

Date 3 June 2021

Bulletin n° 1 for: "Simulations for MV X-Press Pearl chemical and oil leaks in support of response and clean-up"

The bulletin is built by CMCC upon the information on the current (provided by Copernicus Marine Service) and wind (ECMWF provided by Italian Met Office) products used to force the MEDSLIK-II oil spill model.

The bulletin contains the hindcast/forecast of transport of microplastic granules and nitric acid released in the marine environment as well as the bunker oil that at risk of leaking from the sunken ship.

DISCLAIMER

The information and views set out in this Bulletin are those of the authors (CMCC) and do not necessarily reflect the official opinion of the governments of the area. CMCC does not guarantee the accuracy of the data included in this study. Neither CMCC nor any person acting on the author's behalf may be held responsible for the use, which may be made of the information contained therein.

Brief on the results:

Forecast of the nitric acid and microplastic dispersion: Nitric acid leakage and microplastic granules' discarding (represented by 10 000 Lagrangian elements) are simulated starting at 06:00 on 25 May 2021, at the assumed moment of explosion onboard. The conducted 240 hour hindcast/forecast are based on regularly updated meteo-oceanographic datasets.

Nitric acid is assumed to be dissolved quickly and transported in the upper layer of a 120 m thickness. While microplastic is transported at the sea surface due to its positive buoyancy. Potentially impacted areas include the Negombo barrier island and the Panumugama area.

Hypothetical oil spill is simulated by WITOIL on 3 June 2021 at 15:00.

The mean transport direction of nitric acid and plastic varied from NE to E and SE during the first 36 hours of the drift.

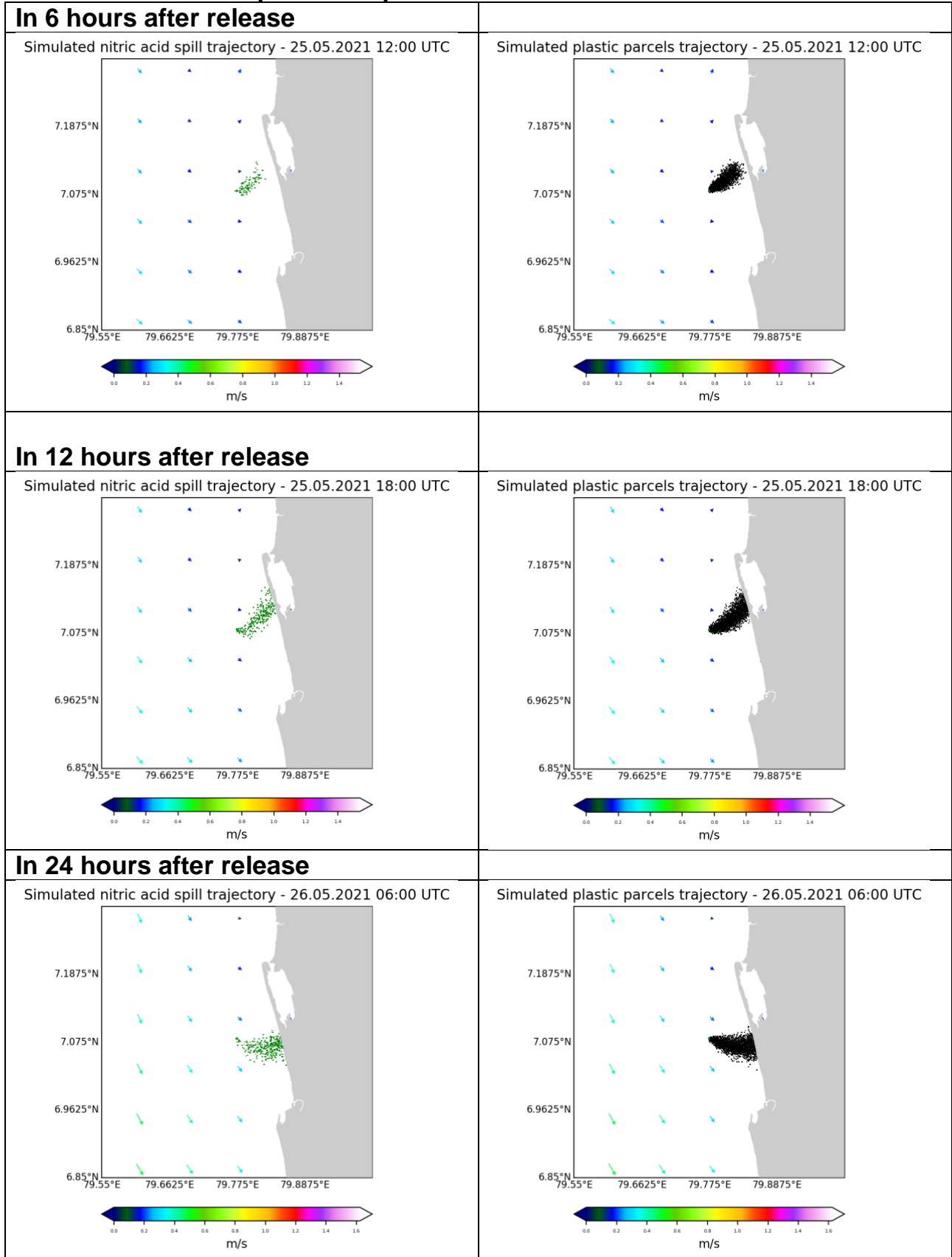
The mean drift of hypothetical oil is directed to NE. Beaching of oil is expected in 15 hours after the start of the spill.

