

## ISCO & THE ISCO NEWSLETTER

The International Spill Control Organization, a not-for profit organization dedicated to raising worldwide preparedness and co-operation in response to oil and chemical spills, promoting technical development and professional competency, and to providing a focus for making the knowledge and experience of spill control professionals available to Intergovernmental, Governmental, NGO's and interested groups and individuals

ISCO holds consultative status at the International Maritime Organisation and observer Status at International Oil Pollution Compensation Funds

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## INTERNATIONAL NEWS

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## YOUTH CALL FOR ACTION ON PLASTIC POLLUTION IN NEW UN VIDEO SERIES



Given that plastic can take up to a thousand years to decompose, young people will bear the weight of this problem. But they can also be part of the solution, say experts. By engaging youth and raising awareness about the challenge, campaigners can bring about a generational shift in the way humanity consumes and disposes of plastics.

In the first episode of UNEP's Uncommon Ground web series, host Juan Pablo Garcia is joined by two panelists – Franco Noriega, a Peruvian entrepreneur, and Elizabeth Wathuti, a Kenyan environmental activist. They discuss how plastic pollution contributes to the triple planetary crisis and what youth can do to change this.

Youth engagement is at the heart of the Transforming Education Summit to be held in New York during the 77th session of the UN General Assembly (UNGA) from 16 to 19 September 2022. Check out the video below to watch the full episode and learn more about how UNEP is working to combat plastic pollution.

To fight the pervasive impact of pollution on society, UNEP launched [#BeatPollution](#), a strategy for rapid, large-scale and coordinated action against air, land and water pollution. The strategy highlights the impact of pollution on climate change, nature and biodiversity loss, and human health. Through science-based messaging, the campaign showcases how transitioning to a [pollution-free planet](#) is vital for future generations. UNEP/ [Read more and watch video](#)

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(Members with special responsibilities in specified geographical areas)

Carlos Sagrera Latin America (Spanish speaking)  
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 John Noble UK London & South'ton  
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<https://chat.whatsapp.com/KMxdW7IEal79namyNlbVqg>

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Professional recognition is a visible mark of quality, competence and commitment, and can give you a significant advantage in today's competitive environment. All who have the relevant qualifications and the required level of experience can apply for Professional Membership of ISCO. The organization offers independent validation and integrity. Each grade of membership reflects an individual's professional training, experience and qualifications. You can apply for MEMBERSHIP (MISCO) or FELLOWSHIP (FISCO)

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**ISCO NEWS**

**ISCO'S SEPTEMBER VOLUNTEERS AND MEMBERS ZOOM MEETING**

This meeting is scheduled to take place on Thursday 29<sup>th</sup> September at 3 pm Detrot time. That's 7 pm GMT, 8 pm BST or the equivalent time in your own time zone.

The link for joining the meeting is <https://us02web.zoom.us/j/5220550000>  
 Meeting ID: 522 055 0000

The Agenda has not yet been finalised and you are invited to send an email to [info@spillcontrol.org](mailto:info@spillcontrol.org) no later than 23<sup>rd</sup> September to request inclusion of any matters you would like to raise.

The Agenda will be published in the next issue of the ISCO Newsletter.

**ISCO AT INTERNATIONAL MARITIME & PORT FORUM IN MEXICO 19-22 SEPTEMBER**

Carlos Sagrea, ISCO's Representative for Spanish-speaking Latin America will be giving a presentation on "IMO Response to HNS Incidents in the Marine-Port Environment".

He will also explain ISCO's role in helping to promote enhanced preparedness for response to marine pollution.

Carlos' presentation will be published after the event in the Latin American page on the ISCO website. <https://www.foropbiplive.org>

**ISCO AT SPILLTECH CONFERENCE & EXHIBITION IN INDIA 21-23 SEPTEMBER**

Captain D. C. Sekhar, Managing Director of AlphaMERS and Member of ISCO Council for India will be speaking at the SpillTech 2022, an international conference & exhibition having theme 'Conserving the Environment by the Sustainable Use of Marine Resources' being held at Goa, India from 21-23 September.

ISCO will be exhibiting at the event and you are invited to visit us and learn more about ISCO's current activities.

SpillTech is a focussed event that will cover a wide range of topics revolving around prevention, mitigation & probable solutions to save the environment from any catastrophic disasters. Apart from the policy & regulatory updates, the event topics will revolve around Oil & Chemical Spills, Ocean Debris, Marine Pollution, Waste & Solid Waste Management, Shoreline Clean-up, Legal & Claims and Risk mitigation.

This is an event that is worth attending and ISCO is proud to be a supporter of the event. <http://spilltech.org/>

**MARITIME DAY 2022 RECEPTION AT IMO HQ IN LONDON**

ISCO will be represented at this event being held on Thursday 29<sup>th</sup> September by Captain John Noble.

John is a longstanding member and acts as an ISCO ambassador for London and Southampton. He served as Chief Executive Officer of the SALVAGE ASSOCIATION until 2005 and his practical expertise lies in dealing with Salvage, Wreck Removal and Oil Pollution having attended some 60 major casualties.

Until recently, John was an advisor to, the International Salvage Union acting as the General Manager. He is the technical editor of the Casualty Management Guidelines book published by the Nautical Institute and has authored many articles and technical publications.



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For information contact  
**Mike Watson at**  
[spillcontrol@mwadigital.com](mailto:spillcontrol@mwadigital.com)

### PODCAST ABOUT THE CAMPAIGN AGAINST SINGLE USE PLASTICS

Reducing the amount of plastic litter in the oceans is a shared responsibility and requires a collective effort. By taking steps to reduce single-use plastics onboard ships, the shipping industry can contribute to addressing the global plastic litter problem.

Dr Bev Mackenzie, BIMCO's Head of Intergovernmental Engagement, was a guest on the Gard OnWatch podcast to talk about the campaign to reduce the use of single use plastics. BIMCO / [Read more and listen to the Podcast](#)

### PREVENTING LOSS OF CONTAINERS IN WEST AND CENTRAL AFRICA

September 9 - Training on measures to prevent loss of containers has been held in Accra, Ghana (5-9 September) for officials from nine west and central African countries.

The workshop was attended by officials from container terminals, port authority, stevedores, the local shippers and cargo forwarding agents, maritime administration, the national competent authority for container safety, and authorities responsible for certification of weights and measures.

The event was run by IMO and the Ghana Maritime Authority to support the full implementation of relevant requirements/recommendations. IMO / [Read more](#)

### CREATING SAFE PASSAGE FOR SOARING BIRDS IN THE MIDDLE EAST

September 14 - Twice a year, the skies above the Jordan Valley become hectic with wings. They belong to the more than 1.5 million migratory birds that make the long and often perilous journey between their breeding grounds in Europe and Asia and their wintering spots in Africa.

The route they take is known as the Rift Valley/Red Sea flyway and it is the second-most important air corridor for migratory birds in the world. The flyway is fraught with danger for the 39 species of high-flying birds that depend upon it, which range alphabetically from the black kite to the white-tailed sea eagle. They risk being shot by hunters or trapped for sale; colliding with wind turbines, power lines, or pylons; ingesting toxins; becoming ensnared in plastic, wire, or other debris; or eating prey contaminated with agricultural pesticides.

