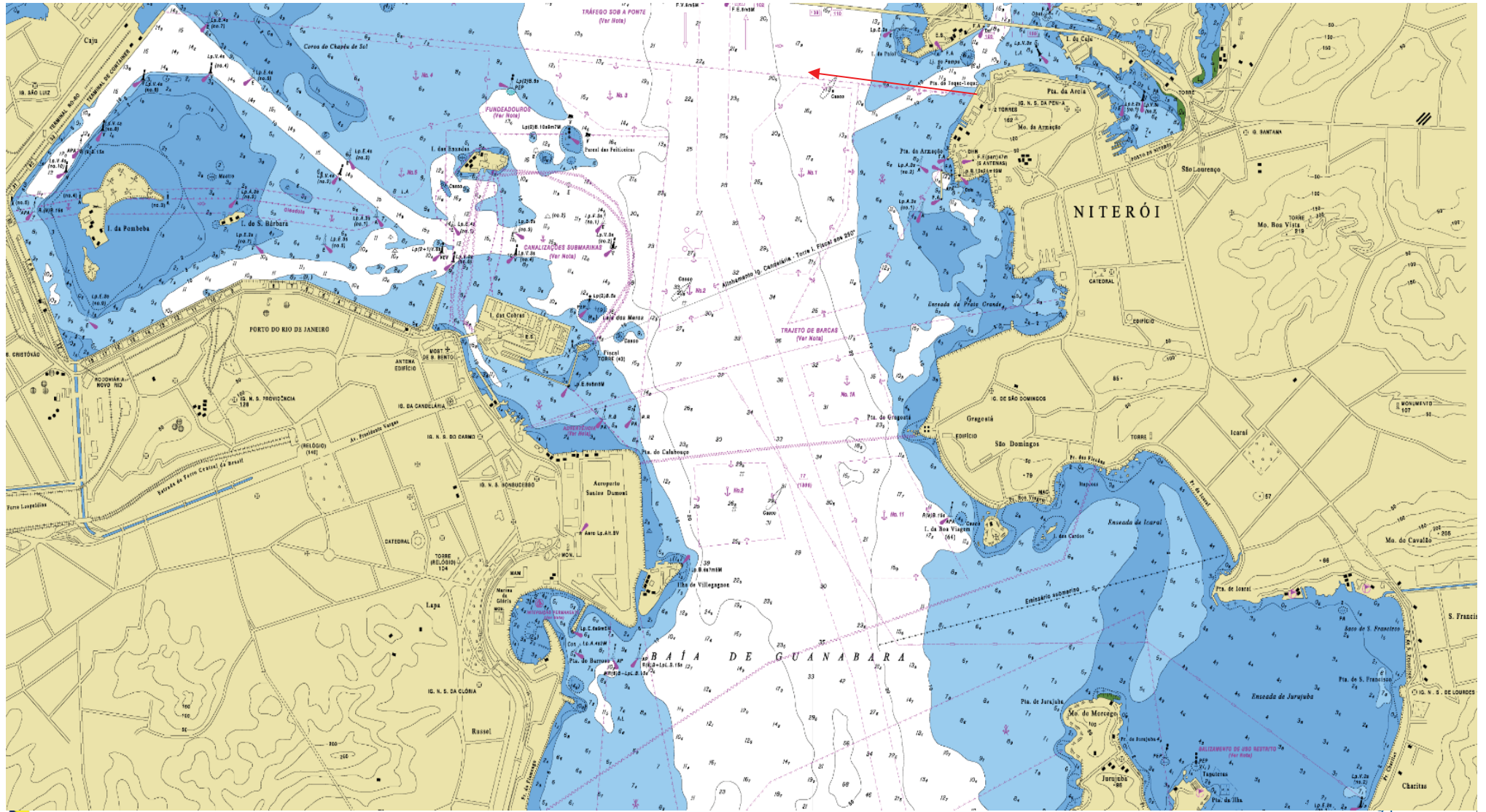
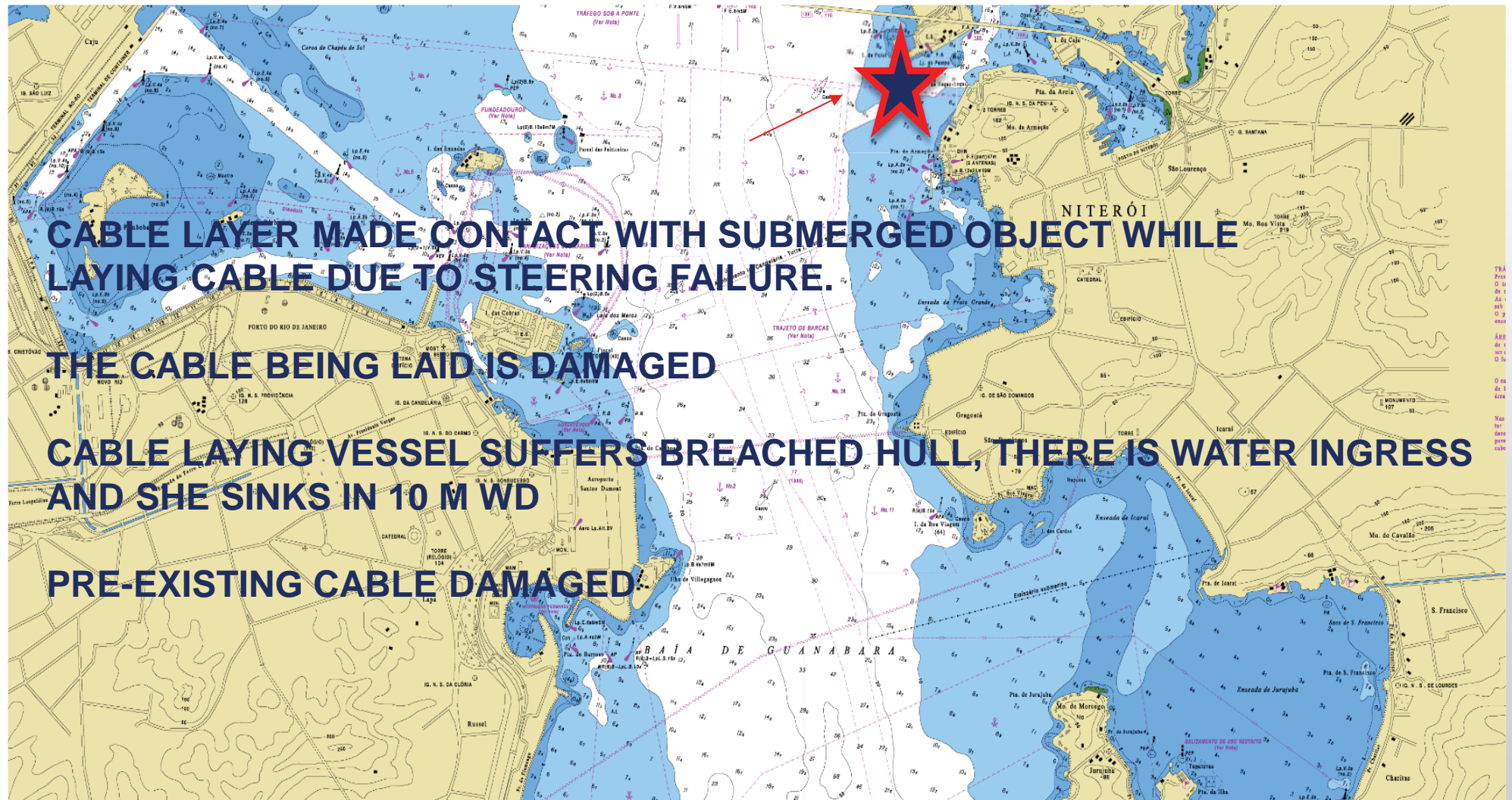


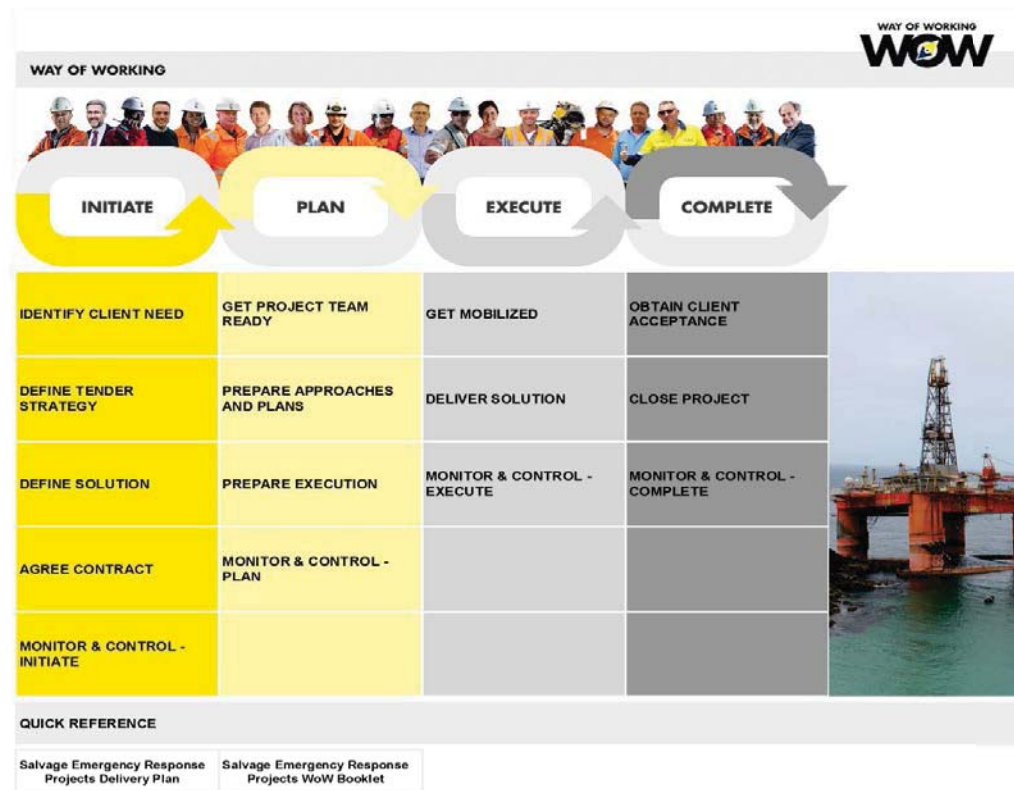
SCENARIO REVIEW - POWER CABLE LAYING FROM NITEROI



SUBMERGED OBJECT CONTACT AND SINKING LOCATION - NITEROI



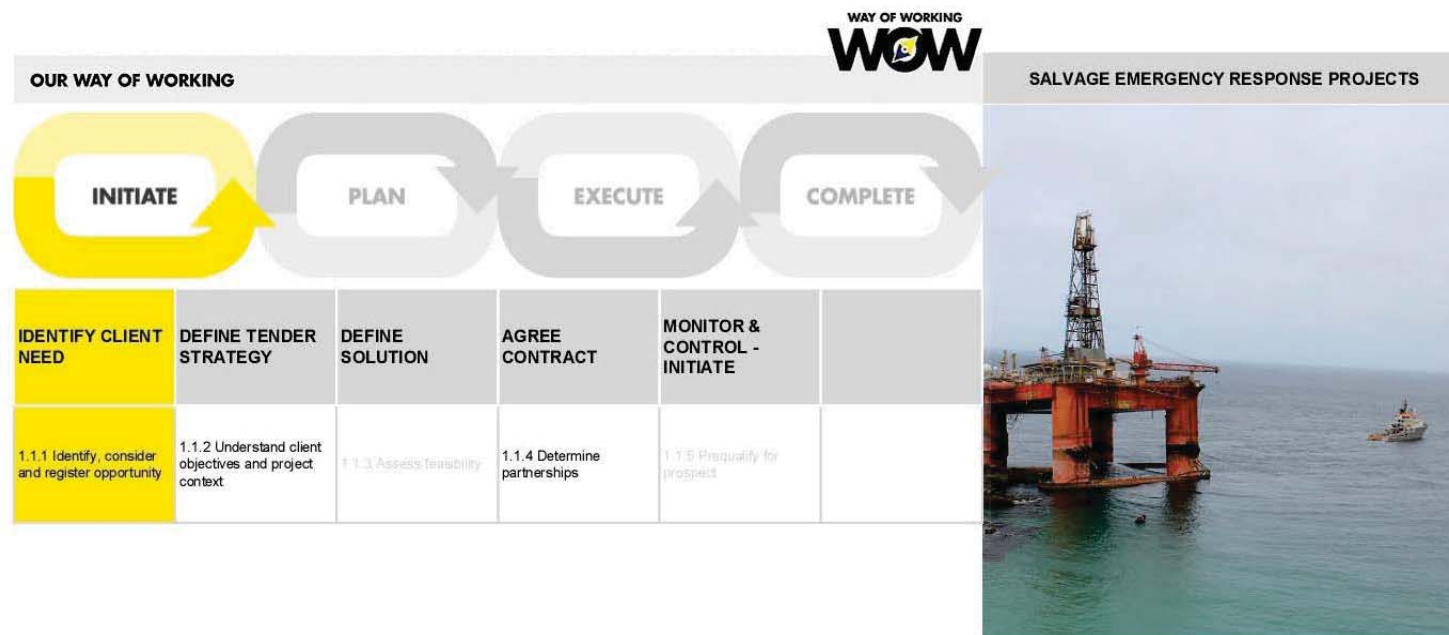
Way of Working – Salvage Emergency Response



