



Wellbore Inspector™ Client

Interactive Visualization of Caliper Log Analysis Results

True Well Visualization

The oil & gas industry is targeting softer reservoirs and higher pressure deposits as well as employing advanced recovery techniques. The structural loads imposed on tubulars are more extreme and well deformations are more common.

Noetic's Wellbore Inspector system uses advanced analysis algorithms to transform multi-finger caliper data into a true 3D model of the well that cannot be matched by any other caliper analysis software. Bending, shear, ovalization, collapse, and buckling deformations are identified and characterized. Well accessibility can be determined and the underlying geological mechanisms understood.

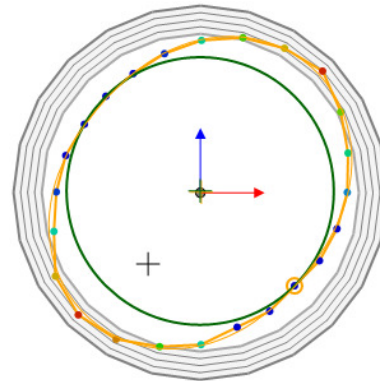
Wellbore Inspector Client is the interactive 3D visualization component of the Wellbore Inspector system. Well operators can license the software to directly interact with their log analysis results.

Identify Deformation Mechanisms

By incorporating survey data into the analysis, the Wellbore Inspector software provides a geological reference. The relationship between deformations and the surrounding geology is clear.

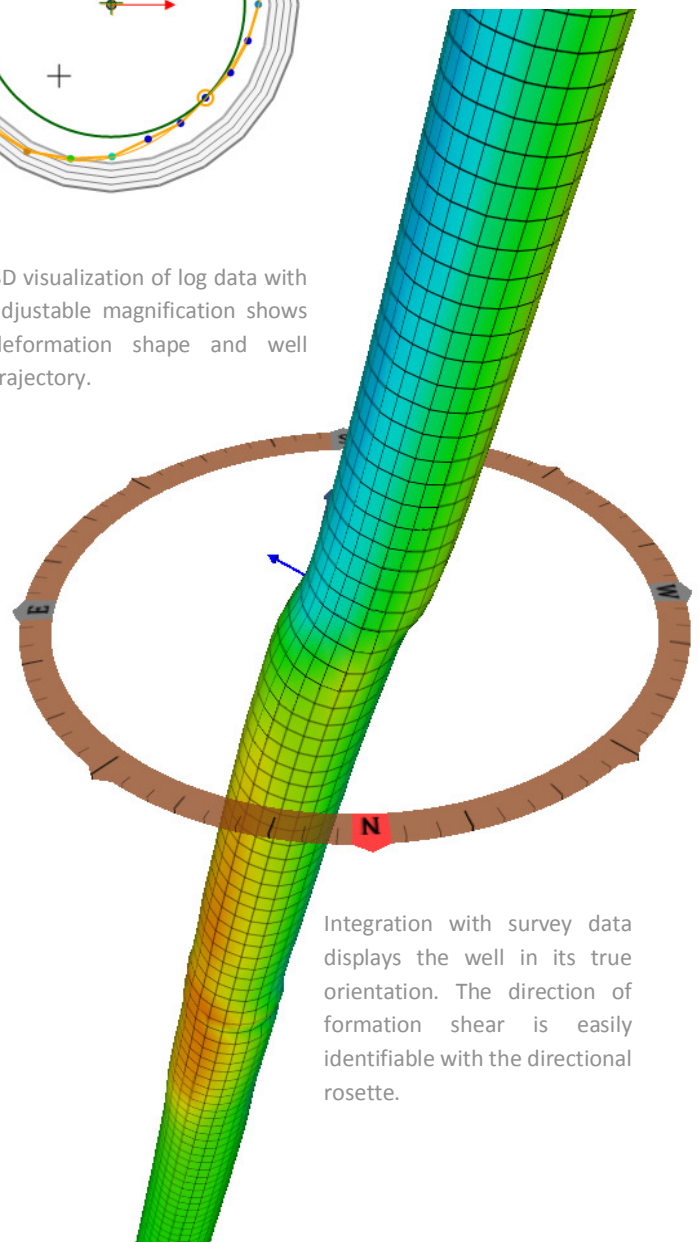
Determine Well Accessibility

From the results of a single caliper log analysis, the Wellbore Inspector Client software calculates drift diameter for any length of mandrel. Well accessibility past a deformed interval can be evaluated without even being at the well site. It is no longer necessary to waste resources running multiple gauge rings or mandrels downhole to assess well restrictions.



2D cross-section views show the extent of ovalization and clearance circle in deformed intervals..

3D visualization of log data with adjustable magnification shows deformation shape and well trajectory.

