



ISCO NEWSLETTER

The Newsletter of the International Spill Response Community

Issue 591 26 June 2017

info@spillcontrol.org

<http://www.spillcontrol.org>



ISCO & THE ISCO NEWSLETTER

The ISCO Newsletter is published weekly by the International Spill Control Organisation, a not-for-profit organisation supported by members in 45 countries. ISCO has Consultative Status at IMO, Observer Status at IOPC Funds and is 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 IMO, UNEP, EC and other organisations.

ISCO COMMITTEE & COUNCIL

ISCO is managed by an elected executive committee members of which are **Mr David Usher** (President, USA), **Mr Matthew Sommerville** (Secretary, UK), **Mr Marc Shaye** (USA), **Mr Dan Sheehan** (USA), **M. Jean Claude Sainlos** (France), **Mr Kerem Kemerli** (Turkey), **Lord Peter Simon Rickaby** (UK), **Mr Li Guobin** (China), **Captain Bill Boyle** (UK) and **Mr John McMurtrie** (UK)

The Register of ISCO Members is maintained by **Ms Mary Ann Dalglish** (Membership Director). She is also responsible for collecting membership dues.

The Executive Committee is assisted by the non-executive ISCO Council composed of the following national representatives – **Mr John Wardrop** (Australia), **Mr Osman Tarzumanov** (Azerbaijan), **Mr John Cantlie** (Brazil), **Dr Merv Fingas** (Canada), **Captain Davy T. S. Lau** (China, Hong Kong), **Mr Li Guobin** (China, Mainland), **Mr Darko Domovic** (Croatia), **Eng. Ashraf Sabet** (Egypt), **Mr Torbjorn Hedrenius** (Estonia), **Mr Pauli Einarsson** (Faroe Islands), **Prof. Harilaous Psarafitis** (Greece), **Captain D. C. Sekhar** (India), **Mr Sanjay Gandhi** (Kenya), **Chief Kola Agboke** (Nigeria), **Capt. Chris Richards** (Singapore), **Mrs Fatima B. Shaik** (South Africa), **Dr Ali Saeed Al Ameri** (UAE), **Mr Kevin Miller** (UK), **Dr Manik Sardessai** (USA), **Mr Dennis van der Veen** (The Netherlands) and **Mr Carlos Sagrera** (Panama)

For more info on Executive Committee and Council Members go to www.spillcontrol.org

INTERNATIONAL DIRECTORY

Click on these links to view websites

[CONSULTANTS](#)

[EQUIPMENT & MATERIALS](#)

[RESPONSE ORGANISATIONS](#)

[TRAINING PROVIDERS](#)

International news

For more information on the events featured below, click on the banners



A MESSAGE FROM YOUR NEW SECRETARY – MATTHEW SOMMERVILLE

Having been in post as ISCO secretary for a little over a month now I felt it was time to introduce what may become a regular column from myself and other members of the ISCO executive committee. In doing this, I hope we can address one of the fundamental objectives of ISCO, to share and disseminate knowledge and at the same time to keep you informed about how ISCO is continuing to grow.

2017 has been identified by some organisations and individuals as an important year for the spill response industry being 50 years since the 18th March 1967 grounding of the Torrey Canyon. While that incident is widely sighted as the start of the oil spill response industry when looked at in the round is clear that it was only a new chapter in the known and already developing story of oil spills. In the same way that later incidents such as the Amoco Cadiz, Exxon Valdez or Deepwater Horizon have filled subsequent chapters.

In the same vein, while the change from John McMurtrie to myself as Secretary might be seen as a start of something new for ISCO, in reality, it is merely a continuation of the 33 years evolution. Of course, John stays on as the editor of ISCO news and as an active member of the executive committee but after 13 years as both secretary and ISCO news editor John has contributed, written and driven what will be a large chapter in the ISCO story. That contribution has not been limited to these headline activities, however. John has been proactive in getting observer status for ISCO with the International Maritime Organisation, The International Pollution Compensation Funds and in preparing the documents and on projects with these organisations.

For ISCO as we enter a new chapter and while core mission, aims and objectives will remain the same you should expect to see new characters, story lines and potentially a change in the plot of where ISCO is heading. For the many of you who read ISCO news but are not yet members, I would encourage to consider joining now and become more involved in the writing of that plot and to do so before potential changes to membership fees and access to ISCO news are implemented. ISCO is and will remain a not-for-profit organisation however as it becomes more active on its members' behalf it must ensure that income matches expenditure and that the differentiator for ISCO members and non-members is more clearly defined. Related to this we will be looking to improve the ways that members can make a comment and contribute to the discussion and the newsletter. Some of

PROFESSIONAL MEMBERSHIP

Advance your career by gaining Professional Recognition

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 Student Membership, Associate Membership (AMISCO), MEMBERSHIP (MISCO) or FELLOWSHIP (FISCO)

[All about Professional Membership Application Form](#)

To receive the free ISCO Newsletter

Go to <http://www.spillcontrol.org> and enter your name and email address in the Registration Form (located on the right hand side of the home page) then click on "subscribe"

International news (continued)

these changes will be facilitated through the Executive Committee and ISCO Council while others will rely on greater use of technology. One simple change going forward will be that we will include news items and links shared with us in languages other than English. While we don't have resources to translate these, we hope they will be of value to some of our members.