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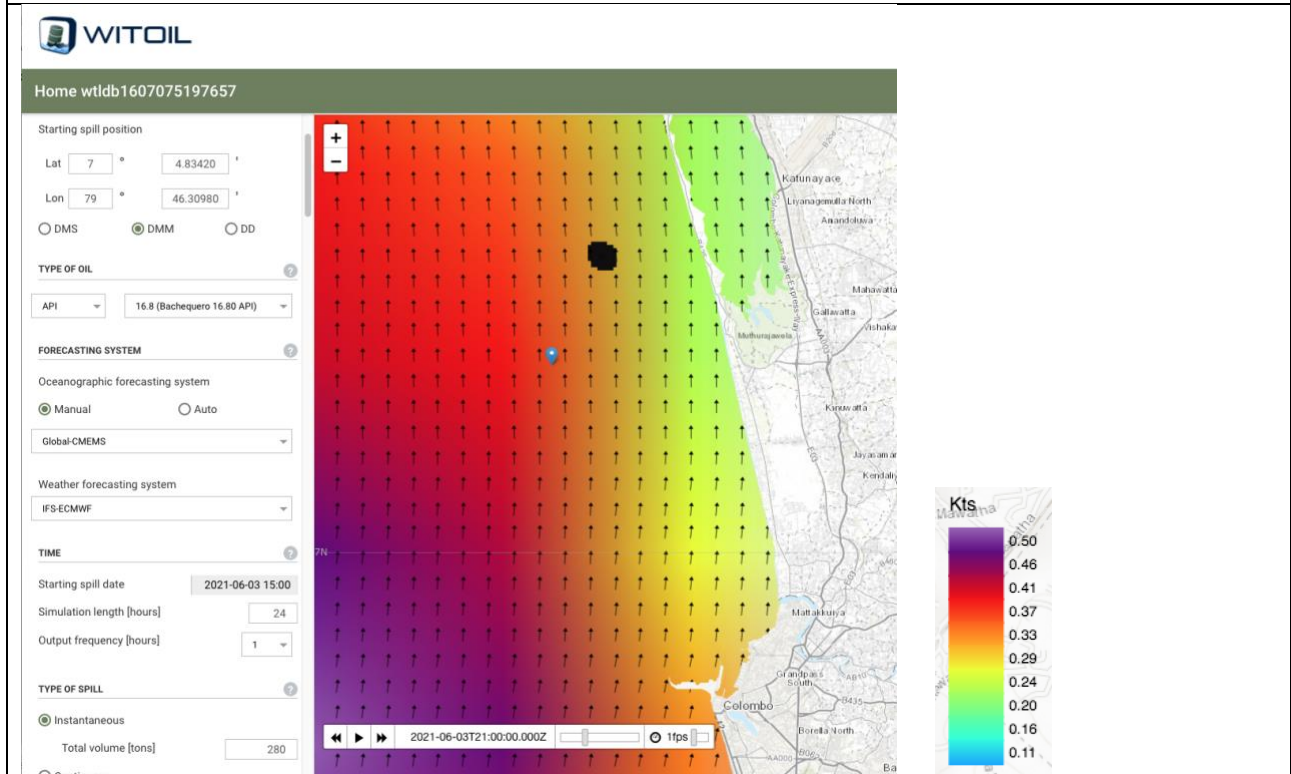
Acknowledgement: Currents are provided by Copernicus Marine Environment Monitoring Service (CMEMS) Global Ocean forecasting system (GLOBAL_ANALYSIS_FORECAST_PHY_001_024). Wind from ECMWF system is provided by Italian Meteorological Office (USAM-CNMCA).

