



ISCO NEWSLETTER

The Newsletter of the International Spill Response Community
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News

MANAGEMENT TEAM CHANGES AT IMO SECRETARIAT



January 3 - After taking office on 1 January 2012, the IMO Secretary-General Mr. Koji Sekimizu today announced a number of changes in the structure of the IMO Secretariat.

Mr. Sekimizu said: "The biggest challenge I see in the coming years, in terms of management of the Organization, is how to improve the 'delivery mechanism' in the Secretariat to address the demanding issues we face, such as anti-piracy measures, the introduction of the mandatory Member State Audit Scheme and our ever-increasing workload. To address this will require effective human resource deployment and redeployment, the creation of new ways of handling our work and improvements to our working methods. It will also require close co-operation between the Secretariat and Member Governments."

In order to meet the future challenges, Mr. Sekimizu transferred Assistant Secretary-General, Mr. Andrew Winbow, from the Administrative Division to the Maritime Safety Division, as its Director. Mr. Sekimizu further transferred Mr. Jo Espinoza-Ferrey from the Marine Environment Division to head the Administrative Division as its Director, and consequentially promoted Mr. Stefan Micallef to the post of Director of the Marine Environment Division.



The IMO Secretariat's new senior management team

News (continued)

To ensure that the Organization makes further progress dealing with piracy, Mr. Sekimizu appointed Mr. Hartmut Hesse as Special Representative of the Secretary-General for Maritime Security and Anti-Piracy Programmes. Mr. Hesse will be taking responsibility for the implementation of the Djibouti Code of Conduct and will also act as the IMO representative to conferences and meetings dealing with piracy issues.

In order to prepare for the successful introduction of the mandatory Member State Audit Scheme and to provide ample resources for these activities, Mr. Sekimizu has reorganized the Sub-Division for Implementation and Coordination of the Maritime Safety Division into a Department for Member State Audit and Implementation Support in the Maritime Safety Division. Mr Laurence Barchue was appointed as Head of the new Department.

Finally, the Secretary-General also decided to strengthen the functions dealing with internal audit and matters of ethics and appointed Mr. K-R. Min as the Senior Deputy Director in charge of the Internal Oversight and Ethics Office. [Read more](#)

NEW ZEALAND: CONTAINER VESSEL RENA HAS BROKEN IN TWO



January 8 - Report from Maritime New Zealand :Severe weather overnight has separated the **MV Rena** into two pieces, which are now about 20-30m apart on the Astrolabe Reef, Maritime New Zealand says.

Both sections of the vessel still remain on the reef, with the forward section remaining firmly wedged, while the aft section has separated and moved clockwise (or to starboard) about 13 degrees, after the ship was hit by seas of over 7m overnight, further worsening the damage it sustained following its grounding on the reef just over three months ago. The current bad weather is forecast to slowly ease over next 3 – 4 days.

MNZ Salvage Unit Manager David Billington said the fresh damage to the

ship had resulted in the loss of a large number of containers and debris.

“While the two sections of the **Rena** currently remain on the reef, there’s no question the ship is badly damaged with the severe movement breaking off many of the hatch covers and releasing containers from the holds. Salvors are now working to assess the state of the vessel so that naval architects can undertake further calculations get gain a clearer picture of its ongoing stability.”

Mr Billington said the vessel **Go Canopus** was currently connected to the aft section of the **Rena** and was continuing to monitor its status.

At least 23 containers had been confirmed as being lost from the ship, which were floating or partly submerged, with another 7 (unconfirmed) thought to be in the water. However, Mr Billington said more were likely to be lost. There was also a large debris trail, including wood, around the vessel.

Container recovery company Braemar Howells had tugs en route to tag containers with buoys as it was currently too rough to tow or safely recover them, while vessels with trawl nets would also be sent out to collect debris once weather conditions improved.

Navigational warnings had also been issued to shipping, with the port company communicating with individual ships via port radio and warnings issued to recreational vessels via Coastguard radio. Shipping lanes were also being monitored for containers and debris. The Bay of Plenty Regional Council Harbour Master is considering extending the 3nm exclusion zone due to the large debris field from **Rena**.