A project funded by the Global Environment Facility is working to reduce the risks these magnificent birds must face as they make their way between where they nest and where they ride out the colder months.

The goal of the UNDP-managed project "Mainstreaming conservation of migratory soaring birds into key productive sectors along the Rift Valley/Red Sea flyway," executed by BirdLife International and Jordan's Royal Society for the Conservation of Nature, is to encourage the economic sectors affecting the flyway to adopt a more sustainable approach. The GEF / [Continue reading](#)

## NEWS REPORTS FROM AROUND THE WORLD

### AUSTRALIA: FPSO REMAINS SHUT DOWN AS REGULATOR ORDERS OUTSIDE REVIEW

September 12 - Australia's National Offshore Petroleum Safety and Environmental Management Authority today issued a general direction to the company, which requires that Jadestone engage an independent reviewer to undertake a gap recognition review, and assure Jadestone's remediation plans and operational readiness before the restart of production operations. The regulators will review the independent reviewer's report before the restart of production through the FPSO.

On August 12, Jadestone reported that it had discovered more defects on the Montara Venture FPSO and had suspended production. It was the second time in recent weeks that problems had been identified the operator reported a leak in a tank that resulted in an oil spill around the vessel in June. The Maritime Executive / [Read more](#)

### CANADA: COAST GUARD HOSTED ENVIRONMENTAL RESPONSE EXERCISE AND 60TH ANNIVERSARY OPEN HOUSE IN IQALUIT, NUNAVUT

September 14 - Media and members of the public were invited to events, hosted by the Canadian Coast Guard Arctic Region:

Environmental response exercise, carried out by the Canadian Coast Guard's Arctic Region Environmental Response program. The exercise will include a simulated on-water response, beach flush demonstration, as well as various decontamination methods used in the event of an oil spill. Canadian Coast Guard / [Read more](#)

### CHINA OUTLINES MARINE-PROTECTION TASKS FOR 2021-2025

September 16 - China has unveiled a plan to specify key tasks for protecting the marine environment in the 14th Five-Year Plan period (2021-2025), according to the Ministry of Ecology and Environment (MEE) on Jan 17.

The plan, jointly issued by the MEE and five other departments, outlines five areas for marine-environment protection.

During the 13th Five-Year Plan period (2016-2020), China saw an overall improvement in its marine environment, said the MEE, but more protection efforts should be made, given that problems such as pollution and ecological degradation remain prominent, and governance systems and capacities still need to be strengthened. Gov.CN / [Read more](#)

### ITALY: SCIENTISTS GATHER TO BOLSTER KNOWLEDGE OF MEDITERRANEAN MARINE AND COASTAL BIODIVERSITY

September 15 - 150 scientists will take part in the "Mediterranean Symposia on Marine Vegetation, Coralligenous, Dark Habitats and Non-Indigenous Species", which will take place on 19-23 September 2022 in Genoa, Italy. This event, convened by SPA/RAC, a Regional Activity Centre of the Mediterranean Action Plan of the United Nations Environment Programme (UNEP/MAP), will be one of the most important scientific gatherings dedicated to the study of marine and coastal biodiversity in the Mediterranean.

To organize it, SPA/RAC has joined forces with the Italian Institute for Environmental Protection and Research (ISPRA), the University of Genoa and its Department of Earth, the Environment and Life Sciences, and the Società Italiana di Biologia Marina association (SIBM). The Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO) has endorsed the Mediterranean Symposia as an Ocean Decade Action. UNEP / [Read more](#)

### SINGAPORE: ATSEA-2 REGIONAL EXCHANGE ON OIL SPILL PREPAREDNESS AND RESPONSE

September - GISEA participated in a regional exchange on oil spill preparedness and response held under the auspices of the ATSEA-2 Program, and hosted by Oil Spill Response Limited (OSRL) in Singapore from 23-25 Aug.

OSRL has been a technical partner to ATSEA-2 since 2021, and supported the conduct of the regional exchange. In collaboration with OSRL, GISEA presented on the framework for international maritime conventions, with focus on OPRC 1990 as the key instrument which facilitates cooperation between States. The ASEAN regional framework and significance of subregional arrangements were also discussed.

The participation by GISEA serves to extend the reach of the Project to organisations and entities with common focus on oil pollution preparedness and response. GISEA / [Read more in the September issue of the GISEA newsletter](#)

### USA: CALIFORNIA - TAHOE BASED 'CLEAN UP THE LAKE' FINDS HISTORIC AMOUNT OF TRASH IN FIRST MILE CLEANUP OF FALLEN LEAF



*Photo courtesy of Clean Up The Lake*

September 9 - Nonprofit Clean Up The Lake (CUTL) has launched an expansive underwater clean up in Fallen Leaf Lake revealing the Tahoe Basin's dirtiest mile yet.

In the history of this small but mighty and often overlooked lake, there has never been an underwater cleanup of this scale.

Local canned cocktail company TIF's Spiked Lemonade has kicked off the initial funding support followed by BlueZone Sports totaling the contributions towards the project to \$15,000.

The CUTL dive team composed of volunteers and team members removed 3,000lbs of trash and 100 tires in just one mile of shoreline.

Carson Now / [Read more](#)

## USA: OREGON - USCG TO REMOVE HISTORIC DERELICT VESSELS IN COLUMBIA RIVER



*Dating to the 1920s, Alert had been a museum ship along the river seen in this 2019 photo (Godsfriendchuck photo - CC BY-SA 4.0)*

September 9 - The U.S Coast Guard intends to remove the wrecks of two abandoned ships in Oregon's Columbia River after it became apparent they are a danger to the environment and a risk to vessels operating outside the navigation channel.

The Coast Guard said that two years after it oversaw the removal of thousands of gallons of diesel and oily water from the decommissioned 125-foot cutter the Alert and the 100-foot former Navy tugboat Sakarissa, the two derelict vessels that sunk off Hayden Island still pose a risk. The wrecks are adjacent to the Interstate 5 Bridge and a mile upriver from the Burlington Northern Santa Fe (BNSF) railroad bridge.

Due to hull deterioration and oil saturation of the vessels' interiors, the abandoned vessels have been discharging oil into the waterway besides posing a collision hazard for vessels operating outside the navigation channel. The Maritime Executive / [Read more](#)

## USA: LATEST NEWS REPORTS FROM NOAA OR&R

September 12 – Please click on the links below to download and read the latest news reports from NOAA OR&R

<https://response.restoration.noaa.gov/orr-participates-africom-sponsored-response-workshop-mauritius>

OR&R's Emergency Response Division participated in an event sponsored by U.S. Africa Command (AFRICOM)—Disaster Response for Oil Spill and Mass Rescue Exchange—held in Port Louis, Mauritius on Aug. 22-26.

<https://response.restoration.noaa.gov/marine-debris-program-staff-receives-business-waste-reduction-and-recycling-champion-award>

Recently, NOAA Marine Debris Program grants specialist and lead coordinator of the National Ocean Service Zero Waste Team, Amanda Dwyer, received a [Business Waste Reduction and Recycling Champion\(link is external\)](#) award from Montgomery County, Maryland. She was one of 22 individuals, businesses, and organizations honored from across Montgomery County for outstanding achievement in recycling, waste reduction, and reuse.