1. INITIATE

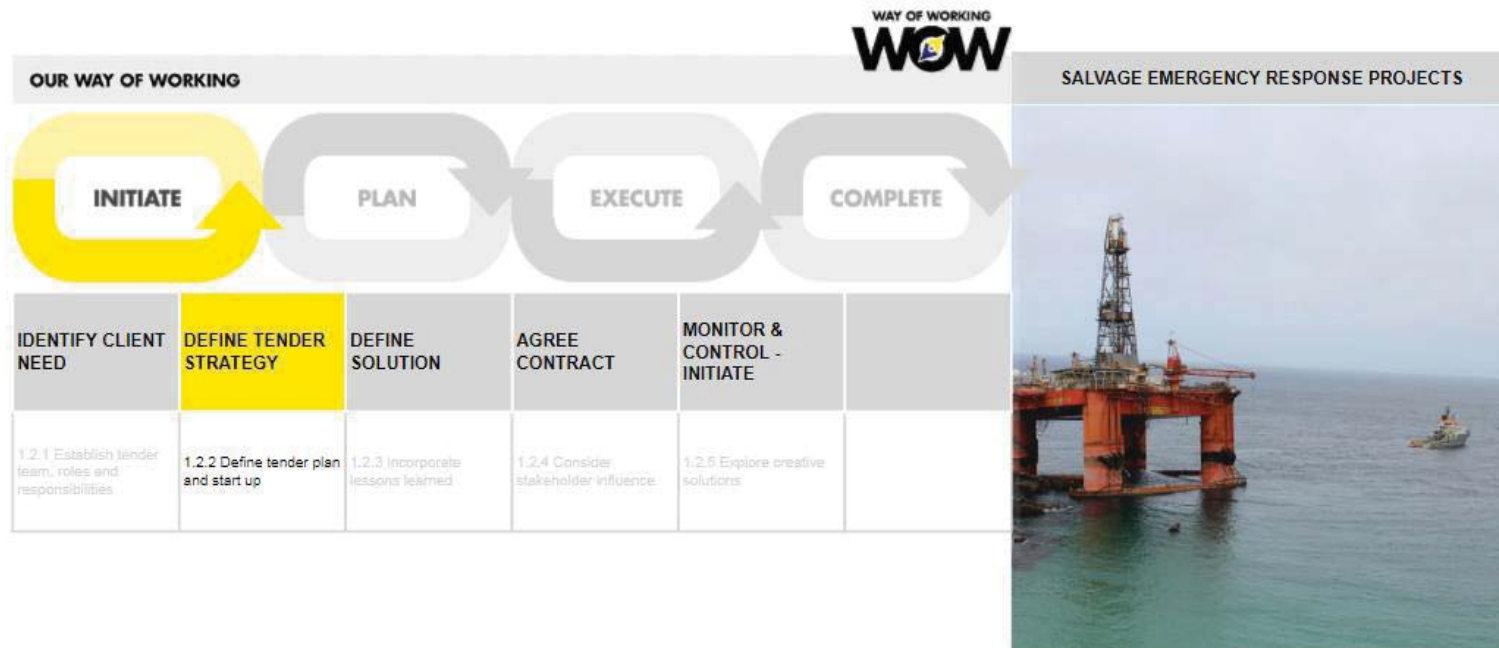
1.1 IDENTIFY CLIENT NEED

1.1.1 Identify, consider and register opportunity



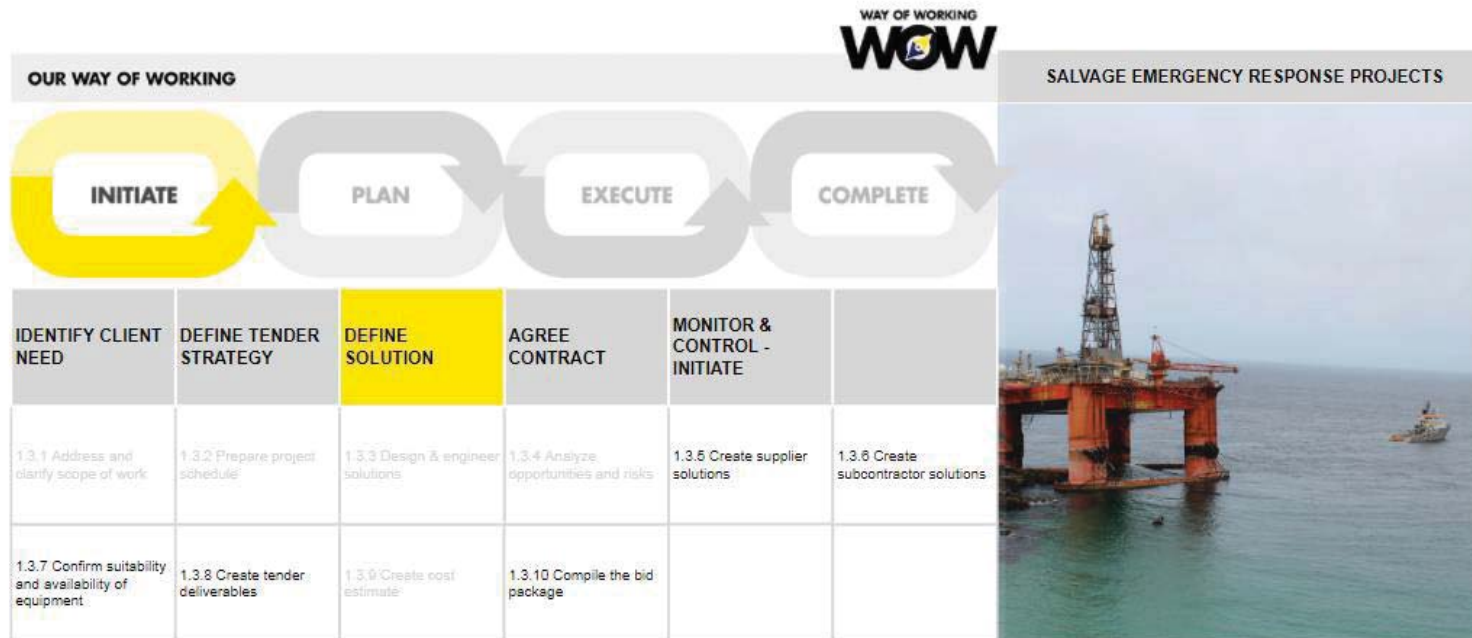
1.2 DEFINE TENDER STRATEGY

1.2.1 Establish tender team, roles and responsibilities (Not applicable)



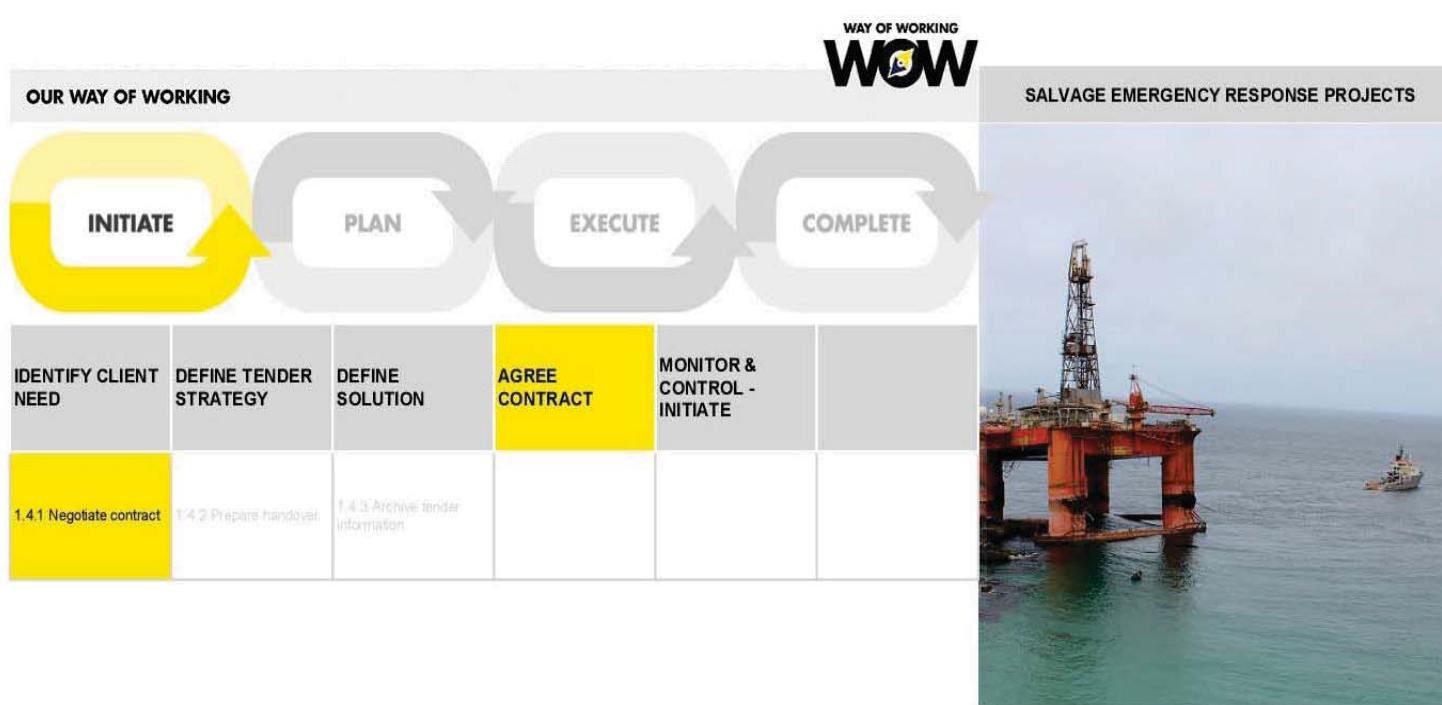
1.3 DEFINE SOLUTION

1.3.1 Address and clarify scope of work (Not applicable)



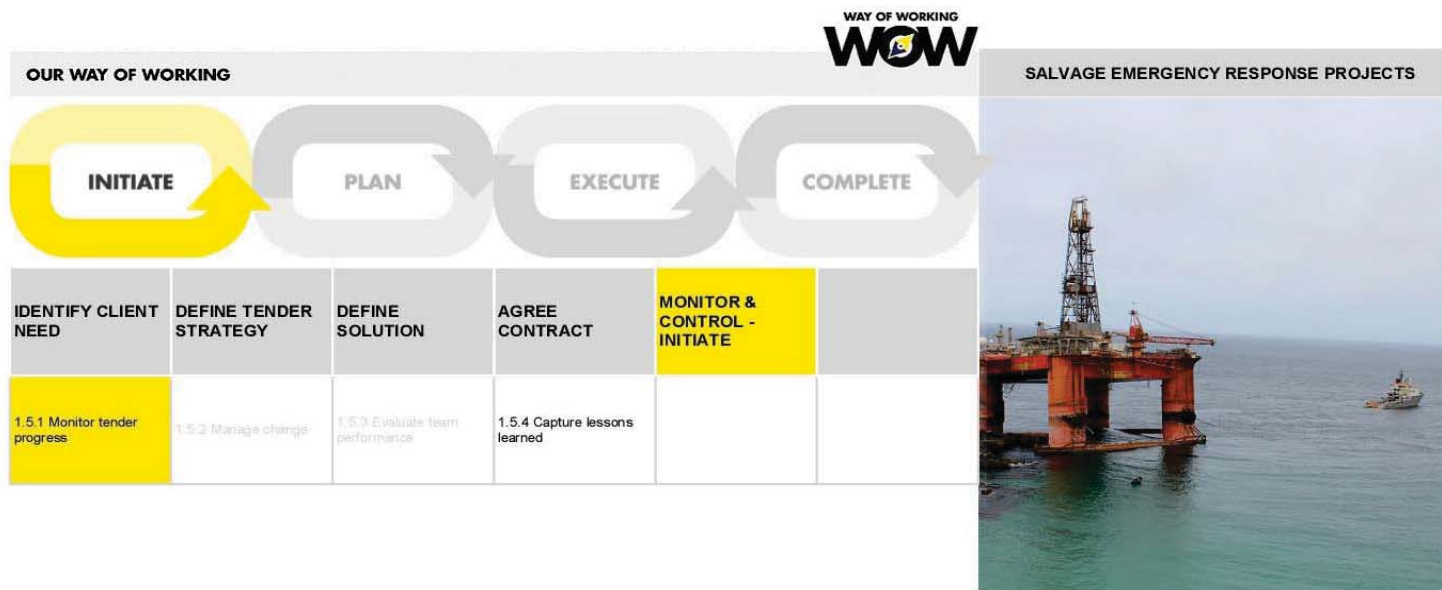
1.4 AGREE CONTRACT

1.4.1 Negotiate contract



1.5 MONITOR & CONTROL - INITIATE

1.5.1 Monitor tender progress



2. PLAN

2.1 GET PROJECT TEAM READY

2.1.1 Establish team, roles and responsibilities



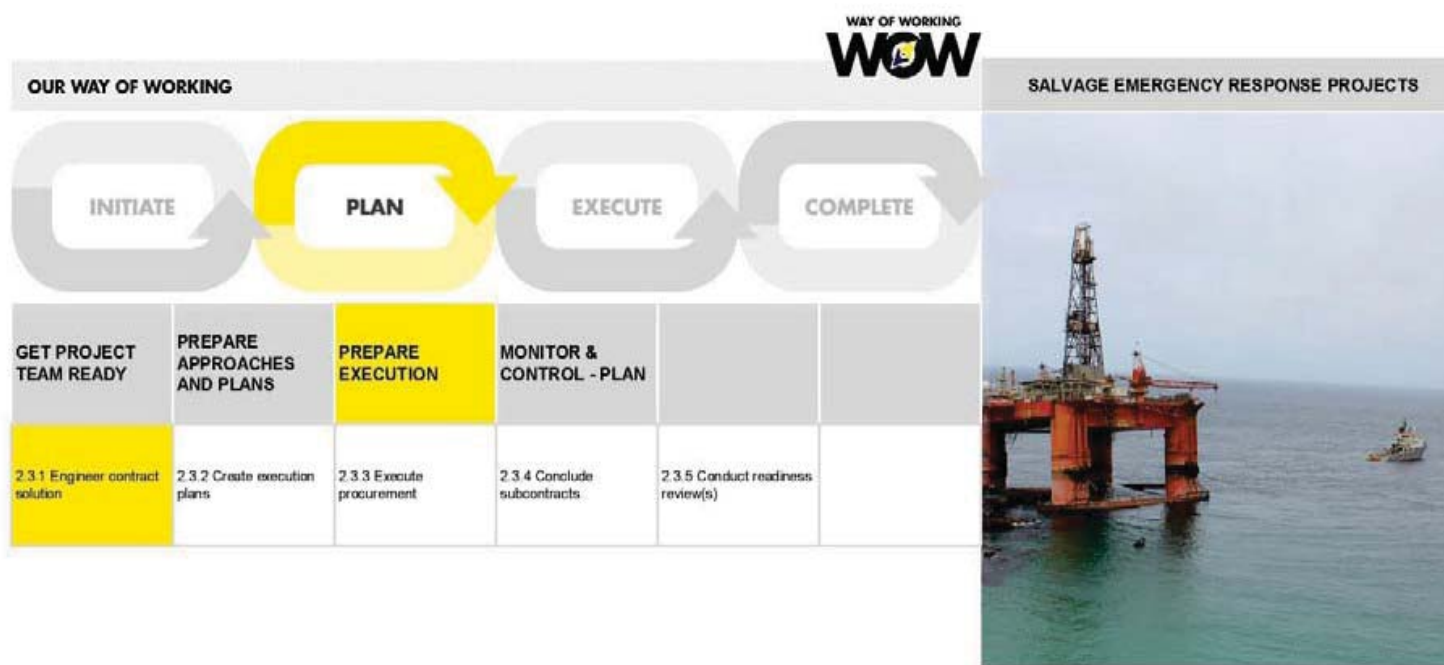
2.2 PREPARE APPROACHES AND PLANS

2.2.1 Configure delivery plan



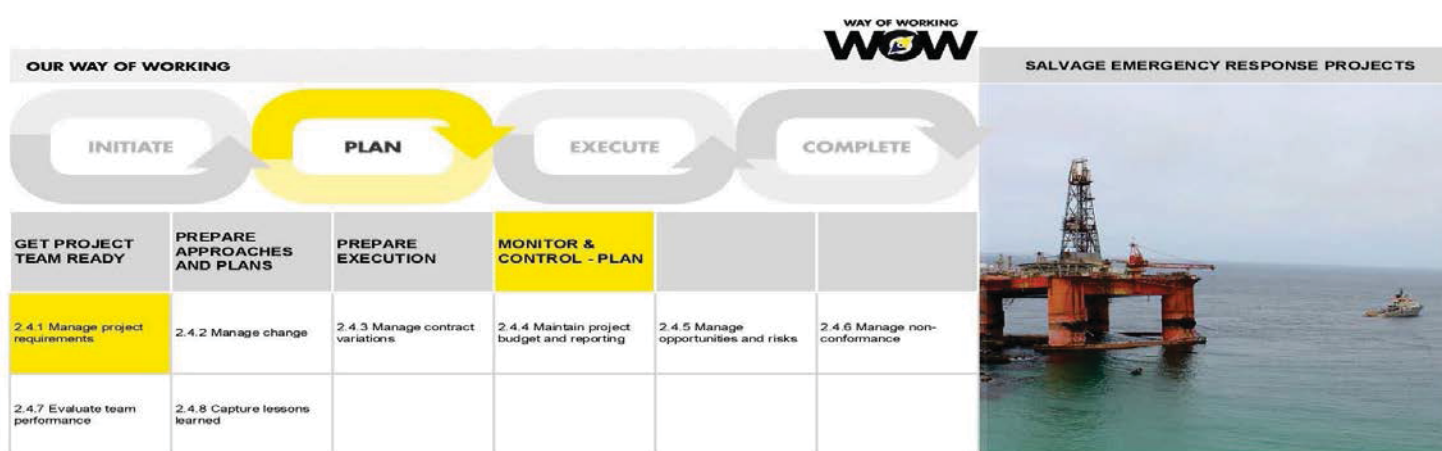
2.3 PREPARE EXECUTION

2.3.1 Engineer contract solution



2.4 MONITOR & CONTROL - PLAN

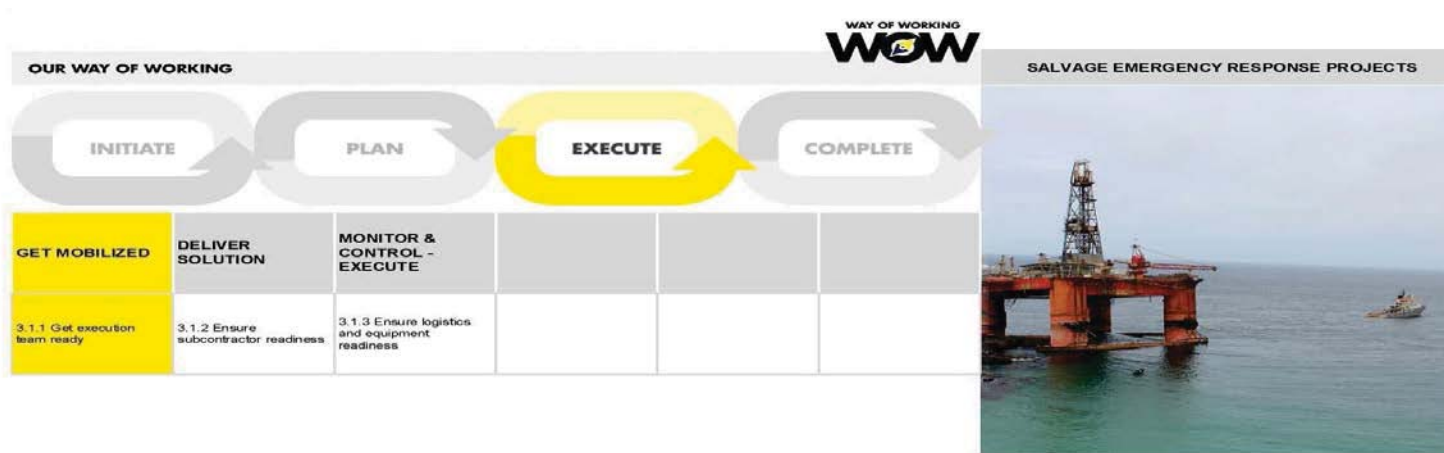
2.4.1 Manage project requirements



3. EXECUTE

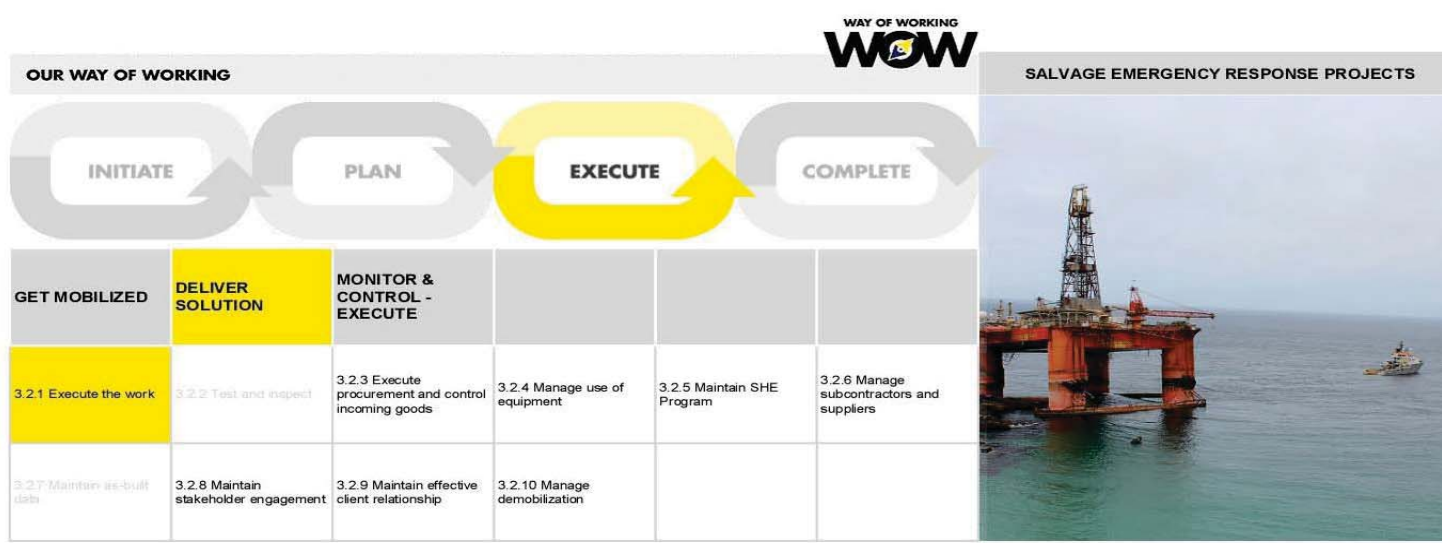
3.1 GET MOBILIZED

3.1.1 Get execution team ready



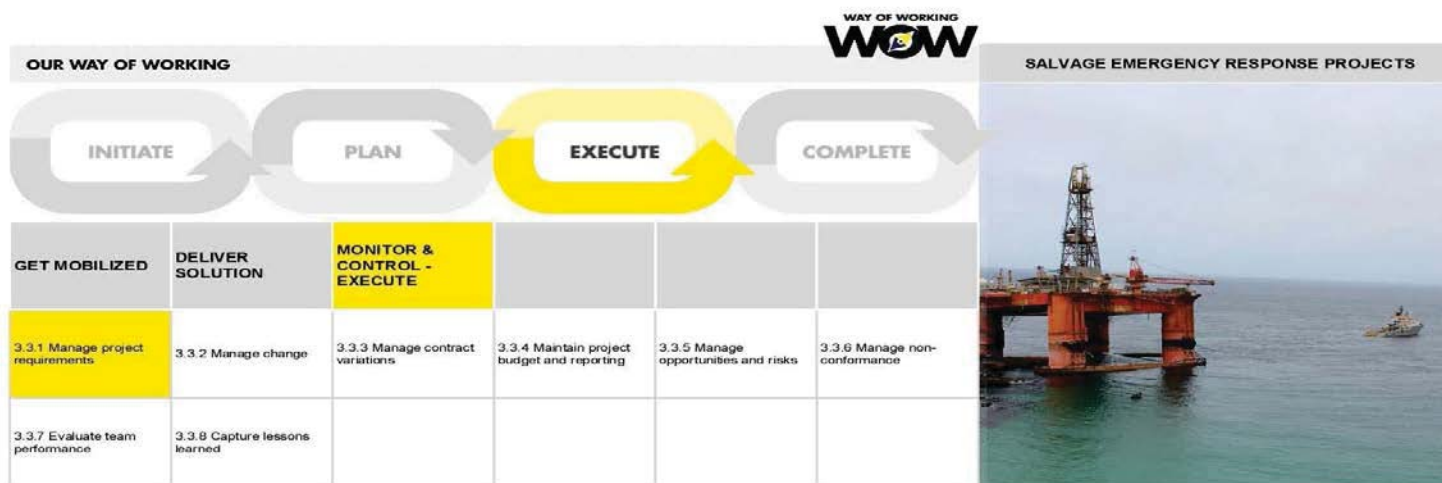
3.2 DELIVER SOLUTION

3.2.1 Execute the work



3.3 MONITOR & CONTROL - EXECUTE

3.3.1 Manage project requirements



4. COMPLETE

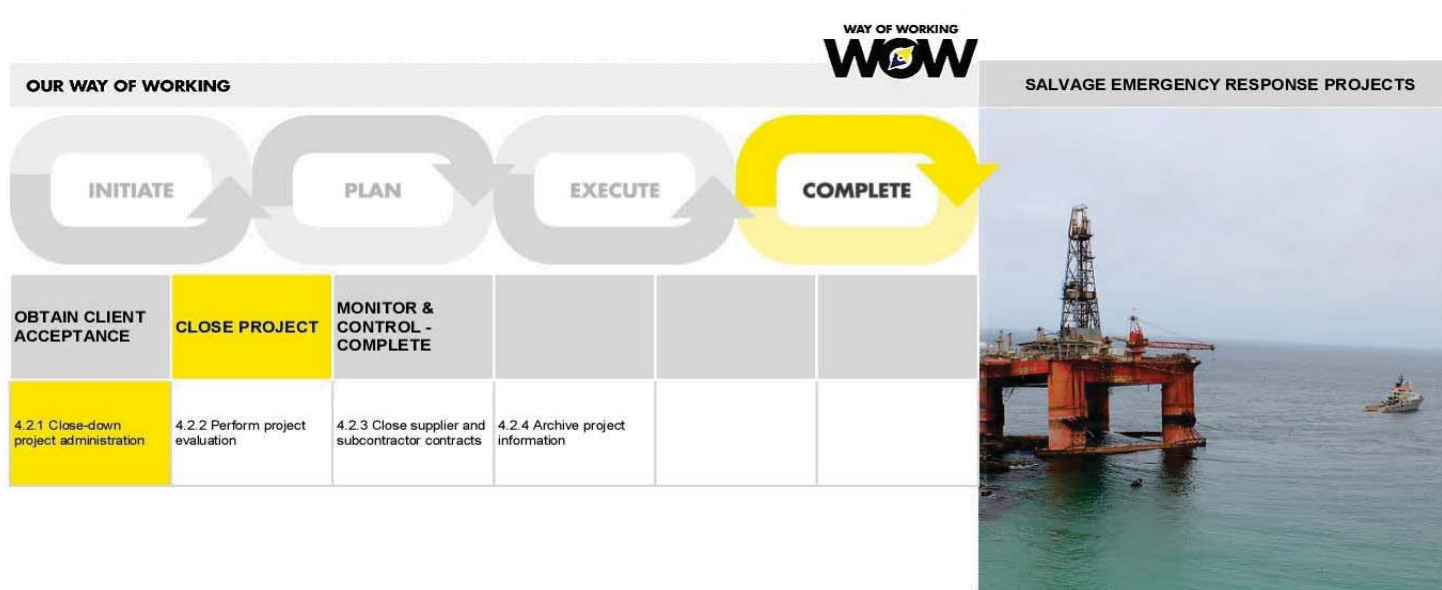
4.1 OBTAIN CLIENT ACCEPTANCE

4.1.1 Provide follow-up services



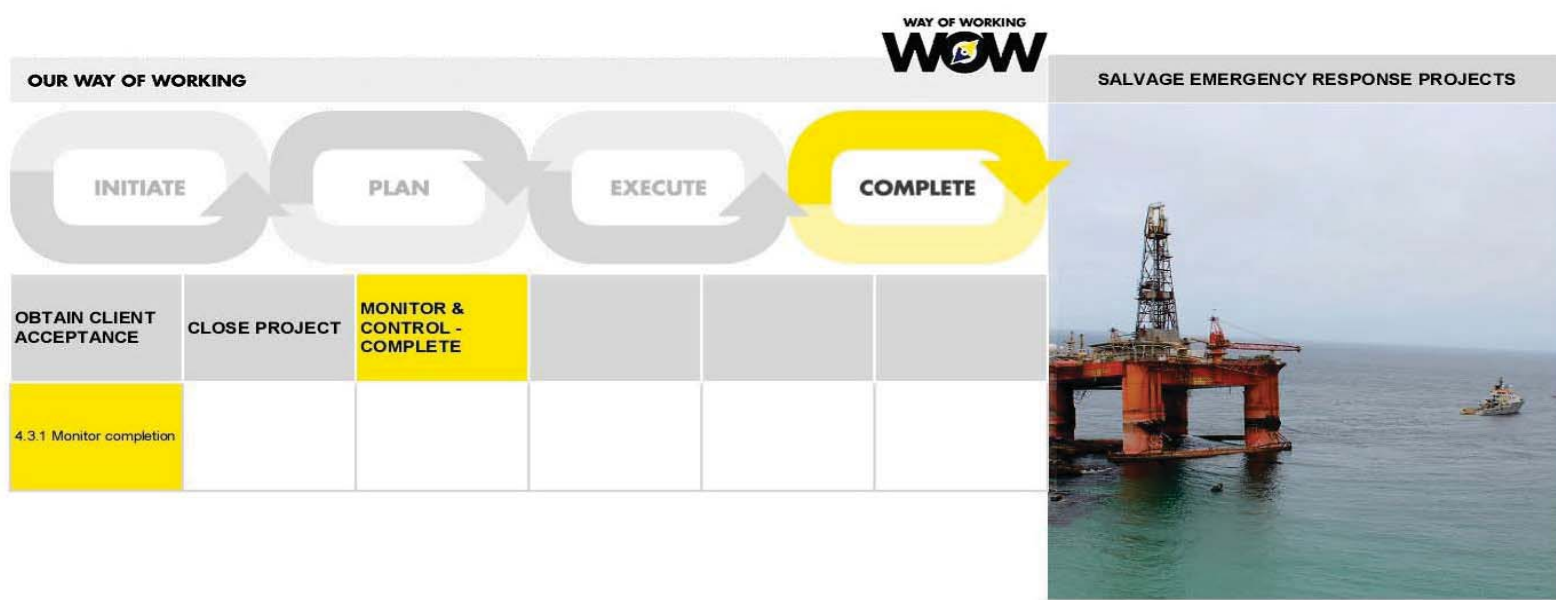
4.2 CLOSE PROJECT

4.2.1 Close-down project administration



4.3 MONITOR & CONTROL - COMPLETE

4.3.1 Monitor completion



SALVAGE – PLANNING CONSIDERATIONS



- **PHASE 1 – AT TIME OF THE INCIDENT:**
 - **NOTIFICATION – AFTER A CASUALTY GET THE MESSAGE OUT TO GET PROFESSIONAL INVOLVEMENT.**
 - **WHAT IS REQUESTED? - RESPOND TO CASUALTY, CHECKING FOR RESOURCES OR SEEKING PROPOSALS?**
 - **REMOTE ASSESSMENT AND CONSULTATION – BASED ON INFORMATION PROVIDED BY RESPONSIBLE PARTY (CIS)**
 - **SITE ASSESSMENT – IN BRAZIL, LOCAL SMIT SALVAGE EXPERTS ARE BASED IN RIO.**
 - **IDENTIFY ACTIONS TO MITIGATE LOSSES AND ADDITIONAL RISK, DO NO HARM (PROFESSIONAL SALVORS ARE BEST SUITED)**
 - **DETERMINE SUITABLE CONTRACT OR “PRE AGREED” CONTRACT ACTIVATION**



SALVAGE PLANNING - REMOTE ASSESSMENT AND CONSULTATION



	REMOTE ASSESSMENT AND CONSULTATION	Form#
		SSA-015_A
		Revision 1 Page 1 of 3

To the Owner / Manager of the vessel,

In order to allow us to make an Initial assessment and prepare our plans in response to your vessel the following information is kindly requested:

AA) DATE/TIME AND POSITION OF CASUALTY			
Date	:	Latitude	:
Time	:	Longitude	:

BB) CONTACT INFORMATION	
Client	:
E-mail Client	:
Emergency Telephone Vessel	:
E-mail Vessel	:

CC) BASIC VESSEL INFORMATION				
Vessel Name	:			
IMO Number	:			
Length (Overall)	:			
Beam	:			
Classification Society	:			
Vessel type	<input type="checkbox"/> Bulk carrier	<input type="checkbox"/> LPG/LNG carrier	<input type="checkbox"/> OSO carrier	<input type="checkbox"/> Product carrier
	<input type="checkbox"/> Crude carrier	<input type="checkbox"/> Container ship	<input type="checkbox"/> RO/RO ship	<input type="checkbox"/> Break-bulk ship
	<input type="checkbox"/> Barge carrier	<input type="checkbox"/> Barge with rake	<input type="checkbox"/> Barge w/o rake	<input type="checkbox"/> Passenger vessel
	<input type="checkbox"/> Fishing	<input type="checkbox"/> Drill Rig	<input type="checkbox"/> Other:	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vessel Cargo	Cargo type and quantity, IMO number if dangerous cargo:			
