ISCO NEWSLETTER

The Newsletter of the International Spill Response Community

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info@spillcontrol.org http://www.spillcontrol.org

CELEBRATING THIRTY YEARS 1984 ~ 2014

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 organisation.

ISCO COMMITTEE & COUNCIL

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

The Register of ISCO Members is maintained by **Ms Mary Ann Dalgleish (**Membership Director) and the list of members is on the website at http://www.spillcontrol.org

The Executive Committee is assisted by the non-executive ISCO Council composed of the following national representatives – **Mr John Wardrop** (Australia), **Mr Namig Gandilov** (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 Psaraftis** (Greece), **Captain D. C. Sekhar** (India), **Mr Dan Arbel** (Israel), **Mr Sanjay Gandhi** (Kenya), **Mr Joe Braun** (Luxembourg), **Chief Kola Agboke** (Nigeria), **Mr Jan Allers** (Norway), **Capt. Chris Richards** (Singapore), **Mr Anton Moldan** (South Africa), **Dr Ali Saeed Al Ameri** (UAE), **Mr Kevin Miller** (UK) and **Dr Manik Sardessai** (USA).

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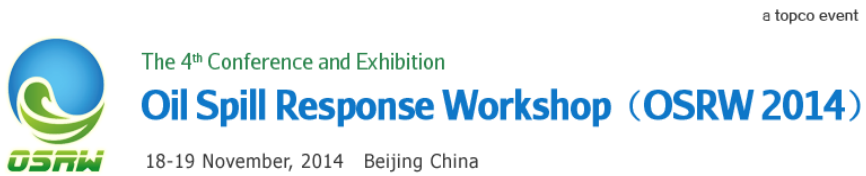

International news

DUMPED AND LOST HAZARDOUS OBJECTS ON BALTIC SEABED TO BE MAPPED

October 30 - Work to assess what potentially hazardous waste and wrecks lay beneath the surface of the Baltic Sea kick-started on 29 October 2014 in a HELCOM expert meeting in Szczecin, Poland. The product will be a one-off HELCOM thematic assessment on environmental risks of hazardous submerged objects covering contaminated wrecks, lost or dumped dangerous goods – e.g. containers – and other objects. *Hydro International* Read more [Thanks to Don Johnston of ISCO Industry Partner, DG & Hazmat Group]

PLANS FOR ANTARCTIC MARINE RESERVES FAIL AGAIN

October 31 - Two marine reserves proposed for Antarctica failed to win approval at international talks in Australia on Friday, campaigners said, adding the decision left one of the world's last untouched wildernesses vulnerable.

Australia had hoped for support for its joint French and European Union plan for a Marine Protected Area (MPA) to protect biodiversity in East Antarctic waters after it drastically reduced the size of the proposed site.

But China and Russia blocked both the East Antarctic scheme and a US-New Zealand bid for a protected zone in the Ross Sea during the annual Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) talks in Hobart.

Proposals must win the support of all 25 members of CCAMLR to succeed.Objections to the proposals last year related to the size of the planned protected areas, Australian officials said ahead of the 10-day meeting. *Terra Daily* Read more

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International news (continued)

EMSA: RESPONDING EFFECTIVELY TO CHEMICAL POLLUTION AT SEA

Being prepared and responding effectively to maritime incidents involving cargoes of hazardous and noxious (HNS) substances presents a number of challenges.

To address these challenges, EMSA held a workshop dedicated to chemical marine pollution response on 1-2 October. This workshop was geared towards experts from national administrations whose responsibilities include marine pollution response. It also targeted relevant industry representatives. Approximately 40 participants from 20 EU countries, four Regional Agreement Secretariats and 8 industry representatives were present. The workshop's main objectives were: to familiarise participants with the role and activation procedures of existing services at EU level in support of maritime chemical incident response; and, to identify and discuss the key challenges associated with HNS maritime incident response, including future challenges *EMSA Newsletter* *Editor:* Apologies for lack of advance notice of this workshop.

ITOPF 2015 R&D AWARD

Each year, over 7800 million tonnes of oil, chemicals, raw materials and finished goods are safely delivered by sea. Nevertheless, from time-to-time accidents do occur that result in pollution of the marine environment by oil or chemicals. The severity of the pollution depends upon many factors.

Continuous improvement inthe understanding of the fate and effects of these sub stances will lead to improvements in accepted 'best practice' for spill response and environmental monitoring.

ITOPF's shipowners and their Protection and Indemnity (P&I) insurers recognise the importance of nurturing good quality R&D in these areas and, for this reason, have established the annual **'ITOPF R&D Award'**. Each year up to £50,000 will be made available to fund R&D projects that make a valuable contribution to improving the knowledge and understanding of issues related to accidental marine pollution.

To qualify: The **'ITOPF R&D Award'** is open to any reputable R&D establishment or other organisation world-wide intending to fund a candidate (individual or project team) to undertake research. Applications are invited from all academic disciplines, although preference will be given to those with an applied scientific focus, such as marine biology, chemistry, ecology, physics, engineering, economics, etc.

Assessment procedure: Applications for the **'ITOPF R&D Award'** will be assessed by the ITOPF R&D Committee comprising:

- The Technical Director of ITOPF as the Committee Chair
- A well-respected external and independent member of the scientific community as the Committee Secretary
- At least one other independent, objective scientist jointly selected by the Committee Chair and Secretary
- One other member of ITOPF's technical staff

How to apply: Candidates wishing to apply for the **'ITOPF R&D Award'** should visit the ITOPF website at www.itopf.com where further information and an electronic application form is provided.