<https://response.restoration.noaa.gov/esi-program-awards-contract-updates-lake-ontario-maps-and-data>

NOAA has awarded a contract to refresh the Environmental Sensitivity Index maps and data for Lake Ontario. The work has already begun, and will be completed by the end of September 2023.

<https://response.restoration.noaa.gov/marine-debris-program-coordinates-california-ocean-litter-strategy-workgroups-1>

On Aug. 31, the NOAA Marine Debris Program wrapped up a month of partner-led virtual workgroup meetings to discuss the California Ocean Litter Strategy (OLS). The meetings brought together over 75 partners across the state and included a diverse set of sectors including state agencies, nonprofits, private organizations, and academia.

## USA: BSEE SEEKS TO STRENGTHEN RULES ON BLOWOUT PREVENTER SAFETY



*The regulations were born out of the failure of the Deepwater Horizon's BOP stack (center right) in 2010 (USCG image)*

September 13 - The U.S. Department of the Interior seeks to strengthen blowout preventer regulations that were relaxed in 2019 under the Trump administration, the agency announced Monday.

After the Deepwater Horizon spill in 2010, the department's Bureau of Safety and Environmental Enforcement (BSEE) imposed stricter rules for blowout preventer design, testing and maintenance. Those took effect in 2016, but were loosened slightly in 2019. In a new proposed rulemaking, BSEE would roll back some of those changes and clarify earlier language.

"These proposed revisions to the Well Control Rule are the result of knowledge and experience gained by stakeholders and BSEE since the 2019 rule was implemented. They will protect workers' lives and the environment from the potentially devastating effects of blowouts and offshore oil spills," said BSEE Director Kevin M. Sligh Sr. *The Maritime Executive* / [Read more](#)

## NEWS FROM ISCO MEMBERS

**Corporate Members and Industry Partners of ISCO can submit news about new products and services in the "News from ISCO Members" section of the ISCO Newsletter. This is a free facility for Corporate Members. Given that the ISCO Newsletter has a large and highly targeted readership in over 50 countries, it's a cost-effective way to promote your organisation.**

If you have some news you would like to share with readers of the ISCO Newsletter, send it to [John.McMurtrie@spillcontrol.org](mailto:John.McMurtrie@spillcontrol.org)



Lamor successfully delivered an in-built oil recovery system (LORS) to South Korean shipbuilder Hanjin Heavy Industries and Construction (HHIC). The project was a good example of Lamor's capabilities to support oil spill response preparedness in new regions.

LORS is a vessel-mounted advancing skimming system based on Lamor's proven conveyor chain brush technology. The system is deployed at the nation's first multipurpose large oil spill response vessel in South Korea.

The new multi-purpose vessel was ordered by the local government agency Korea Marine Environment Management Corporation (KOEM). Named Endam, the vessel will be used primarily for oil recovery work but may also be utilised as a hopper dredger. This 102m-long and 20.6m-wide ship has a displacement of 5,000 tonnes and a hopper capacity of 4,100 cubic metres.

<https://www.lamor.com/>

## SCIENCE & TECHNOLOGY

If you are interested in new technology you might find it useful to visit Technology Innovation News Survey at <https://clu-in.org/products/tins/> and Tech Direct at <https://clu-in.org/techdirect/archive/>

## PROPOSED DESIGNATION OF PERFLUOROCTANOIC ACID (PFOA) AND PERFLUOROCTANESULFONIC ACID (PFOS) AS CERCLA HAZARDOUS SUBSTANCES

EPA Website, Updated September 1, 2022

EPA is proposing to designate two per- and polyfluoroalkyl substances (PFAS) -- PFOA and PFOS, including their salts and structural isomers -- as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as Superfund. This proposed rulemaking would increase transparency around releases of these harmful chemicals and help to hold polluters accountable for cleaning up their contamination. The rulemaking would require entities to immediately report releases of PFOA and PFOS that meet or exceed the reportable quantity to the National Response Center, state or Tribal emergency response commission, and the local or Tribal emergency planning committee (local emergency responders).

<https://www.epa.gov/superfund/proposed-designation-perfluorooctanoic-acid-pfoa-and-perfluorooctanesulfonic-acid-pfos>

## RECENT INTERESTING PEER-REVIEWED OIL SPILL PUBLICATIONS



### A COLUMN CREATED BY DR. MERV FINGAS, MEMBER OF ISCO COUNCIL

This is part of a weekly column which provides the references and abstracts of new peer-reviewed scientific publications on oil spills. These references are selected on the basis of those papers that provide new insights into the fate, effects and control of oil spills. Readers may choose to obtain the full publications and to do so, one of three methods is suggested; contact your library, search the internet with the DOI (digital object identifier) provided, or search the internet for the exact title. These are given in the order of likely success in obtaining the article. Merv Fingas, ISCO Colleague.

### 137. Dissolution of oil in water in the viscous-gravity stage of oil spreading

Chebbi, R. (2022)

Environmental Fluid Mechanics, 22 (1), pp. 189-202.

DOI: 10.1007/s10652-022-09837-6

**ABSTRACT:** Abstract: Spreading of oil on water significantly enhances the water–oil interfacial area. The increase in the interfacial area and the hydrodynamics induced by the viscous oil in the water column underneath the oil affect the dynamics of dissolution of oil in water. The mass transfer dynamics is investigated in the viscous-gravity spreading regime where gravity, promoting spreading, is resisted by the viscous force exerted by the water on the spreading oil. Both unidirectional and axisymmetric spreading cases are considered. A model is developed using an integral boundary layer approach based on fundamentals. The similarity solution provides the time dependent average mass transfer coefficient, concentration boundary layer thickness, and mass transfer coefficient profiles as functions of Schmidt number, geometry and time. Taking into account the typical large oil to water viscosity ratio, the results are discussed based on physical grounds in the light of boundary layer theory to interpret the difference in the asymptotic behavior of the solution near, and sufficiently far from the leading edge of the oil spill. Article highlights: The dynamics of dissolution of oil in water is investigated based on fundamentals taking into account the impact of the oil spreading dynamics on mass transfer. An integral boundary layer approach is adopted to solve the unidirectional and axisymmetric cases using a similarity solution. The time dependent boundary layer thickness and mass transfer coefficient profiles are determined, and the asymptotic behaviors of the solution are discussed based on physical grounds.

### 138. Year-to-year variability of oil pollution along the Eastern Arabian Sea: The impact of COVID-19 imposed lock-downs

Trinadha Rao, V., Suneel, V., Raajvanshi, I., Alex, M.J., Thomas, A.P. (2022)

Marine Pollution Bulletin, 175, art. no. 113356,

DOI: 10.1016/j.marpolbul.2022.113356

**ABSTRACT:** This study investigated the year-to-year variability in the occurrence, abundance and sources of oil spills in the Eastern Arabian Sea (EAS) using sentinel-1 imagery and identified the potential oil spills vulnerable zones. The four consecutive year's data acquired from 2017 to 2020 (March–May) reveal three oil spill hot spot zones. The ship-based oil spills were dominant over zone-1 (off Gujarat) and 3 (off Karnataka and Kerala), and the oil field based over zone-2 (off Maharashtra). The abundance of oil spills was significantly low in zone-1, only 14.30km<sup>2</sup> (1.2%) during lock-down due to the covid-19 pandemic. Whereas, the year-to-year oil spills over zone's 2 and 3 are not significantly varied (170.29 km<sup>2</sup> and 195.01 km<sup>2</sup>), further suggesting the influence of oil exploration and international tanker traffic are in operation during the lock-down. This study further recommends that manual clustering is the best method to study the distribution of unknown oil spills.

