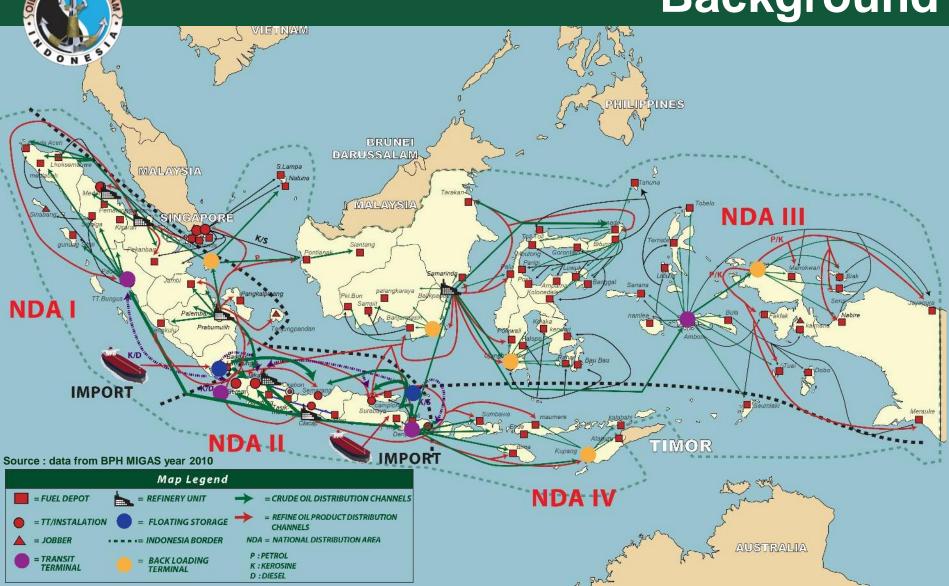
SOUTHERN MERMAID

EMERGING ROLE OF NATIONAL OIL SPILL COMBAT ORGANIZATION BEYOND BORDERS

Yodi Satya,.BSc, PG Dip EDM OIL SPILL COMBAT TEAM INDONESIA 2 0 1 5

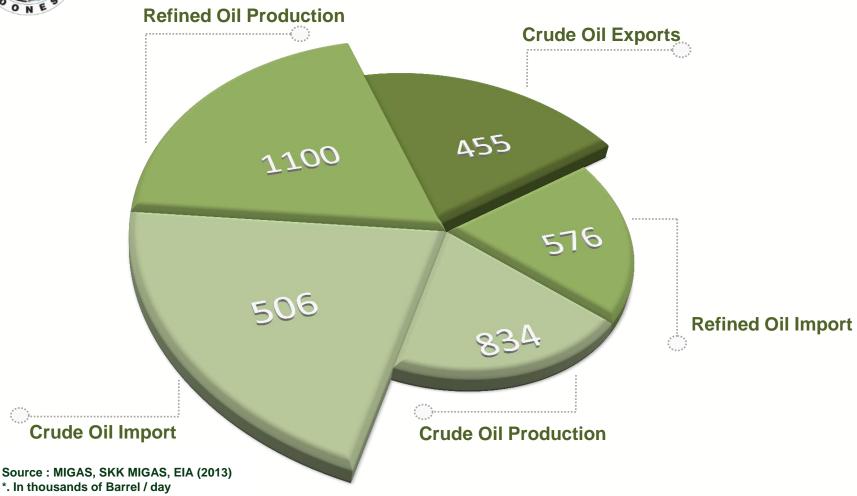
Background



Indonesia is the largest archipelago in the world; with over 17,000 islands, 240 million people, and the fourth longest coastline at 95,000 km. 85% of its territory is ocean and has a big risk of oil spill pollution from major shipping routes, over 200 ports, and oil terminals.