Deadline for applications: 31st December 2014

Incident reports from around the world

CANADA: DIESEL FUEL SPILL IN MAGOG, QUEBEC

October 29 - An attempted fuel heist in Magog overnight led to about a thousand litres of diesel fuel spilling onto the ground and into a nearby river.

Incident reports from around the world (continued)

Police in Magog say the incident happened at around 10 p.m. last night at the Maska paving company in Magog. The thieves managed to siphon close to 37,000 litres of diesel fuel which they stored in a stolen tanker truck.

An employee of the paving company caught them red-handed at around 1 a.m. The would-be thieves disconnected the hose and then sped off, but left the pump from the tank running, causing another 1,000 litres to spill. *CJAD News* Read more
[Thanks to Don Johnston of ISCO Industry Partner, DG & Hazmat Group]

USA: FUEL BARGE GROUNDS NEAR KODIAK, ALASKA

November 1 - The U.S. Coast Guard is responding to a barge, which grounded near Kodiak, Alaska, Saturday. The 382-foot barge DBL106 ran aground approximately two miles from Kodiak with a potential of 2.2 million gallons of fuel products aboard while being towed by the 124-foot motor vessel Bismarck Sea. The barge was successfully refloated, but Coast Guard officials have directed the vessel to anchor until a damage assessment is conducted.

Coast Guard watchstanders at the Sector Anchorage command center received a report of the grounding from Kirby Offshore Marine, the owners of the Bismarck Sea, early Saturday morning. Sector Anchorage personnel requested the launch of a C-130 Hercules airplane crew from Air Station Kodiak to provide an overflight of the area and diverted the crew of the Coast Guard Cutter Spar to the scene.

No sign of pollution was reported at the time of the grounding. Once at anchor, the vessel will be boomed off to prevent any potential pollution from spreading. A Coast Guard MH-60 Jayhawk helicopter crew from Kodiak will conduct an overflight of the area at first light and Coast Guard inspection personnel will deploy to the scene to examine the barge.

This is a separate barge incident to the 134-foot barge still drifting in the Beaufort Sea after it broke free from its tow in Canadian waters during a severe storm over a week ago. *The Maritime Executive* Read more

INDONESIA: OIL SPILL CONTAMINATES BENGAWAN SOLO RIVER

November 4 - Oil spill from an old exploration well in Kedewan district in Bojonogoro, East Java, is suspected to have spread and contaminated Bengawan Solo river, and Bojonegoro's Environmental Agency (BLH) has moved to investigate by obtaining numerous samples from Bengawan Solo's tributaries on which slicks have been reported.

"We strongly suspect that the oil spill originated from an old exploration well," said the Head of Bojonegoro's BLH, Tedjo Sukmono on Monday, November 2, 2014.

The old exploration wells are located in a plateau in Kedewan district, which is located around 60 kilometers southwest of Bojonegoro. The crude oil is suspected to have travelled downstream through Kedungganggang river - a tributary of Bengawan Solo - that passes through the village of Batokan in Kasiman district, Bojonegoro. *Tempo.Co* Read more

USA: DIESEL FUEL LEAKS INTO SOUTH BRISTOL'S POORHOUSE COVE

Photo: Workers secure absorbent booms in Poorhouse Cove in South Bristol Wednesday, Nov. 5. The booms prevent the spread of 100 gallons of diesel fuel in the water. (Photo courtesy Paul Leeman Jr.)

November 5 - A leak in the fuel return line of a diesel generator was the cause of more than 100 gallons of fuel leaking into Poorhouse Cove in South Bristol Wednesday, Nov. 5.

"The Fosters had been without power since Sunday because of the storm, and they had their diesel generator on since then," South Bristol Fire Chief Mark Carrothers said. "The generator's return line leaked," Carrothers said. "The leak saturated the floor of the house, and the saturation got into their drain, which empties into the cove. We're estimating over 100 gallons of fuel is lost." *The Lincoln County News* Read more

CANADA: FREIGHT TRAIN CARRYING DIESEL PLUNGES INTO RIVER IN QUEBEC

November 6 - Part of a freight train carrying diesel fuel plunged into a Quebec river on Thursday, leaving its conductor missing and a silvery layer of oil floating on the water. The train, owned by Iron Ore Company of Canada, was made up of three locomotives and 240 empty cars.

The lead locomotive had a capacity of 15,000 litres and ended up fully submerged in the Moisie River on the remote North Shore, said IOC spokeswoman Claudine Gagnon. *OHS Canada* Read more

Other news reports from around the world

NEWS REPORTS FROM CHILE

October 28 - Chilean Oil Spill Devastates Local Fisheries and Wildlife

It's a grim, but familiar, picture. Waves of black sludge lap at the sandy shore, while seabirds coated in oil struggle to lift their wings. On September 24, more than 5,800 gallons of oil spilled into Quintero Bay, Chile when intake hoses broke free from an oil tanker at the Monobuoy Terminal.

The devastation is tragic. Rescuers have already captured more than 50 birds -- including penguins, sea gulls, pelicans, blanquillo birds, hualas, cormorants, and coots -- many of which have already died from ingesting oil. Countless numbers of marine creatures that rescuers cannot reach are still dying. *Huffington Post* Read more [Thanks to Don Johnston of ISCO Industry Partner, DG & Hazmat Group]

NEWS REPORTS FROM FRANCE

November 6 - POLLUPROOF project trials at Cedre

From 24th to 31st October 2014, trials were conducted in Cedre's outdoor basin as part of the ANR-funded POLLU*PROOF* project (ANR-13-ECOT-007). POLLU*PROOF* aims to consolidate proof of marine chemical pollution by airborne radar and optical means.