**139. History of a disaster: A baseline assessment of the Wakashio oil spill on the coast of Mauritius, Indian Ocean**

Rajendran, S., Aboobacker, V.M., Seegobin, V.O., Al Khayat, J.A., Rangel-Buitrago, N., Al-Kuwari, H.A.-S., Sadooni, F.N., Vethamony, P. (2022) *Marine Pollution Bulletin*, 175, art. no. 113330, DOI: 10.1016/j.marpolbul.2022.113330

**ABSTRACT:** Oil spills from tanker ships provide adverse and irreversible impacts of a pollutant over coastal and marine environments. Using Sentinel-1 and 2 satellite images, this baseline paper presents the detection, assessment, and monitoring of the aground and further oil spill from the Wakashio ship of August 06, 2020, on the Mauritius coast. The oil spill started on August 06, after cracks developed on the hull, and continued until the total breakup of the ship on August 15, 2020. Data shows displacements in ship position of about 100 m, and a maximum change of 80° in orientation (from NS to NE). The remote sensing results were validated using met-ocean observations and reanalysis, which showed winds, waves, and tides of high magnitude at the accident site during the incident period. Analysis of the results of this event using REAS and CMEMS data indicate their usefulness to study similar future oil spills events.

**140. Oil-mediated oxidative-stress responses in a keystone zooplanktonic species, *Calanus finmarchicus***

Soloperto, S., Altin, D., Hallmann, A., Skottene, E., Hansen, B.H., Jenssen, B.M., Ciesielski, T.M. (2022) *Science of the Total Environment*, 806, art. no. 151365, DOI: 10.1016/j.scitotenv.2021.151365

**ABSTRACT:** The copepod *Calanus finmarchicus* is an ecologically important species in the North Atlantic, Norwegian and Barents seas. Accidental or continuous petroleum pollution from oil and gas production in these seas may pose a significant threat to this low trophic level keystone species. Responses related to oxidative stress, protein damage and lipid peroxidation were investigated in *C. finmarchicus* exposed to a water-accommodated fraction (WAF) of a naphthenic North Atlantic crude oil. The exposure concentration corresponded to 50% of the 96 h LC50, and samples were obtained at 0, 24, 48, 72 and 96 h after exposure initiation. Gene expressions (superoxide dismutase, catalase, glutathione S-transferase, glutathione synthetase, heat shock protein 70 and 90, ubiquitin and cytochrome P-450 330A1), enzyme activities (superoxide dismutase, catalase, glutathione S-transferase) and concentrations of total glutathione and malondialdehyde were analyzed. Gene expression analyses showed no differences between controls and the exposed animals, however significantly higher glutathione S-transferase activity and malondialdehyde concentrations were found in the exposed group, suggests lipid peroxidation as main toxic effect.

**141. Comparative toxicity of conventional and unconventional oils during rainbow trout (*Oncorhynchus mykiss*) embryonic development: From molecular to health consequences,**

Bérubé, R., Lefebvre-Raine, M., Gauthier, C., Bourdin, T., Bellot, P., Triffault-Bouchet, G., Langlois, V.S., Couture, P. (2022) *Chemosphere*, 288, art. no. 132521, DOI: 10.1016/j.chemosphere.2021.132521

**ABSTRACT:** Canadian freshwater ecosystems are vulnerable to oil spills from pipelines, which contain mostly diluted bitumen. This study aimed to compare the toxicity of a dilbit and a conventional oil on developing rainbow trout. A total of five exposure scenarios were performed, from 10 to 43 days, using water-accommodated fraction (WAF) with an initial loading of 1:9 oil to water ratio (w/v) in a range of dilutions from 0.32 to 32% WAF, respectively, with TPAH and VOC concentrations from 2.41 to 17.5 µg/L and 7.94–660.99 µg/L, and with or without a recovery period. Following the five exposures, several endpoints were examined, including survivorship, morphometrics, gene expression, and enzymatic activity. Significant mortality rates were measured for the highest WAF concentration of the dilbit in all five exposures (60–100% mortality at 32% WAF). In comparison, the highest WAF concentration of the conventional oil induced significant mortality in three out of the five exposure (from 35 to 100% mortality at 32% WAF). Hatching delays were noted in embryos exposed to both oils. Developmental delays were observed in dilbit-exposed embryos and are suspected to be an indicator of reduced survivorship after hatching. The induced expression of *cyp1a* remained a reliable biomarker of exposure and of fish malformations, though it did not always predict mortality. Using CYP1A activity in combination with *cyp1a* may bring more insights in studies of oil risk assessment. This study demonstrates that dilbits are more toxic to early life stages compared to conventional oils and highlights the need to consider the most sensitive stage of development when performing risk assessment studies on oils.

**142. Oil induced cardiac effects in embryonic sheepshead minnows, *Cyprinodon variegatus***

Allmon, E., Carter, G., Griffitt, R., Sepúlveda, M.S. (2022) *Chemosphere*, 288, art. no. 132482, DOI: 10.1016/j.chemosphere.2021.132482

**ABSTRACT:** Following the Deepwater Horizon oil spill in April 2010, much research has been conducted on the cardiotoxic effects of oil on fish. Sensitive life history stages, such as the embryonic period, have been targeted to elucidate the effects of polycyclic aromatic hydrocarbons (PAHs) on the developing cardiovascular systems of fish. However, much of this research has focused on rapidly developing pelagic species, with little emphasis on estuarine species with longer embryological periods. Moreover, previous studies have used heart rate as the primary endpoint to measure cardiac performance in embryos and larvae; an endpoint that on its own may overlook impairment in cardiac performance. This study aims to fill these knowledge gaps and provide a more holistic approach



for assessing the effects of PAHs on cardiac function by exposing sheepshead minnow (*Cyprinodon variegatus*) embryos to two oil doses (150 and 300  $\mu\text{g/L}$  tPAH nominally) throughout embryonic development and measuring cardiac responses through the identification of cardiotoxic phenotypes (pericardial edema) as well as calculation of cardiac output at 4 days post fertilization. Results of this study show significant increases in pericardial edema at both oil doses relative to controls as well as significantly reduced cardiac output – driven by reductions in ventricular stroke volume. This study is one of the first to assess cardiac output in embryonic fish exposed to oil and methods described here allow for more physiologically relevant measures of cardiac performance in early life stages through established and non-invasive measures.