Elsewhere the recent successful launch of RESPONSECON contracts has addressed a long-standing need of the industry and go a long way to ensuring that resources can be deployed quickly and efficiently. However, with the completion of one piece of work often comes another and in this case, it is the need to insert response rates which generate the next piece project. Clearly, however, RESPONSECON will not achieve its full potential if elimination of delay arising from discussion over contract terms is simply replaced with a delay caused by discussion over rates.

While ISCO and its members have no desire to try to fix or agree rates used this is something which needs to be agreed by parties. To date advice on the technical reasonableness has often been provided by organisations, not themselves involved in the commercial business. While in the main that advice has been accepted and agreed there are numerous cases where it has been disputed or where protracted discussions, debate and resulting delays in payment have occurred. In some cases, the contractor has been unable to justify rates, and it is in this area where improved transparency may assist both sides to agree on acceptable rates.

A further driver for this work is that with success in prevention the opportunity for service providers to generate income, outside of retainer contract, is more limited by the equipment anticipated days in use.

Therefore while calculations of rates in the past accepted 30, 60 or 90 days use such assumptions with a lower frequency of incidents may need to be revisited. There are of course many other factors including purchase price, freight, import taxes, expected lifetime, maintenance and storage costs to be considered. Finally, there is the needed to set a reasonable rate of return on capital expenditure which justifies the original business purchase decisions. While in each company, location and country there may be specific circumstances laws taxes and other factors if these could be identified in a formula/table/matrix it would at least permit each company to explain its rates quickly and effectively to those assessing them. Clearly, such a project will only proceed if there is an indication of interest.

Finally, ISCO has asked its members and ISCO news readers to support and provide information on any experience on the storage of dispersants in support of an IPIECA (not an ISCO member) project. To date, we have had only a limited response and would encourage anyone with experience good or bad to share it with us. Supporting such projects is something ISCO has been involved with for a number of years and is one of the areas where we will be seeking to develop more formal and long-term collaborative and proactive relationship as we have with IMO, IOPC Funds, INTERTANKO and through recent projects with International Group of P+I clubs, BIMCO and ISU. Related to this we are looking to improve our links and relationships with the national trade organisations such as UK SPILL, NOSCA, SRGH, SYCAPOL, etc. We share many members, and while we serve different needs, we need to ensure we are doing our bit as ISCO to support national trade associations where they exist or are being formed and to ensure that where we have common interests or overlapping activities we work together rather than in competition.

ANTARCTIC TREATY CONSULTATIVE MEETING

June 21 – News received from IOPC Funds - The 40th Antarctic Treaty Consultative Meeting (ATCM) and the 20th Meeting of the Committee for Environmental Protection took place in Beijing, China from 23 May-1 June 2017. The ATCM sees the 12 Parties to the Antarctic Treaty convene annually for the purpose of exchanging information, consulting together on matters of common interest pertaining to Antarctica, including environmental protection and marine pollution.

The Director was invited to participate and submitted a document on the functioning of the IOPC Funds. The Director, Mr José Maura, and the Head of External Relations and Conference, Mr Thomas Liebert, represented the IOPC Funds, sharing the Funds' expertise in the field of compensation for pollution damage in order to facilitate a comparison between the Funds' system and a mechanism envisaged under Annex VI to the Protocol on Environmental Protection to the Antarctic Treaty. <http://www.iopcfunds.org/>

Incident reports

VIETNAM: FOREIGN CHEMICAL TANKER STRANDED IN CENTRAL VIETNAM

June 11 - A chemical tanker registered under the Cayman Islands on the way from Singapore to China is being stranded near an island in Vietnam's central Binh Thuan province.

The 20,108-ton Chemroad Journey, which is carrying 27 people, 1,701 tons of fuel oil and 113 tons of diesel oil, is being stranded some 28 nautical miles from Phu Quy island, Vietnam's National Search and Rescue Committee said on Sunday afternoon. The Vietnamese side is ready to coordinate with Chemroad Journey to help the tanker if it requests, as well as to cope with potential oil spills. *Zinhua Net* [Read more](#) [Thanks to Don Johnston of ISCO Industry Partner, DG & Hazmat Group]

USA: CALIFORNIA - OPERATION TO REMOVE FUEL FROM SUNKEN BARGE IN BAY BEGINS



Photo: Fuel spill containment effort following a barge going under on the San Francisco Bay. Photo KTVU

June 14 - U.S. Coast Guard officials said today that they and partner agencies began removing fuel from a barge that capsized in San Francisco Bay in April.

The 112-foot freight barge Vengeance capsized on April 7 south of the Bay Bridge and settled above the subterranean BART Transbay Tube, which is protected by a 25- to 30-foot layer of earth, according to Coast Guard officials.

During fuel removal operations, which began shortly after 9 a.m. today, the fuel that remains on the Vengeance barge is being pumped from the

barge into fuel containers positioned on a second work barge for disposal, Coast Guard officials said.

The commercial diving services company Global Diving and Salvage is conducting the fuel removal operations today.

