Inch Cape Offshore Wind Farm

New Energy for Scotland

Offshore Environmental Statement:
VOLUME 2B
Annex 10A.2: Modelled Baseline Plots

REPSOL edp renewables

INCH CAPE OFFSHORE LIMITED

ANNEX10A.2 MODELLED BASELINE PLOTS

TECHNICAL REPORT

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FIGURES

Section 1: Hydrodynamic regime

Figure 10A.2.1: Mean spring tide, high water (HW) level (m) – Regional

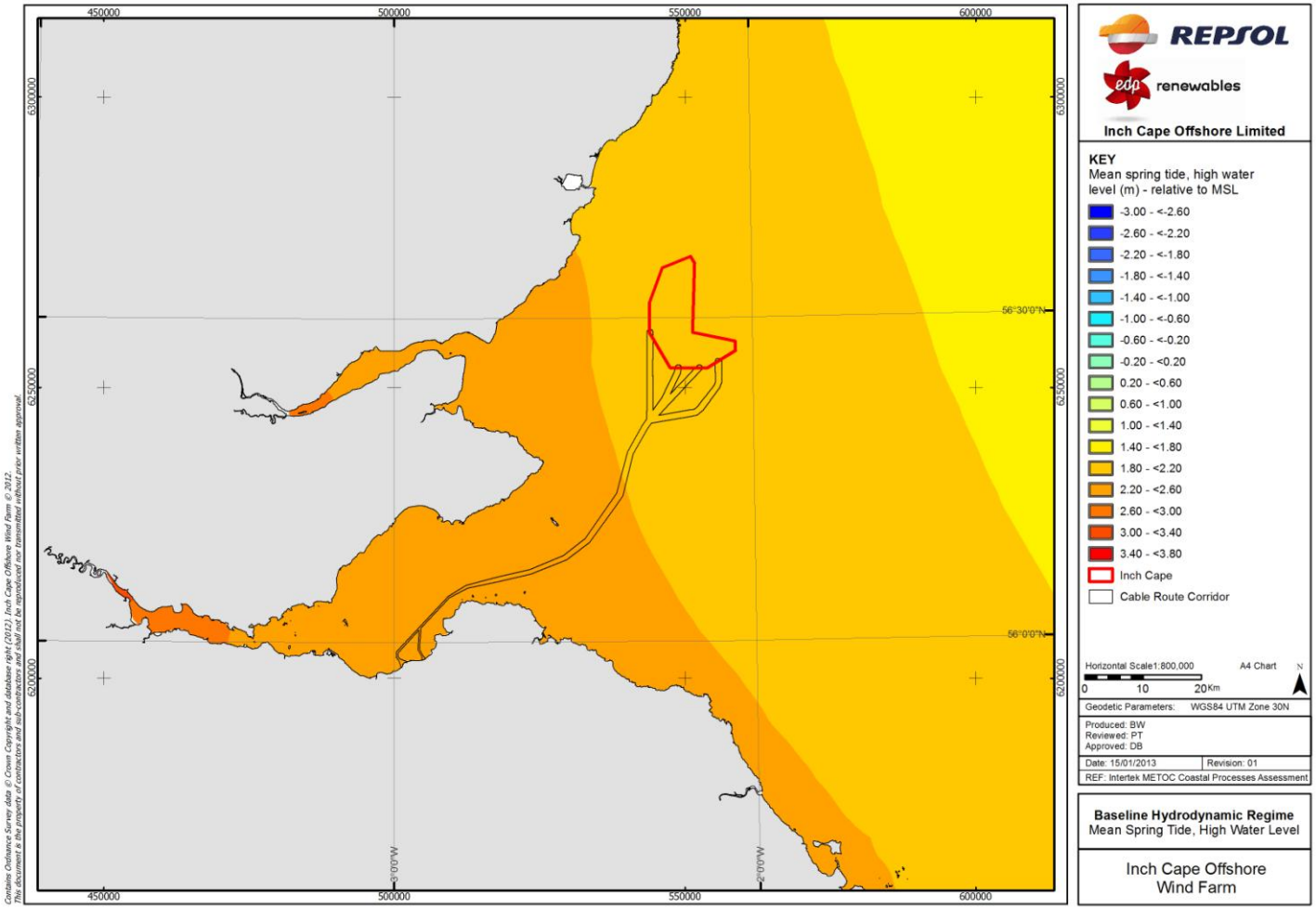