### 143. Impacts of Frazil Ice on the Effectiveness of Oil Dispersion and Migration of Dispersed Oil

Song, X., Chen, B., Liu, B., Lye, L.M., Ye, X., Nyantekyi-Kwakye, B., Zhang, B. (2022)  
*Environmental Science and Technology*, 56 (2), pp. 835-844.  
 DOI: 10.1021/acs.est.1c04014

**ABSTRACT:** Oil spills in the Arctic have drawn dramatic attention in recent years. Frazil ice, as the essential formation of sea ice, may affect the effectiveness of dispersants during oil spill response and the associated behaviors of dispersed oil. However, these impacts remain poorly understood, limiting the appropriate usage of dispersants in ice-covered regions. Herein this work explored the effects of frazil ice on the dispersion effectiveness of two dispersants (Corexit 9500A and hydrolyzed shrimp waste) and the migration of dispersed oil within frazil ice. We discovered that frazil ice inhibited dispersion effectiveness by attenuating water velocity. Permeable frazil ice encapsulated 11–30% of dispersed oil, implying a lower oil bioavailability. We thus proposed and verified a microscopic mechanism to unravel the migration of dispersed oil toward permeable constrictions in frazil ice. We predicted the concentration of dispersed oil encapsulated in frazil ice using bed filtration theory and verified the prediction through experiments. Furthermore, the presence of frazil ice can lead to the breakup and coalescence of dispersed oil. Overall, our findings would facilitate the appropriate planning and decision-making of dispersant-based oil spill response and a better understanding of the fate of dispersed oil in the frazil ice-infested ocean.

### 144. Effect of petroleum hydrocarbon pollution levels on the soil microecosystem and ecological function

Gao, H., Wu, M., Liu, H., Xu, Y., Liu, Z. (2022)  
*Environmental Pollution*, 293, art. no. 118511,  
 DOI: 10.1016/j.envpol.2021.118511

**ABSTRACT:** Petroleum hydrocarbon pollution is a global problem. However, the effects of different petroleum pollution levels on soil microbial communities and ecological functions are still not clear. In this study, we analyzed the changes in microbial community structures and carbon and nitrogen transformation functions in oil-contaminated soils at different concentrations by chemical analysis, high-throughput sequencing techniques, cooccurrence networks, and KEGG database comparison functional gene annotation. The results showed that heavy petroleum concentrations (petroleum concentrations greater than 20,000  $\text{mg kg}^{-1}$ ) significantly decreased soil microbial diversity ( $p = 0.01$ ), soil microbiome network complexity, species coexistence patterns, and prokaryotic carbon and nitrogen fixation genes. In medium petroleum contamination (petroleum concentrations of between 4000  $\text{mg kg}^{-1}$  and 20,000  $\text{mg kg}^{-1}$ ), microbial diversity ( $p > 0.05$ ) and carbon and nitrogen transformation genes showed no evident change but promoted species coexistence patterns. Heavy petroleum contamination increased the Proteobacteria phylum abundance by 3.91%–57.01%, while medium petroleum contamination increased the Actinobacteria phylum abundance by 1.69%–0.26%. The results suggested that petroleum concentrations played a significant role in shifting soil microbial community structures, ecological functions, and species diversities.

### 145. Synergy of Analytical Approaches Enables a Robust Assessment of the Brazil Mystery Oil Spill

Reddy, C.M., Nelson, R.K., Hanke, U.M., Cui, X., Summons, R.E., Valentine, D.L., Rodgers, R.P., Chacón-Patiño, M.L., Niles, S.F., Teixeira, C.E.P., Bezerra, L.E.A., Cavalcante, R.M., Soares, M.O., Oliveira, A.H.B., White, H.K., Swarthout, R.F., Lemkau, K.L., Radović, J.R. (2022) *Energy and Fuels*, July 21  
 DOI: 10.1021/acs.energyfuels.2c00656

**ABSTRACT:** From August 2019 to June 2021, viscous oil residues appeared along the Brazilian coast spanning 11 states and more than 3,000 km of tropical shoreline. Forensic results published to date indicate that the majority of oil samples collected share a common origin, yet the exact source of the mystery oil has yet to be conclusively determined. The proposed sources include illegal discharges from vessels traversing near, within, or downstream of Brazilian waters, leaking offshore platforms, natural seeps, and historic shipwrecks. To constrain the potential sources of oil and provide additional insights into the composition of the oil, we analyzed samples collected from the Ceará state coastal zone in 2019 with a broad suite of geochemical tools and approaches. These approaches included bulk elemental analyses and state-of-the-art analytical platforms including comprehensive two-dimensional gas chromatography (GC  $\times$  GC), gas chromatography with triple-quadrupole mass spectrometry, and Fourier transform ion cyclotron resonance mass spectrometry. Based on bulk and molecular features, field samples collected from northeast Brazil share the same source as other 2019 mystery oil samples collected over  $\sim 2400$  km to the south. A shared source across the Brazilian coast points to an input location east of Brazil within the southern branch of the South Equatorial Current, allowing transport both north and south of the bifurcation. The relative abundance and composition of diagnostic markers were consistent with the published analyses of Venezuelan petroleum. The composition of the field samples is consistent with the blending of, at least, two different petroleum products, a common practice to produce an "on spec" product such as a fuel oil used to power an underway vessel. The two

components appear to be the residuum from atmospheric distillation and a thermally altered, aromatics-rich, nondistilled material. To the best of our knowledge, no samples from potential sources are available for a direct comparison to field samples. Hence, these results play a supporting role in determining the source, and benefit efforts to understand short- and long-term weathering and recovery.

### 146. The Removal of Crude Oil from Cultural Resources

Jariwala, V., Striegel, M., Church, J., Salmon, E.

(2022) 44th AMOP Technical Seminar on Environmental Contamination and Response, pp. 798-821.

**ABSTRACT:** As considerable amounts of crude oil circulate North America by truck, rail, and pipeline, spills are inevitable. Examples of oil contamination from terrestrial spills in the last decade include pipeline ruptures in Utah, Montana, Michigan, and Arkansas along with myriad smaller spills from vehicle accidents and human error. During an oil spill, cultural resources such as historic buildings, structures, landscapes, and archaeological sites are among the resources at risk. As historic buildings are built from porous materials such as brick, stone, and timber, they are particularly vulnerable to the impact of oil. Historic building materials exposed to oil become contaminated both physically and chemically. In January 2018, the National Center for Preservation Technology and Training (NCPTT) began a project funded by the U.S. Department of Interior Inland Oil Spill Preparedness Project (IOSPP) to evaluate commercially available Surface Washing Agents (SWA) and the effectiveness of various application techniques for removing crude oil from historic architectural substrates. The study exposed surrogate materials to oil and examined a variety of SWA as potential conservation treatments in a controlled laboratory setting. Surface Washing Agents used in this study were selected from the Environmental Protection Agency's National Contingency Plan Product Schedule to be applied in situ. Two oils of varying viscosities were selected for this study to understand the differences in interaction with a range of substrates. This paper discusses results from the third Phase of this project which was started in 2019 and examines crude oil removal from sandstone. The materials were oiled with West Texas Intermediate or Access Western Winter Blend. The samples were cleaned by seven surface washing agents. The data collected relate to changes in color, gloss character, surface roughness, and aptitude for water vapor transmission. The success of the product is evaluated based on restoring the physical and chemical properties of the material.

### 147. The FAST Job Aid: Feasibility Analysis for Shoreline Treatment, a Decision Support Tool,

Owens, E., Taylor, E., Owens, T.

