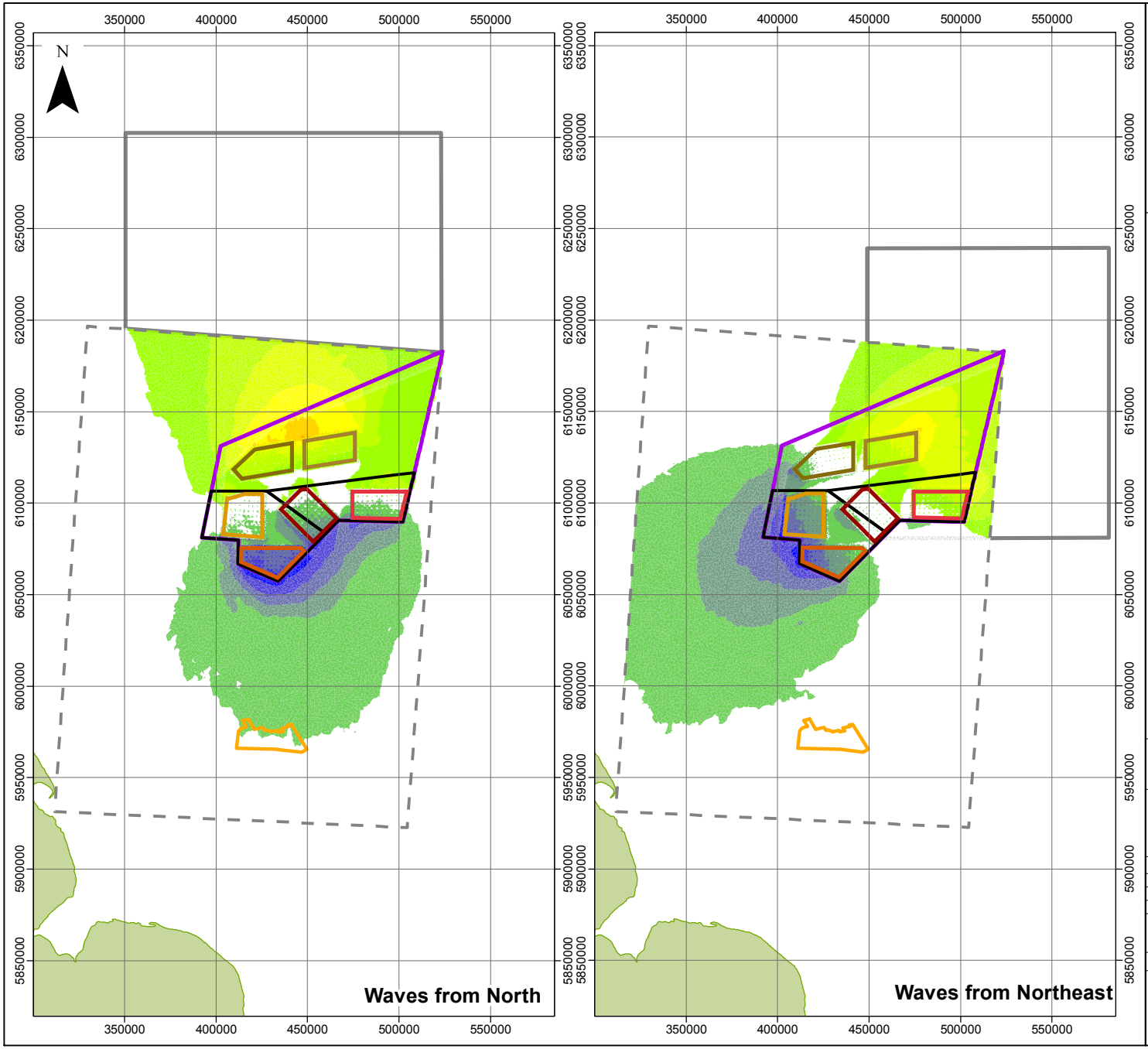

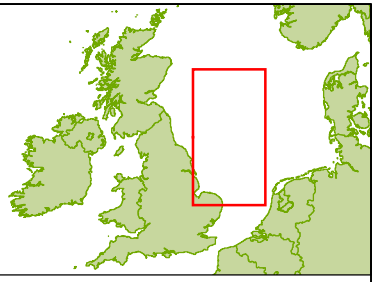

LEGEND

- Dogger Bank Zone
- Tranche boundary
- Dogger Bank Creyke Beck A
- Dogger Bank Creyke Beck B
- Dogger Bank Teesside A
- Dogger Bank Teesside B
- Dogger Bank Teesside C
- Dogger Bank Teesside D
- Hornsea Project One
- Model boundary
- Potential extent of wave effects into international waters

