

**Project** : Deep Water Sampler  
**Partners** : NGI Norway, Lankelma CPT UK

**Description:**

Soft clay layers of the seabed have long been difficult to investigate. They are easily disturbed and samples are hard to be brought to the surface. The increasing activities on the seabed however lead to an ever growing need for an accurate and reliable determination of the soil properties especially in those layers. This need is answered with the Deep Water Sampler (DWS).

With their many years of expertise in offshore soil investigation and equipment, A.P. van den Berg, in co-operation with the Norwegian research institute NGI, succeeded in developing a soil sampler that enables to take high-quality samples from the seabed at great water depths. Especially the quality improvement for samples of soft clay layers is significant. The innovative qualities of the sampler are based on the following features:

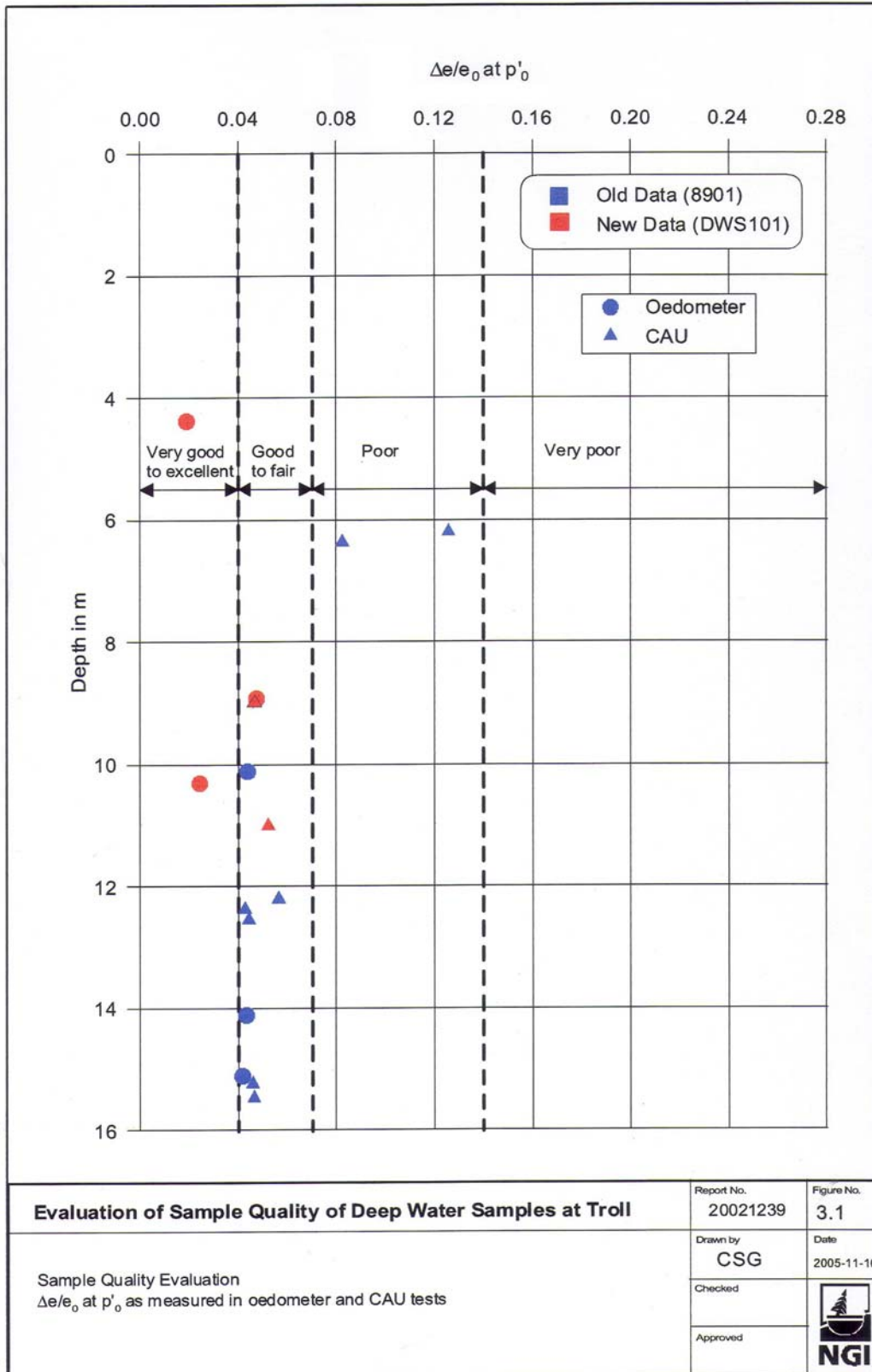
- a new type of cutting shoe
- the core retainer
- a piston that seals off the upper side of the sampler from the surrounding pressure, thus minimizing the forces exerted on the sample
- positioning system that keeps the piston in its place within a mere couple of millimeters
- special connection mechanism of the sample tubes, enabling to separate the sample on the spot without damaging it

Test results of laboratory research of samples taken with the DWS show that the quality of the sample can be qualified as very good to excellent and that especially the quality of the sample in the weak top layer is considerably better than that of samples taken with existing samplers (see Figure 1).

**Reference:**

Technical Note: "Evaluation of sample quality of deep water samples at Troll" by Tom Lunne, Chang Shin Gue and Morten Sjørusen, NGI Norway





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Figure 1