(2022) 44th AMOP Technical Seminar on Environmental Contamination and Response, pp. 132-147.

**ABSTRACT:** A Job Aid has been developed to assess the operational practicality of shoreline treatment options. Planners and decision makers in a spill management team would combine this feasibility information with other key considerations such as oil persistence, ecological and socio-economic sensitivity, vulnerability, and recovery time in the assignment of treatment priorities, the development of concerns and operational constraints, and the definition of treatment criteria (end-point targets). The scenario for each query in the Job Aid is created by the input combination of (a) five oil types, (b) fifteen shoreline types, and (c) surface or subsurface oiling conditions. Twenty-two (22) shoreline treatment methods are evaluated with respect to these scenario inputs. The evaluation is a stepwise process that considers, in order: safety, compatibility with respect to oil type and shoreline type, potential environmental consequences, and practicality. For each specific combination of inputs the outcome is that a treatment method is determined for most situations to be feasible, feasible for small amounts of oil, not feasible, or not applicable. The decision support component of the Job Aid provides four categories of reasons to explain why a method is Not Feasible or Not Applicable for the input scenario. A second decision support component within the Job Aid provides information when more than one treatment method is feasible (practical, appropriate, reasonable, and environmentally acceptable) to help understand the potential consequences associated with each option. These potential consequences are described in terms of four "primary concern" or "trade off" categories: effort (labour, logistics), potential environmental concerns, time to complete (operations), and waste generation. A third support component provides a set of Fact Sheets related to the shore types and treatment methods, which reference the detailed field guides and manuals upon which the feasibility analysis is based.

### 148. A Review of Conditions that Favour Marine Oil Snow Formation after an Oil Spill,

Akshaya, T.R., Kantharaj, M.

(2022) 44th AMOP Technical Seminar on Environmental Contamination and Response, pp. 295-310.

**ABSTRACT:** The ultimate fate of dispersed and dissolved phases of a typical surface or subsurface oil spill is subjected to various processes. One of the prominent observations is the process of biodegradation of the oil hydrocarbons of the dispersed phases by indigenous hydrocarbonoclastic bacteria. While there are limitations to the direct attachment of bacteria onto the dispersed oil droplets, it is more likely for the bacteria to degrade the hydrocarbon fraction if it is confined in a micro-environment. One of the natural micro-habitats for marine bacteria is the porous matrix of marine snow that enables enhanced biodegradation of hydrocarbons. Marine snow is formed due to the coagulation of senescent phytoplankton, exo-polymeric substances (EPS), detritus and faecal particles. However, the formation of marine snow (MS) during an oil spill is constrained by a multitude of factors, such as the availability of nutrients for the phytoplankton to grow, the resilience of the phytoplankton species, the nature of EPS, transparent extracellular polymers (TEP) etc. In addition to this, the optimal conditions for the marine snow to coagulate with the micro-oil droplets are controlled by factors such as the kinetics of TEP secretion in the presence of hydrocarbons, stickiness probability, shear conditions, etc. Thus, the objective of this paper is to provide a review of the optimum conditions under which marine oil snow (MOS) can be formed such that there is maximum removal of the free micro-oil droplets from the seawater. These conditions will be based on the

## RECENT INTERESTING PEER-REVIEWED OIL SPILL PUBLICATIONS (CONTINUED)

observations of the Deepwater Horizon blowout of 2010 in the Gulf of Mexico region. The MOS formation is dependent on phytoplankton growth kinetics, MS aggregation and the method by which MS coagulates with oil. This, in turn, determines the characteristics of MOS, such as porosity and excess density, which will facilitate the hydrocarbon-degrading bacteria in this micro-habitat to accomplish biodegradation during its transit to the seafloor.

## TRAINING COURSES

### USEFUL LINKS

- INTERNATIONAL – IMO E-LEARNING PLATFORM [e-learning platform](#)
- AUSTRALIA – AMOSC - <https://amosc.com.au/training/>
- AUSTRALIA & NEW ZEALAND – ALGA - <https://landandgroundwater.com>
- CHINA - <http://www.sioetc.com>
- EUROPE – EMSA Academy 2022. [Courses Catalogue](#)
- FRANCE - CEDRE - Click on these links [training catalogue](#) and [2022 calendar](#).
- UK & WORLDWIDE – OIL SPILL RESPONSE LTD. - <https://www.oilspillresponse.com/training/courses/>
- UK & WORLDWIDE – BRIGGS ENVIRONMENTAL SERVICES LTD. - <https://www.briggsmarine.com/services/training/>
- UK – NCEC HAZMAT ACADEMY – [More info](#)
- USA – TEXAS A&M UNIVERSITY – NATIONAL SPILL CONTROL SCHOOL <https://www.tamucc.edu/research/nscs/>
- USA – MPC, DETROIT - <https://marinepollutioncontrol.com/services/training-and-compliance>
- USA – ALLIANCE OF HAZARDOUS MATERIALS PROFESSIONALS - [https://www.ahmpnet.org/events/event\\_list.asp](https://www.ahmpnet.org/events/event_list.asp)

Members who would like to be listed here, please contact your editor – [john.mcmurtrie@spillcontrol.org](mailto:john.mcmurtrie@spillcontrol.org)

### CERTIFICATE IN MARITIME SAFETY MANAGEMENT & THE ISM CODE

From Lloyds Maritime Academy - Course commences 28th September 2022. [More info](#)

## UPCOMING WEBINAR



The image is a promotional poster for a webinar. At the top, it features the National Academies logo with the text 'NATIONAL ACADEMIES' in large white letters and 'Sciences Engineering Medicine' in smaller white letters to the right. Below this, the text 'Ocean Studies Board' is displayed in white. The main body of the poster has a dark background with a colorful, abstract pattern of blue, purple, and white. Overlaid on this is a dark purple rectangular box containing the text 'Consensus Study Report' in white, followed by the title 'Oil in the Sea: Inputs, Fates and Effects' in large white letters. Below the title, it says 'Public Release Webinar' in white. At the bottom of the poster, a white horizontal bar contains the text 'SEPTEMBER 28, 2022 | 1-2:30 PM ET' in black.

## UPCOMING WEBINAR (CONTINUED)

### Oil in the Sea: Inputs, Fates and Effects

Public Release Webinar

September 28 | 1:00PM - 2:30PM EDT

Join this public briefing on the new report, "Oil in the Sea IV: Fates, Inputs, and Effects"

The National Academies invites you to join this public webinar for the release of the consensus study report *Oil in the Sea IV: Inputs Fates and Effects* on **Wednesday, September 28** from **1:00 to 2:30pm ET**. This event will cover some of the key takeaways from the report, which documents the state of knowledge around oil in marine environments, identifies important gaps in research and understanding, and makes recommendations on reducing inputs of oil into the sea, reducing the effects of the inputs on the environment, and advancing oil spill science.

This report serves as an update to the most recent report in this series, with the previous installment having been released in 2003. Almost two decades later, there have been significant advances in technology and science, as well as major events, such as the 2010 Deepwater Horizon oil spill, that have reinforced the importance of reducing the quantities and effects of oil in the sea.

