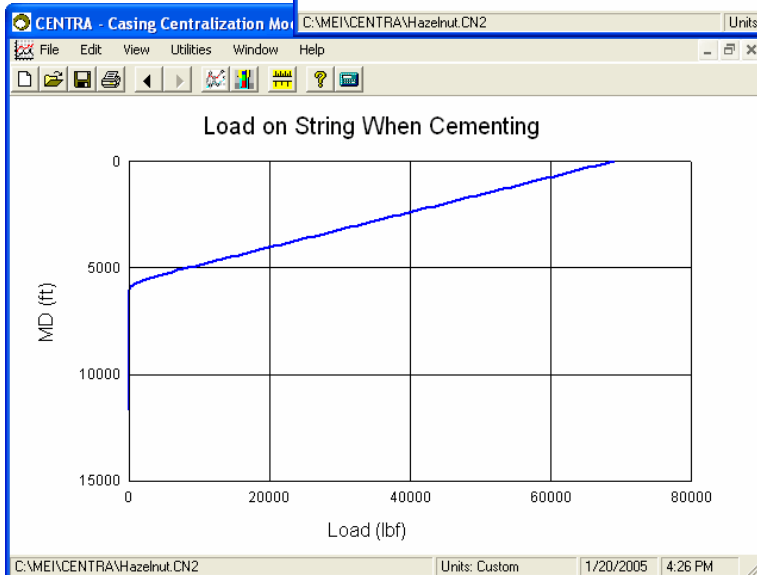
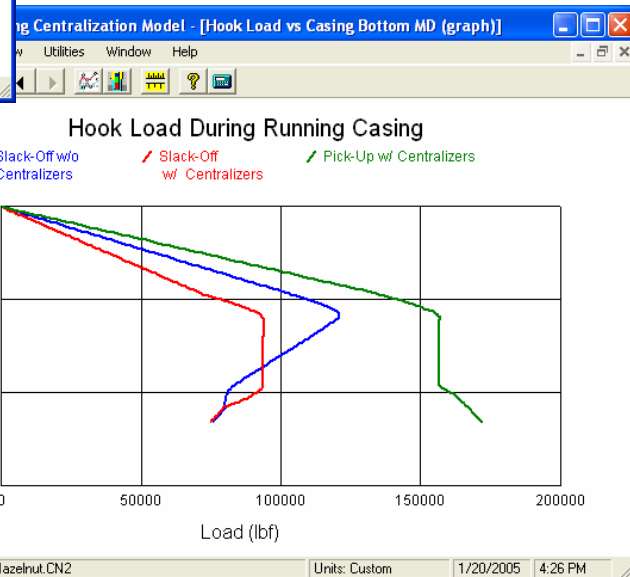
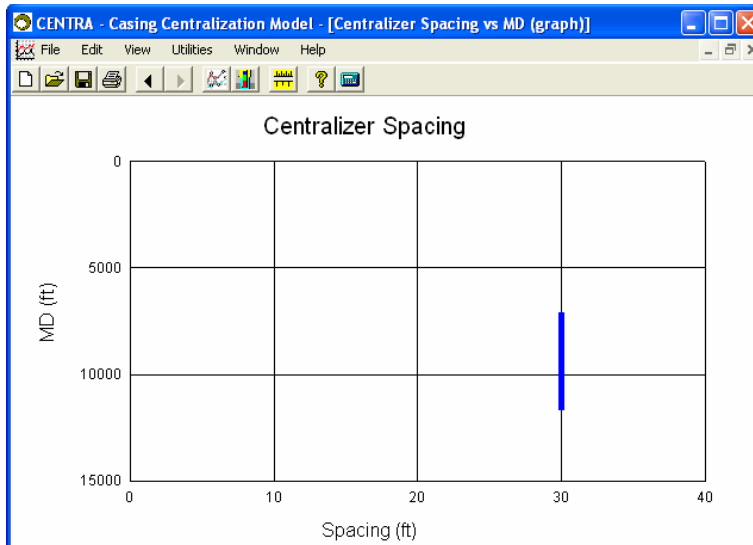
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Data on the Wellbore page describe the ID of the wellbore and friction factors along the well.