National On Scene Commander Alex van Wijngaarden said the National Response Team had been mobilised, which included trained oil spill response and wildlife experts, who were preparing for the likelihood of more oil coming ashore. [Read more](#) Other related reports - [Washington Post](#) [New Zealand Herald](#)

UK NORTHERN IRELAND: BELFAST LOUGH OIL TANKER CARGO TRANSFER COMPLETED

January 8 - An operation to remove 54,000 tonnes of oil from a damaged tanker in Belfast Lough has finished.

The Genmar Companion had been sheltering off the Copeland Islands since developing a crack on its deck on 16 December.

The operation to transfer the vacuum gas oil was delayed several times due to the extreme weather. The transfer, which began on Friday night, was halted for a period due to strong winds but resumed on Saturday. [BBC News Report] [Read more](#)

NIGERIA: BONGA OIL SPILL – CONFLICTING CLAIMS

January 1 - Accusations fly as oil slick hits Nigeria coast

Nigerian villagers say oil washing up on the coast comes from a Royal Dutch Shell loading accident last month that caused the biggest spill in Africa's top producer in more than 13 years.

Shell denies that any of the oil is from its 200,000 barrel per day (bpd) Bonga facility, 120 km offshore and accounting for 10 percent of monthly oil flows, which was shut down by the spill on December 20.

Shell says five ships were used to disperse and contain the spill and that this kept any oil from washing ashore.

But local villagers, as well as environmental and rights groups, dispute this account, saying the oil is still at large, coating parts of the coast, killing fish and sparking protests.

On Saturday, a Reuters team visited two of 13 villages whose residents say they were affected by the spill in the steamy swamps of the Niger Delta. In both, there were stretches of beach coated in a film of black sludge with a rainbow tint. [Reuters] [Read more](#)

January 2 – Investigation underway

An investigation is underway to determine how 40,000 barrels of oil spilled while being loaded onto the tanker. Shell says a break in a transfer line is to blame.

Since the leak, teams from the Shell Nigeria Exploration and Production Company, SNEPCo, have worked around the clock with international oil spill experts, using a combination of dispersants and booms to control the leaked oil, the company said in a statement. [Environmental News Service] [Read more](#)

January 4 - Senate Committee satisfied with clean up

The Senate Committee on Environment has expressed satisfaction with the prompt and effective way that the Shell Group responded on the Bonga oil spill, which occurred on December 20.

The Committee, led by its Chairman, Senator Bukola Saraki, gave the clean bill of health after the team inspected the oil facility which lies 120km Southwest of the Niger Delta, in a water depth of over 1,000m.

He told journalists that "lots of work has been done by Shell to contain the oil spill," adding that such a prompt response is what is expected of other oil companies operating in Nigeria. [Vanguard Newspaper] [Read more](#)

January 7 - NIMASA tasks Shell

The management of Nigerian Maritime Administration and Safety Agency (NIMASA) has tasked the management of Anglo-Dutch oil giant, Shell, on what it called poor response to the cleaning of the oil spill at its Bonga Oil facility.



In the picture: DG, NIMASA, Mr. Patrick Akpobolokemi

Describing it as "short of national and international standards", the management of the nation's apex maritime regulatory authority said in a news briefing in Lagos that "Shell has not behaved responsibly on the matter".

The Director General of NIMASA, Mr. Patrick Akpobolokemi who addressed journalists at the Board Room of Maritime House, the corporate headquarters of the agency said there was a consensus from the agency team that visited the communities that Shell has not behaved responsibly. [This Day Newspaper] [Read more](#)

CHINA PORTS UPDATE

As anticipated, implementation of the new rules requiring owners of vessels calling at Chinese ports to have spill response contracts in place with approved contractors was not delayed. The regulations became effective on 1st January.

With acknowledgements to the Weekly Newsletter of ISCO Industry Partner, INTERTANKO, the following update is reproduced below.

