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Master Thesis Defense

Entitled

Optimization of a new Array Noise Tool; Analysis & InterpREatation of Cases Studies of down-hole leak detection

by

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Abstract: This thesis is concerned with optimization and analysis of new array noise tool. Various lab and field case studies are analyzed to test the capabilities and determine the optimum operation conditions of the new tool for leak detection purposes. The purpose of this study is to optimize the logging procedure of real time array noise tool, selecting adequate gain parameters and frequency band in processing phase, and to analyze the data acquired through multiple lab and field tests The study methodology involved the following steps.

1. Performing lab and field tests for the tool in a range of different scenarios.
2. Carrying out multiple real life case studies and provide interpretation using commercial software.

Gain setting was optimized to obtain best results through logging and adding additional auxiliary logging accessories was proven to enhance the acquisition process. Moreover, implementing proper logging procedure that suits the tool capabilities aid the analysis process and the objective was met successfully. The tool was tested and proved consistent results which can be commercialized and used as real time noise tool. The new array noise tool overcomes the limitations of the memory noise tool in which it will

save both time and money on the oil companies and will be able to provide in situ answer for leak detection purposes.

Keywords: Array noise tool, analysis, leak detection, optimization, down hole logging.