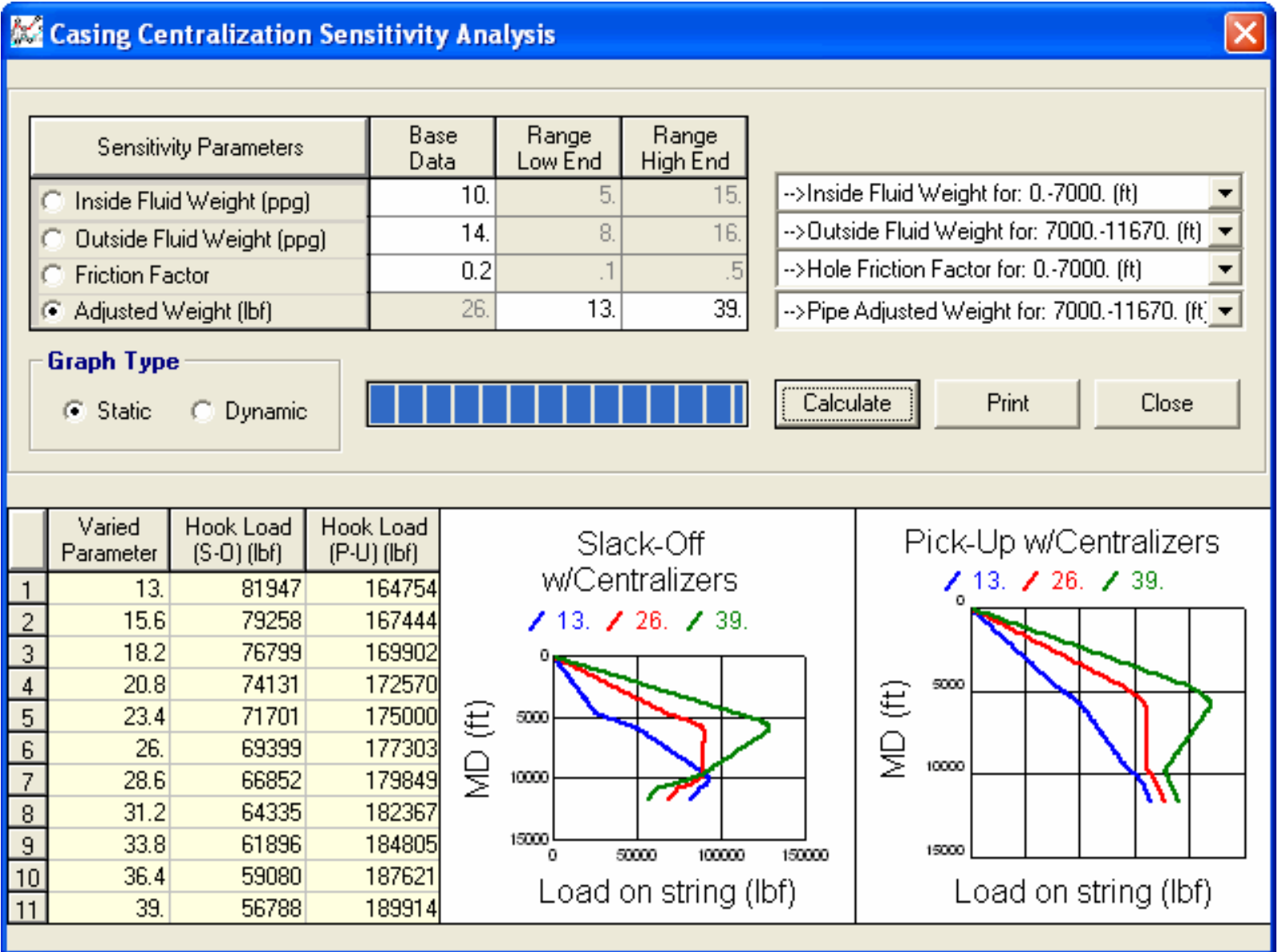
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Results of the whole-well analysis of centralizer spacing are displayed in three graphs and tables.



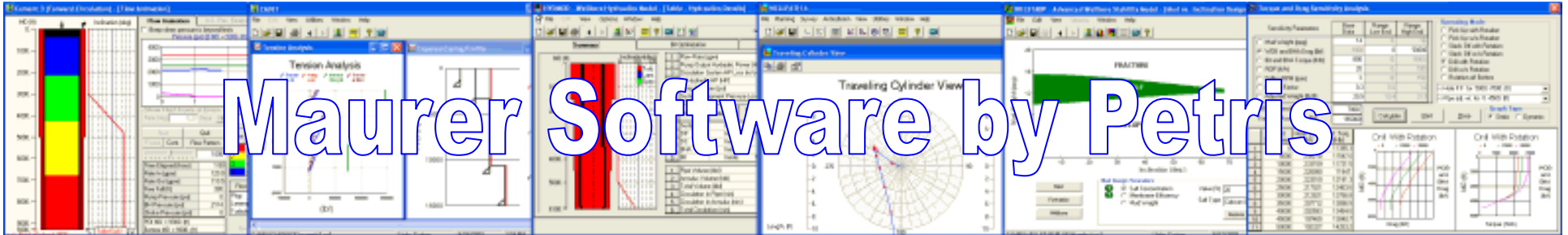
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Enlarge any output graph to view recommended centralizer spacing and loads on the casing.



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The Sensitivity Analysis utility allows you to gauge the impact of changes in various parameters on hook loads for running the string.



**Thanks for your interest in CENTRA**

*For more information on Maurer Software by Petris,*

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**www.petris.com**

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