The China Maritime Safety Administration (MSA) has issued (23 December 2011) further guidance and information relating to the implementation of the Ship Pollution Response Organisation (SPRO) contract requirement for ship owners and operators with vessels carrying polluting and hazardous cargoes into Chinese ports after 1 January 2012.

The announcement by the China MSA on the 22 December provides guidance on procedures when entering ports with an established SPRO and those without an established SPRO as follows:

For a port with an established SPRO:

For ports or waters in which SPROs approved by the MSA have been established, ships shall conclude the agreements for ship pollution response in accordance with relevant provisions as of January 1, 2012. Where a ship cannot conclude the agreement before its first entry into a Chinese port or before commencement of operations due to certain reason(s), such ship shall explain such reason(s) to the local MSA. The local MSA may pre-permit the ship to enter into the port or to commence operations, however, the ship shall conclude the agreement before leaving the port. From March 1, 2012 maritime administration agencies will enforce in full the provisions of this requirement.

For a port without an established SPRO:

For ports or waters in which no SPRO approved by this MSA has been established, all local MSAs shall adopt temporary measures; for ports or waters in which no temporary measure has been arranged, ships may be permitted not to conclude the agreement for ship pollution response. From March 1 2012 onwards, where ships fail to conclude the agreement for ship pollution response in accordance with provisions, maritime administration agencies of all levels shall treat such ships strictly in accordance with relevant provisions.

For further information, the UK P&I Club has issued useful guidance on these latest developments as well as a list of regional notices relating to SPROs on its website. To view [click here](#)

The full text of the latest notice can also be found on the UK P&I Club website. To view [click here](#)

CHINA: MSA AUTHORISES ISCO MEMBER SUNIC OCEAN AS SHIOWNER AGENT IN CHINA PORTS

Mr Lee Guobin, General Manager of Sunic Ocean Marine Technical and Services Co. Ltd. has advised the ISCO Newsletter that his company has been authorized by the Chinese Maritime Safety Authority (MSA) to act as an approved legal agent for ship operators in concluding agreements with MSA approved oil spill response contractors in Chinese ports.

Mr Lee Guobin is the Member of ISCO Council representing China and is also a Member of the ISCO Executive Committee.

Sunic Ocean was established in Qingdao in 1998. With a staff of more than 40, experienced in shipping management, marine engineering and on-site spill accident response, the company is well qualified to provide support for ship owners in meeting the new regulations which have just come into effect. Sunic Ocean provides integrated technical solutions for pollution response, oil spill surveillance, contingency planning and training services to the main players in China, including MSA, Salvage and Rescue, Sinopec, PetroChina, CNOOC, main oil terminals and leading ship pollution response organizations (SPROs).

Sunic Ocean promises to provide ship owners and contracted SPROs with technical advisory support and close liaison with P&I clubs and local MSAs to improve the efficiency and cost-effectiveness of spill response.

In addition to offering highly competitive agency rates, Sunic Ocean is providing an additional 10% discount for ship owners who are existing members of ISCO or who decide to become members of the organization. [More info](#) and Contacts as below

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BRAZIL CITES CHEVRON THIRD TIME FOR OIL SPILL

An aerial view is seen of oil that seeped off the coast of Rio de Janeiro, caused by a well drilled by Chevron at Frade, on the water in Campos Basin in Rio de Janeiro state November 18, 2011. Credit: Reuters/Rogério Santana/Handout

December 30 - Brazil's oil industry watchdog ANP said on Friday it issued a third citation against Chevron for a November oil spill at the Frade offshore field, signaling that regulators are stepping up oversight of the No. 2 U.S. oil company's offshore operations in [Brazil](#).

ANP can fine Chevron up to 50 million reais (\$26.8 million) for each citation.

Chevron failed to put in practice procedures that would slow the depletion of reservoirs at the well 9-FR-50DP-RJS in the Frade field, ANP said in a statement sent to reporters by email.

Also, Chevron has been cited in a \$20 billion civil lawsuit filed by public prosecutors regarding the oil spill. Brazilian federal police have indicted Chevron, the drilling company Transocean and executives from both companies in a criminal case alleging environmental crimes and obstruction of justice.