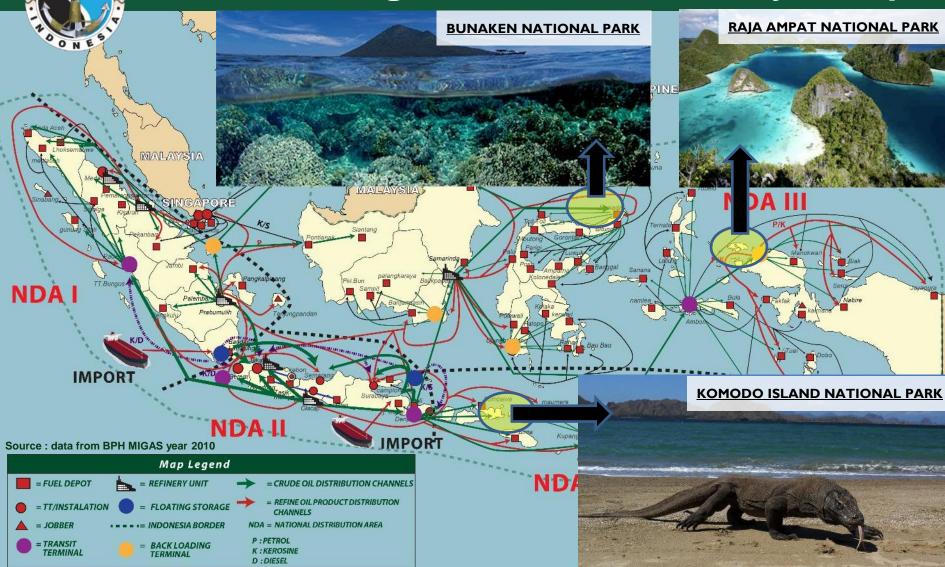


Oil Production, Import & Export



Indonesia produce, import & export oil up to 3,5 million barrels per day

World Heritage Sites Threatened by Oil Spill



Indonesia have over 100 marine protected areas and 6 world heritage sites, namely Bunaken that have thousands of protected marine species, Raja Ampat that have 75% of the World's coral reel species and the famous Komodo Island inhabited by more than 5,700 giant lizards

Bunaken National Park





Bunaken National Park covers approximately 89,000 hectares of coral ecosystem is home to thousands of different species of fish, coral, marine mammals, reptiles, birds and mangrove species and is part of the diverse 2.3 million hectares of North Sulawesi ecosystem

Raja Ampat National Park





Raja Ampat National Park is the seascape crown jewel consisting of about 1,500 islands and is home to over 450 coral species which is over 75% of the world's Coral Reef species and is one of the most famous diving resorts in the World

Komodo Island National Park



Komodo Island National Park is populated of around 5,700 giant lizards that are well known as "Komodo Dragons", the World's largest living Lizard and exist nowhere else in the World.

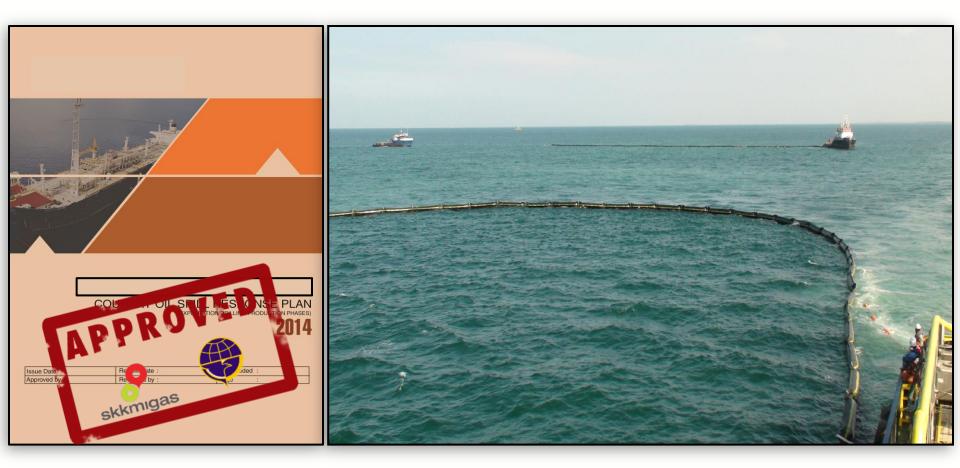
Sources of Oil Spill Response Equipment



Indonesia has resources from DGST, SKKMIGAS, PERTAMINA and national OSRO. International Resources are from Japan and european countries