Learn more about the project by visiting [the project webpage](#). The full report will be available for free download on September 28 at 11am ET. [REGISTER NOW](#) If you have questions, email Kelly Oskvig at [koskvig@nas.edu](mailto:koskvig@nas.edu)

## UPCOMING EVENTS

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### NEWLY ADDED TO THE UPCOMING EVENTS PAGE

- Webinar – National Academies: Oil in the Sea – Inputs, Fates & Effects, September 28, 1.00 to 2.30 pm ET
- Hybrid Event: IMO-Norway Innovation Forum, 28-29 September.
- Webinar - ExxonMobil Oil Spill Response Knowledge Transfer Webinar Series - "A brief but spectacular story about the creation of the ESI shoreline ranking concept, and the oil behavior, impacts, response options, and recovery in marshes" Dr. Jacqueline Michel (Research Planning, Inc.), : November 1st, 2022, 10-11:15 am Houston time (due to the conflict with IOSSC conference, we postponed the October webinar to November)
- Webinar – Remediation & Management of PFAS & Other Emerging Contaminants, 2<sup>nd</sup> November, 1500-1630 GMT

### RECENTLY ADDED TO THE UPCOMING EVENTS PAGE

- Mexico, Veracruz – International Maritime & Port Forum, September 19-22, 2022
- Singapore – MEPSEAS Technology Conference, 15-17 November, 2022

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## MESSAGES FROM EVENT ORGANISERS

### MEXICO: INTERNATIONAL FORUM 19-22 SEPTEMBER 2022



Topics will include –

- Vision and Challenges of the Maritime and Port Activity of the National Maritime Authority of Mexico
- Reactivation of post-pandemic port activity
- ISPS Code: Threats to Maritime Transport at the Ship-Port Interface
- Technologies and Services for the Maritime-Port Sector
- Reactivation of the Cruise Industry +
- Care of the Environment and Marine Resources.

More info : <https://www.foropbiplive.org/>

### INDIA: SPILLTECH CONFERENCE & EXHIBITION, 21-23 SEPTEMBER, 2022

To support the Sustainable Development Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development, SpillTech will cover a wide range of topics revolving around prevention, mitigation & probable solutions to save the environment from any catastrophic disasters. Apart from the policy & regulatory updates, the event topics will revolve around oil & chemical spills, Ocean Debris, Waste & Solid waste management, Shoreline cleanup, Risk mitigation & a few more. [Download the updated Conference Programme](http://spilltech.org/) For ISCO Members a 10% discount on Registration Fee. <http://spilltech.org/>

### FRANCE: SEA TECH WEEK 2022

Sea Tech Week®, Marine Science & Technology Conference - 26-30 September 2022, Brest, France – More info - <https://www.seatechweek.eu/>

### CANADA: INTERNATIONAL OIL SPILL SCIENCE CONFERENCE 2022 – OCTOBER 4-7

IOSSC 2022 REGISTRATION IS OPEN -Attendees will be able to connect with the oil spill response community, government, industry, and academia to work together to deal with the challenges in the field of oil spill response. The conference will bring experts from around the world to present their latest research in the field of oil spill science including spill prevention, contingency planning, and environmental rehabilitation. [Preliminary Conference Programme](#) [Registration](#)  
<https://sites.events.concordia.ca/sites/mpri/en/international-oil-spill-science-conference-2022/> [View Official Event Video](#)

### BAHREIN: RECISO ENVIROSPILL CONFERENCE & EXHIBITION, 11-13 OCTOBER 2022

<https://www.recsoenvirospill.org/>

### USA: CLEAN GULF CONFERENCE & EXHIBITION – NOVEMBER 8-10, 2022

We are counting down the weeks until the 31st Annual CLEAN GULF Conference & Exhibition takes place November 8-10 in New Orleans, LA! In just 8 short weeks, over 1,000 professionals involved in spill prevention & response from oil & gas, maritime, rail, environmental, regulatory agencies, oil spill response organizations and service companies will come together to share information and ideas on a variety of topics that effect the oil & gas industry in the Gulf. This year's CLEAN GULF is packed full of great content and exhibitors – check out what we have in store for you! [Download the Digital Brochure](#) [View Exhibition Contract](#) [View Conference Sessions](#) [Register for Clean Gulf](#)

### ITALY: ECOMONDO EXPO, RIMINI, 8-11 NOVEMBER, 2022

At Ecomondo 2022, we present, compare and identify the most appropriate technological solutions for reducing pollution and restoring the Mediterranean macro-region, and at the same time, bring together local institutions, private and public actors and financing entities as well citizens and consumers.

[Log in to the reserved area, fill in your data, download your ticket](#) [Digital Preview](#)

### AUSTRALIA: ALGA GROUNDWATER FATE & TRANSPORT SYMPOSIUM

ALGA's Groundwater Fate & Transport Special Interest Group (SIG) is pleased to announce the 2022 Groundwater Fate & Transport symposium will be held in Melbourne on 18 November 2022. The symposium aims to share the latest insights, developments and applications for improving our understanding of contaminant behaviour in the environment.

<https://www.cvent.com/c/abstracts/e9e34139-c7a0-4969-88b9-e2cfb510baab>

### USA: CALIFORNIA -10TH BIENNIAL OIL SPILL RESPONSE TECHNOLOGY WORKSHOP FEBRUARY/MARCH 2023

California Department of Fish and Wildlife Office of Spill Prevention and Response (OSPR) and Chevron 10<sup>th</sup> Biennial Oil Spill Response Technology Workshop February/March 2023 in California (TBD). Email or request more info: [TechWorkshop2023@wildlife.ca.gov](mailto:TechWorkshop2023@wildlife.ca.gov)

### NORWAY: NOSCA SEMINAR 2023: MARCH 20-24, 2023

The green shift challenges: New oils and new energy carriers. Marine littering. Biological threats [Registration](#)

### USA: COLORADO - CLEAN WATERWAYS 2023: 11-13 APRIL, 2023

Registration has officially opened for the [2023 CLEAN WATERWAYS Conference](#), taking place at the Hilton Denver City Center Hotel in Denver, CO, on April 11-13. Registration rates are currently at a discount of \$350! These are the lowest rates offered for CLEAN WATERWAYS 2023 and expire on Friday, October 28th.