Figure 10A.2.2: Mean spring tide, low water (LW) level (m) – Regional

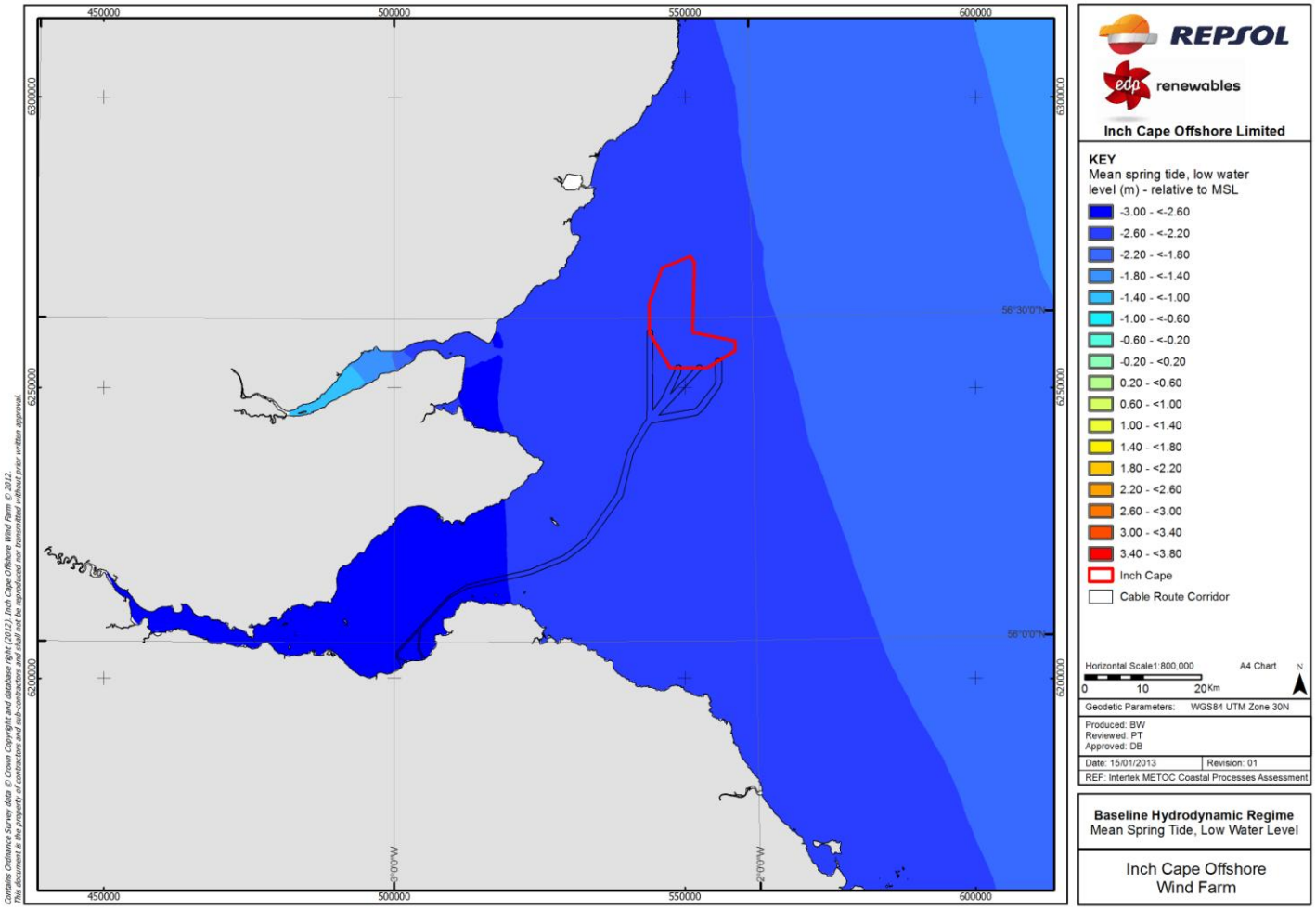


Figure 10A.2.3: Mean neap tide, high water (HW) level (m) – Regional