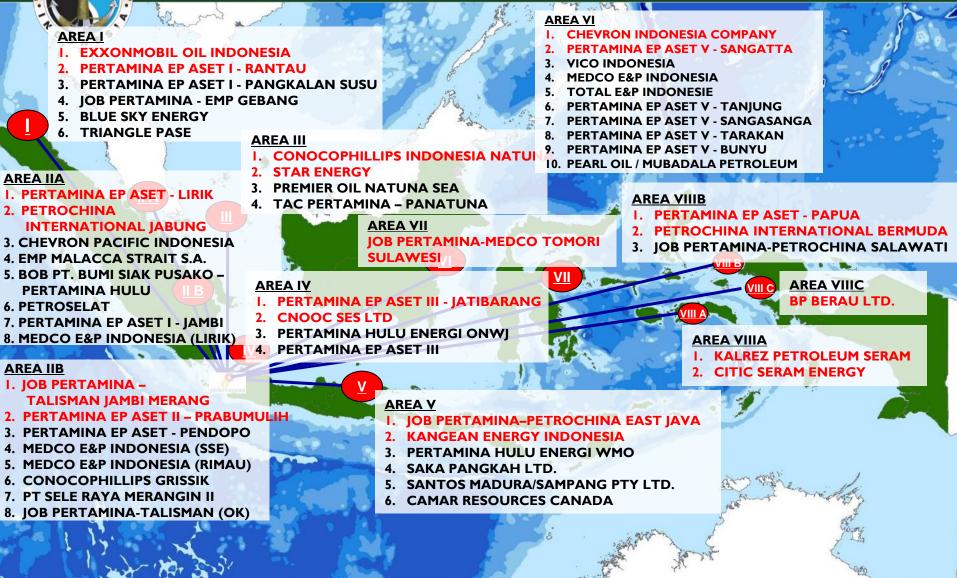
Indonesia Tier-1 Response Preparedness



Every company must have Oil Spill Contingency Plan (OSCP) Approved by Ministry of Sea Transportation & for oil & gas companies SKKMIGAS and then must have Minimum Tier-1 Oil Spill Response Equipment and Trained Responders



SKK MIGAS Tier-2 Coordination Area



SKKMIGAS Oil & gas areas are divided into 8 areas with mutual assistance agreement in each area to release about 25% of Tier-1 resources to assist for Tier-2 Incident



Tier-2 Resources (25% Release)