A discharge of fuel is not expected to occur during the transfer process, but divers are securing an underwater fuel containment dome over the Vengeance fuel fill connection as a precaution to prevent any fuel from reaching the surrounding waters during the transfer, according to the Coast Guard. *SFGate* [Read more and watch video](#) [Thanks to ISCO Industry Partner, DG & Hazmat Group]

CANADA: ONTARIO - FUEL TANKER GROUNDED IN ST. LAWRENCE WEST OF CORNWALL

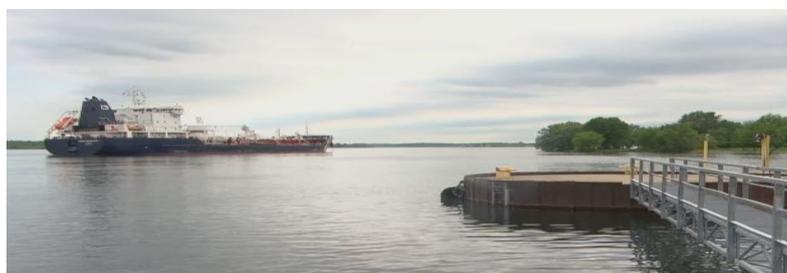


Photo: The Transportation Safety Board is investigating after the engine of the Damia Desgagnés failed in the St. Lawrence late Thursday, June 15, 2017. (Reno Patry/Radio-Canada)

June 16 - The tanker was travelling west from Montreal to the Lake Erie community of Nanticoke in Ontario when the engine failed, according to Serge Le Guellec, the president of Transport Desgagnés, a wholly-owned subsidiary of Groupe Desgagnés.

After the engine failed, the ship drifted and ended with its nose grounded on sand about three nautical miles east of Iroquois, Ont., Le Guellec said.

The ship was carrying what he described as heavy fuel, but he said no spill has occurred. *CBC News* [Read more](#) [Thanks to ISCO Industry Partner, DG & Hazmat Group]

UAE: SHARJAH - BEACH SHUT AFTER MAJOR OIL SPILL

June 17 - The beach in the eastern coastal town of Kalba, part of the UAE emirate of Sharjah, has been closed following an 800-metre-long spill, said a report.

Equipment and personnel were mobilised to clean up the area and identify the source of the oil spill, reported Gulf News, citing Sharjah's Environment and Protected Areas Authority (EPAA) *Trade Arabia* [Read more](#)

Incident reports (continued)

MALAYSIA: SUNKEN TANKER FOUND OFF MALAYSIA, BATTLE TO CONTAIN OIL SPILL



Photo: Malaysian navy chief Ahmad Kamarulzaman Ahmad Badaruddin tweeted that divers had confirmed that the underwater wreckage was the MT Putri Sea. Image: Chief of Navy -via Twitter

June 19 - Malaysia said Monday it had found the wreckage of a tanker which sank last week with six crew on board as officials battle to control an oil spill.

The MT Putri Sea went down last Thursday off the southern state of Johor and all six Indonesian crew are missing, feared dead. In a statement Monday, the Malaysian Maritime Enforcement Agency said the four-day search-and-rescue operation for the crew was halted Sunday after efforts to find them failed.

The agency added the operation to contain an oil spill in the area was ongoing, but it is not clear how much oil the 46 metre-long ship was carrying. TimesLive.co.za [Read more](#)

June 20 - Malaysia tackles tanker oil spill - Malaysia is using chemical dispersants to break up an oil slick off its coast after a tanker laden with marine diesel sank last week, a top official said Tuesday.

Two marine department boats were using chemical dispersants on the more than three kilometre-wide (two-mile) slick, Zulkifli Abu Bakar, director-general of the Maritime Enforcement Agency, said in a statement. *The Business Times* [Read more](#)

USA: MICHIGAN - NEW OIL SPILL CLEAN-UP CONTINUES

June 22 - Workers have removed an estimated 1,700 gallons of oil which spilled from a pipe in Convis Township.

Workers from Omimex Energy in Ludington, which owns the well, and several subcontractors have been working 12-hours each day since a leak was discovered June 12 in a three-inch pipe, Kristy Shimko, Calhoun County Field Geologist for the Michigan Department of Environmental Quality, said Thursday. *Battle Creek Enquirer* [Read more](#)

News reports from around the world (countries listed in alphabetical order)

CANADA: ONTARIO - CITY RELEASES DETAILS ABOUT DANGEROUS GOODS ON LONDON TRAINS

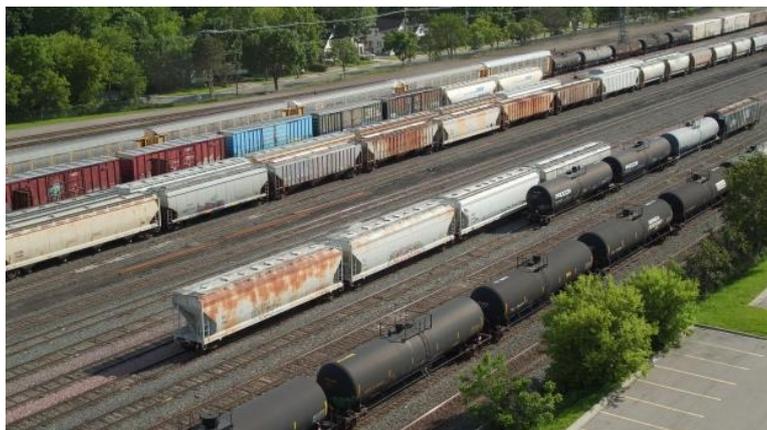


Photo: CN rail yard in London, Ont., near Brydges St. and Egerton St. (Ed Middleton/CBC News)

June 12 - London Mayor Matt Brown commits to making public the dangerous goods list after a CBC London Investigation - The public reports show that 10 per cent of shipments on CP's rail line, which runs through the centre of London then onward to Detroit, are loaded with dangerous material.