To do so, 6 chemicals, chosen based on the quantities shipped (rapeseed oil, fatty acid methyl ester, toluene, heptane, xylene, methanol) were released in turn into the water basin. The aim was to assess the capacity of 5 optical sensors to detect them at the water surface. Some of these sensors were installed on a 12-metre high elevating platform while others were placed around the basin. Project partners ONERA, DRDC (Defence Research and Development Canada) and Transport Canada were present to operate the sensors. These trials also provided the opportunity to assess the response of these sensors to different oil fractions (benzene, unleaded petrol, kerosene, marine diesel and light crude) and to highly reactive chemicals (diethyl ether and propanol). *CEDRE Newsletter* Read more

NEWS REPORTS FROM GERMANY

November 6 - EGEMP workshop and meeting

On 13th and 14th October, the European Group of Experts on remote sensing Monitoring of marine Pollution (EGEMP) held a workshop and its plenary meeting on the premises of the German Federal Institute of Hydrology (Bundesanstalt für Gewässerkunde) in Koblenz, Germany. The workshop gave rise to productive discussions between European experts in remote sensing on the research and development work in progress which should ultimately improve the capacities of current systems and extend their scope of application to new pollutants and to wider ranging conditions, notably weather conditions. The members-only meeting of the group of experts held following the open workshop provided the opportunity to review the results obtained by the group during its ten years of existence. A publication is currently under preparation to review the progress made. The group is then to retreat into a dormant state pending the emergence of new, clearly expressed needs in terms of remote sensing. *CEDRE Newsletter* Read more

NEWS REPORTS FROM INDIA

November 2 - 30 years after the Bhopal gas tragedy

According to a January 2013 report of the Indian Institute of Toxicology Research, Lucknow, the soil and groundwater within 3.5 kilometres from the UCC factory site is contaminated with cancer- and birth defect-causing chemicals. “The contamination of soil and groundwater actually predates the disaster,” says activist Satinath Sarangi, who has fought for the cause of gas leak survivors.

“From 1969 to 1977, Union Carbide used to dump its toxic wastes at 21 spots, most of them unlined pits, inside the 68-acre factory premises. Despite 17 agencies, including government and non-governmental organisations, carrying out studies over the past two decades, a comprehensive plan for remediation of the soil and groundwater has not been prepared,” he says. *The Hindu* Read more

Other news reports from around the world (continued)

NEWS REPORTS FROM IRAQ

November 6 - More Than 600 Reported Chemical Exposure in Iraq, Pentagon Acknowledges

More than 600 American service members since 2003 have reported to military medical staff members that they believe they were exposed to chemical warfare agents in Iraq, but the Pentagon failed to recognize the scope of the reported cases or offer adequate tracking and treatment to those who may have been injured, defense officials say. *The New York Times* Read more

NEWS REPORTS FROM KOREA

November 5 - Refining oil spill preparedness

IMO's Colleen O'Hagan is participating in a training program on oil spill preparedness, response and assessment in Yeosu, Republic of Korea (3-7 Nov). Funded by the Asia-Pacific Economic Cooperation (APEC), the program is being attended by government representatives from a number of APEC countries and run in collaboration between the Ministry of Oceans and Fisheries of the Republic of Korea and the Korea Marine Environment Management Cooperation (KOEM). ITOPF News

NEWS REPORTS FROM PHILIPPINES

November 6 - Philippines National Contingency Planning Workshop

Nicky Cariglia of ITOPF recently travelled to Manila to attend a workshop organised under the auspices of the GI SEA (Global Initiative for South East Asia) programme, which was launched in 2013 and includes all 10 ASEAN (Association of South East Asian Nations) Members. The overall aim of GI SEA is to improve regional oil spill response capability in South East Asia by assisting in the development of national capacities in oil spill preparedness and response through industry and government cooperation.

This was the first national workshop under GI SEA, and its primary target was to assist and support the Philippine Coast Guard (PCG) in the revision of their National Oil Spill Contingency Plan (NOSCP), which is currently in progress. One of the aims of the workshop was to provide a forum through which dialogue between industry and the authorities was encouraged, and by which key needs and lessons learned could be identified and incorporated into the new NOSCP. *ITOPF News* Read more

NEWS REPORTS FROM USA

October 31 - Seabird losses from Deepwater Horizon oil spill estimated at hundreds of thousands

The 2010 *Deepwater Horizon* oil spill is often cited as the worst environmental disaster in U.S. history—yet its impacts on the marine life of the Gulf of Mexico have gone largely undetermined. Now, new findings published this month in *Marine Ecology Progress Series* estimate that the number of seabirds lost as a result of the spill may number well into the hundreds of thousands. *ScienceMag.org* Read more

October 31 - New Oil Train Safety Rules Divide Rail Industry

Many railroad companies want more time to retrofit cars in the U.S. and Canada, but some are forging ahead.

The Railway Supply Institute—a trade organization that represents rail suppliers—has asked DOT to allow legacy cars in the oil and ethanol fleet to remain on the rails until 2020.

Thomas Simpson, the institute's president, said a survey of rail maintenance and repair shops found that only 15,000 of the roughly 50,000 non-jacketed legacy tank cars in the crude oil and ethanol fleet can be modified by the proposed 2017 deadline. *National Geographic* Read more

November 3 - Enbridge estimates oil spill clean-up at $1.2 billion

Enbridge estimates the total cost of cleanup from the 2010 oil spill into the Kalamazoo River at $1.21 billion.This is an increase of $85.9 million compared to Enbridge's estimate in December 2013.