The procedures the ANP alleges Chevron failed to meet had been agreed to in a development plan approved by the agency. Failure to follow the plan led to the leaking of oil from the reservoir, the statement said.

ANP did not say how much it planned to fine Chevron.

The U.S. company said in a statement later on Friday that it will analyze ANP's allegations but added it was "confident that it has always acted in a diligent and appropriate way," and accordingly to the development plan approved by ANP. [Reuters] [Read more](#)



UK: OIL SPILL AFFECTING ISLAND BIRDS

January 4 - Reports have been coming in of a number of oiled birds being washed ashore along the west coasts of Eriskay, Benbecula, North Uist, Harris and Lewis.

It is as yet unknown what has caused this, when or how far out to sea it happened, but considering the swell and wind direction over the past few days there are likely to be more affected birds coming ashore throughout the islands.

British Divers Marine Life Rescue (BDMLR) are asking that anyone using any of the coasts and beaches throughout the islands keep a look out for any birds, or other wildlife, they feel may be affected by oil.

If a suspect bird or animal is found, please call BDMLR on their Marine Wildlife Strandings Hotline – 01825 765546 (out of hours: 07787433412). BDMLR volunteers are on standby to pick up any wildlife casualties and transport them to care facilities where, if found in time, they can be cleaned and treated before release back to the wild. [Stornoway Gazette] [Read more](#)

USA: OIL FROM 2007 SPILL SURPRISINGLY TOXIC TO FISH, SCIENTISTS REPORT

December 27 - The fuel oil that discharged into San Francisco Bay from the cargo ship Cosco Busan devastated the herring population that feeds seabirds, whales and the bay's last commercial fishery, study says.

Thick, tarry fuel oil disgorged into San Francisco Bay from a damaged cargo ship in 2007 was surprisingly toxic to fish embryos, devastating the herring population that feeds seabirds, whales and the bay's last commercial fishery, scientists reported Monday.

Although the bay's herring spawning grounds are now free of toxic oil, studies have found that the moderate-size spill of 54,000 gallons had an unexpectedly large and lethal effect.

The culprit, a common type of ship fuel called "bunker fuel," appears to be especially toxic to fish embryos, particularly when exposed to sunlight, according to a study published Monday in the Proceedings of the National Academy of Sciences. [Los Angeles Times] [Read more](#)

ECUADOR APPEALS COURT RULES AGAINST CHEVRON IN OIL CASE

An Ecuadorean appeals court has upheld a ruling that Chevron should pay damages totalling \$18.2bn (£11.5bn) over Amazon oil pollution. Chevron said the judgement was "illegitimate" and "a fraud".

Texaco, which merged with Chevron in 2001, was accused of dumping toxic materials in the Ecuadorean Amazon.

The original ruling ordered Chevron to pay \$8.6bn in damages, which was more than doubled after the company failed to make a public apology. [BBC News Report] [Read more](#) (Thanks to Don Johnston of ISCO Industry Partner, DG & Hazmat Group for sending the link to this news report)

USA: OHIO EARTHQUAKE LIKELY CAUSED BY FRACKING WASTEWATER

January 4 - Injecting wastewater deep underground is the prime suspect, potentially widening earthquake worries linked to hydraulic fracturing.

Residents of Youngstown, Ohio, received an extra surprise on Christmas Eve and again on New Year's Eve—earthquakes, measuring 2.7 and 4.0 on the Richter scale, respectively. No one was injured and only a few cases of minor damage were reported after the Dec. 31 event.

Scientists have quickly determined that the likely cause was [fracking](#)—although not from drilling into deep shale or cracking it with pressured [water](#) and chemicals to retrieve natural gas. Rather, they suspect the disposal of wastewater from those operations, done by pumping it back down into equally deep sandstone. [Scientific American] [Read more](#)

AUSTRALIA: HUNDREDS OF PETROL STATIONS LEAKING FUEL

January 5 - More than 900 NSW petrol stations and depots could be leaking fuel into soil and groundwater and petrol-related land makes up the bulk of the state's 300 most contaminated sites, official data shows.