	Onboard Loading Computer		<input type="checkbox"/> IALA	

DD) VESSEL DRAFT READINGS					
PRE-CASUALTY DRAFTS*			POST-CASUALTY DRAFTS*		
	Port	Starboard		Port	Starboard
Forward			Forward		
Midships			Midships		
Aft			Aft		
Trim			Trim		
Date/Time			Date/Time		

DEADWEIGHT SCALE - Tonnes per Centimetre Immersion (TPC)** at Above Drafts:
 * Foreboard readings if draft readings are not possible
 ** Tonnes per Inch Immersion (TPI) if using Imperial System



	REMOTE ASSESSMENT AND CONSULTATION	Form#
		SSA-015_A
		Revision 1 Page 2 of 3

EE) CASUALTY INFORMATION AND VESSEL RESPONSE PLAN (VRP) ACTIVATION				
Casualty Type	<input type="checkbox"/> Grounding	<input type="checkbox"/> Sinking	<input type="checkbox"/> Capsizing	<input type="checkbox"/> Collision/Allision
	<input type="checkbox"/> Flooding	<input type="checkbox"/> Fire/Explosion	<input type="checkbox"/> Oil/HAZMAT spill	<input type="checkbox"/> Structural Damage
	<input type="checkbox"/> Equipment Failure / Loss of Propulsion <input type="checkbox"/> Other:			
Vessel Response Plan	Does the vessel have a Vessel Response Plan (VRP)?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	Has your Qualified Individual been notified?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	Has the VRP been activated?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Vessel Damage	Flooding:			
	Structural Damage:			
	Cargo damage, loss, hazards:			
Pollution	Reported pollution, oil spill:			
	Fuel oil type and quantity:			

EE) ADDITIONAL INFORMATION	

	REMOTE ASSESSMENT AND CONSULTATION	Form#
		SSA-015_A
		Revision 1 Page 3 of 3

GG) DESCRIPTION OF TYPE OF INFORMATION		CHECK
1. Contact Details of the vessel Emergency Response Service (ERS)		
2. General Arrangement		
3. Limsa Plan / Hull Offsets		
4. Capacity Plan		
5. Midship Section		
6. Still Expansion		
7. Decking Plan		
8. Trim and Stability Booklet, including hydrostatics		
9. Framing Deck Drawing and Framing Aft Drawing		
10. Machinery Arrangement Drawing		
11. Cargo Piping and Tank Vent Drawings		
12. Cargo Storage Plan		
13. Departure or last known Loading Condition including tank status, draughts, strength and stability data		
14. List /list, including Dmc recorded		
15. Latest draught readings, including time recorded		
16. Latest water depths, or foreboard readings, around vessel, including time recorded.		
17. Latest status of tanks and compartments, giving known breaches and damages.		
18. Details of ship's gear, including grabs.		
19. Engine Room operational status.		
20. Any photographs that would assist to understand the situation.		

Electronic versions in AutoCAD, pdf or tiff, if available, should be sent via E-mail to salvage@smit.com stating in the subject line the vessel's name. Otherwise hard copies should be provided at your earliest opportunity, sent to following address:

Smit Salvage Americas, LLC
 15402 Vantage Parkway East, Suite 316
 Houston, TX 77032-1966

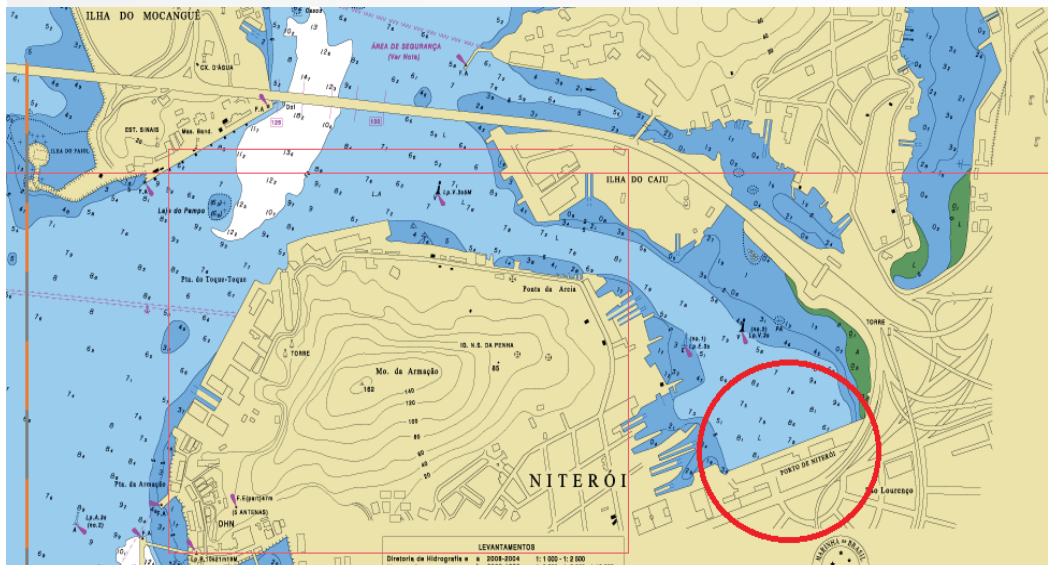
For further clarification please call: **+31 (10) 454-9911** (24/7), ask for Salvage Duty officer.

Thanks in advance for your prompt cooperation.

Smit Salvage Americas, LLC; Remote Assessment and Consultation Team

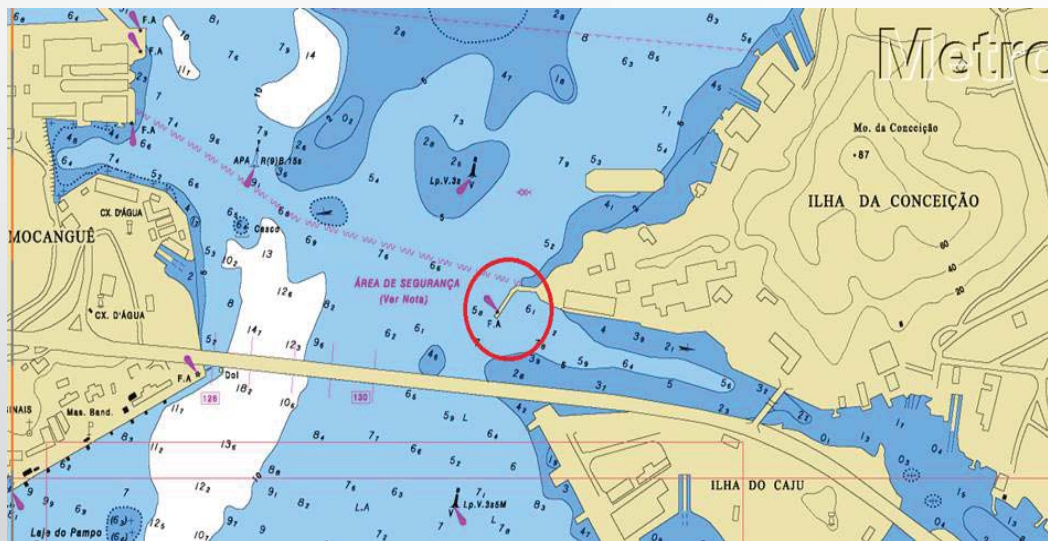
SITE ASSESSMENT - LOGISTICS

- PORTO DE NITERÓI – SUITABLE FOR STAGING PERSONNEL AND EQUIPMENT



SITE ASSESSMENT - LOGISTICS

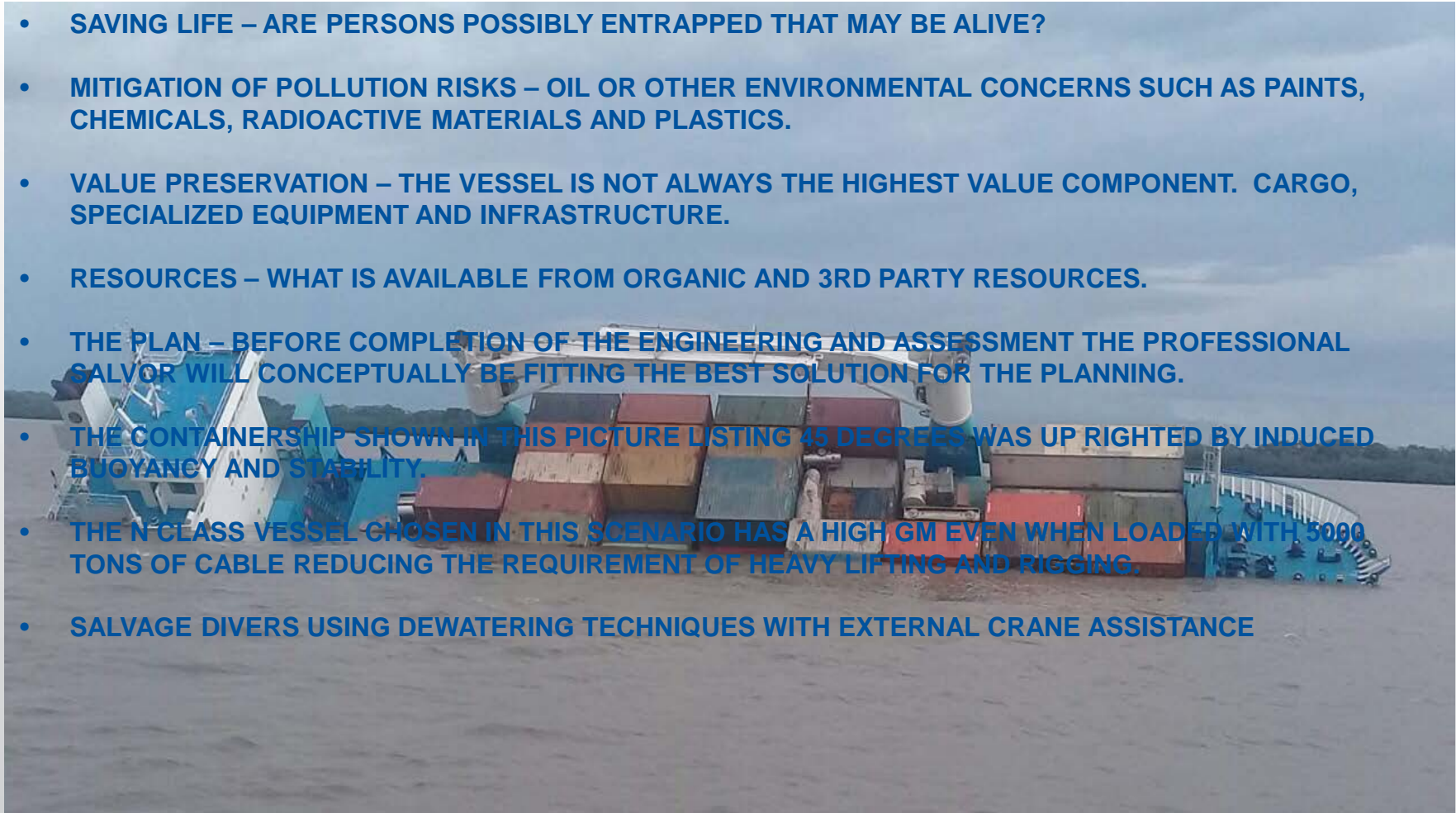
- **BRASCO (GRUPO WILSON SONS): – SUITABLE FOR STAGING PERSONNEL AND EQUIPMENT**