At 14 percent of all freight, quantities of dangerous goods are slightly higher on CN trains, which enter the city from the east near Veterans Memorial Parkway before travelling through the south end of downtown London and onward to Sarnia.

The top dangerous products are: Liquefied petroleum gases (CN); Alcohols, Not Otherwise Specified (CP); Sulfuric acid (CN); Petroleum crude oil (CP) Ethanol & gasoline mixtures (CN). *CBC News* [Read more](#) [Thanks to Don Johnston of ISCO Industry Partner, DG & Hazmat Group]

News reports from around the world (continued)

CHINA: IOPC FUNDS - MEETINGS WITH THE MSA (BEIJING) AND THE CSOP COMPENSATION CENTER (SHANGHAI), CHINA

June 21 - The Director, Mr José Maura and Head of External Relations and Conference, Mr Thomas Liebert had meetings with the Maritime Safety Administration (MSA) in Beijing and the Chinese Ship-source Oil Pollution Compensation Settlement Center (CSOP Compensation Center) in Shanghai on 26 May 2017.

Both meetings were very useful, paving the way for further cooperation, with some specific items already under discussion. <http://www.iopcfunds.org/>



ECUADOR: OIL SPILL CASE MOVES ABROAD AFTER US SUPREME COURT SETBACK

June 22 - After the Supreme Court earlier this week declined to hear arguments in a nearly 25-year-old case alleging that Chevron is liable for polluting a wide swath of the Amazon rainforest in Ecuador, lawyers for the plaintiffs said they plan to continue similar suits against the oil giant in abroad.

The legal battle between Chevron and lawyers representing a group of villagers in Ecuador dates from 1993 when U.S. lawyers sued Texaco in a U.S. federal court over claims that it contaminated a large portion of the rainforest in northeast Ecuador while looking for oil. That suit was eventually dismissed in a U.S. court, but restarted 10 years later in Ecuador – by which point Chevron had purchased Texaco. *Fox News* [Read more](#)

FRANCE: CEDRE GIVES SUPPORT TO RESPONSE EXERCISES

June 15 - Cedre recently took part in three exercises. The first was organised by ENSOSP and simulated a fire onboard a barge which was carrying hazardous substances and which subsequently ran aground.

The scenario of the second, an "ANED Channel-North Sea" exercise, involved a collision between an oil tanker and a container ship resulting in a spill of Arabian Light crude oil and chloropicrin.

For the third, Cedre was called upon by the ICE network through the Polish focal point to provide toxicological data and information on fighting a fire involving a hazardous substance.

http://wwz.cedre.fr/en/content/download/8894/141504/file/257_E.pdf

NETHERLANDS: INTERNATIONAL FREIGHT TRAINS FAILED TO MEET TECHNICAL STANDARDS, SAY DUTCH INSPECTORS

June 12 - Some 600 inspections of trains carrying hazardous materials were performed in 2016 and of those, 76 were found to be in the 'dangerous' category concerning substances aboard stationary trains in rail yards. There were also 50 inspections of moving trains carrying hazardous goods, and the ILT says the provision of information from the operators relating to these movements was 'in order'.

Every year four million tonnes of dangerous goods are transported via rail freight in The Netherlands, and compliance with the rules was described by ILT as 'better than in previous years but still not (good) enough'. *RailFreight.com* [Read more](#) [Thanks to Don Johnston of ISCO Industry Partner, DG & Hazmat Group]

TAIWAN, CHINA - EPA AMENDMENT TO MARINE ACT WOULD RAISE POLLUTION FINES

June 21 - The Environmental Protection Administration (EPA) yesterday proposed an amendment to the Marine Pollution Control Act to raise the maximum fine for ships that cause pollution.

Should the legislature pass the amendment, fines would be increased from NT\$1.5 million (US\$49,340) to NT\$300 million to help the agency handle marine pollution, compensate people affected and reward those who report polluting activities, Yeh said.

Under the proposed amendment, ship owners who discharge wastewater or other polluting substances into the ocean would face a fine of between NT\$300,000 and NT\$30 million, and if violators do not clean up the pollution within a specific time frame, the fine could be increased to NT\$300 million, along with a prison sentence of one to seven years.

In case of a shipwreck, owners would have to take action to prevent possible pollution, the draft says, adding that violators in such cases that do not clean up the pollution within a given time frame would face a maximum fine of NT\$60 million. *Taipei Times* [Read more](#)

News reports from around the world (continued)

UKRAINE: NATIONAL WORKSHOP ON THE INTERNATIONAL LIABILITY AND COMPENSATION REGIME, HELD IN KIEV

June 22 - The IOPC Funds took part in a national workshop on the international liability and compensation regime in Kiev, Ukraine. Hosted by the Ministry of Infrastructure of Ukraine on 21 June 2017, the workshop was aimed at providing guidance on the regime, the role of the IOPC Funds and an overview of other maritime liability conventions.

