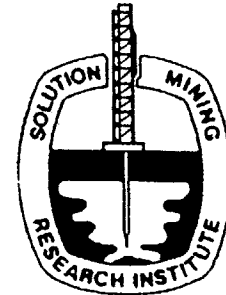


**SOLUTION MINING
RESEARCH INSTITUTE**

1745 Chris Court
Deerfield, Illinois 60015-2079
USA
847-374-0490

**MEETING
PAPER**



**Potential for Microbial
Contamination of the German
Strategic Crude Oil Reserve
Caverns in Wilhelmshaven.**

Joachim W. Koenig

Erdölbevorratungsverband
Jungfernstieg 38 IV
D-20354 Hamburg, Germany

Graham C.Hill

ECHA Microbiology Ltd.
Unit M210, Cardiff Workshops
Lewis Rd., East Moors
Cardiff, CF1 5EJ, UK

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ABSTRACT

The possibility of growth of microorganisms in a high salinity environment is known from crude production fields and Island geysers. Since the invention of oil storage in salt caverns operators have worried about the development of a species which can survive and metabolize in brine. Especially sulfate reducing anaerobic bacteria (SRB's) which produce hydrogen sulfides are feared to cause heavy corrosion and are maybe dangerous to human life at the cavern well head.

Studies by the US-Department of Energy in early German distillate caverns as well as in fields of the Strategic Petroleum Reserve (SPR) in the USA have shown, that microorganisms exist under brine conditions in caverns but do not multiply.

During the hot summer of 1995 a strong microbial infestation of the oil/brine separator tanks of the Nord-Westdeutsche Kavernengesellschaft (NWKG) in Wilhelmshaven (Germany) was experienced.

Since this separator contains almost saturated brine, the microbes were sampled and exposed to cavern-like conditions in a laboratory in the UK.

The paper will present the laboratory findings of an obligate thermophile, halophile, red coloured bacteria, which can live and proliferate at 50-50°C in caverns over saturated brine. It discusses the isolation process and potential consequences.

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