	PERTAMINA HULU ENERGY WEST MADURA OFFSHORE		CAMAR RESOURCES CANADA	
1	Equipment	Quantity	Equipment	Quantity
DONES	I. DEDICATED OIL SPILL RESPONSE VESSEL	30-	I. DEDICATED OIL SPILL RESPONSE VESSEL	
SANTOS INDONESIA	II. OFFSHORE INFLATABLE OIL BOOM	1 Unit	II. OFFSHORE INFLATABLE OIL BOOM	1 Unit
	III. OFFSHORE OIL SKIMMER	1 Unit	III. OFFSHORE OIL SKIMMER	2 Unit
Equipment Quantity	IV. OFFSHORE OIL BOOM & SKIMMER POWERPACK	1 Unit	IV. OFFSHORE OIL BOOM & SKIMMER POWERPACK	1 Unit
I. DEDICATED OIL SPILL RESPONSE VESSEL -	OFFSHORE TEMPORARY FLOATING OIL STORAGE		OFFSHORE TEMPORARY FLOATING OIL STORAGE	1 Unit
II. OFFSHORE INFLATABLE OIL BOOM 1 Unit	V. TANK	1 Unit	VI. OIL SPILL DISPERSANT SYSTEM	-
III. OFFSHORE OIL SKIMMER 1 Unit	VI. OIL SPILL DISPERSANT SYSTEM	1 Unit	VII. NEARSHORE OIL BOOM	
IV. OFFSHORE OIL BOOM & SKIMMER POWERPACK 1 Unit	VII. NEARSHORE OIL BOOM	1.00		0 -
V. OFFSHORE TEMPORARY FLOATING OIL STORAGE TANK 1 Unit		1 Unit	IX. TEMPORARY ON-LAND OIL STORAGE TANK	-
VI. OIL SPILL DISPERSANT SYSTEM -	IX. TEMPORARY ON-LAND OIL STORAGE TANK		X. ABSORBENT & CHEMICALS	
VII. NEARSHORE OIL BOOM -	X. ABSORBENT & CHEMICALS	_	XI. SUPPORTING DEVICE	1 Unit
VIII. NEARSHORE OIL SKIMMER -	XI. SUPPORTING DEVICE	1 Unit	KANGEAN ENERGY INDONESIA Ltd.	
IX. TEMPORARY ON-LAND OIL STORAGE TANK -		mener ,	Equipment	Quantity
X. ABSORBENT & CHEMICALS -	SANTOS		I. DEDICATED OIL SPILL RESPONSE VESSEL	-
XI. SUPPORTING DEVICE -	INDONESIA		II. OFFSHORE INFLATABLE OIL BOOM	1 Unit
JOB PERTAMINA PETROCHINA EAST JAVA	INDONESIA		III. OFFSHORE OIL SKIMMER	-
	JOB PERTAMINA		IV. OFFSHORE OIL BOOM & SKIMMER POWERPACK	- 3
Equipment Quantity	PETROCHINA		OFFSHORE TEMPORARY FLOATING OIL STORAGE	- A. A. A.
I. DEDICATED OIL SPILL RESPONSE VESSEL			V. TANK VI. OIL SPILL DISPERSANT SYSTEM	-
II. OFFSHORE INFLATABLE OIL BOOM 1 Unit	EAST JAVA		VII. NEARSHORE OIL BOOM	
III. OFFSHORE OIL SKIMMER -				
IV. OFFSHORE OIL BOOM & SKIMMER POWERPACK 1 Unit			IX. TEMPORARY ON-LAND OIL STORAGE TANK	<u> </u>
V. OFFSHORE TEMPORARY FLOATING OIL STORAGE TANK	PHE WMO	1 () () () () () () () () () (X. ABSORBENT & CHEMICALS	
VI. OIL SPILL DISPERSANT SYSTEM		- 1 mail	XI. SUPPORTING DEVICE	
VII. NEARSHORE OIL BOOM			SAKA ENERGY PANGKAH	
VIII. NEARSHORE OIL SKIMMER 1 Unit	CAMAR		Equipment	Quantity
IX. TEMPORARY ON-LAND OIL STORAGE TANK	RESOURCES	and in the	I. DEDICATED OIL SPILL RESPONSE VESSEL	
X. ABSORBENT & CHEMICALS -	CANADA	1 1	II. OFFSHORE INFLATABLE OIL BOOM	1 Unit
XI. SUPPORTING DEVICE	CANADA		III. OFFSHORE OIL SKIMMER	1 Unit
			IV. OFFSHORE OIL BOOM & SKIMMER POWERPACK	1 Unit
EXX		EAN	OFFSHORE TEMPORARY FLOATING OIL STORAGE	
(GAGAK R	IMANG)	GY	V. TANK	1 Unit
	INDON		VI. OIL SPILL DISPERSANT SYSTEM	-
			VII. NEARSHORE OIL BOOM	-
NATIONAL	Ltd		VIII. NEARSHORE OIL SKIMMER	
			X. ABSORBENT & CHEMICALS	
OSRO OSRO	SAKA ENERGY		XI. SUPPORTING DEVICE	
		Prest Car	and the second second	4
	PANGKAH		and the second second	
			and the second sec	

Since Tier-1 OSRE that can be mobilized for Tier-2 is limited, resources from National Oil Spill Response Organization (OSRO) such as Oil Spill Combat Team (OSCT) Indonesia are required to respond to major oil spills



National OSRO History



Oil Spill Combat Team (OSCT) Indonesia was founded and established as the first private oil spill response centre in Indonesia



OSCT Indonesia meet requirements of ISO 14001:2004 and OHSAS 18001:2007 The Memorandum of Understanding between Oil Spill Combat Team (OSCT) Indonesia and Oil Spill Response Ltd (OSRL) acknowledges OSCT Indonesia as a capable oil spill response centre and a crucial part of any response to oil spills in Indonesia



First Oil Spill Response Centre in the World with over 40 members to announce OSCT is ready for Initial Public Offering (IPO)

moved to new 10,000 m2 facility, the largest oil response centre in Indonesia and one of the largest in the World



OSCT Indonesia launched membership program for Tier-2 Oil Spill Response support in Indonesia with headquarters in West Java and 4 bases in Surabaya, Balikpapan, Natuna area and Sorong