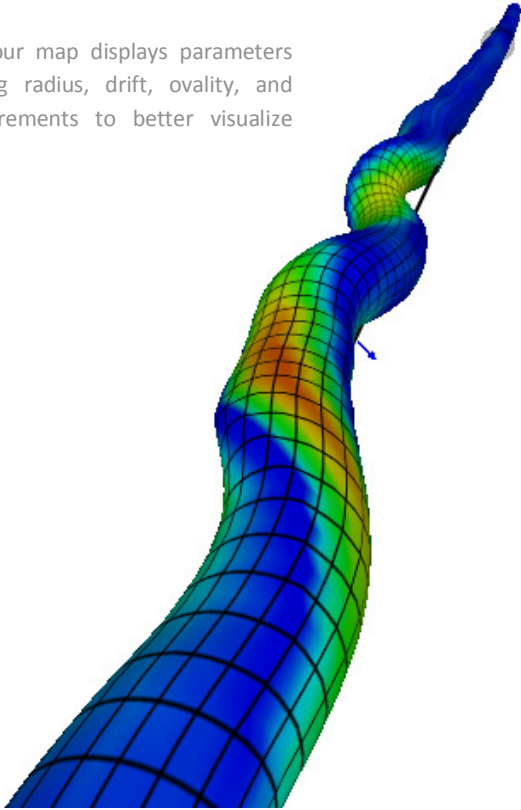


Integration with survey data displays the well in its true orientation. The direction of formation shear is easily identifiable with the directional rosette.



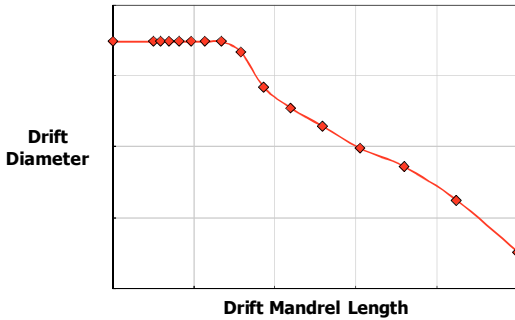
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Selectable colour map displays parameters such as casing radius, drift, ovality, and caliper measurements to better visualize deformations.

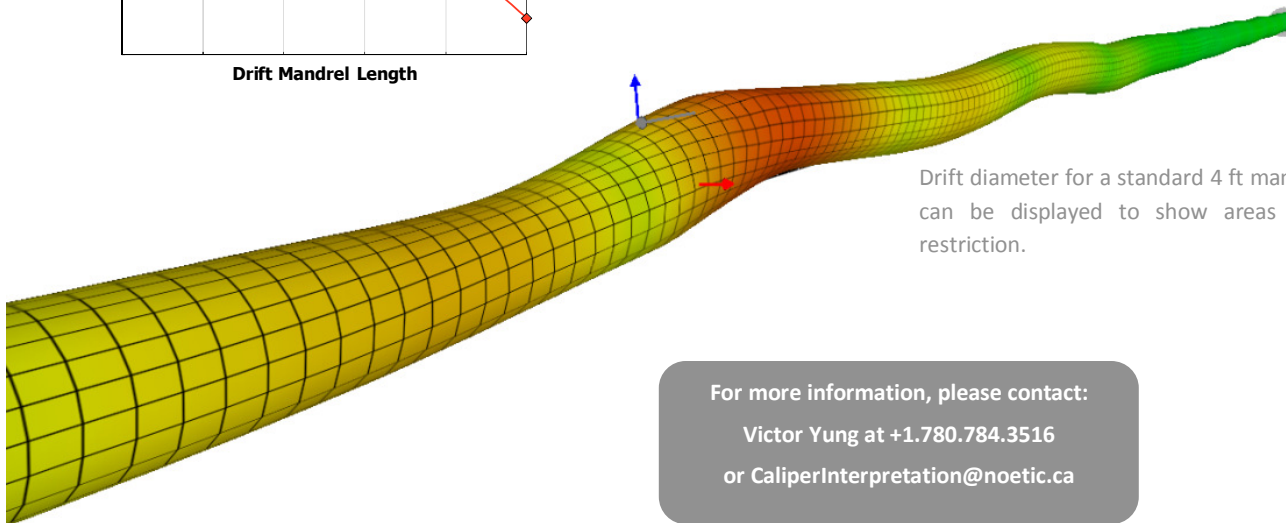


Key Benefits

- Understand the shape of the wellbore with a complete 3D projection that includes well deformation and trajectory
- Visually enhance deformation modes with multiple magnification options
- Explore the well with full rotational control and easy depth navigation to key locations in the well
- Relate the well trajectory to the underlying geology with horizontal reference plane and compass orientation
- Correlate deformations with well components, completion depths, and geological features
- Focus on localized deformations by zooming in on a single location with the 2D cross-section view
- See relationships in the data with multi-pen charts and shading of 3D view
- Determine well accessibility by calculating drift diameter dependence on mandrel length
- Export the results to a spreadsheet for further analysis
- Save the visualization images



Calculate drift diameter dependence on mandrel length to evaluate well accessibility.



Drift diameter for a standard 4 ft mandrel length can be displayed to show areas of highest restriction.

For more information, please contact:
 Victor Yung at +1.780.784.3516
 or CaliperInterpretation@noetic.ca

Noetic Engineering

4120 – 56th Avenue NW, Edmonton, AB, Canada T6B 3R8

T 1.780.414.6241 F 1.780.469.1250 www.noetic.ca

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