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## **Visualization of Well Data and Assessment of Well Integrity Using the Software Suite BOHRIS**

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### **Abstract**

Several gas storage sites operating for many decades now are facing issues with the integrity of their wells due to material degradation (e.g. corrosion, erosion or wear). Together with an increasing public awareness for general risks and safety relevant events related to underground technologies this requires a professional well integrity management, which shall fully comply with ISO 16530.

An important prerequisite for the assessment of the well integrity of individual wells is the availability of a complete, well-maintained and standardized documentation of the wells operational life cycles.

ESK GmbH has developed the software BOHRIS to enable the full documentation and visualization of well data even for an exhaustive number of wells. It provides a data base and several tools and interfaces to enter or edit data simultaneously from different devices. In addition to the collection and maintenance of well data including technical and geological parameters BOHRIS also offers a virtual interface for Autodesk® AutoCAD® to generate unified well drawings (e.g. casing scheme, completion schematic and stacked-up well head components). According to the ISO standard appropriate well barrier schematics can be generated including clearly differentiated primary and secondary well barrier elements. Furthermore, BOHRIS comes with an integrated calculation module, which allows determining the maximum allowable annulus surface pressures (MAASP) and relevant safety factors regarding axial, collapse and burst loads.

With the presented features the software BOHRIS facilitates the management of well data and allows storage operators to comprise with legislative requirements in a highly convenient way. Further developments will include a web interface and a coherent visualization of well histories.

**Key words:** well integrity, well barrier, documentation, well drawings, gas storage, software

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