

CLIENT
Jadestone Energy

# LOCATION Montara FPSO, Timor Sea

#### PROJECT BACKGROUND

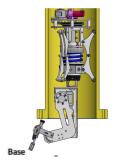
Jadestone had a requirement to install a new umbilical in a previously unoccupied I-Tube at the base of the STL Buoy. As part of this scope a Bend Stiffener Clamp was required to be clamped on to the flange at the bottom of the I-Tube. In order for this clamp to be effective, the I-Tube Flange had to be cleaned back to bare steel. This involved removing all marine growth and coatings from the internal surface of the I-Tube, the base, side and top of the flange, as well as the external surface of the I-Tube up to 100mm above the flange face. The cleaning tool had to be operated remotely from on board the FPSO and all equipment supplied had to be Zone II rated.

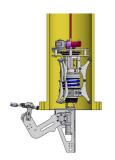
## **SOLUTION**

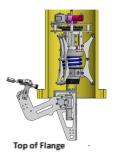
The I-Tube Cleaning Tool uses an ultra-high pressure (UHP) water jetting nozzle in order to provide the

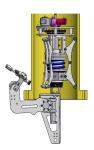
required level of cleaning. The tool is installed into the I-Tube, with the assistance of a winch, through the I-Tube opening on top of the STL Buoy. Due to the buildup of marine growth in the bore of the I-Tube the tool had the ability to clean a path ahead of itself. Once at the target location, the jetting nozzle is extended up to the surface to be cleaned and a 360-degree rotation is completed.

A suspension system provides a solid foundation for the tool during all cleaning activities and accommodates variation in the bore of the tube. In this instance the tool also had to traverse a constriction in the diameter as it was lowered. The design can easily be tailored for different sizes of pipework.









Side of Flange

External Surface of Flange









### INNOVATION, BENEFITS, ADVANTAGES

The tooling provides a remote, Zone II method of cleaning I-Tubes, with all operations completed from on board the FPSO/Platform, removing the requirement for Diver or ROV intervention. This tool demonstrates Blakemere's proficiency in the design and operation of bespoke remote intervention tooling, in the most challenging of environments.

### **DELIVERY**

Once the UHP equipment was setup, the installation of the cleaning tool and all cleaning operations were completed over two shifts.

### **PHOTOS**