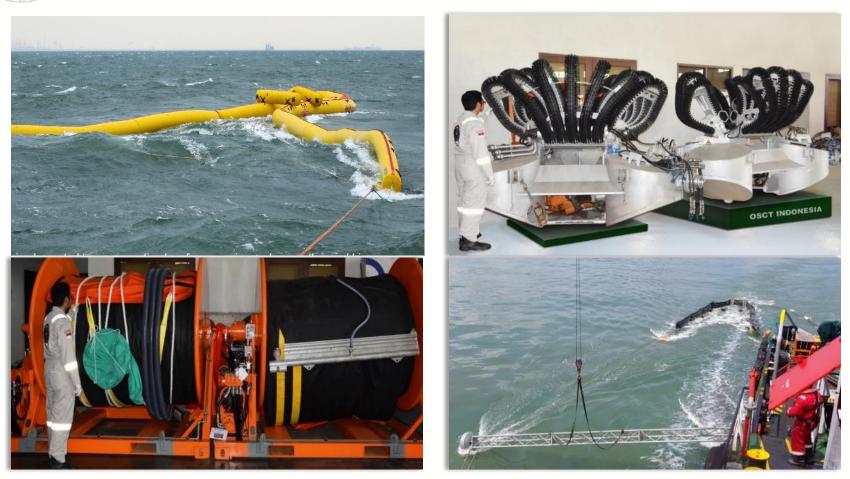
National OSRO Profile



OSCT Indonesia is a private Oil Spill Response Organization with experts that have 32 years of experience providing Tier-2 membership in Indonesia. Headquarters located in West Java with 4 bases across Indonesia and operations in Thailand



National OSRO Capability



Over 10,000 meters of boom, 40 skimmers including Two Large Offshore Skimmers with 500 tons / hour recovery capacity and special purpose equipment like fire boom and fast current boom and fast current skimmers

National OSRO Members



Oil Spill Combat Team Indonesia serves over 40 members from the oil & gas industry upstream, downstream and private companies responding to about 6 oil spills per year

ONE

Oil Spill Combat Experiences



OSCT Indonesia has been combating more than 25 oil spills in Indonesia, China, Qatar and Thailand.



DGST operates 15 Marine Disaster Prevention Ships that is equipped with oil spill response equipment systems on each ship to assist with Tier-3 Response if Tier-2 resources have been exhausted



Indonesia Response Resources

OIL SPILL RESPONSE EQUIPMENT RESOURCES	OFFSHORE BOOM	OFFSHORE SKIMMERS	ONSHORE BOOM	ONSHORE SKIMMERS	DISPERSANT
Area I	300 m	-	450 m	3	-
Area II	400 m	1	985 m	25	4400 Liter
Area III	450 m	4	600 m	1	7250 Liter
Area IV	800 m	6	766 m	9	13600 Liter
Area V	750 m	9	N/A	1	8400 Liter
Area VI	600m	3	1300 m	6	1200 Liter
Area VII	400 m	1	-	-	1963 Liter
Area VIII	250 m	2	300 m	8	8100 Liter
OSCT Surabaya	400 m	5	1500 m	4	1200 Liter
OSCT Headquarters	5400 m	20	6000 m	30	10000 Liter
OSCT Balikpapan	400 m	5	1500 m	4	1200 Liter
OSCT Sorong	400 m	5	1500 m	3	-
TOTAL	<u>11,550 m</u>	<u>61</u>	<u>14,901 m</u>	<u>94</u>	<u>57,313 Liter</u>

There are about 12 km of offshore boom and 15 km of shoreline boom available in-country for Tier-2/3 Response. OSCT Indonesia resources covers over 75% of the national oil spill response resources to respond to major oil spill incidents.





In 2015, OSCT Indonesia plans to upgrade to up total 20KM of boom, with new bases in Medan & Natuna Area and will have a twin propeller airplane for aerial surveillance and dispersant spraying



Emerging Role of National OSRO for Tier-3 Response



Emerging role of National OSRO such as OSCT Indonesia is shown by the signing a MoU with OSRL and other Response Centres around Asia such as IESG (Thailand), NASOS (Vietnam) and CPSE (Vietnam) for the spirit of protecting the World's Natural Environment



Emerging Role of National OSRO for Tier-3 Response

Oil Spill Incident escalates from Tier-2 to International Tier-3 Incidents if national Tier-2/3 resources is exhausted and not sufficient

International Assistance Mobilization Procedure

Customs clearance permit with bank guarantee may cause 1-2 days delay before equipment arrive in-country.

