

# Marathon Steelhead Jacket Levelling - Cook Inlet, Alaska

**Client:** Marathon Oil Co. Houston, Texas

**Main Contractor and Engineer:** M&R Enterprises Inc.  
New Orleans,  
Louisiana



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The 5,000 tonnes Marathon 'Steelhead' jacket located in the Cook Inlet, Alaska was constructed as a self floating unit. It was fabricated in Japan, towed to Alaska and positioned in the sheltered waters of Cook Inlet. After initial positioning and the driving of the first tubular steel piles it was required to adjust the level of the jacket from the position approximately 1,200mm out of level achieved after this early positioning and piling. Levelling was achieved by 'fixing' the high corner and lifting the other corners using piles as a reaction until the jacket was level.

The lifting was achieved by the use of 8 No. Fagioli PSC L600 centre-hole lifting jacks. The jacks were pre-rigged in lifting frames in pairs which were designed to sit on top of the previously driven tubular piles. Due to additional loads imposed by the direction of the extremely fast ebb tide current it was necessary to position one pair of jacks on each of two diagonally opposite corners and two pairs on the other corner.



**Above:** two pairs of L600 centre hole jacks opposite the 'fixed' corner to take account of the fast ebb tide current, only one pair was used in each of the other two 'non-fixed' corners.

Each jack operated on a lifting cable comprising 37 No. 18mm dia strands. These strands were contained within an anchor fabrication designed to connect to pad-eyes welded to the top of the jacket.

All jacks were connected to a single hydraulic power pack from which all eight jacks were controlled.

Due to the on-shore pre-rigging of lifting jacks with their lifting cables and anchor connections it was possible to install all equipment offshore and level the jacket to within millimetre accuracy within a period of less than 7 hours. Welding of the jacket to the lifting pile took a further 8 hours with release and de-rigging of the lifting jacks and associated equipment taking a further 5 hours.