Figures contained in a NSW Auditor-General report released late last year show 770 service stations and 176 other petroleum sites were actually or potentially contaminated, with many leaking fuel from underground tanks.

In two of the worst confirmed cases, high levels of the cancer-causing agent benzene leaked from a Brighton-le-Sands petrol station and were detected beneath a waterfront park, and elevated concentrations of a toxic chemical mix were recorded inside a home near a service station at Rosebery.

More than 300 NSW sites were found to be significantly contaminated, the largest number of which were petrol stations. About two-thirds were yet to be remediated. [Sydney Morning Herald] [Read more](#) (Thanks to Don Johnston of ISCO Industry Partner, DG & Hazmat Group for sending the link to this news report)

USA: STATIC BUILD UP NOT JUST URBAN LEGEND AT GAS STATION

A metro woman's car goes up in flames at a gas station. The cause, static electricity. It's something many believe to be urban legend. Oklahoma City District Fire Chief Tony Davis says, "It's not a myth. It actually can happen." A small static spark, igniting explosions at gas stations. Davis says, "The fumes are very ignitable."

Monday afternoon a woman was at a gas station at Southwest 59th St. and Sunnyslane. She began filling her car with gas and then got back in the vehicle, creating static.

When the pump clicked off she got out and when she touched the pump handle, a fire ignited.

Luke Huynh, a manager at the gas station, says, "Both her tires blow out and her window blow while we're trying to get out of the gas station." Huynh says, "She came in a yelled her car was on fire." He rushed to help, shutting off the pump as the truck burned.

Davis says, "She had built up a static charge and when she touched the nozzle the static charge went off and the fumes around the gas tank ignited." Getting in your car is the main way to create the static that can potentially cause a spark. It's a mistake often made during cold weather. [KFOR News Channel] [Reads more and watch the video](#) (Thanks to Don Johnston of ISCO Industry Partner, DG & Hazmat Group for sending the link to this news report)

STEFAN MICALLEFF APPOINTED AS NEW DIRECTOR OF THE MARINE ENVIRONMENT DIVISION OF IMO



Mr Stefan Micallef has been appointed as the new Director of the Marine Environment Division of IMO with Mr Jo Espinoza-Ferrey moving to the position of Director, Administrative Division. Mr Micallef, who was previously the Senior Deputy Director, Pollution Response and Technical Cooperation Coordination.

Stefan Micallef graduated with a Ph.D. in marine toxicology from the University of Wales, U.K. He started his career with the UN in 1990 as *Programme officer at the UNEP/IMO - Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) based in Malta*. This Centre was set up to assist Contracting Parties to the Barcelona Convention with their commitments under the Emergency Protocol and to facilitate regional cooperation and mutual assistance among the countries of the Mediterranean. He was responsible for developing and implementing the programme concerning marine chemical emergencies. He represented the Centre at meetings of the IMO's Marine Environmental Protection Committee, its OPRC-HNS Technical Group as well as the Sub-Committee of Bulk Liquids and Gases. He was also a member of the Working Group on the Evaluation of the Hazards of Harmful Substances Carried at Sea (EHS) of the Joint Group of

Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) during the time that the revised evaluation procedure for Annex II chemicals of MARPOL 73/78 was developed.

In 2000, he joined *UNEP's Division of Environmental Policy Implementation* in Nairobi as *Chief of the Disaster Management Branch* and was responsible for policy and strategy formulation that included developing and coordinating UNEP's strategies and policies on environmental emergencies including backstopping the work of the joint UNEP/OCHA Environment Unit, and the Regional Seas Programme as well as partnership and alliance building as a mechanism for backstopping initiatives on awareness building for disasters management. During this time he led a number of expert missions to assess the impacts of incidents including the 2003 crude oil tanker incident *Tasman Spirit* off the port of Karachi. He also represented UNEP on the Inter-agency Task Force of the UN International Strategy for Disaster Reduction.

