

Dr Stuart Godfrey, Oceanographer

PULP MILL EFFLUENT TO BLOW BACK TO TAMAR ON SUNNY DAYS WITH LIGHT ON-SHORE WINDS

Effluent from Gunns' pulp mill will almost certainly be blown back to the shore and sometimes up to the mouth of the Tamar estuary, according to a former CSIRO oceanographer.

Dr Stuart Godfrey, who worked at the CSIRO Marine and Atmospheric Research for over 38 years, believes that Gunns' failure to take account of two processes that create layering in the ocean has undermined the company's assurances about the behaviour of the mill's effluent.

"Oil spills move downwind at 3% of the wind speed; sunny days can turn the top few meters of the ocean into a layer that moves like an oil spill. Depending on wind direction, effluent can travel to the shore, or into Commonwealth-controlled waters, within a few hours; or to the Tamar estuary within less than one day of its discharge into Bass Strait," said Dr Godfrey.

Dr Godfrey illustrates his point with an aerial photograph of the plume of effluent from a pulp mill in Oregon, USA, in which the plume is clearly blown back to the shore on days of light winds.

Dr Godfrey also warned that potentially toxic substances in the effluent – including bacteria and dioxins – could attach themselves to an ultra-thin layer of oil on the surface of the ocean, and thereby concentrate in foam that blows back to the shore.

Dr Godfrey has drawn his conclusions after detailed analysis of Gunns' Impacts Statement, the Sweco Pic Report, and Gunns' responses to submissions that were part of the federal government's assessment of the proposed pulp mill.

Using a basic modelling program and meteorological data from a week in January 2005, Dr Godfrey carried out a desk-top 'trial' to predict where particles from the effluent would have travelled on the days in question – even when the surface flow is assumed to be fully compensated by an equal and opposite flow beneath. Some plumes travelled 20 kilometers in a day, easily enough to take it onto the beach, or into Commonwealth waters, or to the Tamar mouth, depending on wind direction.

The Sweco Pic report identified the absence of adequate data as one of the areas where Gunns had failed to comply with the state's Emission Guidelines. The Scandinavian company's report said that Gunns had failed to comply with Guidelines D.3.14, 3.15 and 3.17 because it had not adequately considered the issue of 'stratification', or layering, of the ocean as a result of warming. Sweco Pic recommended that these deficiencies be addressed through permit conditions.

Dr Godfrey finds that Gunns' failure to meet Guideline D.3.14 is so comprehensive that their observations were of no use for the purpose for which they were intended. That purpose is to provide an effective check on the major assumptions used by Gunns in its modelling. He backs this statement with a report, to be found at www.cleantamar.com.au.

"Gunns' prediction that effluent will not reach the shore is due to the combined effects of several modelling errors, that disallowed ocean layering", Dr. Godfrey said. "This should be a wake-up call to both Governments, and the fishing and tourism industries."

He will recommend to Tasmanian Parliamentarians and to the Federal Minister for the Environment that Gunns Ltd failure to meet Tasmanian Government Guidelines is so extensive, and augurs so

poorly for Gunns meeting any Commonwealth Guidelines, that they should not grant a permit for the Mill to proceed.

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