Other news reports from around the world (continued)

NEWS REPORTS FROM USA (Continued)

The $1.21 billion was split into three categories: $551.6 million for response personnel and equipment, $227 million for environmental consultants, $429.4 million in professional, regulatory, and other. *Wood TV* Read more

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November 3 - Sunoco's Louisiana Oil Spill Revised Up to 189,000 Gallons

Oil is flowing again through a 1,000-mile pipeline that broke in northwest Louisiana nearly four weeks ago.

Sunoco Logistics Partners LP spokesman Jeff Shields tells The Times of Shreveport that the total spill is now estimated at 189,000 gallons. That's up 21,000 gallons from the previous estimate. Sheilds says the partnership got a more accurate estimate after refilling the Mid-Valley Pipeline. *Inside Climate News* Read more

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November 5 - UD ships ready to respond to Delaware-area oil spills

Ten years ago this month, the tanker Athos I began leaking its cargo of Venezuelan crude oil into the Delaware River. The hull of the Cyprus-based ship had been punctured by a submerged metal object at the CITGO dock in Paulsboro, New Jersey.

The nonprofit Delaware River and Bay Cooperative was created in response to the 1975 incident involving the Corinthos, an Algerian ship containing 300,000 barrels of crude oil. The ship caught fire and, eventually, leaked thousands of gallons of oil into the waterway at Marcus Hook, Pennsylvania.

Though the incident seriously affected the Delaware River ecosystem, its impact may have been lessened because two oil spill response ships were positioned nearby. One of the ships called to respond to the Athos spill 10 years ago was the DELRIVER, an oil spill recovery vessel based in Lewes at the University of Delaware dock on the canal.

Despite the fact that oil spills in the River and Bay are not common, the crew maintains readiness by conducting training exercises in the Bay. “If we get called, we’ll be ready,” Bossert said on a recent tour of the ship, which is moored adjacent to the University of Delaware’s Adrian S. Hooper Building and across from the College of Earth, Ocean and Environment’s Hugh R. Sharp Campus on Pilottown Road in Lewes. *Delaware Online* Read more

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November 6 - Where Do Fracking Fluids Go? Scientists Create the First Detector

Despite the concerns about wastewater from hydraulic fracturing, it can be difficult to keep track of where the drilling fluids end up. Now a team of researchers claims to have figured out how to trace leaks and spills of fracking fluids—and even detect their presence in treated water.

The method, detailed in a study published in the journal *Environmental Science & Technology*, relies on identifying a specific combination of geochemical characteristics unique to fracking wastewater. “There’s a particular chemical signature we look for,” explains Nathaniel Warner, postdoctoral fellow at Dartmouth College and lead author of the study. That signature is independent of ingredients that make up fracking fluids, which vary and are often proprietary. Instead, it relies on elements that merge with the fracking fluids underground. *Bloomberg BusinessWeek* Read more

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November 7 - Safe water advocates file testimony in investigation to WVAW, chemical spill

Advocates for a Safe Water System filed expert testimony at the Public Service Commission Nov. 6 in the Commission's ongoing investigation of West Virginia American Water's response to the Freedom Industries chemical spill Read the testimony HERE.

Advocates' expert witness, Fred Stottlemyer, testified that the utility's decision in 2004 to remove upstream monitoring and chemical testing equipment from its Kanawha Valley Treatment Plant limited its ability to respond effectively to the spill. *The State Journal* Read more

People in the news

ALEX VANDUSEN JOINS OIL COMPANIES INTERNATIONAL MARINE FORUM (OCIMF)

News received from OCIMF: We asked our new Technical Advisor, Offshore, Alex VanDusen to tell us a little bit about himself - “I started my maritime career in 1999 when I joined the U.S. Coast Guard. While in the Coast Guard I worked in several different departments including Port State and Domestic Vessel inspection, Waterfront Facilities and Incident Management Division

“I started working for Chevron in 2007 in Marine Assurance department dealing with Tug, Barge and Tank ship vetting. Before being seconded to OCIMF I work as an Upstream Marine Authority, which provides marine risk management advice and support to upstream marine operations. *OCIMF News* Read more

People in the news (continued)

PAULINE MARCHAND JOINS ITOPF AS SENIOR CLAIMS COORDINATOR

News received from ITOPF - ITOPF welcomes Ms Pauline Marchand joining us as Senior Claims Coordinator to work with Tim Wadsworth and our technical team to coordinate the claims process across ITOPF. Pauline has a background in law having received her degree and Licence in General Law from the University of Lyon in 2007, and then three Master's degrees in International Law (2008); Business Law (2009) and Law of Maritime Spaces and Activities (2010).

She was previously employed by the Secretariat of the International Group of P&I Clubs (IG). Her expertise in maritime pollution issues comes from her active involvement in the Pollution Sub-Committee/Vessel Response Plan Working Group of the IG, and her previous work experience at Cedre and Natural England. *ITOPF* Read more

Obituary

DEATH OF ADMIRAL GAGLIARDI, HONORARY PRESIDENT OF CEDRE

Received from CEDRE – "It is with great sadness that we inform you of the death of Vice-Admiral Claude Gagliardi, President of Cedre from 1987 to 1994. He was a member of our Board of Governors as President of the "Mission Interministérielle de la Mer". Having entered the Navy in 1946, he culminated his career as Commander in Chief for the Mediterranean and Maritime Prefect of the 3rd Region (1983-1987). Cedre's "veterans" remember him as a warm-hearted man who worked proactively for the development of our organisation".