In 2004, he moved to IMO Headquarters as *Head of the Chemical & Air Pollution Prevention Section, Sub-Division for Pollution Prevention, Marine Environment Division* where he was specifically responsible for the secretariat duties involving the revision of MARPOL Annex II and Annex III and the amended IBC Code. He was also co-secretary of the BLG Sub-Committee and Technical Secretariat to the GESAMP/EHS Working Group.

Contributed article

USCG R&D CENTER INVESTIGATES CLEANING UP SUBMERGED OIL

An article published in the OHMSETT GAZETTE of Fall/Winter 2011 and reproduced here with acknowledgement to OHMSETT, Oil Spill Research and Renewable Energy Facility in Leonardo, New Jersey, USA.

The U.S. Coast Guard Research & Development Center (RDC) of Groton, Conn., has been conducting a multi-year project to develop ways to detect and clean up sunken oil in U.S. waters. The underwater environment poses major problems, including: poor visibility, difficulty in tracking oil spill movement, colder temperatures, inadequate containment methods and technologies, and problems with the equipments' interaction with water. During the first two years of the project, Kurt Hansen, project manager at the RDC, and his team came to Ohmsett in 2008 and 2009 to evaluate technologies to detect heavy oil underwater.

For the third phase of the project, RDC returned to Ohmsett in November 2011, this time to evaluate three vendor's prototype recovery systems. This phase, funded by the Bureau of Safety and Environmental Enforcement (BSEE), tested each system's overall capacities in the recovery and detection aspects of the system, as well as their deployment while working in conjunction with oil/water separation technologies.

Pictured on right: Ohmsett personnel constructed a simulated underwater environment by placing trays containing various sands, rock, stone, dirt, plants, seaweed, and known quantities and thicknesses of oil at the bottom of the test tank.

The typical method of recovering oil on the bottom of the sea floor is for a diver to take down a suction hose so that a pump can move the oil to the surface. For shallow spills the pump is located on a vessel or pier, and it discharges into some type of holding tank. For deeper oil, submersible pumps are attached to the diver's hose and intermediate pumps may also be needed at the surface.

"We wanted to evaluate methods of recovering oils on the bottom, up to 200 feet; work that has been typically been done using divers," explained Hansen. "The challenge with using divers is the lack of visibility, waves, and currents, as well



as the endurance and safety for the divers. That is why we chose the 200 foot mark."

The prototype systems evaluated during R&D at Ohmsett in November included Alion Science's Seagoing Adaptable Heavy Oil Recovery System (Sea Horse); Marine Pollution Control's manned submersible equipped with oil pumping recovery capabilities as well as oil detection equipment using multibeam sonar and fluorescence polarization; and Oil Stop's Sub-Dredge.



Pictured on left: The Alion Science and Technology Sea Horse is a manned submersible equipped with oil pumping recovery capabilities, as well as oil detection equipment.

Alion Science and Technology, of New London, Conn., developed the Sea Horse. The complete Sea Horse system consists of three major subsystems: detection, recovery, and decanting, plus auxiliary equipment. It was designed using Remotely Operated Vehicles (ROV), and uses high-resolution sonar coupled with highly accurate 3-D positioning, and commercially available generators and pumps. "In developing a system that fills the niche of a lightweight system, the three major aspects considered to be crucial were: mobility, flexibility, and low cost. This design could provide the ability to deploy multiple small systems and to respond rapidly," Hansen said

Pictured right: The Marine Pollution Control's new design concept for improved submerged oil response, refines pumping and reclamation systems.

Marine Pollution Control (MPC) of Detroit, Michigan, developed and tested a new design concept for improved submerged oil spill response capability using proven and emergent technologies. It is equipped with the RESON multibeam sonar and the EIC, a fluorescence polarization, for oil detection. The new design concept refines the pumping and reclamation systems, and replaces the requirement for a team of commercial divers through the incorporation of the SEAmagine, a manned submersible, connected to the surface by a robust, multipurpose marine umbilical system. According to Hansen, the submarine unit could allow for increased operational bottom time and will minimize health and safety hazards associated with submerged oil detection and recovery operations.