Nitric acid and microplastic dispersion

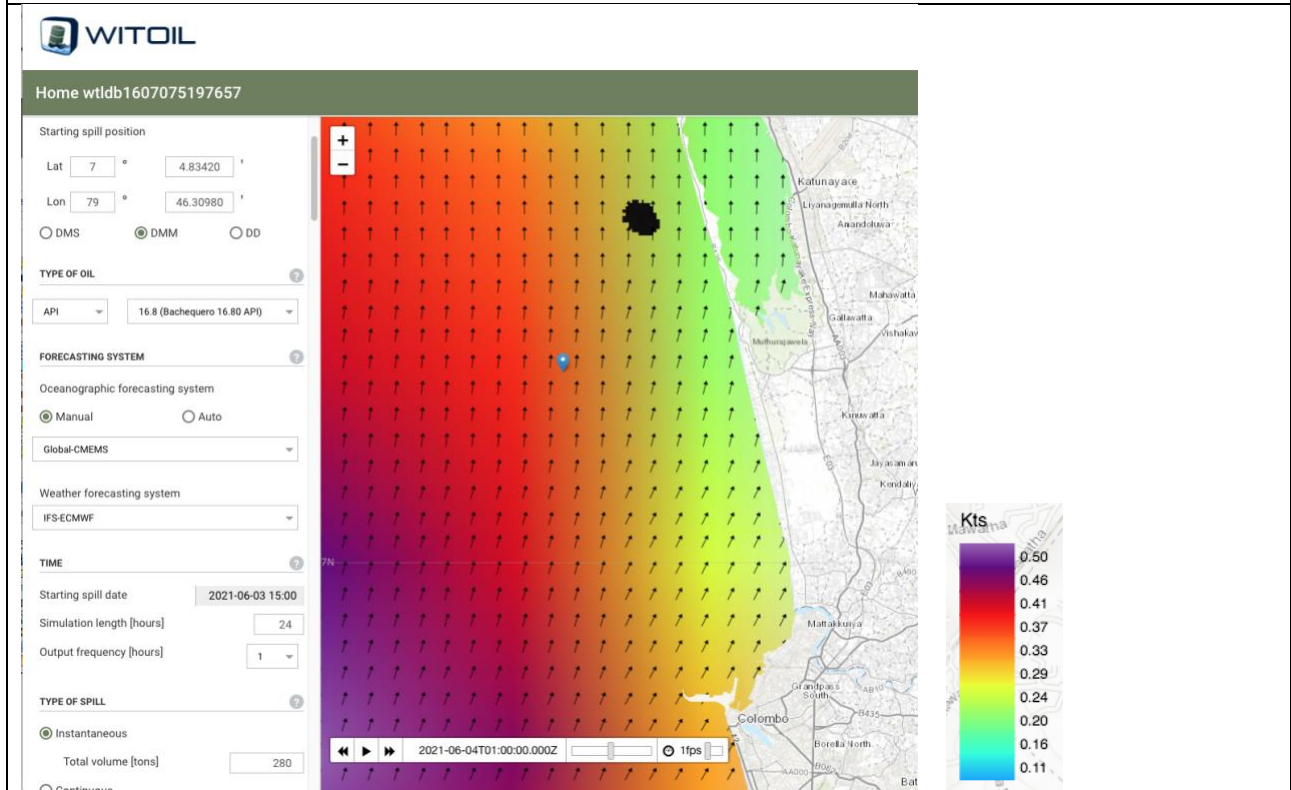


Drift of hypothetical oil

In 6 hours after release : 3 June 2021 at 21:00



In 10 hours after release : 4 June 2021 at 01:00.



