# Integral model predictions of chlorine dispersion for the proposed Jack Rabbit II experiments in 2016

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The purpose of this presentation is to show initial modelling prediction results for the discharge and dispersion of chlorine for the proposed Jack Rabbit II experiments due to take place in 2016, which involve four different jet angle releases of pressurised liquefied chlorine from a 10 tons vessel. The jet angle releases include 0° (vertically upward), 90° (horizontal), 135° and 180° (vertically downward).

Two different integral models have been used: the PHAST model produced by DNV-GL and the DRIFT model produced by ESR Technology/GT Science & Software. The latter model is used primarily by the UK regulator, the Health and Safety Executive.

PHAST incorporates sub-models for liquid/two-phase discharge, pool spreading/evaporation and dense-gas and passive dispersion. DRIFT has similar overall functionality but is indirectly coupled to the pool evaporation sub-model (GASP) and discharge sub-model (STREAM).

The presentation will provide an overview of the strengths and weaknesses of these two models for simulating the complex physics involved in the Jack Rabbit II trials proposed for 2016. Results from a set of simulations will be presented, which will include sensitivity tests to help explore uncertainties in the modelling.

**Disclaimer**