Correspondence

RESPONSE TO APPEAL FOR INFORMATION IN LAST WEEK'S NEWSLETTER

ISCO Newsletter 456: In ISCO News

Regarding the request for information on products from the Oil Spill Training Company, the only Oil Spill Response Tool currently available, due to ownership by the Receivers, is the Waste Management Calculator software and the accompanying 2009 report that can be downloaded free of charge at
http://www.arctic-council.org/eppr/completed-work/oil-and-gas-products/eppr-waste-management-report/

A range of manuals and materials related to Shoreline Assessment (SCAT) techniques can be found at
http://www.shorelinescat.com/

Ed Owens, Owens Coastal Consultants Ltd.
#205, 755 Winslow Way East
Bainbridge Island, WA 98110, USA

ISCO News

NEW ADDITIONS TO INFORMATION ON OIL SPILL RESPONSE PAGE OF TECHNICAL AND REFERENCE SECTION OF ISCO WEBSITE

Your Secretary has written to thank Ed Owens for the information provided (see Correspondence above) and can now confirm that the links for downloading the Waste Management Calculator and information on Shoreline Assessment (SCAT) Techniques have been posted in the Oil Spill Response page of the Technical and Reference Section in the Members' Area of the ISCO website.

There are now more than 125 oil spill technical reference documents available on the site.

NEW ONLINE JOINING FORM MAKES IT FASTER AND EASIER TO BECOME A MEMBER OF ISCO

The new joining form at http://www.spillcontrol.org/2013-02-05-10-50-47/membership-application can be completed on line and sent in by clicking the SUBMIT button.

Are you / Is your company or organisation eligible for ISCO membership ? You can check at http://www.spillcontrol.org/2013-02-05-10-50-47/who-can-join

You can review the different Classes of ISCO Membership that are available at http://www.spillcontrol.org/2013-02-05-10-50-47/classes-of-members

ISCO WELCOMES NEW MEMBERS

ISCO is pleased to welcome new members that have recently joined the organisation.

New Corporate Members

Polestar Maritime Ltd. based in Mumbai, India
AES Response Operations LLC. located in Anchorage, Alaska, USA.
PT Gurita Samudera, based in Jakarta, Indonesia

New Individual Members

Mark Shepherd, Incident and Crisis Manager, Agip KCO, Atyrau, Republic of Kazakhstan

Contributed article

ENVIRONMENTAL EFFECTS MODEL

A Short Article contributed by Tony Rodolakis, Department Manager – Risk Assessment & Natural Resources AMEC Environment & Infrastructure (tony.rodolakis@amec.com) November 7, 2014

New oil pipeline and terminal projects frequently run into political road blocks because of public concerns over potential short and long term impacts to rivers or shorelines if a spill were to occur.

An **Environmental Effects Model** is a useful tool that can scientifically and objectively quantify potential impacts, aid in communicating risks to the public, and diminishing public opposition.

A well developed and executed Environmental Risk Model can take advantage of the current science and best practices to impartially guide public discourse. In addition, this tool can help plan a better spill response by identifying where and when the most damage could occur, even before a release happens, helping to control short and long term project costs.

The Environmental Effects Model can be performed as part the Environmental Impact Statement.

An Environmental Effects Model is comprised of these three steps:

Step 1) Run a **mass balance** model to estimate how hydrocarbons will partition into the air, water column, and sediment. A good mass balance model will estimate hydrocarbon concentrations at several locations downstream, ranging from a few hundred feet to several miles. It is also important to model concentrations at each point along a time series spanning, days, months, and years to account for the effects of time and weathering.

Step 2) Model how predicted concentrations move through the **food chain**. An experienced risk assessor or toxicologist will be able to take the output from the Mass Balance model and develop Food Chain Models for each location and time series. Food Chain Models estimate exposure concentrations and doses and to aquatic plants, invertebrates, fish, birds, and mammals of interest that inhabit the waterbody.

Step 3) Perform a **toxicity assessment** by comparing results of the food chain models to toxicity values to quantify impacts to plants and wildlife over distance and time. These models can also be adapted to assess risk to people that consume wild plants, fish, and game, especially to populations that depend on or enjoy traditional tribal hunting and fishing and recreation.

A great many factors influence the outcome of the Environmental Effects Model, including the location of the spill, whether the hydrocarbons are released to land or directly to a watercourse, the size of the watercourse, slope and flow volumes, river bed substrate, the amount of suspended particulates in the water, environmental conditions (such as time of year, temperature, and wind speeds, precipitations, etc.), the types of shoreline soils and vegetative cover, degree of weathering, aquatic community, native plants and wildlife, and most significantly, the type and volume of hydrocarbon released.

The Environmental Effects Model will need to take these factors into account in order to withstand public, technical, and legal scrutiny.

A properly executed Environmental Effects Model can help move infrastructure projects forward by providing a better understanding of risks to people and the environment.

A better understanding allows for better planning. And better planning, in turn, reduces public opposition, lowers costs associated with public opposition, and helps control potential response costs for the operating company down the road.