SALVAGE OPERATIONAL - CONSIDERATIONS



- **SAVING LIFE – ARE PERSONS POSSIBLY ENTRAPPED THAT MAY BE ALIVE?**
- **MITIGATION OF POLLUTION RISKS – OIL OR OTHER ENVIRONMENTAL CONCERNS SUCH AS PAINTS, CHEMICALS, RADIOACTIVE MATERIALS AND PLASTICS.**
- **VALUE PRESERVATION – THE VESSEL IS NOT ALWAYS THE HIGHEST VALUE COMPONENT. CARGO, SPECIALIZED EQUIPMENT AND INFRASTRUCTURE.**
- **RESOURCES – WHAT IS AVAILABLE FROM ORGANIC AND 3RD PARTY RESOURCES.**
- **THE PLAN – BEFORE COMPLETION OF THE ENGINEERING AND ASSESSMENT THE PROFESSIONAL SALVOR WILL CONCEPTUALLY BE FITTING THE BEST SOLUTION FOR THE PLANNING.**
- **THE CONTAINERSHIP SHOWN IN THIS PICTURE LISTING 45 DEGREES WAS UP RIGHTED BY INDUCED BUOYANCY AND STABILITY.**
- **THE N CLASS VESSEL CHOSEN IN THIS SCENARIO HAS A HIGH GM EVEN WHEN LOADED WITH 5000 TONS OF CABLE REDUCING THE REQUIREMENT OF HEAVY LIFTING AND RIGGING.**
- **SALVAGE DIVERS USING DEWATERING TECHNIQUES WITH EXTERNAL CRANE ASSISTANCE**



TUG ASSET -SMIT TUGS BRAZIL



- **COMPLETE SPECTRUM OF TOWAGE SERVICES IN BRAZIL**
- **SAAM SMIT TOWAGE BRASIL OPERATES 46 TUGS IN 14 DIFFERENT PORTS AND TERMINALS IN BRAZIL.**
- **2006-2017 BRAZILIAN NEWBUILD PROGRAM OF 35 ASD TUGS OF 45-70 TONS BOLLARD PULL,**
- **BASED ON PROVEN INTERNATIONAL DESIGNS AND EQUIPMENT. 2017-2018 ANOTHER 2 ASD 70 TBP UNDER CONSTRUCTION.**
- **BRAZILIAN STAFF, CREW, FINANCE AND CONSTRUCTION. INTERNATIONAL STANDARDS, MANAGEMENT AND NETWORK. BEST OF BOTH WORLDS.**



HEAVY LIFT ASSETS – RIO AREA



SUPERPESA-MARÍTIMA

Balsa guindaste PACECO 360ton

SALVAGE PLAN – OUTLINE



Rio Forum Cable Salvage Scenario

DOCUMENT NUMBER: EN-SAL-533
 PROJECT NAME: Rio Salvage Scenario – Cable lay vessel
 PROJECT NUMBER: TBN
 CLIENT NAME: Drill
 CLIENT REFERENCE: Drill

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DOCUMENT CONTROL

General document data	
Document Title:	Rio Forum Cable Salvage Scenario
Document Number:	EN-SAL-533
Project Name:	Transocean Recovery Moon Pool Flap
Project Number:	DR
Client Name:	Transocean
Client Reference:
Client Revision Number:
Boekalis Entity:	SMIT Salvage

Revision status		
Revision Number:	rev. 1.0	
Revision Date:	28-Sep-2017	
Approval Status:	drill	
Prepared By:	Bart Meljering	Role: Salvage Master
Reviewed By:	Chris Bos	Role: Sr. Salvage Master
Interdisciplinary Check:	Roy Riehof	Role: Naval Architect
Approved By:	Douglas Martin	Role: General Manager

Change log		
Revision	Section	Change
Rev.	All	New Issue
01	-	-



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SALVAGE PLAN – COMMERCIAL CONSIDERATIONS



- **PROPOSAL BASIS TYPICAL CONSIDERATIONS:**

- **LUMP SUM NO CURE NO PAY – WRECKFIX**, NOT SUITABLE FOR THIS SCENARIO, TYPICALLY WRECK REMOVAL WITH CLEARLY IDENTIFIED SCOPE OF WORK AND RESOURCES REQUIRED.
- **LUMP SUM – STAGE PAYMENTS – WRECKSTAGE**, NOT SUITABLE FOR THIS SCENARIO, TYPICALLY WRECK REMOVAL WITH CLEARLY DEFINED SCOPE OF WORK AND RESOURCES REQUIRED, CONTRACTOR DOES NOT HAVE TO FINANCE THE ENTIRE OPERATION AND EACH STAGE PAYMENT IS FULLY EARNED WHEN MILESTONE IS MET.
- **DAILY HIRE TIME AND MATERIALS – WRECKHIRE**, SUITABLE FOR THIS SCENARIO, TYPICALLY USED WHEN SUFFICIENT TIME EXISTS TO NEGOTIATE A CONTRACT. IT IS COMMON TO HAVE PRE-AGREED CONTRACTS THAT INCLUDE DAILY HIRE CONTRACTS WITH OR WITHOUT BONUS PROVISIONS.
- **SALVAGE NO CURE NO PAY – LLOYDS OPEN FORM**, SUITABLE AGREEMENT FOR SITUATIONS WHERE SCOPE OF WORK IS NOT CLEARLY DEFINED AND URGENCY EXISTS. THERE ARE ALSO SITUATIONS WHERE CORPORATE POLICIES WERE NOT DEVELOPED CONSIDERING RESPONDING TO AN EMERGENCY SALVAGE SITUATIONS THEREBY INHIBITING THE OPERATIONS. LOF AFFORDS THE POSSIBILITY FOR COMPANIES WITH NORMALLY LITTLE ABILITY TO DEVIATE FROM POLICIES THE POSSIBILITY TO DO SO.
- **LLOYDS OPEN FORM WITH SCOPIC** – SCOPIC IS A SAFETY NET MECHANISM ADDING A TIME AND MATERIALS COMPONENT TO A LOF AGREEMENT.
- **LLOYDS OPEN FORM ARTICLE 14** – ANOTHER SAFETY NET THAT EXISTS IN THE EVENT SCOPIC IS NOT INCORPORATED INTO THE LOF AGREEMENT – LIKE LAS VEGAS THERE ARE A FEW SIMPLE RULES.



SALVAGE PLAN – AUTHORITIES

- **PROPOSAL BASIS TYPICAL CONSIDERATIONS:**

- CAPTAIN OF THE PORT (NAVY) – WE HIGHLY RECOMMEND VERY CLOSE COMMUNICATIONS AND COOPERATION WITH THE COTP. THEY ARE DEPENDING ON THE SALVOR AND RESPONSIBLE PARTY TO ACT PROPERLY SAFEGUARDING HIS EXTENSIVE AREAS OF RESPONSIBILITY. CONFIDENCE IN EACH OTHER IS PARAMOUNT. WHEREVER POSSIBLE THE RESPONSIBLE PARTY AND THE SALVOR SHOULD BE ALIGNED IN DEALING WITH THE AUTHORITIES TO MINIMIZE INTERFERENCE, FINES AND WORSE. CONFIDENCE AND TRUST ARE EARNED – ACT ACCORDINGLY!
- IBAMA – RESPONSIBLE FOR NATIONAL ENVIRONMENTAL POLICY AND LICENSING IN BRAZIL. SALVAGE PLANS MUST BE APPROVED BY BOTH THE NAVY (COTP) AND IBAMA. ENVIRONMENTAL PENALTIES IN BRAZIL ARE VERY SEVERE AND SALVORS ARE HELD TO A VERY HIGH LEVEL OF ACCOUNTABILITY AND RESPONSIBILITY. IT IS NOT PERMISSIBLE TO SIGNIFICANTLY CONTRACTUALLY MITIGATE THE SALVORS RESPONSIBILITY IN BRAZIL.
- FEDERAL AND STATE AUTHORITIES MAY BE A PART OF THE APPROVAL PROCESS:
 - INSTITUTO BRASILEIRO DO MEIO AMBIENTE E DOS RECURSOS NATURAIS RENOVÁVEIS (IBAMA) ...
 - INSTITUTO CHICO MENDES DE CONSERVAÇÃO DA BIODIVERSIDADE (ICMBIO) ...
 - COMPANHIA AMBIENTAL DO ESTADO DE SÃO PAULO (CETESB) ...
 - FUNDAÇÃO ESTADUAL DO MEIO AMBIENTE (FEAM) ...
 - INSTITUTO DO MEIO AMBIENTE E RECURSOS HÍDRICOS (INEMA)

SALVAGE: THE PARTIES INVOLVED



IN SUMMARY – SALVAGE PLANNING

Summary of actions taken when planning a salvage Operation:

INITIATE

ASSESS

PRIORITIZE

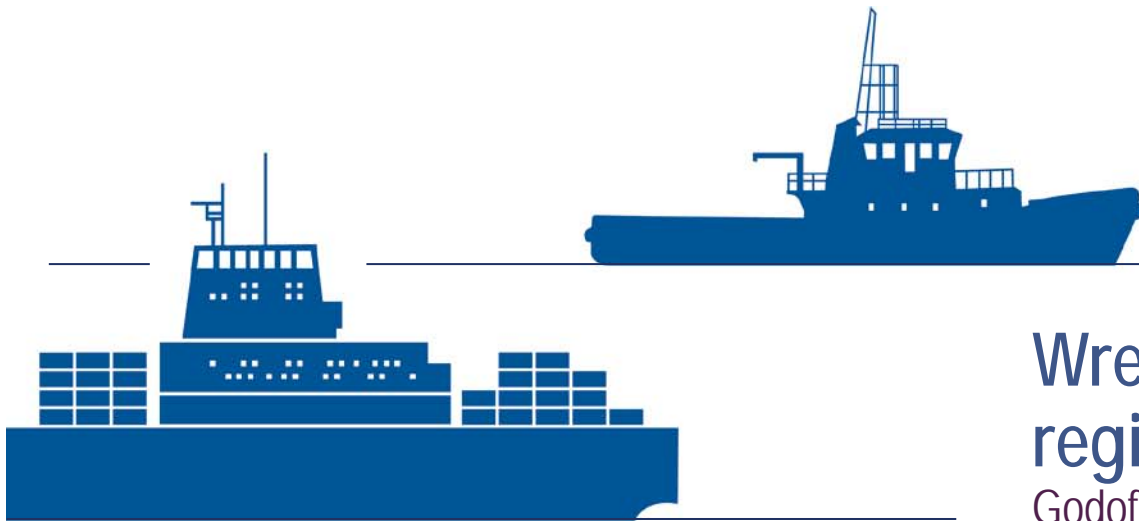
PLAN

EXECUTE

FINALIZE



**Standard
Club**



Wreck removal contracts & regimes in Brazil

Godofredo Mendes Vianna

Partner, Kincaid



Wreck Removal Contracts and Regimes in Brazil

85
ANOS
1932 • 2017

Standard Club - Latin America Forum 2017



**Standard
Club**

1. Legal Framework
2. Authorities
3. Immediate Obligations/Steps
4. Liability Regime
5. Case Study



Law n. 7542/86



Regulates the research, exploitation, removal and demolition of objects or properties sunk, submerged, stranded and lost in waters under national jurisdiction, on marine land and on marginal land.

NORMAM n. 10



Enacted by the Directorate of Ports and Coasts (DPC), the Normative Resolution regulates the removal of wrecks. It establishes standards and procedures for authorizing the research, removal, demolition or exploitation of wrecks.

International Convention of Nairobi – WRC 2007

- ❖ On April 14th, 2014, the Nairobi International Convention on the Removal of Wrecks, WRC 2007, reached the required number of ratifications for its entry into force internationally, which took place on April 14, 2015;
- ❖ The Convention requires shipowners to obtain insurance or provide adequate financial security to cover the costs of locating, marking and clearing wrecks and gives States Parties the right to take direct action against insurers.
- ❖ Vessels registered in a State Party to the Convention must obtain a Certificate as sufficient proof that they have insurance or financial security. Vessels registered in a State which is not a Party to the Convention but which undertake voyages to Country Parties shall obtain a Certificate issued by a State Party to the Convention.
- ❖ Brazil is not signatory of that Convention.



BRAZILIAN NAVY - Competent Authority



- ❖ Maritime Authority is the competent administrative body responsible to control and supervise the operations and activities related to the research, exploitation and removal of wrecks.
- ❖ Responsible to determine if there is any need for wreck removal operations and to demand such removal from the responsible parties.
- ❖ Authority takes into consideration whether wreck poses a threat or an obstacle to the navigation, a threat of losses to third parties, or of damages to the environment.



Immediate Obligations

The Master of the Vessel has an obligation to inform the authorities – Article 8, V, “b” Law n. 9.537/97

When the sunken objects constitute a danger, obstacle to navigation or threat of damage to third parties or the environment, the Maritime Authority may impose to the responsible party the obligation to remove the wreck or may take the operations of removal (Art. 5, Law n. 7.542/86)

The party responsible for the sunken object may request its removal by filing a request for a license to remove the wreck (art. 4, Law n. 7.542/86)



If the Maritime Authority demands the removal

❖ **When can the Maritime Authority determine the removal?**

When the sunken objects constitute a danger, obstacle to navigation or threat of damage to third parties or the environment, the Maritime Authority may impose to the responsible party the obligation to remove the wreck or may take the operations of removal (Art. 5, Law n. 7.542/86).

❖ Non-compliance with the obligation to notify the authorities: the master of the vessel may face penalties of fine or suspension of the certificate of qualification (which may not exceed 12 months). These penalties may be cumulative and applied through an administrative procedure.

❖ Who will be responsible for the removal? “Responsible party”.

❖ The Maritime Authority will fix a deadline for the removal.

❖ Maritime Authority may assume the operation, at the expenses of the responsible party, should the responsible party fail to remove within the established deadline (art. 10, Law n. 7542/86). Possibility to contract a 3rd party.

❖ Preliminary actions may be requested to ensure safety of the operation.



If the interested party requests the License

- ❖ Party responsible for the wreck may request a license within 5 years of the occurrence.
- ❖ NORMAM: owner of the wreck
- ❖ After 5 years without any action, property passes to the State.
- ❖ Responsible party may transfer its right to a third party, remaining liable for damages to the safety of navigation, third parties or environment caused by the wreck or the wreckage removal operation.



Necessary documents to request the authorization for removal

- ❖ Request to the Commander of the Naval District;
- ❖ Copy of the social contract and National Registry of Legal Entities (CNPJ);
- ❖ Copy of the document that authorized the research in the area;
- ❖ List of means available for carrying out the services, describing, in the case of ships, all existing equipment on board;
- ❖ Description of the work, including the method to be employed, the start and end date and the expected schedule of the main events; and
- ❖ **Opinion of the agency responsible for controlling the environment, when the property is located in a Conservation Unit area, such as Marine Parks, and Ecological and Biological Reserves.**
- ❖ List of technical personnel that will participate in the operation.



- ❖ There is no limitation of liability.
- ❖ Liability of the responsible party for reimbursement of removal costs if done by the Maritime Authority.
- ❖ Joint liability of the insurer of the risk of wreck removal, permitting direct action.

Art. 13 – The responsible party for the things or goods referred to in art. 1st of this law, its grantee and the insurer, who covered specifically the risks of research, exploitation, removal or demolition of things and goods, will remain jointly responsible:

I – for damages caused, directly or indirectly, to the safety of navigation, to third-parties or to the environment until the things or goods are removed or demolished or until the things and goods are incorporated into the Federal Government property, after a period of 5 years counting from the date of the incident; and

II – for the remaining amount necessary to reimburse or indemnify the Federal Government, when the Maritime Authority acted according to art. 10 and paragraph 2 of art. 11.



- ❖ Art. 13 § 1º In case of a vessel, its responsible party is jointly liable with the responsible party of the cargo, for the damages that the cargo may cause to the safety of navigation, to third parties and to the environment.
- ❖ Wreck with cargo on board: if cargo owner does not show interest in the removal, shipowner may request license for its removal.
- ❖ Maritime Authority may order the removal to cargo owner or shipowner or both.



- ❖ BOKA N sinks in shallow waters
- ❖ Inform authorities
- ❖ Inquiry at Port Captaincy
- ❖ Possible order to remove or request license
- ❖ Liabilities – damage to existing cable, pollution, damage to other vessels
- ❖ Contractual issues – owner/charterer



CÓPIA



MARINHA DO BRASIL
CAPITANIA DOS PORTOS DO CEARÁ
Av. Vicente de Castro nº 4917 - Mucuripe
60180-410 - Fortaleza - CE
Tel.: (85) 3133-5100 - secom@cpce.mar.mil.br

Ofício nº [REDACTED]
DJ/DJ/06
999
ET-2013/08-01108

Fortaleza, em 29 de agosto de 2013.

A Sua Senhoria o Senhor
[REDACTED]

Assunto: Solicitação de Remoção da Embarcação [REDACTED]

Prezado Senhor,

1. Com fundamento no art. 5º, da Lei nº 7.542, de 26 de setembro de 1986, que prevê que a Autoridade Naval poderá determinar a remoção de uma embarcação, quando essa constituir perigo, obstáculo à navegação ou ameaça de danos a terceiros ou ao meio ambiente, solicito a Vossa Senhoria a remoção da Embarcação [REDACTED] com brevidade, após a conclusão de retirada do óleo, para local seguro, por oferecer perigo e obstáculo à navegação, com custas a cargo do Armador. Para planejamento solicito seja indicado representante junto à Capitania dos Portos do Ceará, como coordenador da remoção, e ponto de contato (TEL/CEL/EMAIL).