During the workshop, about 30 participants from various government authorities and the oil industry were briefed by the Head of External Relations and Conference, Mr Thomas Liebert, and Claims Administrator, Ms Ana Cuesta, on a variety of subjects relating to ship-source oil pollution incidents. These included the legal, technical and administrative requirements, implications and benefits of accession to the 1992 Fund Convention, the settlement of claims and several case studies to highlight the application of the compensation regime. <http://www.iopcfunds.org/>

USA: 2017 SCIENCE OF OIL SPILLS TRAINING IN SEATTLE



Photo: Students and instructors on the SOS class field trip to a Puget Sound shoreline north of Seattle. Image credit: NOAA

June 23 - The week of June 19, 2017, OR&R's Emergency Response Division team of oil spill scientists concluded the last of four "Science of Oil Spills" (SOS) classes planned for fiscal year 2017.

The Seattle class covered a wide range of spill response topics, as well as a field trip to a Puget Sound shoreline north of Seattle. NOAA thanks Jennifer Leach of the

Parks and Recreation Department of the City of Edmonds for supporting this, and past SOS field trips.

SOS workshops are always in high demand in the oil spill response community, and this fiscal year was no exception. To accommodate continued high demand, four SOS classes are planned in fiscal year 2017 including in Anchorage, Alaska; Mobile, Alabama; Seattle, Washington; and one other location yet to be determined. The Anchorage class is scheduled for the week of November 13, 2017. Dates have not yet been set for the other planned classes.

For more information about this week's or upcoming SOS classes, or other OR&R Emergency Response Division training activities, please contact Nicolle.Rutherford@noaa.gov NOAA OR&R [Read more](#)

USA: IOPC FUNDS VISIT TO NATIONAL POLLUTION FUNDS CENTRE (NFPC), WASHINGTON, U.S

June 21 - The Director, Mr José Maura and Head of External Relations and Conference, Mr Thomas Liebert visited the National Pollution Funds Centre in Washington on 19 May 2017. They held a very useful meeting with Mr Grawe, Director of the Centre (pictured), during which a number of topics were discussed including ways in which the two organisations could share their experience and knowledge with each other in the future. <http://www.iopcfunds.org/>



NO NEWS FROM YOUR PART OF THE WORLD?

Members and other readers are invited to help rectify the balance of world news reporting. News stories from North America, UK, Australia, etc. are much more accessible on the internet than reports from other parts of the world and especially from non-English-speaking countries. To make it easier for readers in other parts of the world to contribute stories your editor is considering options to include links for interesting articles in other languages.

If you come across a report or an article that you think worth sharing with other members of the response community, why not send it to the editor at info@spillcontrol.org

OIL SPILLS: INLAND RESPONSE GOOD PRACTICE GUIDELINES FOR INCIDENT MANAGEMENT AND EMERGENCY RESPONSE PERSONNEL

Part 1 of a new serialised article contributed by IPIECA and IOGP



Preface

This publication is part of the IPIECA-IOGP Good Practice Guide Series which summarizes current views on good practice for a range of oil spill preparedness and response topics. The series aims to help align industry practices and activities, inform stakeholders, and serve as a communication tool to promote awareness and education. The series updates and replaces the well-established IPIECA 'Oil Spill Report Series' published between 1990 and 2008. It covers topics that are broadly applicable both to exploration and production, as well as shipping and transportation activities. The revisions are being undertaken by the IOGP-IPIECA Oil Spill Response Joint Industry Project (JIP). The JIP was established in 2011 to implement learning opportunities in respect of oil spill preparedness and response following the April 2010 well control incident in the Gulf of Mexico.

Note on good practice

'Good practice' in this context is a statement of internationally-recognized guidelines, practices and procedures that will enable the oil and gas industry to deliver acceptable health, safety and environmental performance. Good practice for a particular subject will change over time in the light of advances in technology, practical experience and scientific understanding, as well as changes in the political and social environment.

Introduction

Most large, well-known oil spills have occurred in the marine environment; however, inland spills outnumber marine spills. Many of the classic oil spill response techniques were originally developed for use in offshore and coastal spill settings. While some basic principles of oil spill response are the same no matter where oil is spilled, techniques for inland oil spill response operations require some degree of adaptation. The objective of this Good Practice Guide is to present an overview of inland oil spill response, identifying similarities to marine response and highlighting unique issues pertinent to inland oil spills.

This guide addresses the response phase of inland oil spill incidents, where actions are undertaken to ensure safety, minimize the immediate spread and threat of a spill and deploy techniques to clean-up spilled oil. Its principal focus is on spills in the aquatic environment, although some additional information on adjacent terrestrial environments is also included. It does not address the possible remediation actions which may be considered where oil has contaminated the ground.

Inland aquatic environments in this guide encompass freshwater rivers and streams, lakes and ponds, wetlands and estuarine water bodies and their associated shores and banksides.

Excluding the infrequent large oil spill events, more oil is spilled on inland habitats than on marine coastal or offshore habitats. Inland spills most frequently involve refined products, though almost half of the largest inland spills involve crude oil. In general, more inland spills originate from fixed facilities than from transportation, though pipeline breaks have caused many of the largest inland spills.

