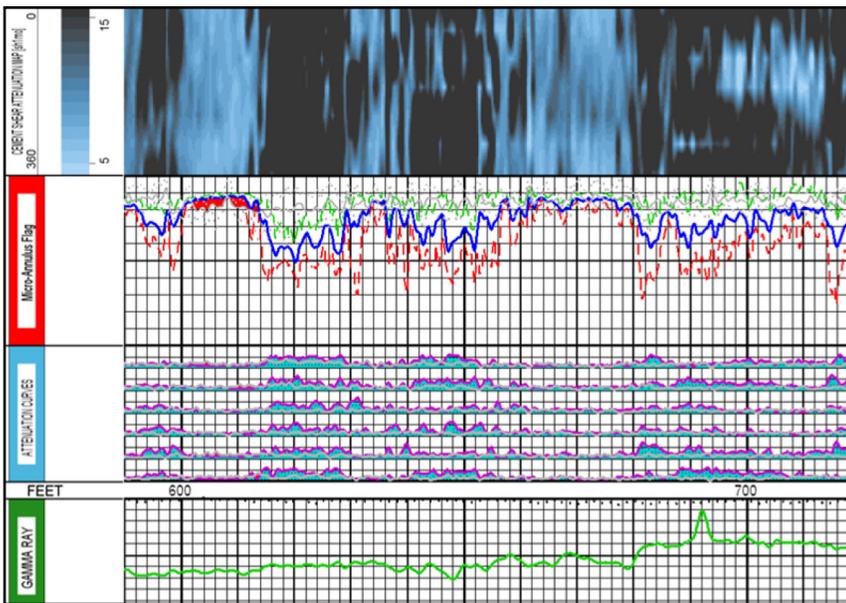


LOCATION: NORTHERN U.S.



Integrity eXplorer Service Performed Industry's First Wireline Cement Evaluation Logging in Air-filled Borehole



A microannulus flag and a cement shear attenuation map, shown in the cement evaluation log by the Integrity eXplorer service, indicate that measurements can be obtained without borehole fluids.

Operators in the Northern U.S. store natural gas for future use in underground gas storage (UGS) wells. Evaluating the casing cement for zonal isolation in these wells has proved to be costly because of the time and resource-intensive nature of the operation.

Conventional cement evaluation services require operators to relieve stored gas pressure, kill the well, and fill the wellbore with liquid to get effective cement evaluation data. In order to minimize losses, operators wait until the well pressure is lower than the well discovery pressure,

but this condition typically occurs only once a year, significantly limiting the time when cement evaluation in these wells is possible. To reduce operational cost, safety, and environmental implications, operators need the ability to log these UGS wells at any time.

To address this issue, Baker Hughes, a GE company (BHGE), deployed the Integrity eXplorer™ cement evaluation service in two of the gas-filled wells. The wireline logging service was run under pressure of the wellhead.

Results

- Evaluated cement in gas-filled wellbore
- Eliminated the need for additional operational and remedial services related to cement evaluation
- Helped operator determine long-term zonal isolation
- Saved rig time

Challenge

- Evaluate cement in the absence of borehole fluids to determine zonal isolation

BHGE solution

- Integrity eXplorer service

Using electromagnetic-acoustic transducer (EMAT) sensor technology, the Integrity eXplorer service successfully provided cement evaluation data without fluids in the borehole. The data acquired matched previous data provided by the BHGE Segmented Bond Tool™ (SBT™) service obtained several years prior, when in the presence of borehole fluids. This comparison gave the operators the reassurance they needed to determine long-term zonal isolation.

Operational and remedial expenses were significantly reduced by deploying the Integrity eXplorer service, which eliminated the need to set a plug, fill up the well with fluid for cement evaluation, and then empty the well once again to restore the storage functionality.

bhge.com

© 2017 Baker Hughes, a GE company, LLC – All rights reserved.

Baker Hughes, a GE company, LLC and its affiliates ("BHGE") provides this information on an "as is" basis for general information purposes and believes it to be accurate as of the date of publication. BHGE does not make any representation as to the accuracy or completeness of the information and makes no warranties of any kind, specific, implied or oral, to the fullest extent permissible by law, including those of merchantability and fitness for a particular purpose or use. BHGE hereby disclaims any and all liability for any direct, indirect, consequential or special damages, claims for lost profits, or third party claims arising from the use of the information, whether a claim is asserted in contract, tort, or otherwise. The BHGE logo is a trademark of Baker Hughes, a GE company, LLC. GE and the GE monogram are trademarks of General Electric Company used under trademark license. Integrity eXplorer is a trademark of Baker Hughes, a GE company.

67482

**BAKER
HUGHES**
a GE company

