



## **Guidelines for Japan Tsunami Marine Debris Contamination Assessment**

Developed by the California Tsunami Debris Multiagency Advisory Coordination Group and the USEPA

**Goal:** Provide technical support to Local, State and Federal agencies tasked with identifying potentially contaminated marine debris generated by the Japan tsunami of March 2011.

**Role of Response Organizations:** It will be difficult to differentiate between marine debris from the tsunami and other debris that commonly affects the West Coast shoreline. When responding to reports of unusual or suspect marine debris off shore or on the shoreline, any responder or response organization should follow standard hazard assessment procedures.

There is an extremely low likelihood that any tsunami debris from Japan is radioactive since the tsunami struck days before the Fukushima-Daiichi power plant incident occurred and the debris was likely carried out to sea before ever becoming contaminated. In addition, the breakup of the debris and exposure to the environment over long ocean distances combined with half life degradation of the isotopes will likely have reduced any radioactive contamination to very low levels, below any that would pose a human health threat.

**Basic Procedure:** It is a common occurrence for marine debris from a variety of sources to wash up on our beaches. Responders should follow their standard operating procedure for assessing and responding to any suspected contaminated debris they may find. The following assessment steps summarize the basic response procedures:

- Any response team called out to evaluate shoreline debris should conduct an upwind walking/screening survey using normal procedures and not handle anything appearing to be hazardous unless wearing proper PPE after the initial survey.
- Teams approaching debris should be actively monitoring for volatile organic compounds, oxygen levels, and lower explosive limit using a combination gas meter.
- Teams should also screen for potential radiation using a radiation survey meter that is capable of measuring microrentgen per/hr or microrem per/hr (mR/hr). Representative background readings should be collected by response teams using available instruments.\* Background should be determined on the survey day in a known uncontaminated area similar in topography to the area where debris could be observed (note: background radiation readings will vary depending on local geology and weather and are typically lower on the water than on the shoreline).
- If during a beached or floating debris survey event, a response team identifies radiation contamination equal to or greater than two (2) mR/hr, or at a lower value subject to the agency's discretion, the team should (1) consider evaluating the debris, and (2) consider requesting assistance from a radiation health expert from their home office or a state or federal agency. If radiation

measurements equal or exceed 2mR/hr, then a radioactive source is likely present. Further investigation should not be conducted without determining whether the responding agency has the equipment and personnel to fully characterize the source and ensuring that all health and safety measures are implemented, including a dose management program.

- Make all required local, state and federal notifications, including the National Response Center – 800.424.8802.
- For additional information on California hazmat spill/release reporting, see:  
<http://www.calema.ca.gov/HazardousMaterials/Pages/Spill-Release-Reporting.aspx>

Additionally, if Japan tsunami marine debris is identified please report that discovery to the NOAA Marine Debris Program at: [DisasterDebris@noaa.gov](mailto:DisasterDebris@noaa.gov)

\* Radiation survey meters differ in their measurement outputs (readings). Some meters show their measurements in Roentgens or Roentgens/hour (e.g., Micro R meters) and others, in rems or rems/hour (e.g., microrem meters) for gamma radiation. These metrics are roughly equivalent (i.e., 1 Roentgen = 1 rem) and differ only in the detector design.

The EPA Region 9 office recommends that field personnel report the meter readings in whatever units are printed on the face of the meter, as they have always done, and rely on the radiation experts back in their home office (or other state or federal agencies) to interpret the measurements and issue their agencies' findings.

Any questions or comments on these guidelines can be directed to:

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