This guide begins with a description of the weathering, fate and effects of spilled oil. The socioeconomic effects of inland spills are also described, followed by a discussion of response management issues and response techniques.

Oil fate and weathering

Crude oils are composed of a large number of individual chemical compounds. Almost all of these are hydrocarbons, composed of only hydrogen and carbon. Hydrocarbons can be classified by molecular weight or carbon chain length, and the majority of hydrocarbons in crude oil contain from 5 to 35 carbon atoms.

Hydrocarbon categories include:

- 1 paraffins (alkanes)—consisting of saturated carbon chains with no double bonds;
- 1 olefins (alkenes)—consisting of carbon chains with at least one double bond;
- 1 naphthenes (cycloalkanes)—consisting of carbon rings, with up to four rings in one compound; and
- 1 aromatics—consisting of one or more unsaturated carbon rings with alternating double bonds.

The relative proportions of these chemical compounds differ between crude oils, and are responsible for the range of physical properties that crude oils exhibit. The majority of hydrocarbons in most crude oils are alkanes and cycloalkanes, and these can range from volatile liquids to non-volatile liquids or solids (waxes) depending on their size (number of carbon atoms) and the prevailing temperature. Oil products represent different oil fractions derived from refining crude oil.

The light, single-ring aromatic compounds are the most toxic compounds in oil and consist of benzene, toluene, ethylbenzene and xylenes (BTEX). Aromatics with two or more rings are called polycyclic aromatic hydrocarbons (PAHs) and many are also toxic. Examples include naphthalene (two rings), anthracene (three rings) and benzo(a)pyrene (five rings). The extremely large aromatics are called asphaltenes. These compounds can have sulphur, oxygen and nitrogen derivatives in the mixture and may also have low levels of metals.

Weathering processes

Spilled oil is affected by natural processes that transform the oil (weather) and modify its fate and behaviour. The weathering processes affecting oil in aquatic environments are summarized below.

Movement

Liquid oil spreads out over the water to form very thin slicks with an average thickness of about 0.1 mm, although these can range from as high as 1–2 mm for thick oil to as low as 0.1 μm for sheens in open waters. Low-density oils spread faster than heavier oils, which means lighter, refined products will spread faster than most crude oils. Depending on the location and spill volume, spreading may be constrained by available surface area. Wind and water flows may fragment the oil as it spreads, and fast flowing rivers may move oil downstream relatively quickly. Smaller inland water bodies result in rapid oil stranding, and their size makes it easier to locate and track oil.

Evaporation

The smaller, lighter hydrocarbons (typically with less than 12 carbon atoms) are likely to vaporize under ambient conditions. The process is temperature dependent, and large percentages of gasoline, light crude oils and light fuel oils can evaporate in the first hours and days of a spill. The heavy hydrocarbon components in crude oils and heavy fuel oils have a low potential for evaporation, so the amounts lost to evaporation during a spill can be small. Initially, in a spill with light to medium crude oils or refined products, the vapour concentrations can be so high that health and fire hazards may result. Any remaining oil after evaporation is more viscous, which can complicate response efforts.

Dissolution

Some hydrocarbons dissolve in water. However, less than 1% of crude oil will dissolve and many of the hydrocarbons that do dissolve are the light aromatics and polar compounds containing oxygen, sulphur or nitrogen. These compounds are also highly volatile and therefore tend to evaporate rather than remain in the water. The solubility of oil is greater in fresh water compared to the sea, and increases with higher concentrations of dissolved organic matter.

Natural dispersion

Wave and current energy causes the oil to form into small droplets in a water body. Most of these droplets are large enough to quickly resurface. It is therefore typical for only a small percentage of oil to remain naturally dispersed, although there have been a few cases of marine spills during major storms with very high winds and waves where virtually 100% of the spilled oil dispersed naturally. Inland lakes rarely experience these conditions.

Emulsification

Naturally dispersed oil droplets that return to the surface can trap water in the surface oil slick to form a water-in-oil emulsion. Emulsification greatly increases a spilled oil's viscosity and thereby complicates recovery efforts. Emulsified oils are also less affected by other weathering processes such as evaporation, dispersion and biodegradation. An emulsion may consist of up to 80% water, and the apparent volume of the oil pollution can increase by 4–5 times. The formation of stable (persistent) emulsions requires heavy components such as asphaltenes and resins. Many lighter refined products (gasoline and light fuel oils), therefore, will either not emulsify or will form unstable emulsions (not persistent). Emulsification is a major weathering process affecting marine spills of crude and heavy fuel oils because the mixing energy in the ocean is extremely effective in incorporating water into oil. Emulsification is less likely in fresh water, even for spills of heavier oils, because significant mixing energy often does not persist long enough to generate the stable emulsions seen at sea.

Photo-oxidation

Sunlight oxidizes oil. This process occurs with less than 1% of spilled oil and is what makes heavily weathered black oil turn greyish over time. The process makes the oxidized compounds more soluble.

Sedimentation

Oil can adhere to solids in the water. In waters with high silt content, spilled oil can bind to the suspended sediments, becoming neutrally buoyant in a water body and/or sinking to the bottom. Very fine particles, especially clays, can bind with oil and provide a platform for microbes to biodegrade the oil. Sedimentation can be significant for oil spills during flooding events when waters contain high levels of suspended solids; some spills have seen dramatic decreases in surface oil due to this process.

