



# Weatherford®

## REAL RESULTS

### LoTORQ™ Centralizer System Reduces Wear and Friction on World's First Offshore Drilling-with-Liner Project

#### Objectives

- Minimize wear and friction in a potentially unstable shale formation in the North Sea while drilling with the casing liner.

#### Results

- Weatherford supplied 24 non-rotating drilling-with-casing (DwC™) centralizers and 84 LoTORQ 9-5/8 in. × 12-in. mechanical-friction and wear-reduction centralizer systems.

#### Value to Client

- The DwC and LoTORQ centralizers enabled the project to achieve exceptionally low friction and rotating coefficients, significantly contributing to the drilling program's success while saving Statoil valuable rig time.
- The successful use of steerable drilling-with-liner technology was the first ever performed on an offshore platform.



Weatherford's non-rotating DwC (left) and LoTorq centralizer (right) systems have been proven in some of the world's most challenging wells. These unique systems perform independently of drilling and completion mud-film strength or lubricity, achieving exceptionally low friction factors with rotating coefficients in cement.

**Client**  
Statoil

**Location**  
North Sea, Norway

**Date of Operation**  
July 2009

**Rig Name**  
Brage platform

**Formations**  
Shale

**Hole Size**  
12-1/4 in.

**Depth**  
13,297 ft (4,053 m) measured depth

**Products/Services**

- 9 5/8- × 12-in. non-rotating DwC centralizer (24)
- 9 5/8- × 12-in. LoTORQ centralizer (84)

Statoil  
Gaute Grindhaug  
Principal Engineer, Drilling Technology  
gaug@statoil.com

Weatherford  
Bard Einar Rimereit  
Sales Engineer, Cementing Products  
bard.rimereit@eu.weatherford.com

Weatherford products and services are subject to the Company's standard terms and conditions, available on request or at [weatherford.com](http://weatherford.com). For more information contact an authorized Weatherford representative. Unless noted otherwise, trademarks and service marks herein are the property of Weatherford. Specifications are subject to change without notice. Weatherford sells its products and services in accordance with the terms and conditions set forth in the applicable contract between Weatherford and the client.