National OSRO Role

Custom clearance permit prepared valid for one year, no delay for custom clearance

2

After custom clearance permit issued, equipment is inspected at entry port or airport and may cause further delay

Documentations at port or airport prepared, valid for one year. No delay at port or airport

Equipment mobilized from port or airport to incident location need logistics and local support that may cause delays

Logistics and infrastructure support prepared, uses existing national resources

International response team takes time to integrate with national response team due to different equipment, operating procedures and coordination



Standard operating procedure (SOP) prepared for seamless integration between national & international resources



Pre-arranged Customs Clearance Permit

KEMENTERIAN PERDAGANGAN REPUBLIK INDONESIA

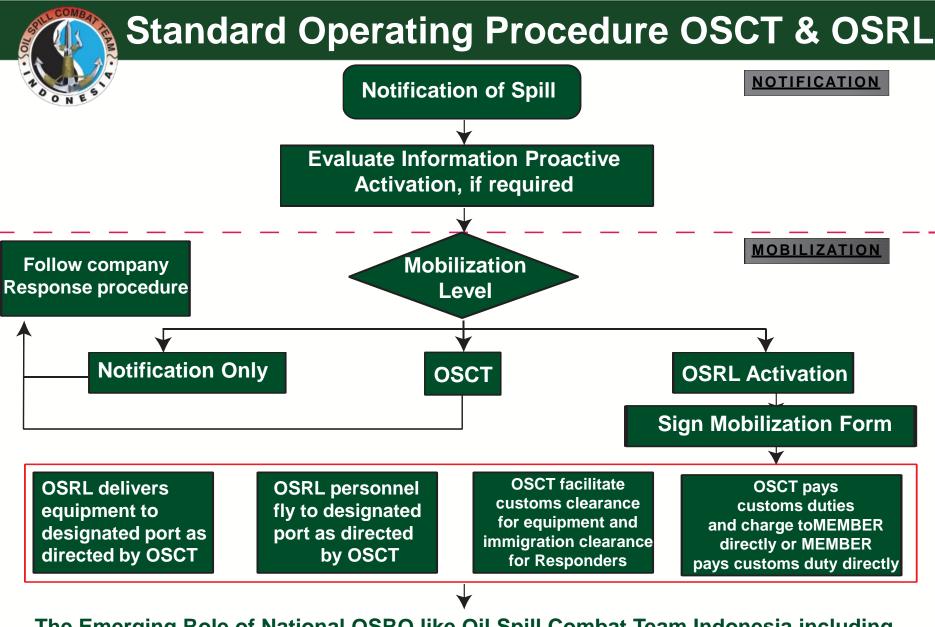
MINISTRY OF TRADE

Temporary Import Permit Preparedissued by Ministry of Tradevalid for one year

Directorate General of Customs notified and documents prepared for equipment to be cleared at port of entry valid for one year



The Emerging Role of National OSRO like Oil Spill Combat Team Indonesia including pre-arranged customs clearance permit to speed up clearance of international OSRE



The Emerging Role of National OSRO like Oil Spill Combat Team Indonesia including pre-arranged Standard Operating Procedure for seamless integration of national & international team in the field

Standard Operating Procedure OSCT & OSRL Relationship during response RESPONSE OSRL Report to Member IMT, works closely with OSCT **Member Brief OSCT & OSRL OSCT Roles/Responsibilities OSRL** Roles Responsibilities Arriive at designated port with equipment & Arrive at designated port with - HSE responders from indonesia equipment & responders Operate OSCT Equipment, provide expertise - Security from Singapore/UK/Bahrain Customs / Immigration / Work Permits for OSRL **Status of Response** Coordinate SCAT, Command Post for ERT Provide documentation for all equipment Provide Local Manpower if required Operate OSRL equipment, provide expertise **Special Instructions?** Provide Modelling, cross check with OSRL Make available aircraft, 2D/3D modelling Liaison with SKK MIgas, DGST, Environmental integrated aerial surveillance service Ministry in Coordination With Member IMT Support SCAT, ICS for IMT with OSCT Local Logistics Communications Special Instructions? - Vessels. BOEING 737. - Daily Reporting

- Video Conference

> OSCT. OSRL.