BITUMENS AND DILUTED BITUMENS FROM WESTERN CANADIAN OIL SANDS: CHAPTER 1

A short series of articles on Bitumens and Diluted Bitumens from Western Canadian Oil Sands contributed by Dr Merv Fingas of Spill Science, Edmonton, Alberta, Canada T6W 1J6 fingasmerv@shaw.ca

Merv Fingas MSc PhD worked for more than 35 years in the field of oil spill technology at Environment Canada's Environmental Technology Center in Ottawa, Ontario. As head of the Emergencies Science Division at the Centre, he conducted and managed research and development projects. He is currently working independently in Alberta. Dr Fingas is the Member of ISCO Council for Canada.

Bitumens and Diluted Bitumens from Western Canadian Oil Sands

This serial will cover the topic of bitumen products such as from the Canadian Oil Sands and diluted bitumen products (Dilbit and others). This is the first of nine issues by Dr. Merv Fingas, ISCO member for Canada.

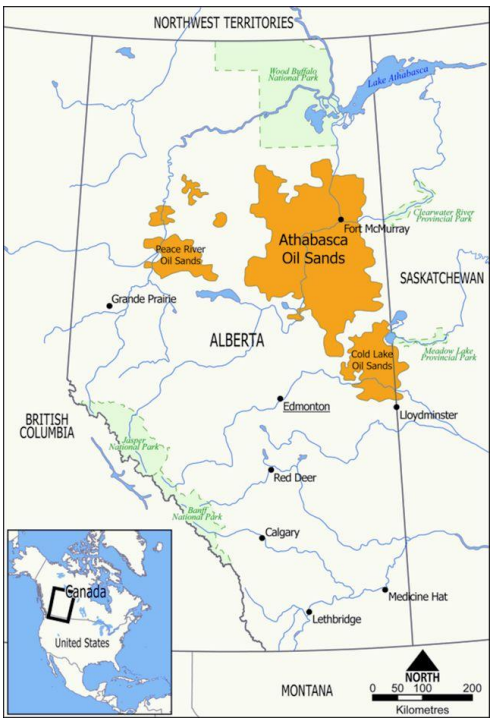
Summary

This series is a summary of several physical parameters and the spill behavior of diluted bitumens and other bitumen products. There are three basic types of diluted bitumen based on the diluents used to lower the bitumen viscosity. The most typical type is diluted with various condensates and these are called Dilbits, alternatively there are some diluted with naphtha. A newer type that is emerging is diluted with C4 or a butanes mixture (sometimes including C5 or a pentanes mixture), often along with condensates. Synthetic crude is sometimes used as a diluent and this type is called Synbit. Other variants on these include Railbit, similar to Dilbit but diluted half as much and Neatbit, which is not diluted at all. Each of these bitumen products has different properties initially when spilled, however with time, generally revert to the properties of the starting bitumen except for Synbit which tends to weather much less. The properties of the starting bitumens vary widely, as do the diluents, resulting in highly variable products with highly variable behaviors.

Definitions

Bitumen – heavy oil from oil sands
Condensate – a light oil product typically produced from a gas well and used as a diluent for transporting bitumen products
Dilbit – diluted bitumen with about 30% diluent, typically transported by pipeline
Dilsynbit – diluted bitumen with synthetic crude and another diluent – usually condensate
Diluent – traditionally condensate but could be a variety of materials
Neatbit – undiluted bitumen, if shipped, would be shipped by heated rail tank cars
Railbit – diluted bitumen with about 15% diluent, typically shipped by rail tank car
Synbit – bitumen diluted with synthetic crude
Dilsynbit – diluted bitumen with synthetic crude and another diluent – usually condensate

1.1 Introduction



This series deals with products deriving from Canada's oil sands, the majority of which are located in Alberta. Figure 1 shows the location of these oil sands.

Figure 1 *Location of the three major Oil Sands deposits*

These oil sands cover over an area about twice the area of Florida and are the third largest oil deposit in the world.

The Alberta oil sands have been produced for about 40 years. More than 25 companies now producing at more than 7 sites – about 3 new sites added per year (about $ 50 billion construction projects are underway now).

There is variance in production methods and in refining methods, therefore the bitumen produced is highly variable in properties. Bitumen is typically marketed as a refined product (Synthetic crude) or as a diluted product (Dilbit).

1.2 Background

The objective of this paper is to provide countermeasures and environmental prediction information on the three types of diluted bitumen.

Because of the high variability of each of the products, there is a high variability in behavior; this becomes very important to dealing with the products once spilled.

Diluted bitumens can be divided into four classes dependent on the diluent:

- Standard Dilbit, if the diluent is a gas condensate,
- Synbit, if the diluent is a synthetic crude,
- Lightened Dilbit, if the diluent is a gas condensate with added C4 and/or C5 diluents, herein called C4/C5 enhanced Dilbit, or
- Dilbit diluted with a synthetic naphtha.

Synbits are sometimes modified by the addition of a gas condensate to meet pipeline specifications and these are alternatively called Dilsynbits.

The dilution of bitumen is governed by pipeline specifications which are in turn governed by pumping and pipe considerations. The most common specification for pipeline inputs is a maximum of 940 kg/m3 (0.94 g/mL) density and 350 cSt (mPa.s) viscosity (NRC, 2013).

1.3 A Summary of Oil Composition and Behavior

Petroleum oils, including bitumens, are mixtures of hydrocarbon compounds ranging from smaller, volatile compounds to very large, non-volatile compounds (ESTC, 2014; AOSTA, 1984; NRC, 2013). This mixture of compounds varies according to the geological formation of the area in which the oil is found and strongly influences the properties of the oil. Petroleum products such as gasoline or diesel fuel are mixtures of fewer compounds and thus their properties are more specific and less variable. Hydrocarbon compounds are composed of hydrogen and carbon, which are therefore the main elements in oils. Oils also contain varying amounts of sulphur, nitrogen, oxygen, and sometimes mineral salts, as well as trace metals such as nickel, vanadium, and chromium. One thing that must be stressed about petroleum, especially crude oils and bitumens, is that they are highly varied products in terms of composition. Composition varies extensively between batches and times of production. This results in a corresponding variability in properties and behavior.