## MESSAGES FROM EVENT ORGANISERS (CONTINUED)

The CLEAN WATERWAYS program is developed by a government/industry-based committee of approximately 45 professionals, and the committee is looking for leaders to help shape the conference. All abstracts submitted are reviewed for content and relevance by the committee and are selected by consensus. [More News re conference & abstract submission](#) [Registration](#) [Introduction to the Planning Committee](#)

## AUSTRALIA: BRISBANE - SPILLCON 2023: 11-15 SEPTEMBER 2023

We are delighted to announce that Spillcon 2023 has been confirmed for 11–15 September 2023 at the Brisbane Convention and Exhibition Centre, Queensland, Australia. For more information contact Spillcon Event Team, Nicky Reading, GPO Box 279, Canberra ACT 2601, Australia; Phone +61 417 244 355, Email [spillcon@aip.com.au](mailto:spillcon@aip.com.au)

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This is a subscription service. <https://www.tender247.com/keyword/oil+spill+tenders+global>

### OTHER OPPORTUNITIES: USA & EUROPE

US Government solicitations are frequently posted in Technology Innovation News Survey <https://clu-in.org/products/tins/> US EPA Tech Direct <https://clu-in.org/techdirect/archive/> and USA Federal Contracts Update <https://clu-in.org/Federal-Contract-Opportunities> European Maritime Safety Agency invitations to tender are often posted in The EMSA Newsletter <https://www.emsa.europa.eu/newsroom/newsletters.html>

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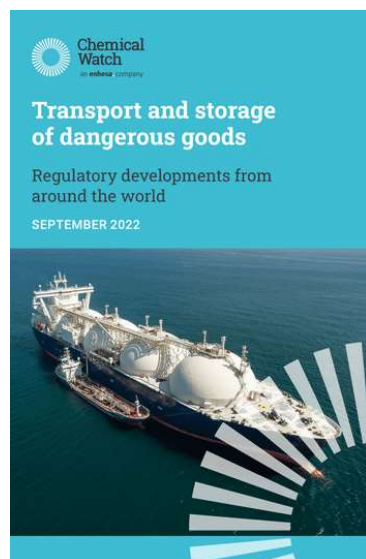
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## NEW PUBLICATIONS

### SEPTEMBER 2022 ISSUE OF EMSA NEWSLETTER

In this issue: EMSA at ECGFF Plenary & COASTEX 22; EMSA Guidance on Shore-Side Electricity (SSE); closure of pilot interoperability project with concrete results achieved; conclusion of Member State visit cycles related to the PSC and sulphur directives; major new release for THETIS & THETIS-EU; EMSA hosts the ENISA maritime cybersecurity conference. [Download the EMSA Newsletter](#)

## REPORT ON TRANSPORT AND STORAGE OF DANGEROUS GOODS



A new Report from Chemical Watch - Keep up with regulatory developments from around the world.

The regulations governing the transport of dangerous goods exist to protect people and the environment from the hazards presented by those goods and to facilitate trade. For decades, experts have worked hard to harmonise the regulations between different territories and modes of transport but, still, disharmony reigns and a lack of harmonisation creates confusion.

Keeping on top of amendments to the various sets of regulations is a full-time job for anyone with responsibility for compliance in the dangerous goods transport and storage sector.

This is why Chemical Watch has extended its service to cover the [transport and storage of dangerous goods](#), along with our broader coverage of chemicals management, keeping goods compliant from the factory to their final destination.

In our latest members-only report, Transport and storage of dangerous goods: Regulatory developments from around the world, you can read a selection of recent coverage of the sector. All articles are available as part of the Chemical Watch [News & Insight membership](#). [Download the Report](#)

### **NIGERIA: EQUIPMENT FAILURE RESPONSIBLE FOR SHELL OIL SPILL —REPORT**

September 14 - Equipment failure is believed to be to blame for the crude oil leak at the Shell Petroleum Development Company of Nigeria (SPDC) facilities in Peremabiri, Southern Ijaw Local Government Area, Bayelsa.

The leak was caused by equipment failure, according to a Joint Investigation Visit (JIV) that was conducted at the incident site on September 5 and 6. Ripples Nigeria / [Read more](#)

### **USA: OREGON - SOURCE OF WHITE SUBSTANCE IN FANNO CREEK IDENTIFIED**

September 14 - Environmental Services' spill response team began receiving reports from the public beginning the Tuesday before Labor Day and continuing through Saturday. During those days, investigators scouted the creek near the new pedestrian bridge at SW Bertha Boulevard near Beaverton-Hillsdale Highway as well as upstream properties. On Sunday, an investigator found the source: A pollution remediation project at a dry cleaners' property on 6337 SW Capitol Highway was using a white liquid on site, and somehow that substance was reaching the creek.

Environmental Services investigators determined that the substance the remediation crew was using was BAC-9, a non-toxic brew of microbes and vegetable oil used to clean up certain pollutants underground. The vegetable oil feeds the microbes which in turn break down pollutants. Portland Local News / [Read more](#)

### **INDIA: BITUMEN TANKER LISTED, ABANDONED, STILL AFLOAT**

September 15 - Bitumen tanker PARTH developed heavy list after massive water ingress in ballast tanks in Arabian sea some 3 nm off India western coast at night Sep 15, while en route from Khor Fakkan UAE to New Mangalore India, with 3,911 tons of bitumen on board. 19 crew abandoned tanker, they've been rescued by Indian Coast Guard. Tanker is afloat, Indian authorities demand owner to organize towage, and prevent possible leaks. Maritime Bulletin / [Read more](#)

### **GIBRALTAR TO SINK STERN SECTION OF GROUNDED BULKER TO SEABED**



*Above: The bend and break is visible near the number 2 hold of the OS 35. Photo Courtesy of Gibraltar Port Authority*

September 16 - The salvage team working in Gibraltar on the wreck of the bulker OS 35 has decided to sink the remainder of the vessel to the seabed to prevent further damage from approaching heavy weather. The forward section of the vessel has been resting on the seabed since August 30, but with the number 5 hold and engine room having remained dry the stern has continued to float.

“The Gibraltar Port Authority and HMGoG (Gibraltar government) are confident that the plan proposed by Resolve is the best course of action to secure the vessel in place as far as possible, minimize the potential for pollution and give the salvors the best chance of

## INCIDENT REPORTS (CONTINUED)

recovering the vessel efficiently and as quickly as possible going forward,” the port authority said announcing the decision to sink the vessel. The Maritime Executive / [Read more](#)

### IRAQ: OIL SPILL AT BASRA TERMINAL

September 16 - Oil exports from Iraq's Basra oil terminal are being gradually resumed after they were halted last night due to a spillage, which has been contained, Basra Oil Company said.

The spill at the port, which has four loading platforms and can export up to 1.8 mln barrels per day, drove up prices on the prospect of lower global crude supply. Investing.com / [Read more](#)

### VIETNAM: CLAMS DIE EN MASSE AT NORTHERN VIETNAM BEACH AFTER OIL VESSEL SINKS

September 16 - Thousands of tons of clams in northern Vietnam's Thai Binh Province have died after an oil-carrying vessel sunk.

Over the past week, dozens of families in Thai Do Commune, Thai Thuy District, could not sit still as their clams, which were close to being harvested, kept dying. The smell of death spread over 10 kilometers along Con Den Beach.

While local authorities have yet to provide an official explanation for the clams' death, it coincided with the moment when the Ha An 01 vessel, which carried over 1,000 tons of oil, sunk on Sept. 8 while anchored about 10 kilometers from the site where the clams were raised. VN Express / [Read more](#)

### VENEZUELA: TANKER BROKE OFF MOORINGS CAUSING OIL TERMINAL FIRE

September 17 - Product tanker LARKO broke off her moorings at Guaraguao Oil Terminal, Puerto La Cruz, Venezuela, at around 0830 LT Sep 17, during loading of gasoline. Shortly after mooring lines broke, cargo hose also broke, and according to witnesses, minutes after that fire erupted. Tanker was taken to Puerto Lacruze outer anchorage, and anchored, fire on pier and probably, on tanker too, was extinguished in some 40 minutes, no injuries reported. No other news yet on tanker damages, oil leak.

Maritime Bulletin / [Read more](#)

## REMINDERS

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