Biodegradation

Microbes use spilled oil as food and degrade the compounds to simpler hydrocarbons and, ultimately, to carbon dioxide and water. This process requires nutrients (primarily nitrogen and phosphorus) and oxygen. The very large hydrocarbons (such as asphaltenes) found in heavier oils degrade very slowly or not at all. Biodegradation in calm freshwater bodies with low oxygen replacement rates may cause oxygen depletion, slowing subsequent oil breakdown.

Sinking

Fresh oils are typically less dense than water, and will therefore float on the surface. However, the weathering processes tend to increase the density of the oil and lead to situations where the oil may sink. This is most likely to occur with very heavy oils, whose initial density is relatively high; sinking is also more likely in fresh water, which is less dense than seawater.

Terrestrial spills

Inland oil spills can come into contact with soils and groundwater as well as surface water bodies. On the ground surface some weathering processes, such as evaporation, are active while others, such as emulsification and dispersion, are non-existent. Spreading does occur, but the degree is highly dependent on the topography and surface roughness. The amount of biodegradation is dependent on moisture and nutrient levels. Underground spills contaminating soil and groundwater undergo little weathering. Oxygen levels are usually limiting and biodegradation proceeds slowly. The oil does adhere to the soil, but other weathering processes are virtually non-existent. This guide does not address contaminated soil and groundwater remediation.

Disclaimer; While every effort has been made to ensure the accuracy of the information contained in this publication, neither IPIECA, IOGP nor any of their members past, present or future warrants its accuracy or will, regardless of its or their negligence, assume liability for any foreseeable or unforeseeable use made of this publication. Consequently, such use is at the recipient's own risk on the basis that any use by the recipient constitutes agreement to the terms of this disclaimer. The information contained in this publication does not purport to constitute professional advice from the various content contributors and neither IPIECA, IOGP nor their members accept any responsibility whatsoever for the consequences of the use or misuse of such documentation. This document may provide guidance supplemental to the requirements of local legislation. However, nothing herein is intended to replace, amend, supersede or otherwise depart from such requirements. In the event of any conflict or contradiction between the provisions of this document and local legislation, applicable laws shall prevail.

To be continued next week

Correspondence

FLOODING CAUSED OIL SPILL AND LED TO EXPLOSION AND FIRE



June 24 - Letter from Carlos Sagrera, Member of ISCO Council for Panama

"I didn't see any news at the ISCO Newsletter concerning this incident in the Salinas Cruz Refinery of PEMEX in Mexico. It was ten days ago and the oil loss from the tank was total (the storage zone has normally 500,000 bbl. of crude) with one firefighter dead and nine workers injured. PEMEX speaks about the causes in its written communications and points to the flood and fire caused by tropical storm Calvin. Some attached Mexican links point to other human errors. They are talking now to re-

open the Refinery in the month of July. Perhaps it will be useful to mention the incident and publish the links in the coming Newsletter". *Your editor thanks Carlos for sending this and the links are given below –*

<http://www.ogj.com/articles/2017/06/fire-halts-operations-at-pemex-s-salina-cruz-refinery.html>
http://www.pemex.com/en/press_room/press_releases/Paginas/2017-055-national.aspx
http://www.pemex.com/en/press_room/press_releases/Paginas/2017-054-national.aspx
<http://www.nvnoticias.com/nota/61760/aun-sin-esclarecer-origen-de-incendio-en-refineria-de-salina-cruz-oaxaca>
<http://www.eluniversal.com.mx/articulo/estados/2017/06/14/reportan-un-incendio-en-la-refineria-de-salinas-cruz-oaxaca>
<https://laopinion.com/2017/06/14/video-impresionante-incendio-en-refineria-de-salina-cruz-oaxaca/>
<http://www.eluniversal.com.mx/articulo/estados/2017/06/19/limpian-refineria-de-salina-cruz-tras-inundacion-e-incendio>
<http://periodicoeldia.mx/2017/06/16/pide-estefan-garfias-que-pemex-explique-causas-de-incendio-en-salina-cruz-oaxaca/>

Technical support

HAZARDS TO THE ENVIRONMENT: LET'S LOOK AT CHEMICAL MANAGEMENT

This video from the Energy Institute (EI) aims to raise awareness of hazards to the environment in reference to chemical management.

This has been produced by the EI's Upstream Environmental Group for use on offshore and onshore sites as a free resource to incorporate in safety briefings.