Pictured left: Oil Stop's remote-controlled Sub-Dredge equipped with an EDDY pump, volute, and rotor, can go under, over, or around obstacles to remove sediment or oil

American Pollution Control (AMPOL) Oil Stop Division, of Harvey, LA brought the Sub-Dredge for testing during the research. The Sub-Dredge is a remote-controlled submersible crawler pumping vehicle that also replaces the divers. It relies on an external detection system for initial detection, but uses underwater cameras for recovery. It is un-manned and controlled safely from the surface and is self-propelled on the sea floor by electrically-driven tracks. Its patented EDDY pump incorporates a hydro dynamically built volute, along with a precision-engineered geometric rotor. It is capable of going under, over, or around obstacles to efficiently remove sediment or oil. "The most distinguishing feature of the Sub-Dredge is its ability to adjust the depth of contaminant removal, hopefully minimizing the volume of clean materials removed with the contaminants, with the least amount of turbidity and re-dispersal of contaminants," said Hansen.

With this research data, the RDC will develop a decision tool for use by the on-scene commander that will determine when and where these technologies might be appropriately used during spill operations.

For more information and the final report, visit <http://www.bsee.gov/Research-and-Training/Master-List-of-Oil-Spill-Response-Research.aspx>. [At time of writing the final report is not yet available on this website]

[Download and read the issue of the Ohmsett Gazette in which the above article appears](#)



In this issue of the ISCO Newsletter we are printing No. 58 in a series of articles contributed by Dr Douglas Cormack.

Dr Douglas Cormack is an Honorary Member of ISCO. As the former Chief Scientist at the British Government's Marine Pollution Control Unit and head of the UK's first government agency, the Warren Spring Laboratory, Douglas is a well known and highly respected figure in the spill response community. He is the Chairman and a founder member of the [International Spill Accreditation Association](#)

Cormack's Column (continued)

KNOWLEDGE OF DISPERSANT USE (CHAPTER 58)

To return to oil-in-water emulsions, we have already noted that for crude oil emulsions the upper viscosity limit for effective dispersant use is 7500cSt at the seawater temperature of application, which equates to a measured viscosity of 300cSt, 700cSt and 1500 cSt at the standard measuring temperature of 100°F; and that such will be dispersible down to respective seawater temperatures of 0, 10, and 20°C respectively. However seawater temperature and pollutant viscosity can be measured directly at incidents. Thus, while it is difficult to predict the rate at which viscosity increases to its maximum value for any given water-in-oil emulsion, viscosity values can easily be measured and spraying can easily be stopped accordingly. In addition, we already know that oil products with viscosities up to 350cSt at 100°F will either evaporate or disperse without recourse to dispersants. However, it is also known that fuel oils and lubricants of viscosity > 600cSt at ambient temperatures are generally heated to a working viscosity of 600cSt and it has been found that fuel oils and their emulsions have a dispersible limit of 5000cSt at sea water temperature probably because they lack the natural surfactants of crude oils and have higher viscosities and surface tensions which tend to permit greater layer thicknesses than do the more freely flowing/spreading crude oils, these thicker layers being disadvantageous to dispersants applied at rates commensurate with the generally thinner layers of crude oil for which Phase II spreading is limited by viscosity only.