2. A Embarcação [REDACTED] se encontra afundada nas coordenadas de LAT 03° 49'10"S e LONG 037° 50'52"W, 30 MN ao norte do município de Beberibe/CE, numa profundidade de 21 metros, com uma distância vertical da superfície d'água em cerca de 11 metros.

3. Aproveito a oportunidade para colocar à disposição o CC (T) SAUNDERS - Tel. (85) 3133. 5120, no tocante aos aspectos operacionais, e a Primeiro-Tenente (RM2-T) DANIELE - Tel (85) 3155-5123, nos demais.

Atenciosamente,

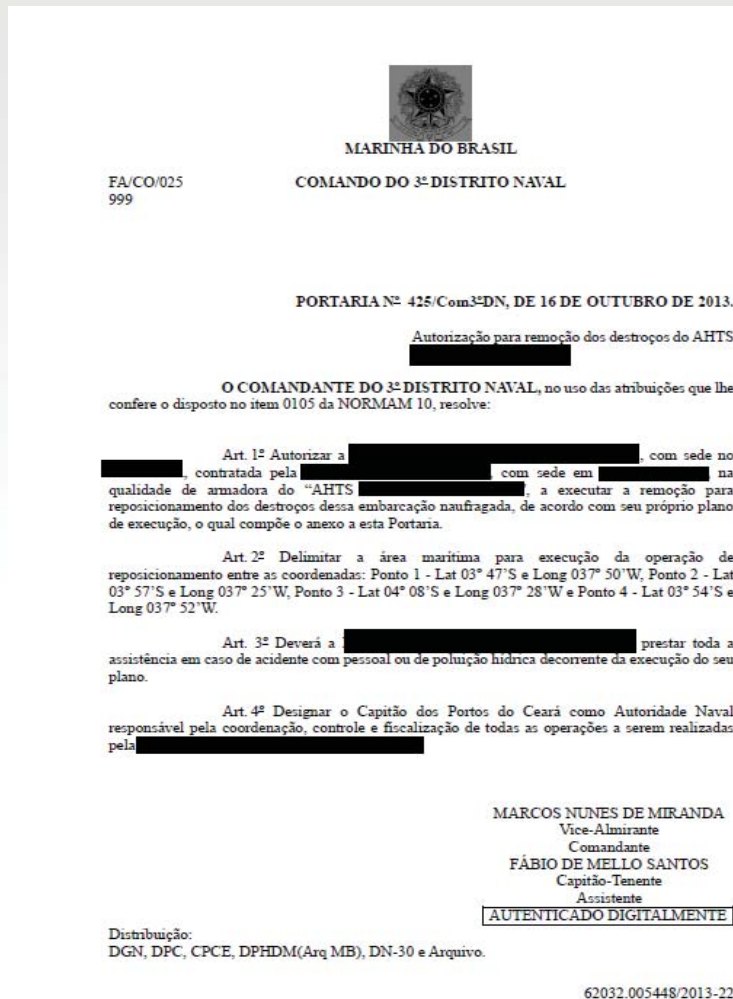

ADALBERTO BRAZ DA SILVA JUNIOR
Capitão-de-Mar-e-Guerra
Capitão dos Portos

ASSINADO DIGITALMENTE

Cópias: Com3ºDN, DPC, CPRN, CP-20, CP-07, CP-06 e Arquivo
Organizações Extra-Marinha: Petrobras e IBAMA.



- ❖ Order to remove after removing the oil
- ❖ Danger and obstacle to navigation
- ❖ Costs by shipowner



- ❖ Authorization to Salvage Company, hired by responsible party, to remove wreck;
- ❖ Appointment of a salvage master and execution plan by salvage company;
- ❖ Definition of area;
- ❖ Salvage company to assist in case of accident or pollution.



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Obrigado.

Godofredo Mendes Vianna

godofredo@kincaid.com.br



RIO DE JANEIRO – SÃO PAULO – BRASÍLIA – VITÓRIA

RIO DE JANEIRO

FONE: (55 21) 2276 6200
FAX: (55 21) 2253 4259
AV. RIO BRANCO, 25 - 1º andar
20090-003 - RIO DE JANEIRO – RJ

SÃO PAULO

FONE: (55 11) 3045 2442 / 5084 5911
FAX: (55 11) 5084 5913
Rua Vergueiro, 2087 – CJ 501
04101-000 – SÃO PAULO – SP

BRASÍLIA

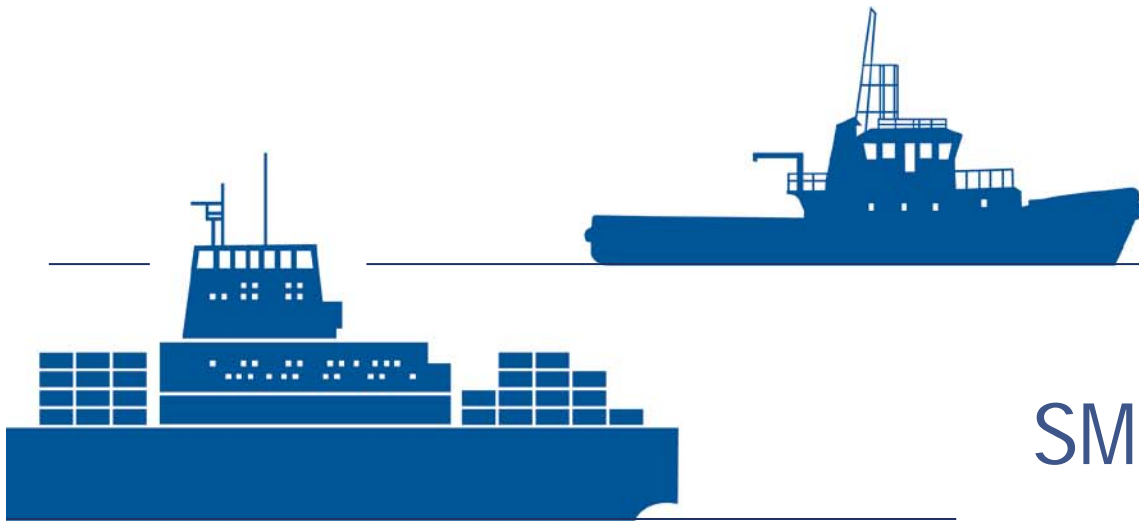
FONE: (55 61) 3542 9232
FAX: (55 61) 3543 6200
SHN, Quadra 01, Lote A. Bloco D – Sala 1006
Ed. Fusion Work – Asa Norte
70701-040 – Brasília – DF

VITÓRIA

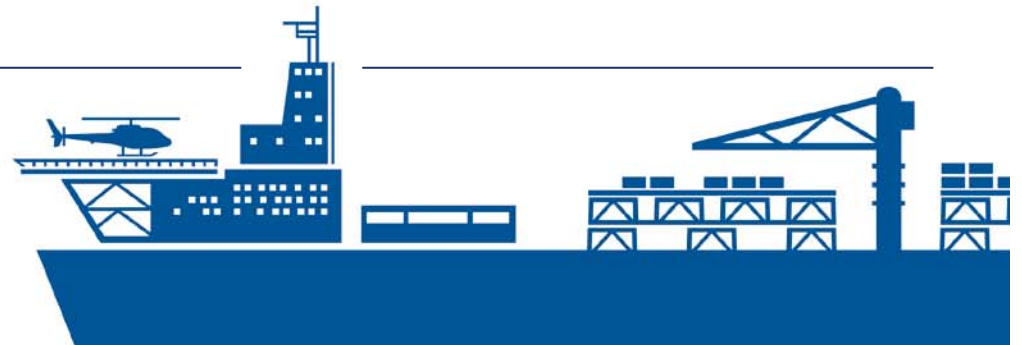
FONE: (55 21) 3019 2633
Av. Professor Almeida Cousin, 125
Ed. Enseada Trade Center
Salas 1202 a 104 – Enseada do Suá
29050-565 – Vitória - ES



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SMIT case studies





SALVAGE FORUM 2017 – SMIT SALVAGE

DOUGLAS MARTIN

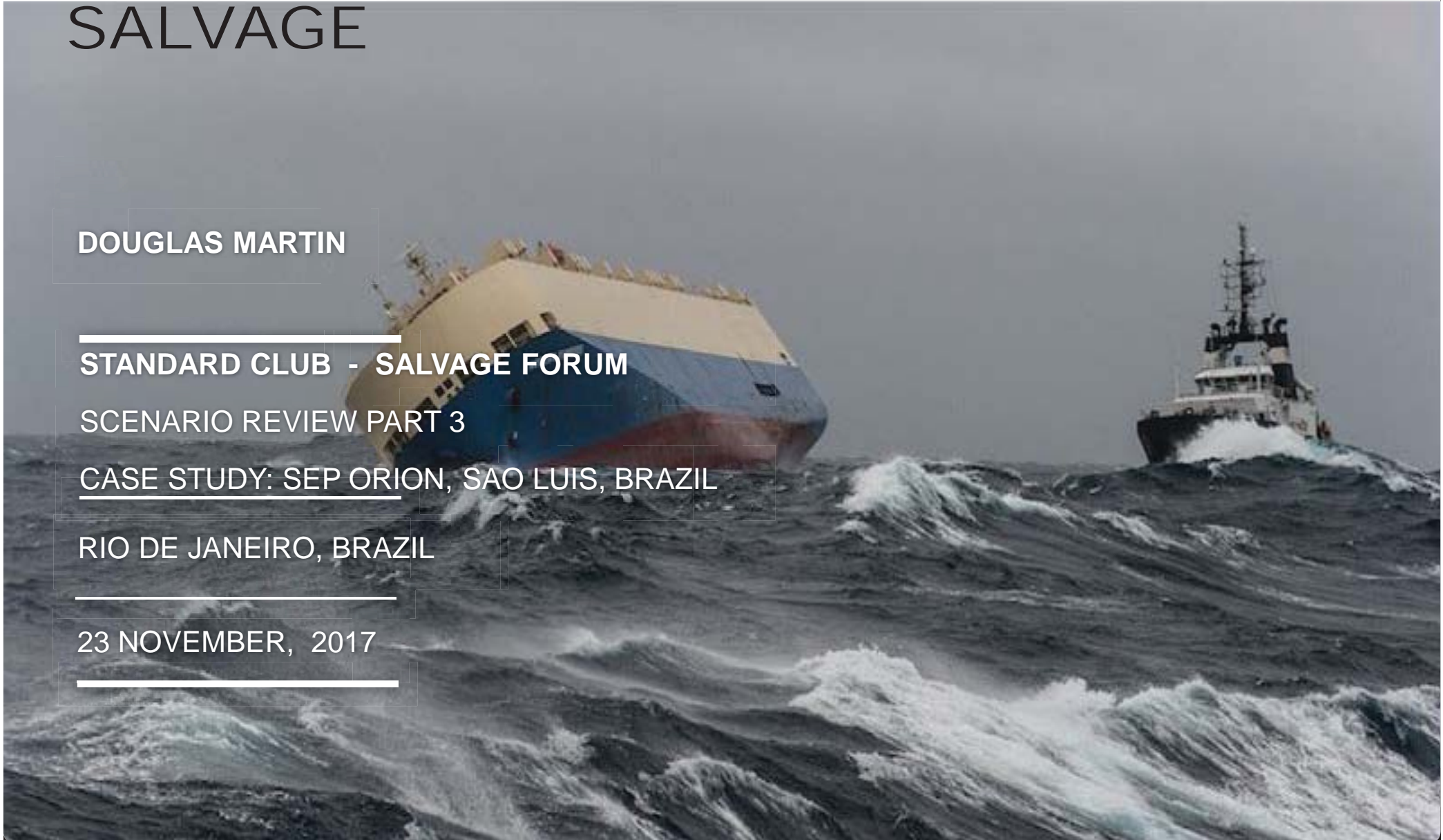
STANDARD CLUB - SALVAGE FORUM

SCENARIO REVIEW PART 3

CASE STUDY: SEP ORION, SAO LUIS, BRAZIL

RIO DE JANEIRO, BRAZIL

23 NOVEMBER, 2017



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SALVAGE & BOSKALIS**
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- 03 CASE STUDY: WRECK
REMOVAL – SEP ORION –
SAO LUIS, BRAZIL**
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- 05 QUESTIONS AND ANSWERS**
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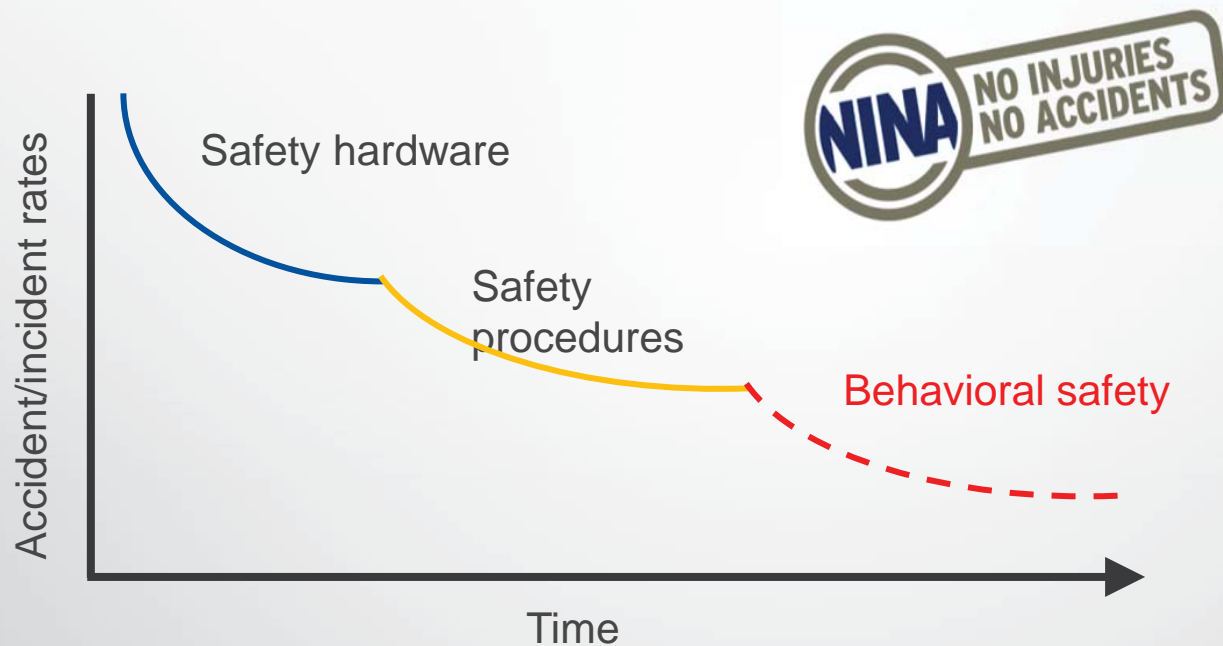
INTRODUCTION – SMIT SALVAGE & BOSKALIS



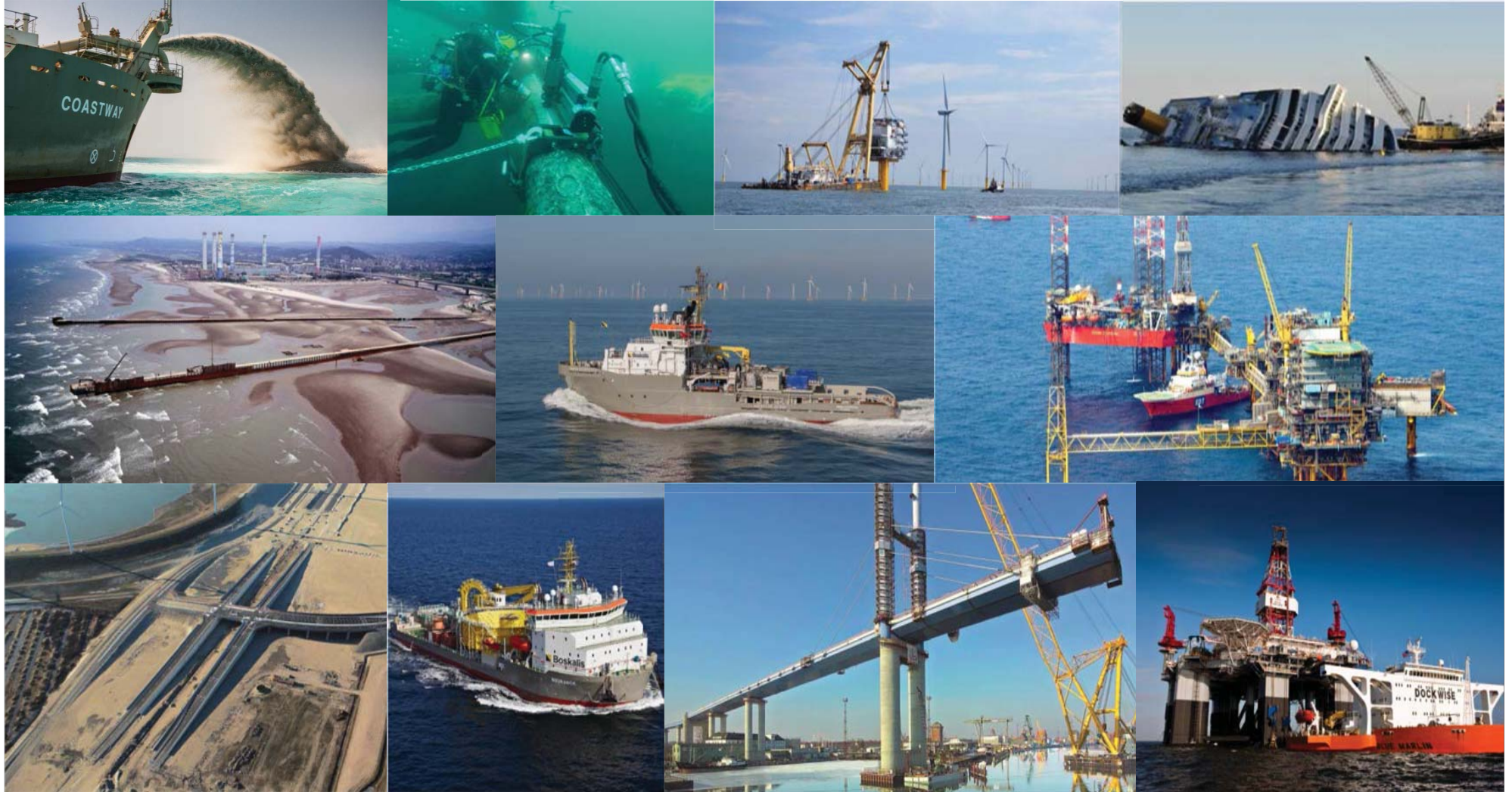
BOSKALIS NINA SAFETY PROGRAM



- **SERIOUS PROGRESS MADE OVER THE YEARS**
- **NOW FOCUSING ON BEHAVIORAL SAFETY**



BOSKALIS COMPANY INTRO



BOSKALIS DIVISIONS



SEGMENT

ACTIVITY

KEY BRANDS

DREDGING & INLAND INFRA

- Construction & maintenance of ports & waterways, land reclamation and coastal defense
- Earthmoving, roads, civil structures, soil remediation & improvement