ANNEX I

Geographic coordinates of the accident:

lat_degree=7.080575°N

lon_degree=79.77184°W

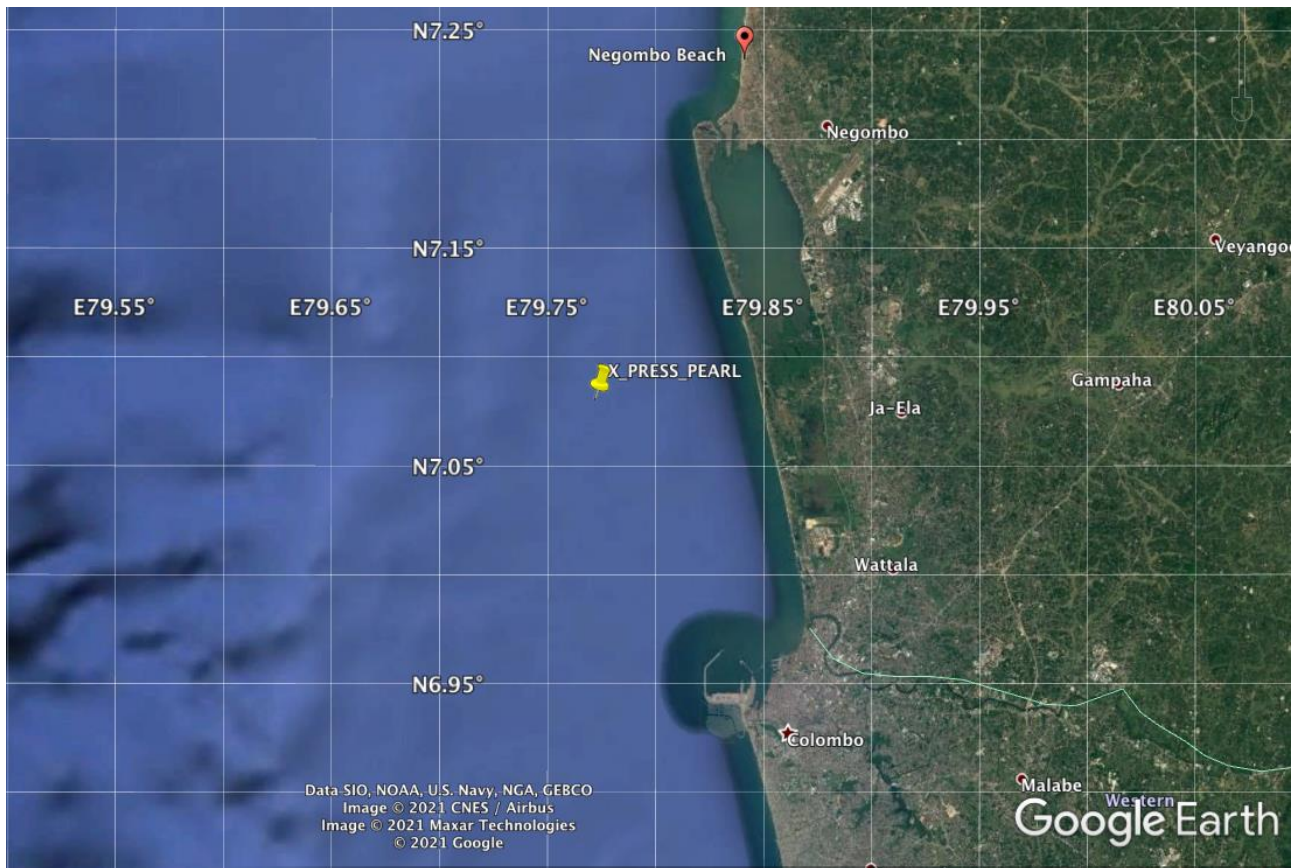


Fig. 2 Possible location of the accident (start position of the simulations)