In general, the hydrocarbons found in oils are characterized by their structure. The hydrocarbon structures found in oil are saturates, aromatics, and polar compounds. The saturate group of components in oils consists primarily of alkanes, which are compounds of hydrogen and carbon with the maximum number of hydrogen atoms around each carbon. Thus, the term 'saturate' is used because the carbons are ‘saturated’ with hydrogen. Larger saturate compounds are often referred to as ‘waxes’. The aromatic compounds include at least one benzene ring of six carbons. Three double carbon-to-carbon bonds float around the ring and add stability. Because of this stability, benzene rings are very persistent and can have toxic effects on the environment.

The most common smaller and more volatile compounds found in oil are often referred to as BTEX, or benzene, toluene, ethyl-benzene, and xylenes. Polyaromatic hydrocarbons or PAHs are compounds consisting of at least two benzene rings.

Polar compounds are those that have a significant molecular charge as a result of bonding with compounds such as sulphur, nitrogen, or oxygen. The 'polarity' or charge that the molecule carries results in behavior that may be different from that of un-polarized compounds. In the petroleum industry, the smallest polar compounds are called 'resins', which are largely responsible for oil adhesion. The larger polar compounds are called 'asphaltenes' and they often make up the largest percentage of the asphalt commonly used for road construction. Asphaltenes often consist of very large molecules and, if in abundance in an oil, they have a significant effect on oil behavior. Bitumen contains significant but varying amounts of asphaltenes.

References:

AOSTA, The Thermodynamic and Transport Properties of Heavy Oils and Bitumen, AOSTA - Alberta Oil Sands Authority, 1984

ESTC (Environmental Technology Centre), World Catalogue of Oil Properties, WWW.ETC-CTE.ec.gc.ca, 2014.

NRC, TRB Special Report 311: Effects of Diluted Bitumen on Crude Oil Transmission Pipelines, The National Academies Press, Washington, DC, 2013

Events

CRUDE BY RAIL CANADA: TANK CAR AND RAILROAD SAFETY SUMMIT 2014

December 9-10, 2014 - Calgary, Canada - With only 14,000 tank cars meeting the proposed rail car safety standards and 1.7 million b/d of additional crude oil supplies from Western Canada forecast to be available by 2020, there are obvious needs for investment and expansion to comply with new regulations to ensure increasing amounts of product can be transported.

"ENSURING SAFETY WHILE MITIGATING THE OPERATIONAL AND COST IMPACT OF COMPLIANCE"

The key for crude by rail transporters now is to make sure safety is maintained and requirements met, while mitigating the operational and cost impact of compliance. More info

Events (continued)

CLEAN GULF 2014 – 2-4 DECEMBER 2014, SAN ANTONIO, TEXAS, USA

Pricing increases after 11/14/2014 - Register today and join us at the biggest reunion in North America for oil spill response professionals! Over 2,000 attendees are set to converge from December 2-4, 2014, in San Antonio, Texas, for the CLEAN GULF Conference & Exhibition. Key professionals and decision makers from throughout the Gulf Coast and beyond will come together to discuss the latest trends and best practices in response operations.

Attendees will walk away with viable solutions they can incorporate to safely produce and transport unconventional and conventional oil and effectively respond when a spill occurs. In addition to the conference sessions, the exhibit floor features more than 200 companies ready to assist you with finding new solutions and technologies that will work best for your organization.

The CLEAN GULF conference is programmed by industry leaders, and is designed to provide you with best practices and lessons learned in response operations. Meet with old friends, discuss best practices, and walk away with solutions on how to help you better prepare, prevent and respond to a spill. In addition to the conference sessions, CLEAN GULF has an exhibit floor featuring over 200 companies displaying the latest technologies and products for the industry. **Register today!**

View the Conference Agenda Clean Gulf Home Page

17TH ANNUAL SALVAGE & WRECK REMOVAL CONFERENCE – LONDON, 10-11 DECEMBER 2014

Read the 2014 **Salvage & Wreck Conference agenda** here. This year features a packed programme on the latest salvage and wreck removal cases and legal changes affecting the industry.

4 panel discussions on insurance risk, the decline of LOF, the role of authorities and ports of refuge and 5 operational case studies on the Costa Concordia, Maritime Maisie, MV Danio, Emma Maersk and WWII RFA Darkdale

Plus separately bookable - Salvage and Wreck of Mega Vessels Workshop: Insight into safety, design and salvage and wreck solutions of mega vessels. More info

25TH ANNUAL NO SPILLS CONFERENCE - MICHIGAN, USA, JANUARY 5, 2015.