> SKK Migas, Member

Respond as directed by IMT

Mobilizing Company Demob Form

OSCT & OSRL

invoice MEMBER

Conduct Debrief

DEMOBIILIZATION

The Emerging Role of National OSRO like Oil Spill Combat Team Indonesia including pre-arranged Standard Operating Procedure to avoid confusion, overlapping procedures and inconsistent recommendations or advise to members

- Forward Staging, truck, forklifts

- Airport Access



Response Arrangements Summary

COMPANY

Each Tier level in Indonesia have sources of oil spill response equipment to mitigate risk of oil spill incident. Tier-1 response is the key to rapid response

KY MGA

MT SOUTHERN MERMAID (OIL SPILL SOURCE) 6° 1'45.00"S - 105°54'31.32"E	Cigadin	
SUNDA STRAIT N SUNDA STRAIT	Impact time	
	Date	November 17 th , 2013
Legend :	Oil Properties Spill Volume	Marine Fuel Oil (MFO) 20 tones
Plantation Mangrove Minimum time before exposure	Impact Area	Industrial Port (Cigading & Ciwandan)
0 1 2 4 6 8 Brushwood Settlement 1 - 2 days	Sensitive Area Impacted There is no existing Oil S	Industrial Port (Cigading & Ciwandan)

Oil Spill Combat Team Indonesia responded to an Marine Fuel Spill from a Chemical Carrier collision incident at Anyer, near Java Island monitoring the spill with trajectory modelling and satellite. Oil Spill impacted the shoreline in 8 hours.



LEAKING VESSEL



Oil Spill impacted the shoreline of Cigading and Ciwandan Port within 8 hours. Monitored from command center with satellite, and live updates by mobile command centre

Command Centre



Mobile Command Centre



IMPACT OF OIL SPILL

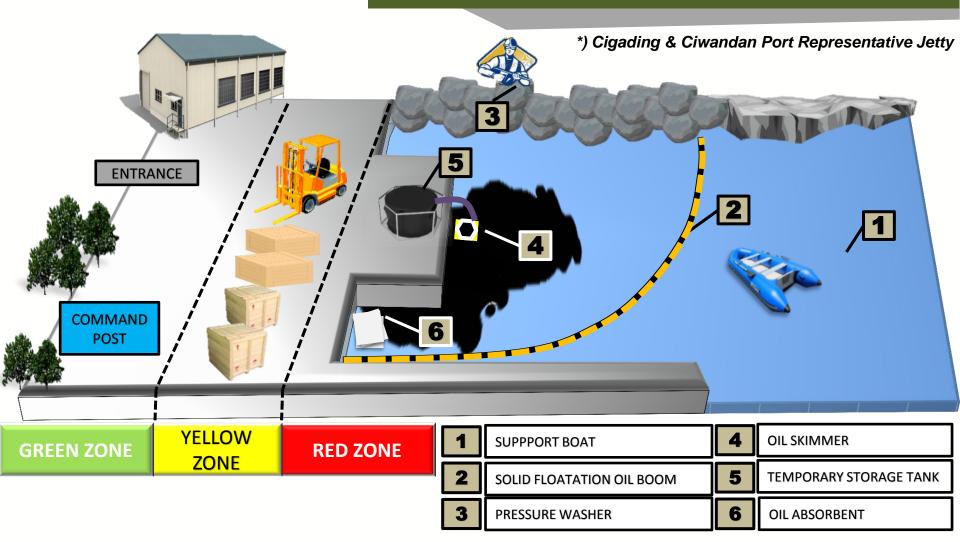


Spilled oil hit impacted rocky beach near the port. Flushing technique/pressure washer is required to recover the spilled oil.

