WellCONTAINED™ Subsea Containment Solutions

Prevention and Response
Drawing from more than 40 years of experience, the WellCONTAINED Subsea Containment group provides the industry with unique, comprehensive solutions to offshore, deepwater well control events.

Prevention and response serve as cornerstones to the WellCONTAINED set of solutions, providing operators with a full-service response in a right-sized package.

The WellCONTAINED Subsea Capping Stack
WellCONTAINED delivers an adaptable-response equipment package built for a variety of subsea scenarios. Based on extensive experience in subsea well control, the kit’s design criteria provides for a depth rating to 12,500 fsw, 15,000 psi shut-in pressure, and dual mechanical barriers, complete with ROV-controlled functionality.

The capping stack’s modular design facilitates rapid global deployment on a readily available Boeing 747 cargo aircraft. The system is verified by third parties and staged for deployment at our Aberdeen and Singapore locations.
A 6-stage disaster response timeline provides a roadmap to containment for all subsea and deepwater events.

**Initial Response**
- a. Evacuate and account for all personnel; attend to medical needs.
- b. Activate and put into action emergency response plans.
- c. Make all necessary intercompany and regulatory notifications.
- d. Mobilize assets and personnel to manage and assess the situation.
- e. Set up Spill Response and Source Control Teams.

**Survey and Planning**
- a. Personnel and equipment arrive; site survey and incident assessment conducted.
- b. Formalize response plan and additional resource needs.
- c. Call out additional equipment and personnel as required by the response plan.

**Mobilization of Resources**
- a. Surface spill response teams begin operations.
- b. Dispersant application on surface and at source (subsea).
- c. Additional personnel and equipment arrive.
- d. Assemble, test, and load response equipment onto vessels for transit to location.

**Interim Response**
- a. Continue dispersant application.
- b. Attempt direct subsea intervention operations on drilling BOPs.
- c. Conduct subsea debris clearance.
- d. Prepare for capping stack installation.
- e. Monitor well for any changes in flow/conditions.

**Cap and Contain**
- a. Capping stack transit to location.
- b. Install capping stack on well.
- c. Shut in well and monitor well data to determine if further action is required.

**Relief Well Operations**
- a. Relief well rig arrives on location and spuds relief well.
- b. Relief well drilling.
- c. Final kill and plugging of wells.

**Note:** All time frames occur after incident and are dependent on the complexity of the event.

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**Global Response Equipment Lineup**

<table>
<thead>
<tr>
<th></th>
<th>Aberdeen</th>
<th>Singapore</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date in Service</strong></td>
<td>May 2012</td>
<td>September 2014</td>
</tr>
<tr>
<td><strong>Status</strong></td>
<td>Ready</td>
<td>Ready</td>
</tr>
<tr>
<td><strong>Manufacturer</strong></td>
<td>Wild Well / Cameron</td>
<td>Trendsetter</td>
</tr>
<tr>
<td><strong>Pressure Rating</strong></td>
<td>15,000 psi</td>
<td>15,000 psi</td>
</tr>
<tr>
<td><strong>Water Depth Rating</strong></td>
<td>12,500 ft</td>
<td>12,500 ft</td>
</tr>
<tr>
<td><strong>Bore Restriction</strong></td>
<td>No - 18 3/4-in. unobstructed bore</td>
<td>No - 18 3/4-in. unobstructed bore</td>
</tr>
<tr>
<td><strong>Main Bore</strong></td>
<td>3ea, 18 3/4-in. Cameron type TL BOPs with Blind Shear Rams</td>
<td>2ea, 18 3/4-in. Cameron type TL BOPs with Blind Shear Rams</td>
</tr>
<tr>
<td><strong>Diverter Below</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Outlets</strong></td>
<td>4ea, 3 1/16-in. Outlets</td>
<td>4ea, 5 1/8-in. Outlets</td>
</tr>
<tr>
<td><strong>Chokes</strong></td>
<td>2ea, 3 1/16 in.</td>
<td>2ea, 5 1/8 in.</td>
</tr>
<tr>
<td><strong>Connectors</strong></td>
<td>2ea Cameron HC and 1ea Cameron H4</td>
<td>1ea Cameron HC, 1ea Cameron H4, 1ea DrilQuip DX-15 H4</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>105 MT</td>
<td>110 MT</td>
</tr>
<tr>
<td><strong>Airfreight / # of planes</strong></td>
<td>Yes / 3ea 747</td>
<td>Yes / 3ea 747</td>
</tr>
<tr>
<td><strong>Chemical Injection Capability</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Controls</strong></td>
<td>ROV Hydraulic and Torque Tool</td>
<td>ROV Hydraulic and Torque Tool</td>
</tr>
<tr>
<td><strong>Running Methods</strong></td>
<td>Work Wire and Drillpipe</td>
<td>Work Wire and Drillpipe</td>
</tr>
</tbody>
</table>

**In-house Planning, Engineering, and Deployment Services**
- Yes
- Yes