OFFSHORE ENERGY

- Subsea Contracting and Services
- Marine Contracting and Services
- Heavy Marine Transport



TOWAGE & SALVAGE

- Harbour Towage
- Terminal Services
- Salvage



SERVED

- Ports
- Infra

- PORTS



CURRENT SCOPE OF TOWAGE JVS



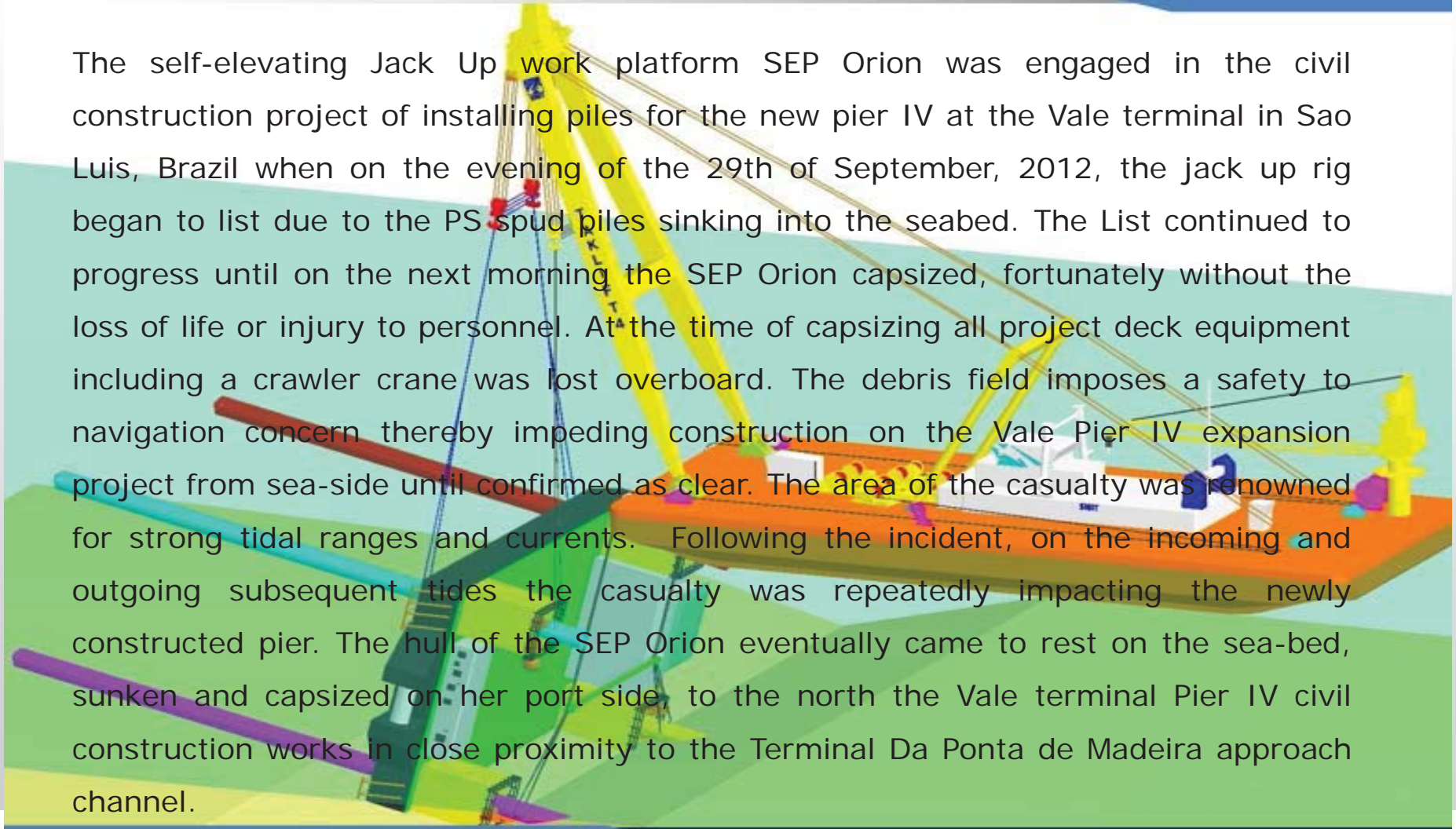
MODERN EXPRESS – EMERGENCY RESPONSE



MODERN EXPRESS VIDEO



SEP ORION – WRECK REMOVAL



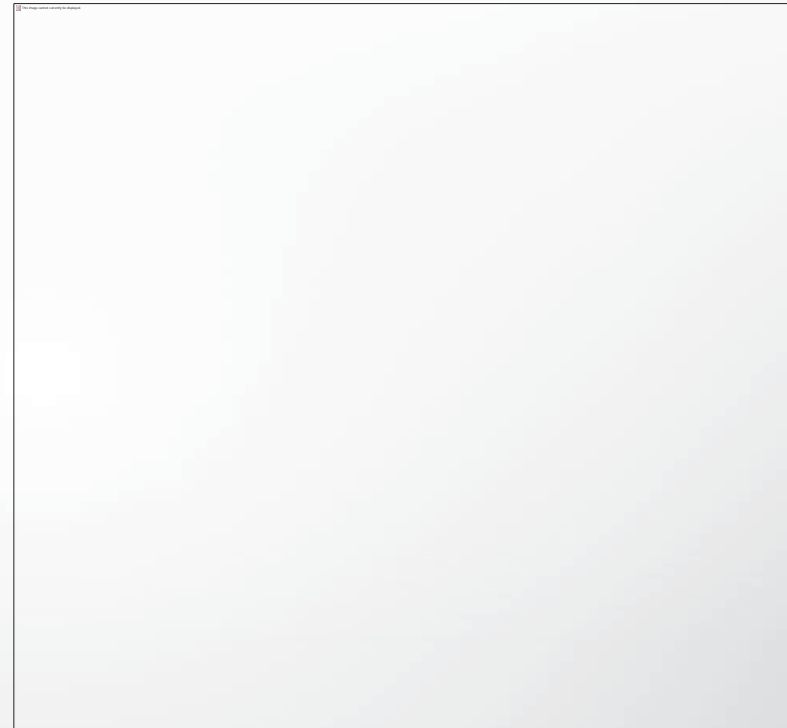
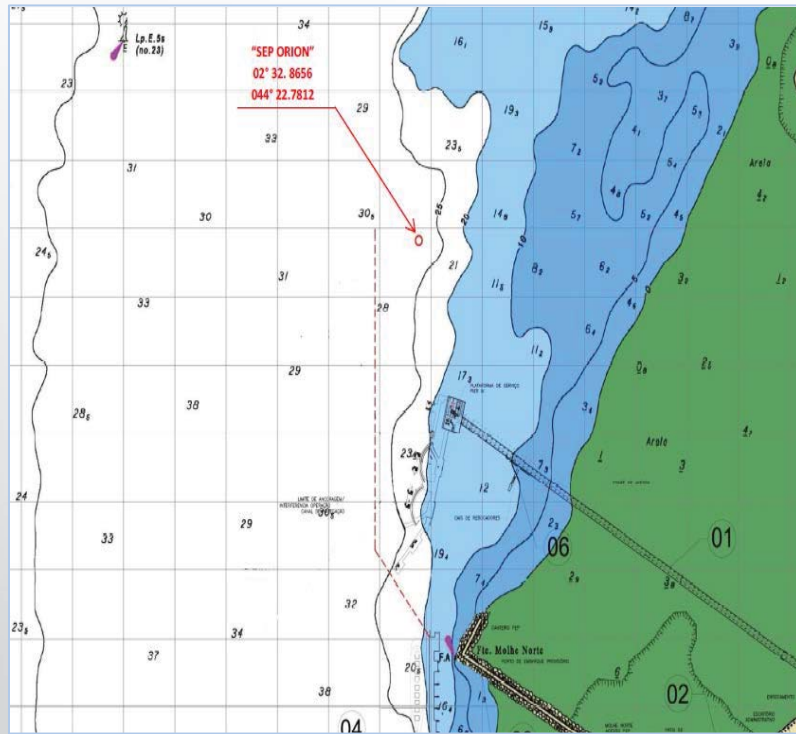
The self-elevating Jack Up work platform SEP Orion was engaged in the civil construction project of installing piles for the new pier IV at the Vale terminal in Sao Luis, Brazil when on the evening of the 29th of September, 2012, the jack up rig began to list due to the PS spud piles sinking into the seabed. The List continued to progress until on the next morning the SEP Orion capsized, fortunately without the loss of life or injury to personnel. At the time of capsizing all project deck equipment including a crawler crane was lost overboard. The debris field imposes a safety to navigation concern thereby impeding construction on the Vale Pier IV expansion project from sea-side until confirmed as clear. The area of the casualty was renowned for strong tidal ranges and currents. Following the incident, on the incoming and outgoing subsequent tides the casualty was repeatedly impacting the newly constructed pier. The hull of the SEP Orion eventually came to rest on the sea-bed, sunken and capsized on her port side, to the north the Vale terminal Pier IV civil construction works in close proximity to the Terminal Da Ponta de Madeira approach channel.

SEP ORION PARTICULARS

Particulars "SEP ORION"		
L_{oa} :	abt. 55.00	m
L_{pp} :	50.00	m
Beam (mld):	28.00	m
Depth (mld)	4.50	m
Draft (design):	3.00	m
Lightweight (including spud piles):	2770	ton
KG (spud piles up)	11.59	m
Built:	2010	
No. of spud piles	4	
Diam. of spud piles	2.3	m
Length of spud piles	65.7	m



LOCATION – VALE TERMINAL NEW PIER



SEP ORION - SIZING UP THE RESPONSE



SEP ORION – WRECK REMOVAL PHASES



Spanning over a nine month period of time between 30-September, 2012, until July, 2013, SMIT salvage SEP Orion related works were divided into four sequentially executed phases (contracts). All contracts and their associated Salvage Plans were design so as to promote the highest standards of safety, expedience, and protection to the marine environment.

PHASE I: Stabilization / Accessible Oil recovery / debris

Identification

PHASE II: Caretaker / Debris recovery Operations

PHASE III: Crane Recovery / SEP Orion Wreck Removal

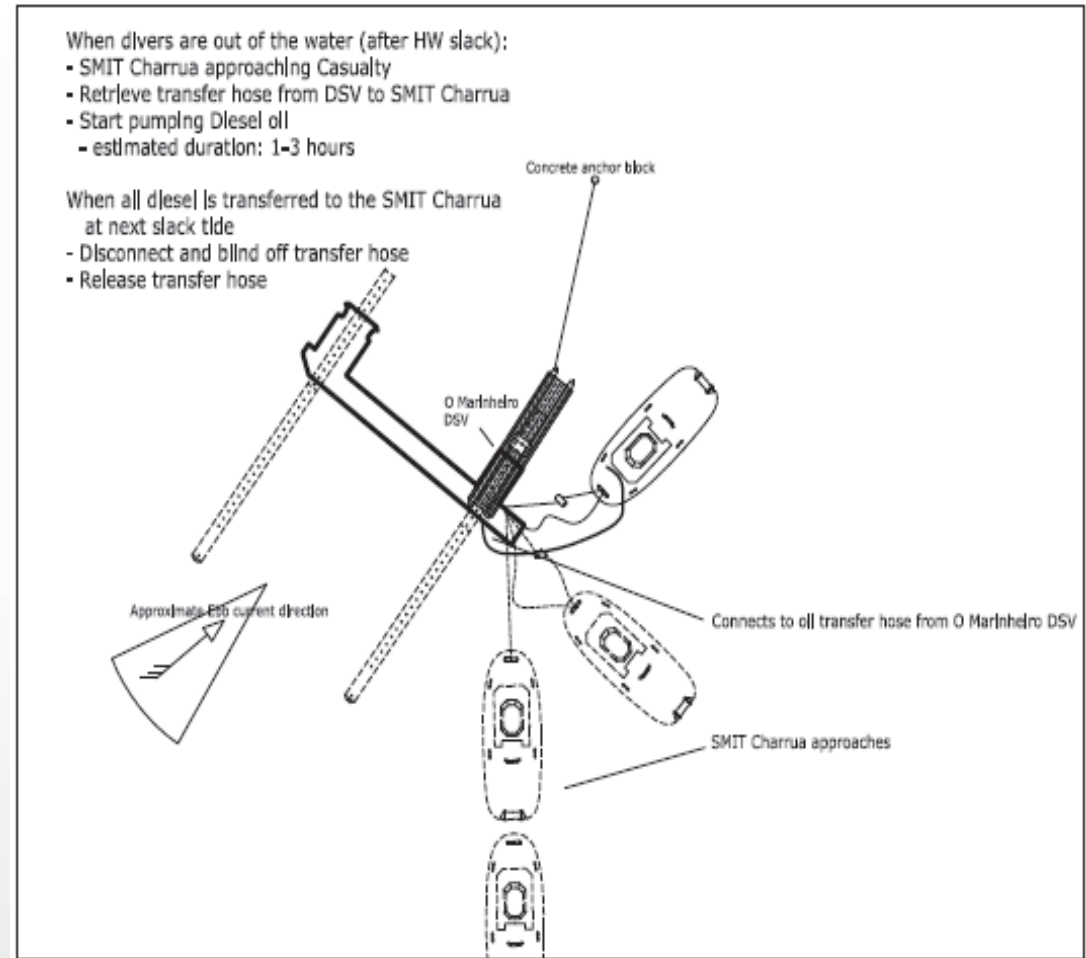
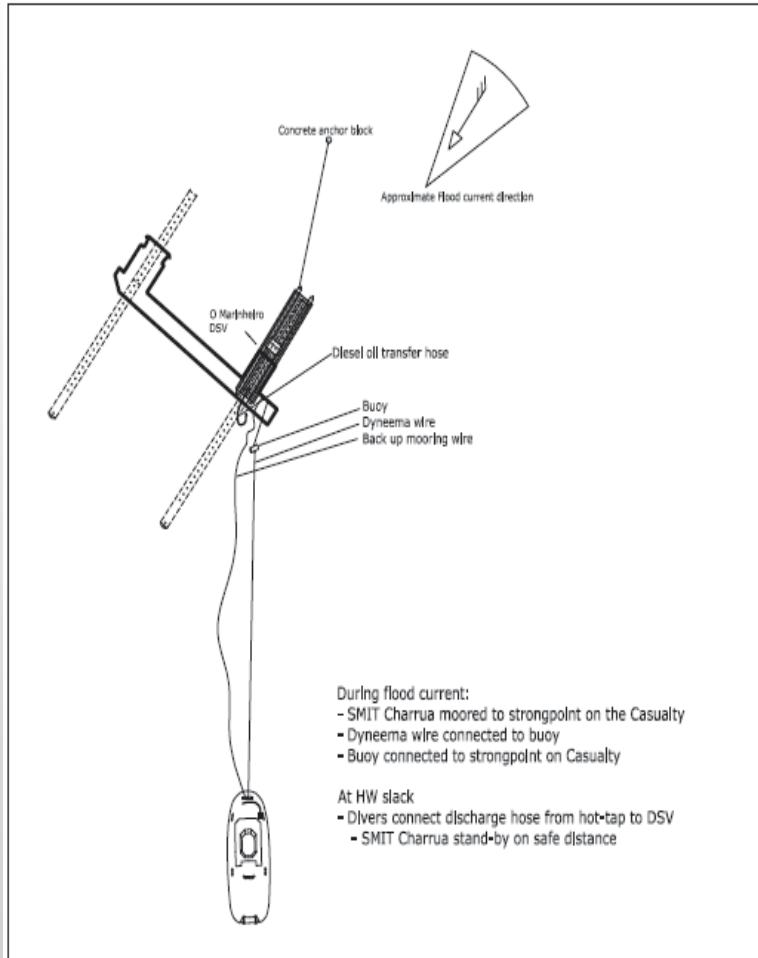
PHASE IV: Destruction by Sinking (Scuttling)



PHASE 1 RESOURCES

Phase I - III	
Tug	SMIT
2 x Salvage Master	SMIT
1 x Salvage Consultant	SMIT Brasil
1 x Cost Controller	SMIT
1 x Naval Architect	SMIT
1 x Salvage Engineers	SMIT
1 x Salvage Superintendent	SMIT
3 x Diver / Riggers	SMIT
HOT-Tapping and pumping package	SMIT
Fuel Storage (Tank-Container or alternate)	SMIT "Charrua"
Dive support vessel "OMarineihro"	O'Marinheihro
Mooring Arrangement (buoys / clump-wt)	Star Services
Dive spread / 5 x Divers / 'Mar 22' tender	O'Marinheihro
Small shuttle craft 'Striper'	O'Marinheihro
Rigging	SMIT
Survey Equipment/boat (multibeam, magnetometer,...)	Jan De Nul
Underwater tool spread (cutting/welding)	OMarinheiro

OIL RECOVERY – WORKING WITH TIDES



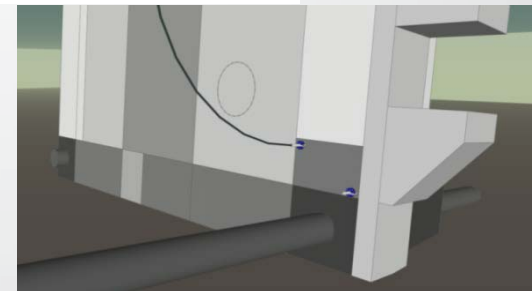
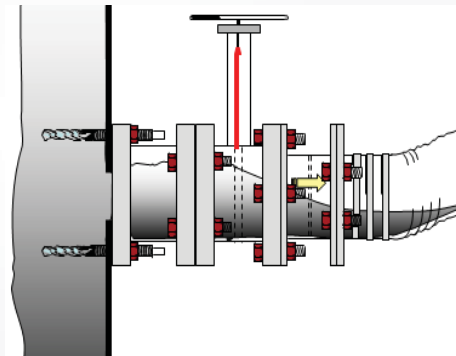
PHASE 1- POLLUTANT RECOVERY

