

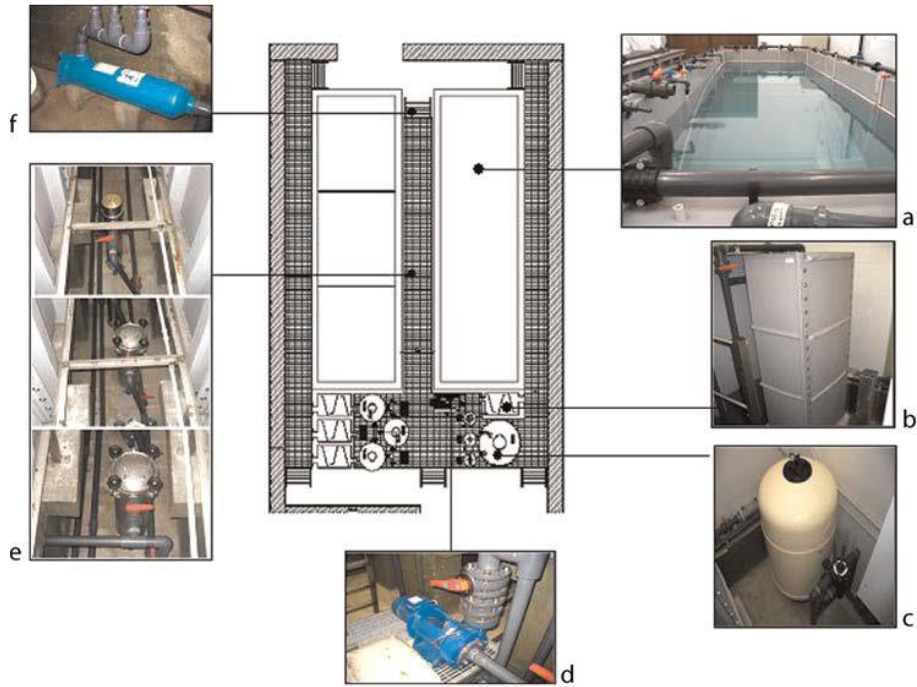
<b>INFRASTRUCTURE/FACILITY</b>	<i>LABORATORY/SYSTEM MESOCOSMS</i>
<b>INFRASTRUCTURE/FACILITY</b>	<i>MESOCOMS</i>
<b>LOCATION OF INFRASTRUCTURE/FACILITY</b>	<i>Institute for Marine Biological Resources and Biotechnology (IRBIM)-CNR of Messina - Sp. San Raineri, 86 – 98122 Messina (Italy) - 38°11'38.883" N – 15°34'24.313"</i>
<b>LEGAL NAME OF OWNER ORGANIZATION</b>	<i>Institute for Marine Biological Resources and Biotechnology (IRBIM)-CNR of Messina</i>
<b>COUNTRY</b>	<i>Italy</i>
<b>CONTACT</b>	<p><i>Simone Cappello, IRBIM-CNR of Messina, Sp. San Raineri, 86 – 98122 Messina (Italy) phone: +39-3495883269, email: <a href="mailto:simone.cappello@cnr.it">simone.cappello@cnr.it</a></i></p> <p><i>Maria Genovese IRBIM-CNR of Messina, Sp. San Raineri, 86 – 98122 Messina (Italy) phone: +39-3489110507, email: <a href="mailto:maria.cappello@cnr.it">maria.cappello@cnr.it</a></i></p>

## DESCRIPTION

*The mesocosm facilities recently constructed by IRBIM-CNR of Messina were designed and built mainly for the large scale simulation of accidental load of crude oil into the marine environment. Experimental mesocosm unit consists of two indoor large tanks of rectangular shape (**Figure 1**). First and principal tank has a volume of 11,250 L, with dimensions of 500 cm (length), 150 cm (height) and 150 cm (depth). Second tank of the same volume capacity and the same size is divided onto three fully independent compartments (each of 3,750 L volume with dimension of 166 cm (length), 150 cm (height) and 150 cm (depth). Separation of the three tanks was achieved by application of internal bulkheads.*

*Additional mesocosm facilities consist of one outdoor large tanks (**Figure 2**) of rectangular shape with dimensions of 6 m (length), 5 m (height) and 1,5 m (depth). These tanks have a volume of 45,000 L each. In order to simulate the pelagic environment, tanks are equipped with a perimeter tubing system consisting of a single structure tubular PVC frame with regular perforations made as separate holes in series. During the pumps operation, flow currents result in the creation of a mechanical barrier preventing the adhesion of hydrocarbons to the walls of tank and hence, prevents their*

eventual accumulation on the walls and at the same time facilitates dispersion. In order to simulate the coastal marine environment the tanks will be filled with chronically polluted marine sediments following the strategy and experimental plan. In accordance with the experimental design, all the tanks are equipped with filtration modules which include the disoleator, electric pumps connected to mechanic-biological filters and UV-sterilizers. The laboratory room with indoor tanks is equipped with air-filtration unit and illumination units simulating solar irradiation.



**Figure 1** - Indoor mesocosm facility at IRBIM-CNR of Messina: (a) principal tank (11,250L), (b) oil separator; (c) mechanical and biological filter; (d) hydraulic pump; (e) system of step-wise water outlet treatment; (f) filter for organic compounds.



**Figure 2** – Outdoor mesocosm facility at IRBIM-CNR of Messina. Different moment of activity related to simulation of oil spill in marine environment.

RI/ Facility participating in an ERIC	NO	---
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## ANALYTICS/EXPERIMENTAL INFRASTRUCTURES/FACILITIES

TYPE	SERVICE DESCRIPTION	ADDITIONAL INFORMATION	.....
Mesocosms 3.000 L	Simulation costal and pelagic marine environment		
Mesocosms 10.000 L	Simulation costal and pelagic marine environment		
Mesocosms 42.000 L	Simulation costal and pelagic marine		

	environment		
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### ACCESS PROVIDED

Physical. The presence of the user team is authorized from Monday to Friday from 7:00 to 19:00. Possibility of access also on Saturday and Sunday in accordance with the experimental design.

### SPECIAL REQUIREMENTS

Num of access/Call;	6
Max period granted in the year:	(180 days) 6 months
Exclusion Periods in the year:	July – August
Max period granted per single user team (working day; days for R/V)	(30 days) 1 month
Max num of user team members admitted	5
Admin/Safety requirements for the user team (free itemized text)	Insurance coverage for laboratory accidents, third parties and instrumentation for each individual member of the research team
Min # days/months of notice to the RI Resp/PI for preparing the access	30 days (1 month)
Geographical Areas where RI/facility access is granted to user teams	Laboratory/System “Mesocosms” – Laboratory of Microbiology – Laboratory of Molecular Biology and Biotechnology