25th Anniversary of No-Spills - "Quarter of a Century of Great Lakes Protection" More info

Links for recent issues of other publications

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	October 2014
The Essential Hazmat News	Alliance of Hazardous Materials Professionals	September 29 issue
USA EPA Tech Direct	Remediation of contaminated soil and groundwater	November 1 issue
USA EPA Tech News & Trends	Contaminated site clean-up information	Summer 2014 issue
Technology Innovation News Survey	From US EPA - Contaminated site decontamination	September 16-30 2014
Intertanko Weekly News	International news for the oil tanker community	No 45 2014
CROIERG Enews	Canberra & Regions Oil Industry Emergency Response Group	October 2014 issue
IMO Publlshing News	New and forthcoming IMO publications	October 2014
IMO News Magazine	News from the International Maritime Organization	No 1, 2014
Pollution Online Newsletter	News for prevention & control professionals	November 5 issue
EMSA Newsletter	News from the European Maritime Safety Agency	November 2014 issue
JOIFF "The Catalyst"	Int'l Organisation for Industrial Hazard Management	October 2014 issue
Environmental Technology Online	Environmental Monitoring, Testing & Analysis	September 2014 issue
OCIMF Newsletter	News from the Oil Companies International Marine Forum	October 2014 issue
IPIECA eNews	Int'l Petroleum Industry Environmental Conservation Assoc'n	February 2014 issue
WMU Newsletter	From the World Maritime University in Malmo, Sweden	May 2014 issue
AMSA Aboard	News from the Australian Maritime Safety Authority	May 2014 issue
Sea Alarm Foundation Newsletter	News from the Sea Alarm Wildlife Protection Organisation	Summer 2014 issue
Regenesis Remediation News	Case studies, articles and upcoming events in Europe	Summer 2014 issue

Training

USA: OIL SPILL RESPONSE STRATEGIES & TACTICS TRAINING

With the emphasis on practical experience in full-scale oil recovery operations in the Ohmsett tank, you can increase your proficiency using boom and skimmers while practicing removing spilled oil. The combined classroom/tank exercise training provides response teams the skills to work more safely, operate more effectively, and make better decisions in the field.

Training (continued)

The course is presented in partnership with Texas A&M National Spill Control School (NSCS). At the completion of the course, you will receive an NSCS Certificate of Completion.

Course Date: April 7-10, 2015 Register: www.ohmsett.com/registration.html The cost is $1,270.00 per person. Space is limited to 20 students. For more information call 732.866.7286 or email scunneff@ohmsettnj.com More info at http://www.ohmsett.com/

MARINE POLLUTION PREVENTION AND MANAGEMENT – DISTANCE LEARNING TRAINING COURSE

This crucial part-time distance learning programme from Lloyds Marine Academy delivers current, comprehensive knowledge of the regulatory framework governing marine pollution, including applicable regulations, compliance requirements and related management strategies, all broken down into six easy to study modules. Part-time distance learning over 12 weeks. Commences: 18th February 2015. More info

EUROPE: SAFESEANET: FOCUSING ON THE INCIDENT REPORT FRAMEWORK

On 23 October, EMSA hosted a training course on the SafeSeaNet application for EU marine pollution response experts with the goal to present how the system can support both marine environment protection and the initial response operations in case of a pollution incident. *EMSA Newsletter* Read more [Editor: Apologies for omission of advance information]

Contracts and Tenders

USA: BAA FOR MITIGATION OF OIL IN THE WATER COLUMN

Department of Homeland Security, U.S. Coast Guard Research and Development Center (RDC).
Federal Business Opportunities, FBO-4725, Solicitation HSCG32-14-R-R00021, 2014

This Broad Agency Announcement pertains to a challenge faced by the Coast Guard: the inability to determine the location of subsurface oil plumes in near-real time, which inhibits timely decisions to protect the environment, water intakes, and commercial facilities. Other issues include poor visibility in deeper waters, difficulty in tracking oil movements in fast-moving currents, and an inability to discover very low levels of oil or dispersed oil at all depths. Two prototype detection systems have been developed and tested for their feasibility and performance, and RDC's focus now shifts to the mitigation phase as it seeks a reliable in situ technology, technique, or strategy that can remove submerged oil or mitigate the adverse impact of any type of oil submerged in the water column of fast-moving waters located in riverine or near-shore environments in depths down to 200 ft. Prior to proposal submittal, offerors have the opportunity to submit a White Paper as an abbreviated version of a proposal. White papers are due by 2:00 pm ET, November 13, 2014, and the technical proposal and a separate cost/price proposal are due by 2:00 pm ET, January 15, 2015. https://www.fbo.gov/spg/DHS/USCG/USCGRDC/HSCG32-14-R-R00021/listing.html

USA: ENVIRONMENTAL ASSESSMENT, REMEDIATION AND EMERGENCY RESPONSE SERVICES

Defense Logistics Agency, Fort Belvoir, VA.
Federal Business Opportunities, FBO-4724, Solicitation SPE600-15-R-0502, 2014

Responses to this notice shall determine if sufficient competition exists to set aside part or all of the procurement for small businesses. The Defense Logistics Agency (DLA) seeks small businesses capable and interested in performing environmental assessment, remediation, and emergency response services at two DLA Energy Fuel Supply Point locations: Mitchell Field, Maine, and Newington, New Hampshire. For NAICS code 562910, the small business size standard is 500 employees. The requirement will be issued via one solicitation from which individual firm-fixed-price, performance-based contract awards (one per location) are anticipated as five-year contracts with six one-month extensions, beginning on or about November 1, 2015. Submit only one response (10-page limit) per company by 3:00 pm ET, December 1, 2014. https://www.fbo.gov/spg/DLA/J3/DESC/SPE600-15-R-0502/listing.html

Company news

UPDATED ADDRESS FOR UK SPILL ASSOCIATION -

UK Spill Association, Chiltlee Manor, Haslemere Road, Liphook, GU30 7AZ UK
T 0845 625 9890 M 07793 649643 E info@ukspill.org

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