RECOVERY OF POLLUTANTS

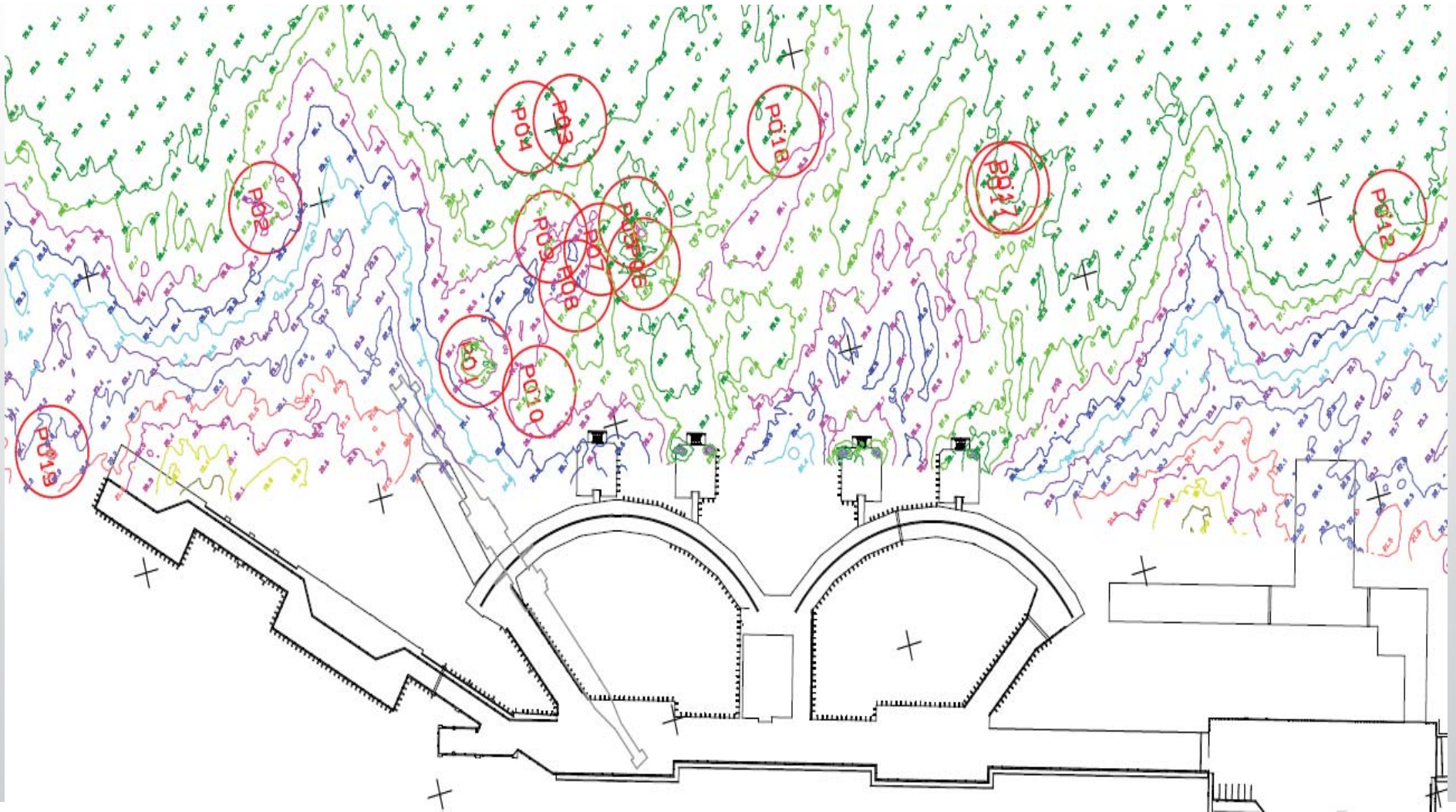
TEAM USING SPECIALIZED HOT TAP EQUIPMENT AND PORTABLE PUMPS REMOVED 27.7 M3 OF DIESEL FROM FOT-P.

THOUGH HW/LW SLACK WATER DIVING TIMES WERE RESTRICTED TO APPROXIMATELY 30-60 MINUTES A DAY

A PONTOON DIVE PLATFORM SECURED TO A MULTI-POINT MOORING ARRANGEMENT THE OIL RECOVERY PROCEEDED SMOOTHLY, WITHOUT INCIDENT, AND TO THE SATISFACTION OF THE RELEVANT AUTHORITIES.



DEBRIS IDENTIFICATION AND RECOVERY



DEBRIS RECOVERY TIMELINE

20-Nov	SMIT executing additional services; caretaking / small item debris field clearance. Sourcing and mobilizing suitable equipment to execute contracted works.
23-Nov	SMIT wreck site 24/7 stand-by vessel replaced by catamaran "Caburezinho"
30-Nov	Survey equipment engaged and mobilizing
06-Dec	SEP Orion damaged leg deemed non-buoyant by diver survey
11-Dec	Survey equipment arrives, Sau Luis – preparations being made
12-Dec	Commence survey and debris recovery activities using divers / Multi-Cat DN-201
15-Dec	Commence side-scan and multi-beam survey of debris field
19-Dec	Surveys completed – Preliminary results reviewed
22-Dec	Dive discovery of crawler crane / final survey determination of objects projecting from the seabed for priority diver verification
03-Jan	Final comprehensive survey report complete for 12/12-19/2012 surveys.
15-Jan	Surveys with cross-views per various depths to assist continued debris clearance
18-Jan	Authorized to mobilize crane barge for debris recovery; "DN-125"
23-Jan	Crane barge DN-125 with orange peel grab supplementing debris removal works
07-Mar	catamaran "Caburezinho" dismissed from stand-by duties (Taklift-4 on station)
03-Apr	Small item debris recovery operations complete

DEBRIS RECOVER WITH SAND WAVES



TAKLIFT 4 – SALVAGE SHEERLEGS

- ❌ 3,000t capacity: 2,200 ton A-Frame + 800t deck tackles
- ❌ A-Frame lift stability
- ❌ 4 Block control
- ❌ 50 ton crane (Stern)
- ❌ Self-propelled (2 x Z-drive)
- ❌ Bow Thrusters (2 ea.)
- ❌ Built-in Contingency
- ❌ Accommodations for 40
- ❌ 4-point mooring spread (4 x 1,200m wires)
- ❌ Winches, compressors, welding, cutting, fabrication
- ❌ Deep Air Diving Spread

In order to perform the prescribed works modifications to the Taklift-4 main deck fairleads, mooring winches, and deck general arrangement were required

RESOURCES FOR CRANE AND WRECK REMOVAL



Crane and Wreck Removal resources	
1 x Salvage Master	SMIT
1 x Salvage Consultant	SMIT Brasil
1 x Salvage Superintendent	SMIT
1 x Project Controller	SMIT
1 x Salvage Engineer	SMIT
6-8 x Diver / Riggers	SMIT
2 x Boskalis Gouger/welder	Boskalis
SEP Orion Cleaning Team	STAR Services
Welding Team w/ equipment	STAR Services
Taklift-4 (Heavy-Lift sheer leg vessel) see 5.4.1 detail	SMIT
High capacity pumping package	SMIT
SMIT Tugs	SMIT
Fast Boat	O Marinheiro
Dive support vessel "Mar-22"	O Marinheiro
Dive spread	O'Marinheiro
Shore cranes	Itaqui Port
Cargo handling gear (fork-lifts / reach-stackers)	Itaqui Port
Specialized tooling (spreader beam and for leg lifting)	CEM, Sao Luis
1m3 tank cubes x 15	local
Garbage skids x 10	local
Oil Pollution kit / cleaning kit	local
Portable lighting / portable ventilators / gas meters	SMIT
Vacuum truck / munk trucks	local



CRANE RECOVERY WITH SAND WAVES



The 250t crawler crane was submerged beneath sand whose bottom profile was constantly shifting in an area of high current velocities.



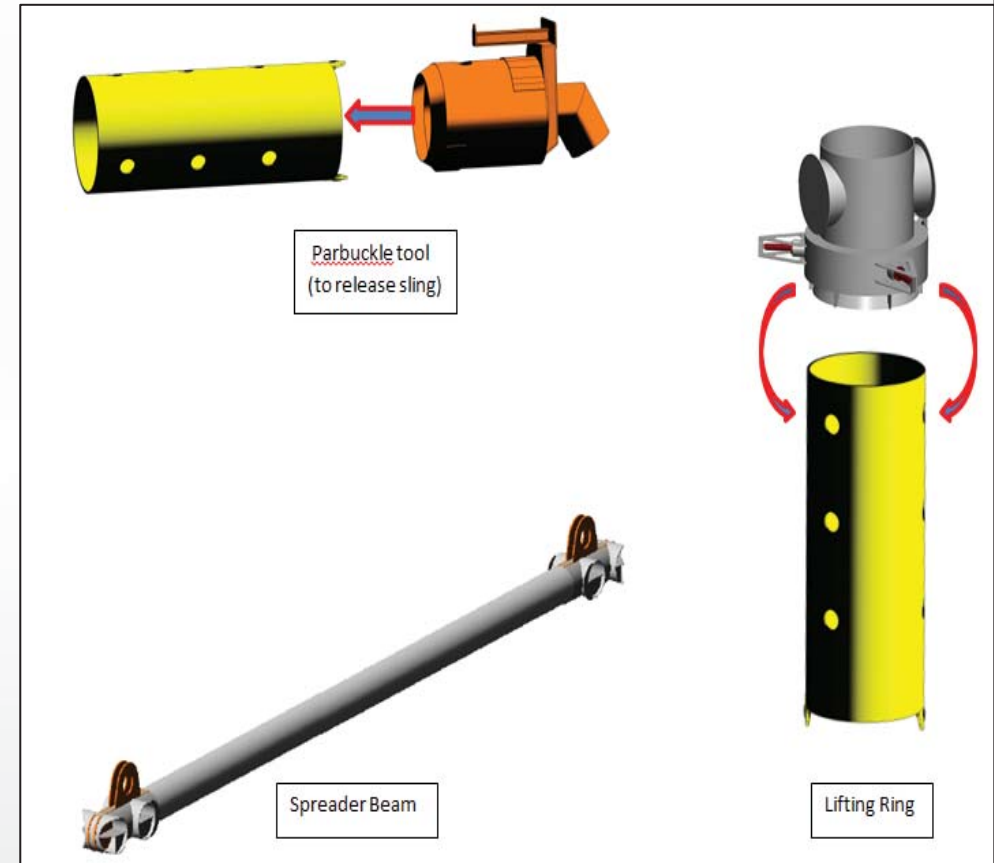
CUSTOM TOOLING – FABRICATED NEAR SAO LUIS, BRAZIL



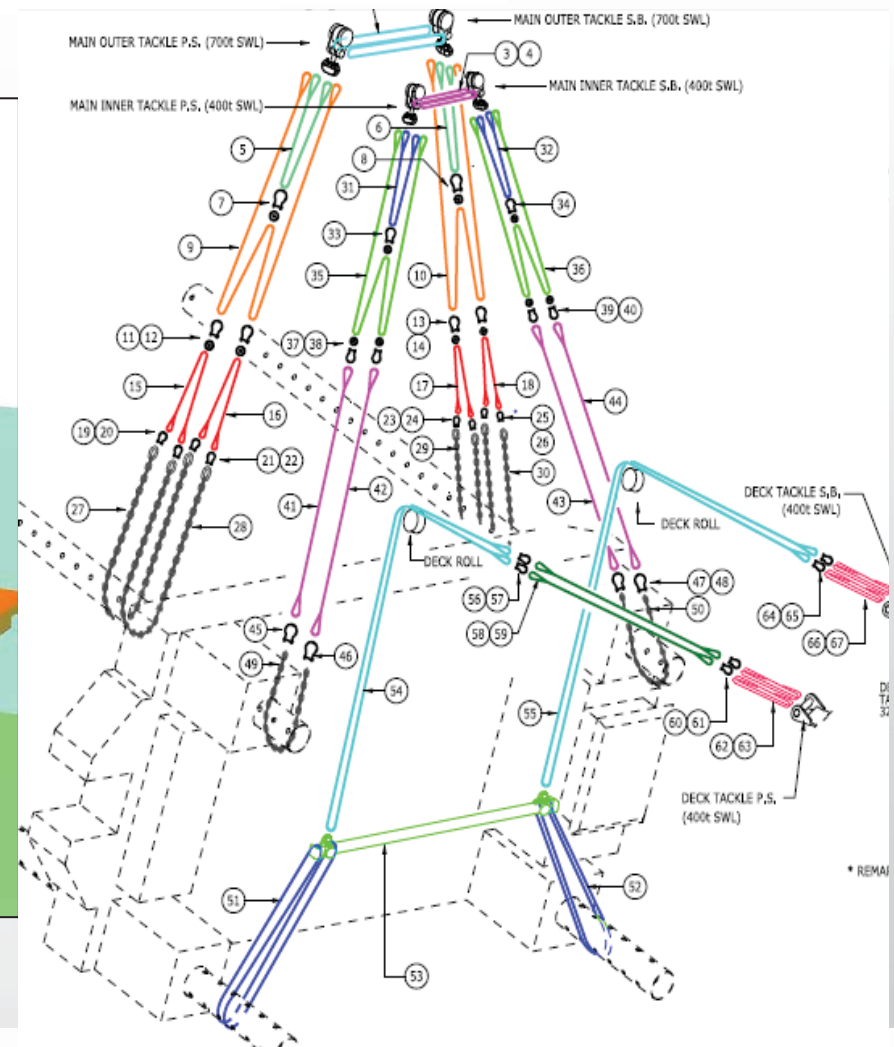
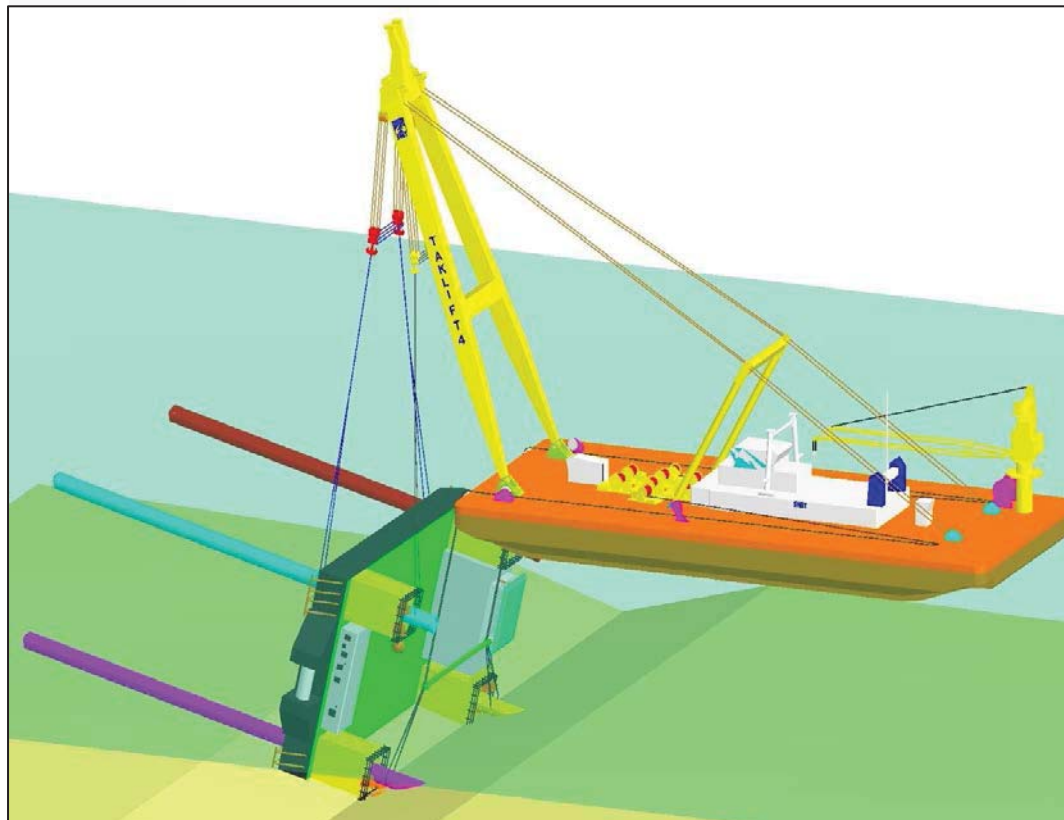
In order to satisfy the demands of secure and strong connection between the Taklift-4 and SEP Orion during critical phases of lifting operations SMIT engineers custom designed lifting tools which were produced locally by CEM industries. The Lifting rings, parbuckle tools, and spreader beam depicted below were designed as per the following criteria and specifications:

- ✘ Positive connectivity of lift rigging to the spud pile
- ✘ Minimum diver intervention for installation
- ✘ Minimum installation time requirements
- ✘ Adequate capacity plus built-in safety factor
- ✘ Proper orientation per lift/pull angles
- ✘ Engineered per SMIT specifications

The “Parbuckle tool” served as a passive release bracket which ensured the automatic release of the lifting slings as Orion’s CoG passes her center of rotation and gravity took over to complete the 90 degree rotation. The “Lifting rings” and “spreader bar” provided positive heavy-lift connectivity to the SEP Orion and the proper rigging orientation at all times.



