

Mooring Remediation Catenary Analysis

Stack Nest A Moorings at Elefsina Bay, Greece

Client: Transocean Ltd



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REVISION HISTORY

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EXECUTIVE SUMMARY

The analysis contained within this report identified the vessel requirements for remediation of mooring lines on Vessel Stack Nest A, moored at Elefsina Bay, Greece.

The vessels are considered to be moored in a water depth of 30 m (98 ft), using set lengths of 111 mm Chain and 12 Te Stevpris MkV Anchors. Minimum bollard pull capacity for the chosen anchor handling vessel was calculated to maintain clearance between the line and seabed during redeployment of the mooring lines.

The proposed line make-up for deployment is comprised as follows (from AHV to moored vessel):

Line Make-Up: 50 m x 76 mm Laydown Chain + 12 Te Stevpris MkV Anchor + 111 mm Chain

Based on the analysis for the deployment of the moorings, a minimum bollard pull of **167 Te** is required for the AHV to maintain a clearance of 4 m between the mooring line and seabed during deployment of the anchor.

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1.0 Summary

1.1 Objectives

- 1.1.1 InterOcean is to provide catenary analysis for the deployment of mooring lines on Stack Nest A to determine vessel requirements for the line remediation.

1.2 Mooring Arrangement

- 1.2.1 The vessels are considered to be moored in a water depth of 30 m (98 ft), using set lengths of 111 mm Chain and 12 Te Stevpris MkV Anchors.

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2.0 Catenary Analysis – 375 m x 111 mm Chain

2.1 Summary

2.1.1 Analysis was carried out considering the condition where 375 m x 111 mm mooring chain has been paid out from the vessel. Seabed clearance was calculated for a range of tensions.

2.1.2 A minimum bollard pull capacity of 167 Te was calculated for the AHV to maintain a clearance of 4 m between the mooring line and seabed when 375 m of chain was paid out from the moored vessel.

Table 2-1: Catenary Analysis Results – 375 m x 111 mm Chain Payout

Line Number	76 mm Laydown Chain (m)	111 mm Chain (m)	Range Drillship to Stern Roller (m)	Horizontal Loads at Stern Roller (Te)	Vertical Loads at Stern Roller (Te)	Minimum Clearance from Seabed (m)
1	50	375	421	190	50	8
2	50	375	419	167	50	4
3	50	375	418	156	50	2

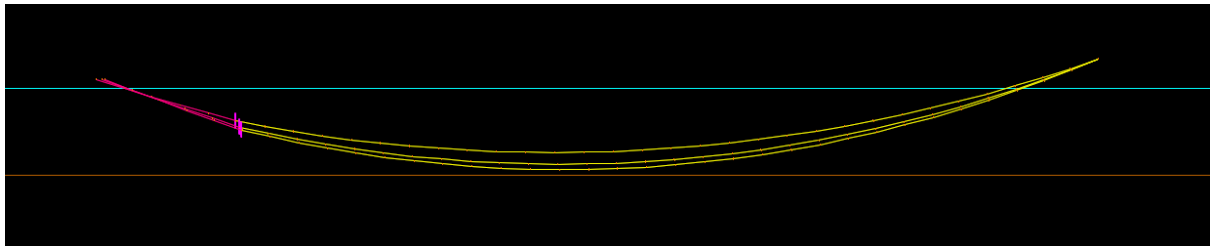


Figure 2-1: Catenary – 375 m x 111 mm Chain Payout

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3.0 REFERENCES

1. "Elefsina Stack Nest A, Mooring Re-Tensioning and Mooring Upgrade - Move 01 Mooring Reconfiguration Plan - Revision 00"

Transocean

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2. "Vryhof Manual – The Guide to Anchoring – Eighth Edition"

Vryhof

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Appendix A – Proposed Deployment Arrangement

