THE DEVELOPMENT AND APPLICATION OF GREEN CHEMISTRY IN THE UPSTREAM OIL AND GAS PRODUCTION INDUSTRY

H.A Craddock*

* HC Oilfield and Chemical Consulting, 92, Rowan Avenue, Kirriemuir, Angus, DD8 4TD, UK. henry.craddock@hcoilchem.com

**Keywords:** Green Chemistry, Oil, Gas, Production, Environment, Surfactants, Phosphonates, Demulsifiers, and Corrosion.

**Abstract:** In the last two decades the chemical applications used, in the oil and gas upstream production industry in the North Sea, have seen a revolution in the types of chemistry employed. This is mainly due to the increasing need to minimise the impact of these chemicals on the environment both during their use and at their ultimate discharge or disposal.

My paper sets out to review this change in the chemicals and chemical applications used. It will show the journey from harmful and toxic chemistries to more acceptable ones. It will explore both the regulatory and economic drivers pushing these developments.

The paper will cover all aspects in which chemicals are used and applied in the upstream oil and gas production industry. It will examine the geographic spread on environmentally acceptable chemicals and show where the key "hotspots" are continuing to push developments.

It will conclude with an examination of further developments with considerations of sustainability and life cycle improvement, and look at some of the critical issues in entering more environmentally sensitive areas such as the Arctic.

**References:**
M.A Kelland Production Chemicals for the Oil and Gas Industry, 2nd Edition 2104, CRC Press


The Use of Alkyl Polyglucosides as Corrosion Inhibitors in the Oil and Gas Industry – H. A. Craddock, P. Simcox and G Williams, Proceedings of the Royal Society of Chemistry Symposium on Oilfield Chemistry, Chemistry in the Oil Industry XII, 7-9 November 2011, Manchester, UK.