To watch the video click on this link - <https://www.youtube.com/watch?v=odcRboCP47U>

Links for recent issues of other publications (in alphabetical order)

AMSA Aboard	News from the Australian Maritime Safety Authority	December 2016
ASME EED EHS Newsletter	News and commentary on HSE issues from George Holliday	Most recent issue
Bow Wave	Sam Ignarski's Ezine on Marine & Transport Matters	Current issue
Cedre Newsletter	News from Cedre in Brittany, France	May 2017
CROIERG Enews	Canberra & Regions Oil Industry Emergency Response Group	Current issue
EMSA Newsletter	News from the European Maritime Safety Agency	June 2017 issue
Environmental Technology Online	Environmental Monitoring, Testing & Analysis	April 2017 issue
IMO News Magazine	News from the International Maritime Organization	Summer 2017 issue
IMO Publishing News	New and forthcoming IMO publications	May-June 2017
Intertanko Weekly News	International news for the oil tanker community	June 23, 2017
JOIFF "The Catalyst"	Int'l Organisation for Industrial Hazard Management	Q2 2017 issue
Maritime Executive Magazine	Often contains articles of interest to the spill response community	May-June 2017
MOIG Newsletter	News from the Mediterranean Oil Industry Group	April 2017 issue
NOWPAP Quarterly	News from the North West Pacific Action Plan	Quarter 1, 2017 issue
Ocean Orbit	Newsletter from the International Tanker Owners Pollution Federation	May 2016
OCIMF Newsletter	News from the Oil Companies International Marine Forum	May 2017 issue
Pollution Online Newsletter	News for prevention & control professionals	June 21, 2017
Safe Seas, Clean Seas	Quarterly Newsletter from Maritime New Zealand	December 2016 issue
Sea Alarm Foundation Newsletter	Oiled wildlife Preparedness and Response news from Sea Alarm	Spring 2017 issue
Technology Innovation News Survey	News from US EPA – Contaminated Site Decontamination	March 1-31, 2017
Transport Canada Newsletter	News and articles re transport of dangerous goods in Canada	December 2016 issue
USA EPA Tech Direct	Remediation of contaminated soil and groundwater	June 1, 2017
USA EPA Tech News & Trends	Contaminated site clean-up information	Spring 2016 issue
WMU Newsletter	News from the World Maritime University	December 2016 issue

Your editor depends on regular receipt of updated links for listed publications. If these are not received, relevant entries may be discontinued

Publications

OCIMF ANNUAL REPORT FOR 2017

Grahaeme Henderson, Chairman of the Oil Companies International Marine Forum, writes – "OCIMF has supported an impressive improvement in tanker safety and environmental performance over the years, but there is still much to do." [Download the OCIMF Report](#)

Events

INTERSPILL - CALL FOR PAPERS - DUE 31 JULY 2017

Authors are requested to submit a short abstract, up to 250 words, to the committee by email, addressed to info@interspill.org

Authors are requested to confirm whether their paper is for the conference, for the poster exhibition, for the science workshops or the spill industry seminars and to indicate which stream(s) they wish their paper to be considered under. Authors will be notified of acceptance by 30 September 2017, and full papers should be received by 31 December 2017.

Upcoming events summary

COUNTRY	2017	TITLE OF EVENT	LOCATION
For more information click on Title of Event			
UK	Jan 16 – July 7	IMO Exhibition – 50 Years Gov't & Industry Co-op'n	London
IRELAND	June 26-29	OSPAR Commission 2017	Cork
GHANA	June 26-30	NOSCP Table-top Exercise	Accra
USA	June 27-28	Clean Waterways	Louisville KY
CONGO	June 27-29	Workshop on Oil Spill Response Waste Management	Pointe Noire
UK	July 3-7	IMO Marine Environment Protection Committee	London
NIGERIA	July 13-14	Marine Safety & Fisheries Protection Conference	Lagos
CHINA	July 14	6th NOWPAP DELTA Exercise	Weihai
SENEGAL	July 17-20	International Workshop on Dispersant and NEBA	Dakar
SINGAPORE	Sept. 4-6	Salvage & Wreck Asia	Singapore
NIGERIA	Sept. 5-7	National Workshop on Liability and Compensation	Abuja (TBC)
UK	Sept. 5-8	SPE Offshore Europe	Aberdeen
UK	Sept. 6-7	8th Maritime and Salvage Response	London
UK	Sept. 27-28	Contamination Expo Series 2017	London
FRANCE	Sept. 28	CEDRE Information Day – "Spills in Ports"	Paris
IVORY COAST	Nov. 6-9	GI WACAF Regional Conference	Abidjan
UAE	Nov. 13-16	Abu Dhabi Int'l Petroleum Exhibition & Conference	Abu Dhabi
UK	Nov. 29-30	11th Arctic Shipping Summit	London
USA	Dec. 5-7	Clean Gulf Conference and Exhibition	Houston, TX
	2018		
UAE	Feb 28 – Mar 1	Offshore Arabia Conference & Exhibition	Dubai
UK	March 13-15	2018 INTERSPILL Conference and Exhibition	London
UK	March 13-15	Oceanology International 2018	London
USA	June 19-21	Clean Pacific Conference and Exhibition	Portland, OR
To request posting of an event of interest to the Spill Response Community please send details to the Editor			

Legal disclaimer: Whilst ISCO takes every care to ensure that information published in this newsletter is accurate unintentional mistakes can occur. No liability for consequences of errors is accepted but, if an error is brought to our attention, a correction will be printed in a following issue of this newsletter. Products and services featured in the ISCO Newsletter and/or the ISCO website, including the International Directory of Spill Response Supplies and Services, have not been tested, approved or endorsed by ISCO. Any claims made by suppliers of products or services are solely those of the suppliers and ISCO does not accept any liability for their accuracy. It should not be assumed that views and opinions expressed in linked reports, articles and other content reflect the views of the organization. Subscription is subject to acceptance of ISCO's Terms and Conditions as published on the website www.spillcontrol.org