Change in significant wave height (m)

- Above 0.09
- 0.08 - 0.09
- 0.07 - 0.08
- 0.06 - 0.07
- 0.05 - 0.06
- 0.04 - 0.05
- 0.03 - 0.04
- 0.02 - 0.03
- 0.01 - 0.02
- 0.00 - 0.01
- -0.01 - 0.00
- -0.02 - -0.01
- -0.03 - -0.02
- -0.04 - -0.03
- -0.05 - -0.04
- -0.06 - -0.05
- -0.07 - -0.06
- -0.08 - -0.07
- -0.09 - -0.08
- Below -0.09

0 30 60
Kilometres

Data Source:
Wave height © Royal HaskoningDHV, 2013

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

Figure 10.4 Cumulative changes to significant wave height for one-year waves from the north and northeast caused by 6MW conical GBS#1 foundations

VER	DATE	REMARKS	Drawn	Checked
1	26/06/2013	Draft	FK	DB
2	07/10/2013	PEI3	LW	DB
3	06/02/2014	DCO Submission	GC	DB

DRAWING NUMBER: **F-OFL-MA-443**

SCALE	1:3,200,000	PLOT SIZE	A4	DATUM	WGS84	PROJECTION	UTM31N

FOREWIND

10.3.6 **Figure 10.5** shows the maximum relative change in wave height for one-year waves from the north and north east directions. The maximum change in significant wave height is approximately up to 1.5% along the southern and south western boundaries of Dogger Bank Creyke Beck A (a band up to 4km or 13km wide, depending on wave direction). Along the northern and north eastern boundaries of Dogger Bank Teesside A, Dogger Bank Teesside C and Dogger Bank Teesside D, predicted changes are mainly up to 1%. These percentage changes are within the natural variation of wave height across Dogger Bank and surrounding sea areas and are unlikely to affect the form of recent sediments over and above the natural processes.

Predicted cumulative suspended sediment concentrations in the bottom layer

10.3.7 The results of the cumulative plume dispersion modelling of the operational phase are presented as maximum and average changes in suspended sediment concentration in the bottom layer and sediment thickness deposited from the plume. The worst case results are presented for a run of the model during which all foundations (across Dogger Bank Teesside A & B, Dogger Bank Creyke Beck and Dogger Bank Teesside C & D) (and related infrastructure) are struck by a 50-year storm. **Figure 10.6** to **Figure 10.8** show maps of predicted suspended sediment concentration in the bottom layer. The concentrations are presented as excesses over the natural background concentration (2mg/l).

10.3.8 **Figure 10.6** shows the maximum concentration in the bottom layer predicted by the model at any time over the 30-day simulation period. The maximum suspended sediment concentration is predicted to be greater than 200mg/l in up to 22km long, 7km wide patches along the boundaries of all projects except Dogger Bank Teesside C. Across all projects, suspended sediment concentrations are generally greater than 50mg/l. Concentrations reduce to the background of 2mg/l up to approximately 55km south of the southern boundaries and up to 39km north of the northern boundaries.

10.3.9 Predicted average suspended sediment concentrations are between 50mg/l and 100mg/l across the adjacent boundaries of Dogger Bank Creyke Beck A & B (**Figure 10.7**). Predicted concentrations across all projects are generally 10mg/l and 50mg/l reducing to the background of 2mg/l up to approximately 39km south of the southern boundaries and up to 24km north of the northern boundaries.

10.3.10 **Figure 10.8** presents the exceedance time during the simulation of the predicted suspended sediment concentration above the background of 2mg/l. The map shows that 2mg/l is exceeded greater than 90% of the 30-day simulation period in large areas across and up to 17km south of Dogger Bank Creyke Beck and Dogger Bank Teesside A. Exceedance is generally greater 70% across Dogger Bank Creyke Beck and Dogger Bank Teesside A & B, reducing to 50-70% across Dogger Bank Teesside C & D.