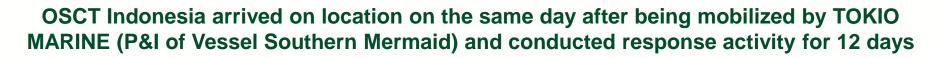




INITIAL DEPLOYMENT STRATEGY







	Fishing Ground along Rawa River Impact Time: 2 hours		INITIAL CONDITION		
				4 hours	
	Mangrove along Raw	River	3 hours		
Impact Time : less than 1 hour 2 hours		OIL SPILL INFORMATION			
			1 hour	Spill resources	Well blow out
	H-M			Activity	Drilling well
		Location Description	Well location near the estuary which affected by tidal current.		
	PLAN AREA /			Date	May, 2014
and the second second second				Oil Properties	Light crude oil
				Spill Volume	3000 bbls
	(ell Blowout	Canal Cana		Impact Area	River with mangroves in the riverside
-	l Spill Source) 35 E – 98720.669 N			Sensitive Area Impacted	Mangroves, Fishing Ground
Legend : N N N Settlement N Settlement N Settlement N Settlement Se		River Conditions	Intertidal zone		
		Mangrove 1 -	grove <pre><1 hour 1 - 2 hours</pre>	River conditions	Current is variety from 0.5 – 2 knots
		Palm Plantation 3 –	m Plantation 3 – 4 hours		There is no existing Oil Spill Response Equipment (OSRE) on site
Kilo	meter				

Oil Spill Combat Team Indonesia responding to Oil Spill from well blowout incident at Selat Panjang, Rawa River, Riau Province. Oil Spill would impact sensitive area within less 1 hour.



TIER-2 ASSISTANCE

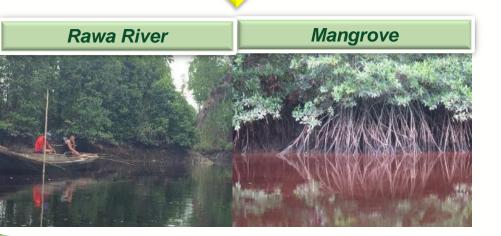


Recent Tier-2 Oil Spill in Indonesia, where National OSRO were mobilized by BOEING 737. Area assistance was mobilized by sea-freight but limited to only 25% of available Tier-1 OSRE

WELL BLOW OUT



Oil spill impact Rawa River and mangrove less than 1 hour



IMPACT OF OIL SPILL



Oil spill retained in the sediment surface at low tide and settles into sediments



Oil spill attached to the roots, rods, and leaves of mangrove

ONE



DEPLOYMENT STRATEGY

Standby vessel for open and close oil boom

Current

Direction

Oil spill recovered and storage in temporary storage tank

Manual clean-up by personnel

Installing absorbent boom to hold oil spill in to the river





8th of May 2014 Oil boom deployment in Rawa River



17th of May 2014 Deflection oil spill to pond as a collection point in Rawa River



19th of May 2014 Response oil spill with skimmer

24th of May 2014 Cleanup oil that sticks to vegetation using pressure hot water



27th of July 2013 Spill due to leak in pipe between a vessel and refinery

28th of July 2013 Oil spill hits Koh Samet (northwest coast). The navy deployed at least 300 soldiers to help clean up the spill





31st of July 2013 Oil Spill Combat Team Indonesia assisted an international oil spill incident with OSRL and IESG

2st of August 2013 Continue cleaning Ao Phrao bay. Oil slick there has significantly decreased.

Recent Tier-3 Oil Spill in Thailand, where Oil Spill Combat Team Indonesia assisted an international oil spill incident with OSRL and the Thailand national team and IESG

Summary



Emerging Role of National OSRO for Tier-1 First Response



Based on oil spill incidents like the Japanese chemical carrier collision, national OSRO is emerging to assist private companies as first response as some companies does not have complete Tier-1 resources on-site

Emerging Role of National OSRO for Tier-2 In-Country Response



- Based on Tier-2 Oil Spill incidents like in Sumatra, Selat Panjang, assistance from Area is limited(25% of Tier-1 OSRE)
- National OSRO with membership program is required to respond to major Tier-2 oil spills quickly

Emerging Role of National OSRO for Tier-3 International Response



- Based on international oil spill incidents like in Thailand, MOU between Tier-2 and Tier-3 Oil Spill Response Centres allow access to more resources
- National OSRO to pre-arrange customs clearance, logistics and SOP for international assistance

ありがとう THANK YOU

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