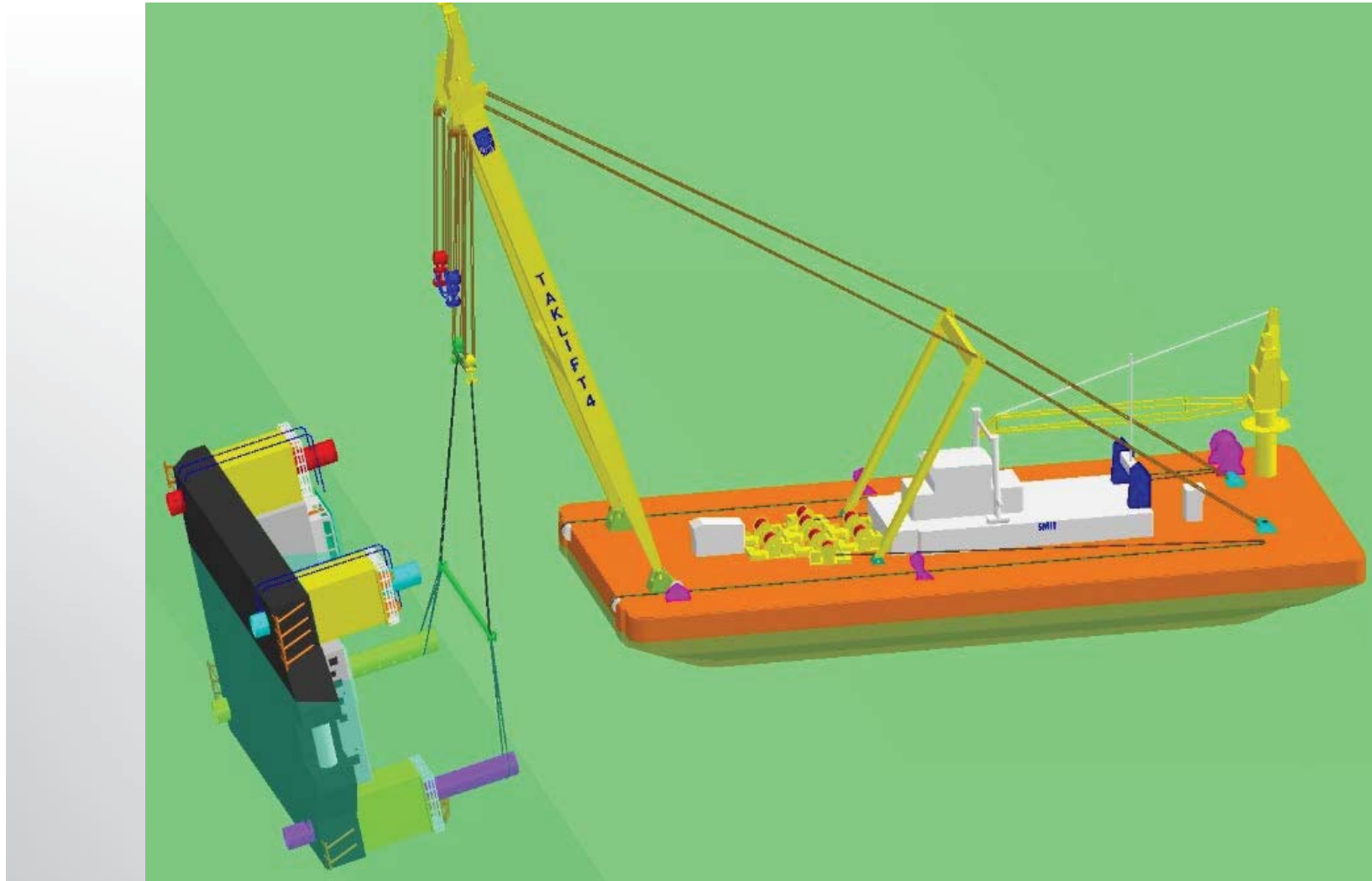
WRECK REMOVAL STEP 1 - LIFT AND SHIFT - APX 2400 TONS



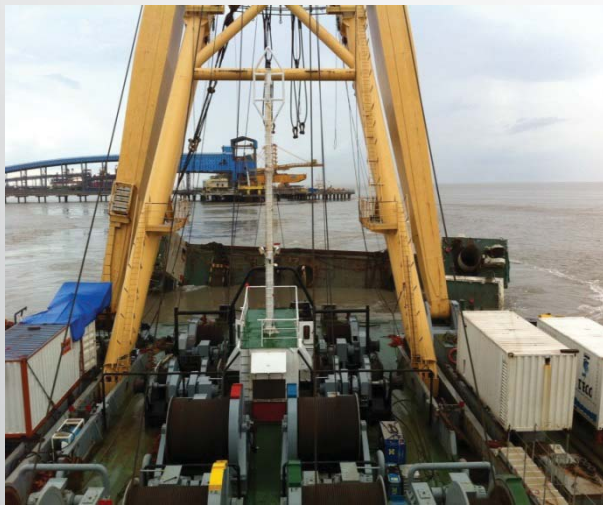
LIFT AND SHIFT IN PROGRESS



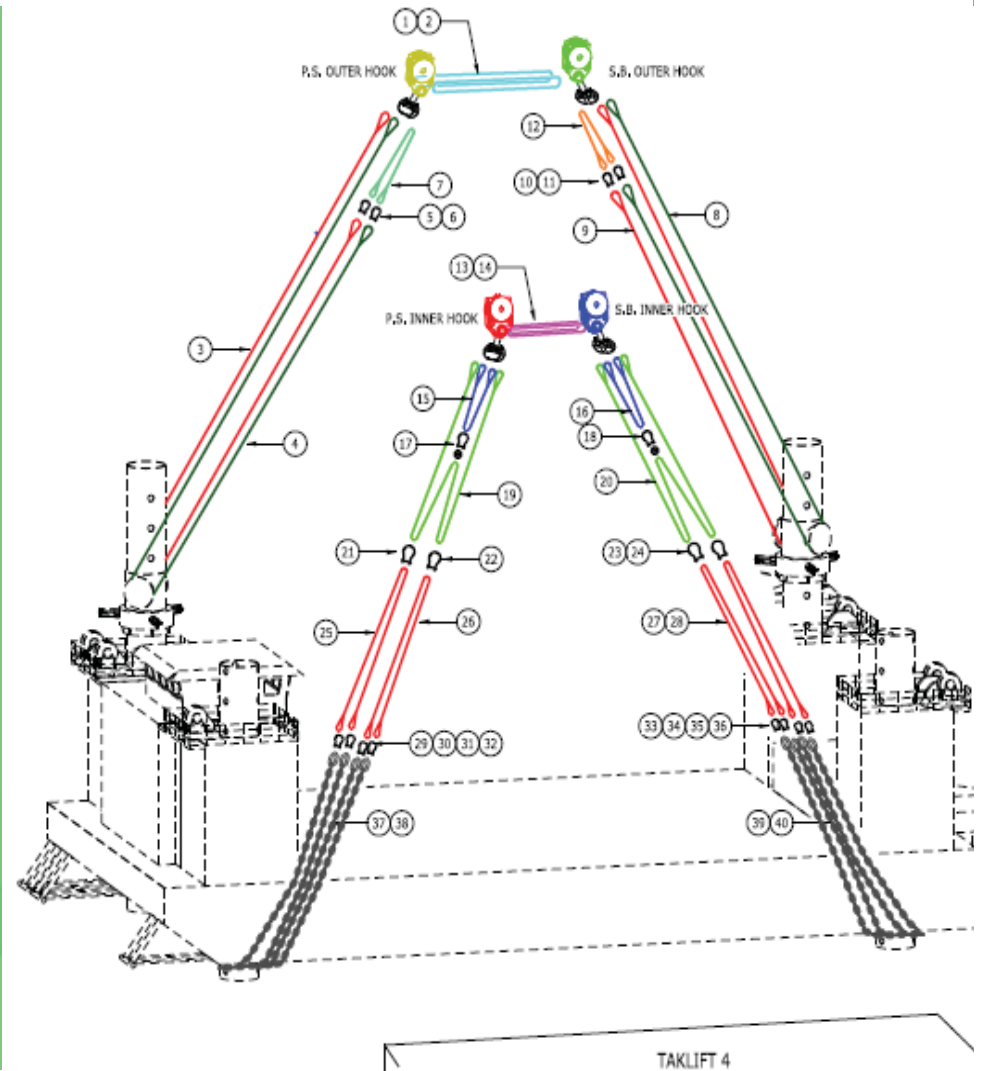
STEP 2 – PARBUCKLING UPRIGHT



PARBUCKLING IN PROGRESS



STEP 3 - REFLOATING



REFLOATING IN PROGRESS



REFLOATED - STABILIZED BY TL4





STEP 4 – SANITIZING AND SCUTTling

All debris and pollutants removed from the SEP Orion were transported by a SMIT REBRAS tug equipped with oil spill response equipment to Porto Grande where they were transferred to the custody and control of a licensed disposal contractor (JC Ambiental). Disposal receipts of delivery for the Ex SEP Orion pollutants (to JC Ambiental) were received. These receipts are attached (**ANNEX 1**) and provide detail of items removed as well as quantities of pollutants removed.



SANITIZATION INCLUDED

1. hand cleaned until free from all hydrocarbon residues:

- ✘ FOT (S) and FOT (P)
- ✘ FO Service Tank
- ✘ FO Day Tank
- ✘ Jacking Eng Oil Tanks 1 and 2
- ✘ Winch Oil Tank
- ✘ Hyd. Storage Tank
- ✘ VOID spaces inspected and cleaned

2. Other identified potential pollutants disposed of:

- ✘ Barrels with oil and grease removed
- ✘ Cans with paint removed
- ✘ Cleaned the Machinery Space
- ✘ Removed ALL batteries from generators
- ✘ Removed ALL batteries from Battery Charging Room
- ✘ Removed ALL batteries from Battery Room
- ✘ Drained lube oil from generators and removed oil filters
- ✘ Removed fuel oil filters from the generators

3. Plastics and potential flotsam were removed from accessible compartments:

- ✘ Machinery Space
- ✘ Pump Room
- ✘ Store Area
- ✘ VOID 5 P & S
- ✘ Domestic Utility Space
- ✘ Accommodation except Deck A and B due to excessive mud.
- ✘ Jack Houses and bridge deck
- ✘ Removing minor oil quantities from the bilges.

SCUTTling PREP – NO SCRAP PERMITTED TO REMAIN IN BRAZIL (LEGAL REQ)



1. Preparations for scuttling

The following preparations were carried out in order to ready the SEP Orion for scuttling:

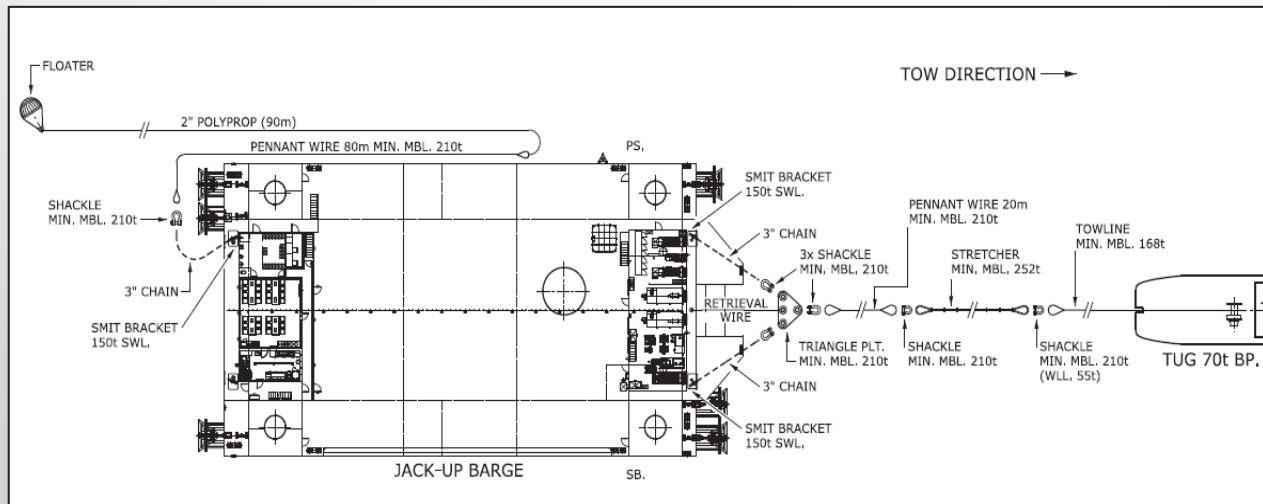
- ❌ Confirmed SEP Orion secured for sea and seaworthy for tow
- ❌ Rig portable navigation lights on SEP Orion
- ❌ Restore watertight integrity of SEP Orion - Patched PS sideshell breaches
- ❌ Removed vents and replaced with removable blanks
- ❌ Fabricate cradle to house and sea-fasten all leg sections
- ❌ Floating legs (40m ea. @150t) returned to SEP Orion – stowed in cradle
- ❌ Small (cut) leg sections returned to SEP Orion – stowed atop cradled legs
- ❌ Sea-fasten all legs to cradle and each other
- ❌ Reinforce welded crane matt retaining brackets
- ❌ Modified SEP Orion 145t SMIT towing bracket arrangement
- ❌ Install an emergency towing wire arrangement
- ❌ Installed towing chain bridle to wire pennant for tow connection
- ❌ Cut (8) holes between internal voids and WBT-1,2,3 (PS/SB), and FWT-1
- ❌ Temporary patched (8) cut holes (removed prior to scuttle)
- ❌ Marked SEP Orion with location for cutting vent holes (cut prior to scuttle)
- ❌ Close openings in accommodation w/raster framing to retain flotsom
- ❌ Prepare sea-chest strainer as access for (scuttle) water ingress
- ❌ Open all man-holes (deck man-holes opened just prior to scuttle)
- ❌ Received final IBAMA letter authorizing the final scuttle of SEP ORION
- ❌ Receive IBAMA/Navy/SEMA acceptance of final scuttle position
- ❌ Generate a detailed approved passage plan for tow
- ❌ SMIT workability calculation at final destination of tow
- ❌ Calculate bollard pull requirements (SMIT Charrua @ 70tbp selected)



TOWING TO DEEP WATER SITE

1. Tow to Deep Water and scuttle

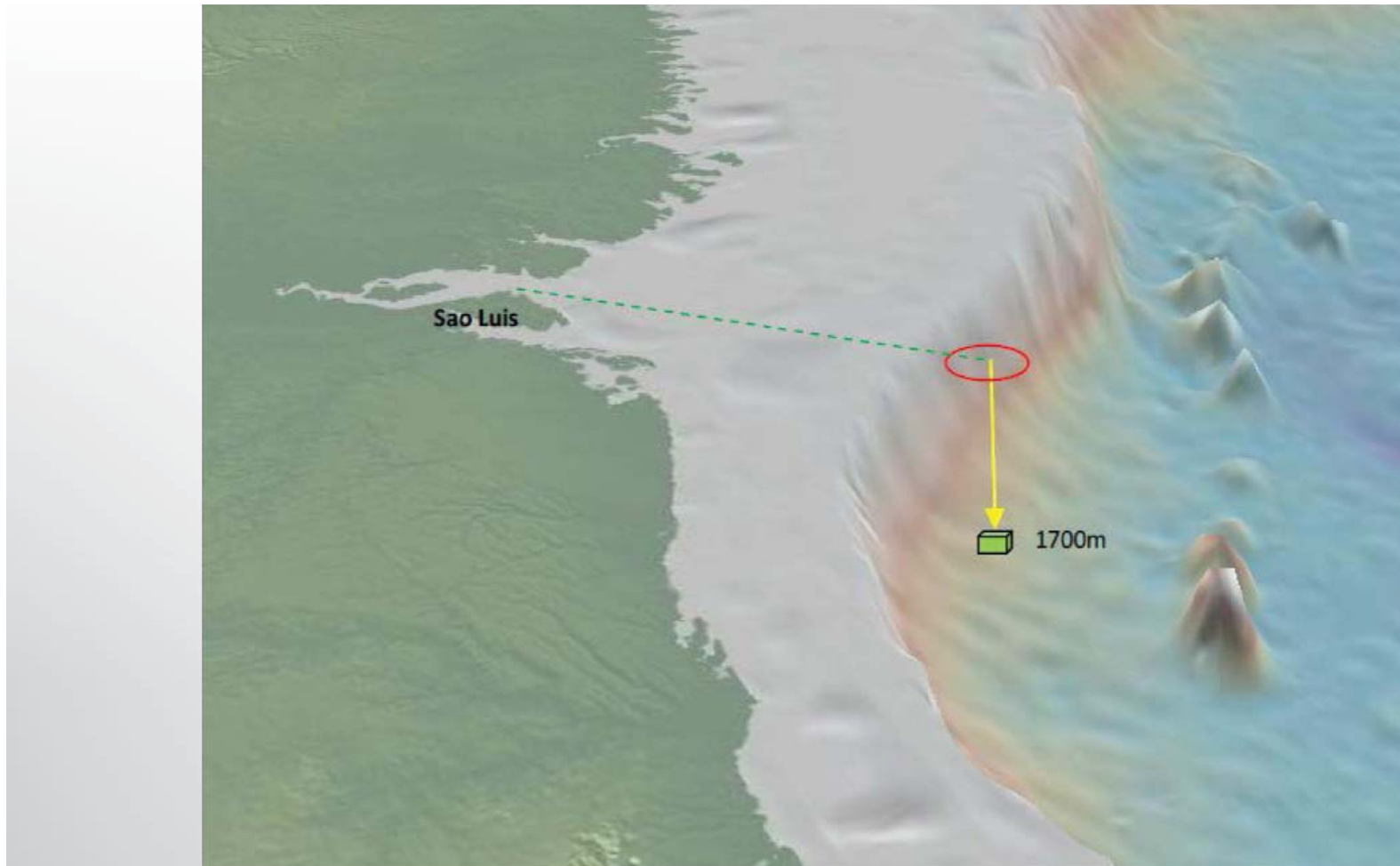
- ✘ Approved scuttle location: Lat: 1 – 45 S Lon: 042 – 45 W
- ✘ Final scuttle location: Lat: 1 – 44.8 S Lon: 042 – 46.8 W
- ✘ Lead Tug: "Charrua"
- ✘ Escort tug: "CAIAPO" (with contingency emergency response package)



SEP ORION UNDER TOW TO SCUTTLE SITE



DEEPWATER SCUTTling APPROVED SITE



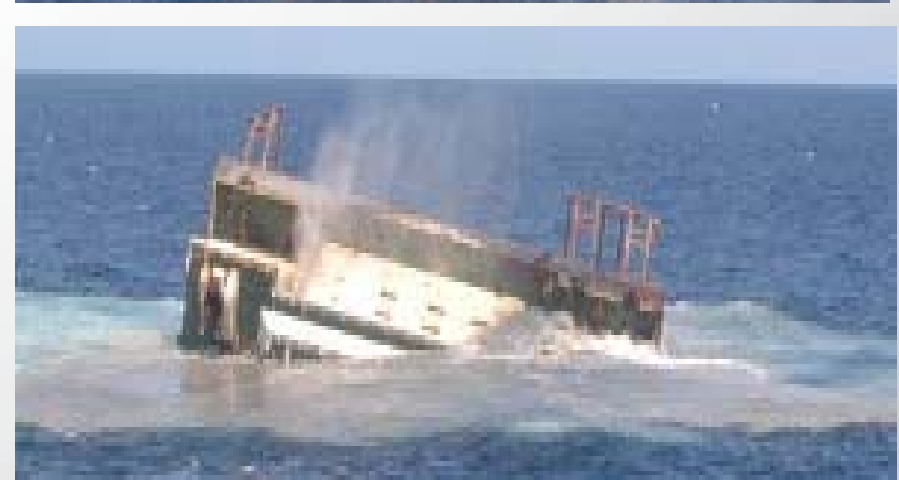
Overview scuttling position, water depth approx. 1500m



SCUTTling

The SEP Orion was scuttled in a controlled manner via the seawater inlet chest of the ballast water system. Entering through the 4" and 6" ballast pump suction strainers (open with basket strainer removed) water flowed into the pump room, freely communicating with all internal voids (Stores Space – Utility space – No. 5 void) and then into WBT1-3 and FWT-1. SEP Orion slowly and steadily sank bodily until deck edge immersion accelerated the process by inducing massive downflooding through her open man-hole covers and cut-holes on deck.

SCUTTTLING AT DESIGNATED SITE



OFFICIAL DOCUMENTATION – COMPLETED



On July 07th, 2013, at 13:30 hours the Belize flag Self-Elevating Platform "SEP ORION", Call Sign V3PQ6, Owned by Messrs. EUSUNG O&C COMPANY LTD, was successfully scuttled in deep water of approximately 1,500 meters in the following position: Latitude 01° 44.8'S / Longitude 042° 46.8'W. An official legal declaration of scuttling was issued by the Harbor Master of São Luis,MA, on July 15th, 2013 (above).

SEP ORION VIDEO – 2 MINUTES




▶▶▶ **THANK YOU FOR YOUR ATTENTION**




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 - The Standard Syndicate Services Asia Pte Ltd, trading as 1884 Asia, is a service company and a Lloyd's coverholder that is part of the Charles Taylor Plc group of companies. The Standard Syndicate Services Asia Pte Ltd. is regulated by the Monetary Authority of Singapore in its capacity as a Lloyd's coverholder under the Insurance (Lloyd's Asia Scheme) Regulations. The Standard Syndicate Services Asia Pte Ltd. has authority to enter into contracts of insurance on behalf of the Lloyd's underwriting members of The Standard Syndicate 1884 which is managed by Charles Taylor Managing Agency Ltd.




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