Thus, a limit of 5000cSt equates at a sea temperature of 0°C which equates to a measured viscosity of 200cSt at the reference temperature of 100°F, oils of this viscosity being therefore dispersible down to sea temperatures of 0°C, while those measuring 300 and 1100cSt at the reference temperature of 100°F will be dispersible down to sea temperatures of 10°C and 20°C respectively. Indeed, even a 200cSt oil would probably be heated in transit if the ambient temperature was below 70°F and for all practical purposes it can be assumed that 500cSt and 1100cSt oils would also be heated. Thus, all heated oils whether crude or product should be treated with suspicion with regard to dispersant efficacy and all incidents involving such oils should be treated as trials/experiments for new knowledge-acquisition in these respects, while those of greater volatility and lower viscosities can be sprayed with confidence where required, or left to natural evaporation and/or natural dispersion. Again, lubricant base-stocks containing no surfactants appear to be dispersible up to viscosities of only 2000cSt at sea temperatures, these producing thicker layers than the fuel oils discussed above, even to the extent of lens formation, this limit of 2000cSt at sea temperature equating to a viscosity limit as measured at the 100°F reference temperature of only 110cSt, 250cSt and 600cSt if dispersants are to work down to sea temperatures of 0,10, and 20°C respectively, with all incidents involving such oils being treated as trials/experiments for further knowledge-acquisition. Thus, these as yet tentative conclusions, are tabulated below in a manner indicative of viscosity scale relationships.

Oil Type	Limiting Viscosity CSt	Sea Temp. °C	Viscosity measured at 100°F					
			Centi-Stokes cST	Redwood No 1	Admiralty Redwood	Engler seconds	Engler degrees	Saybrook seconds
Crude	7500	0	300	1200	120	2000	40	1500
		10	700	2800	280	5000	75	3100
		20	1500	6000	600	10000	200	6500
Fuel	5000	0	200	800	80	1400	28	950
		10	500	2000	200	3500	70	2300
		20	1100	4500	450	8000	160	5000
Lubricant	2000	0	110	450	45	750	15	550
		10	250	1000	100	1600	35	1200
		20	600	2400	240	4400	85	2900

1 The *Rational Trinity: Imagination, Belief and Knowledge*, D.Cormack, Bright Pen 2010 available at www.authorsonline.co.uk
 2 *Response to Oil and Chemical Marine Pollution*, D. Cormack, Applied Science Publishers, 1983.
 3 *Response to Marine Oil Pollution - Review and Assessment*, Douglas Cormack, Kluwer Academic Publishers, 1999.

EVENTS

USA: THE SIXTH INTERNATIONAL CONFERENCE ON ENVIRONMENTAL SCIENCE AND TECHNOLOGY 2012

The International Conference on Environmental Science and Technology 2012 (IC EST2012) sponsored by the American Academy of Sciences will be held from June 25 to 29, 2012 in Houston, Texas, USA. The conference will host presentations on a wide range of environmental problems. Scientists, engineers, government officials, environmentalists, and environmental product/service providers are invited. [More info](#)

UK: EI WORKSHOP ON THE ENVIRONMENTAL LIABILITY DIRECTIVE (ELD) APPLICATION

Energy Institute, 61 New Cavendish Street, London W1G 7AR, UK
Tuesday, 07th February 2012, 9:30AM until ~2:30PM - lunch included

The focus of the workshop is on establishing a species and habitats baseline. The main application is for onshore manufacturing sites. While the ELD applies to onshore sites now, there are current proposals to extend it to offshore facilities.

Some background information:

In early 2011 the EI launched the 'Guidance on establishing a species and habitats baseline for the Environmental Damage/Liability Regulations 2009'. This guidance aims to help building over time a 'living baseline' such that the natural variation in key species and habitats local to the site becomes better understood. Many of the techniques described are relatively simple and low cost, and used as part of a phased approach will help characterize the local environment. The baseline information can inform compliance, providing some assurance, without which the site impact may be open to conjecture and false.

The purpose of this EI workshop:

This workshop will give the opportunity to exchange information as well as to share views and to ask and discuss eventual existing questions regarding the ELD application within the Energy Industry.

Places are limited so it is important that you express your interest as soon as possible. Email me to register your interest (BHildenbrand@energyinst.org.uk), or call me on 020 7467 7126 to find out more.

PUBLICATIONS

US EPA: TECHNOLOGY INNOVATION NEWS SURVEY

The November 1-30, 2011 *Technology Innovation News Survey* has been posted to the CLU-IN web site. The *Survey* contains market/commercialization information; reports on demonstrations, feasibility studies and research; and other news relevant to the hazardous waste community interested in technology development.

The latest survey is available at: <http://www.clu-in.org/products/tins/>

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