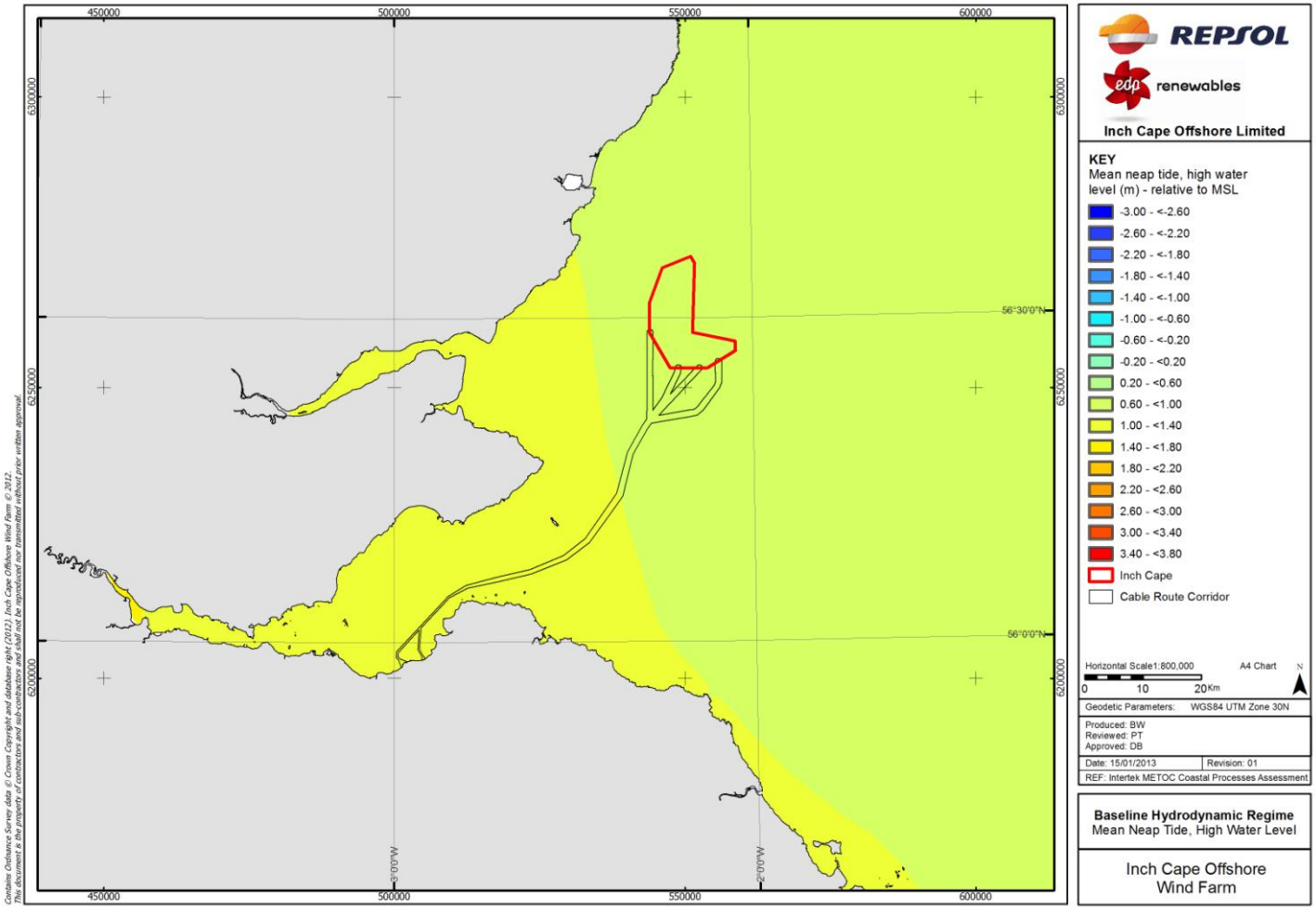


Figure 10A.2.4: Mean neap tide, low water (LW) level (m) – Regional

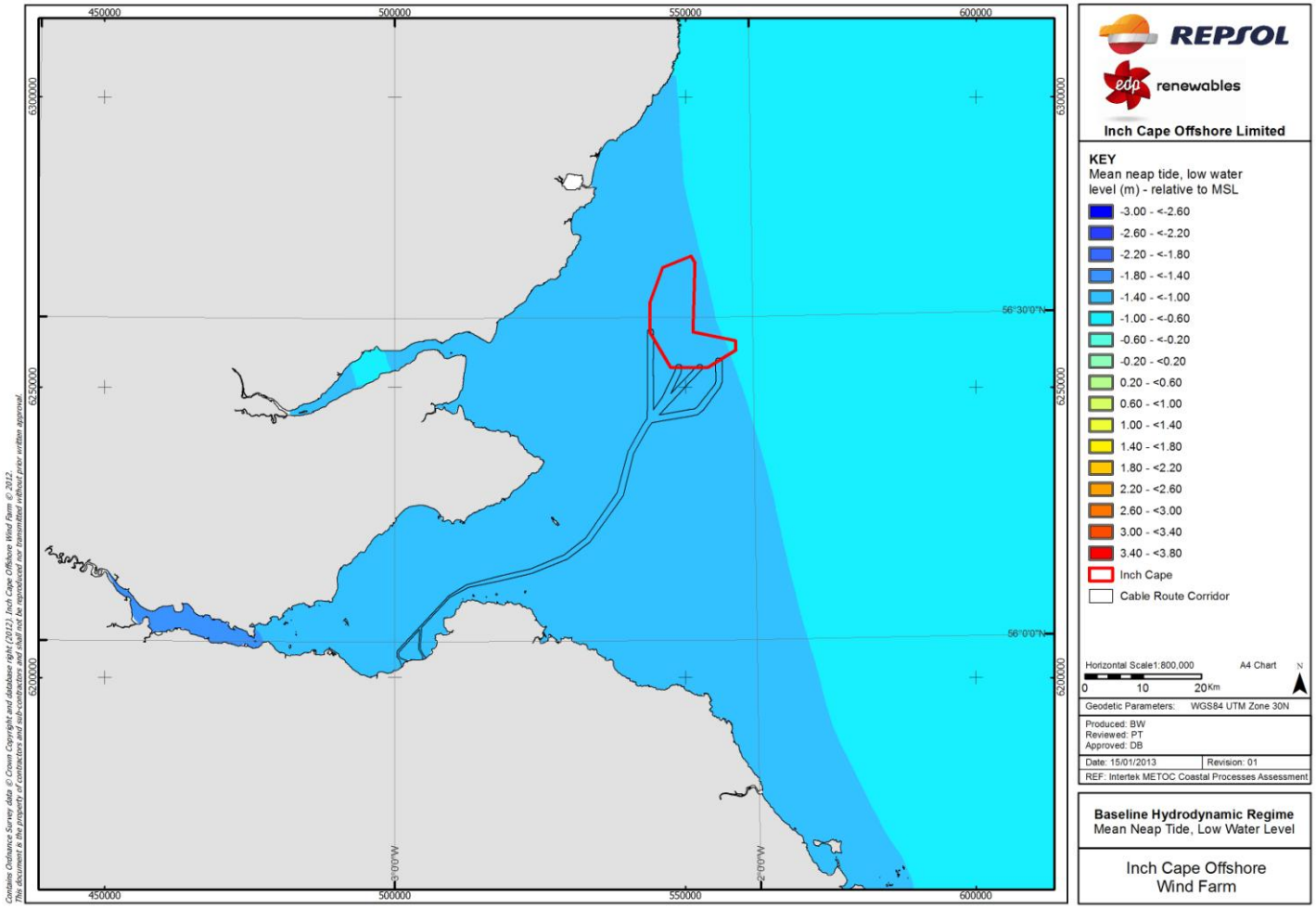


Figure 10A.2.5: Mean spring tide, peak flood currents (m/s) – Regional

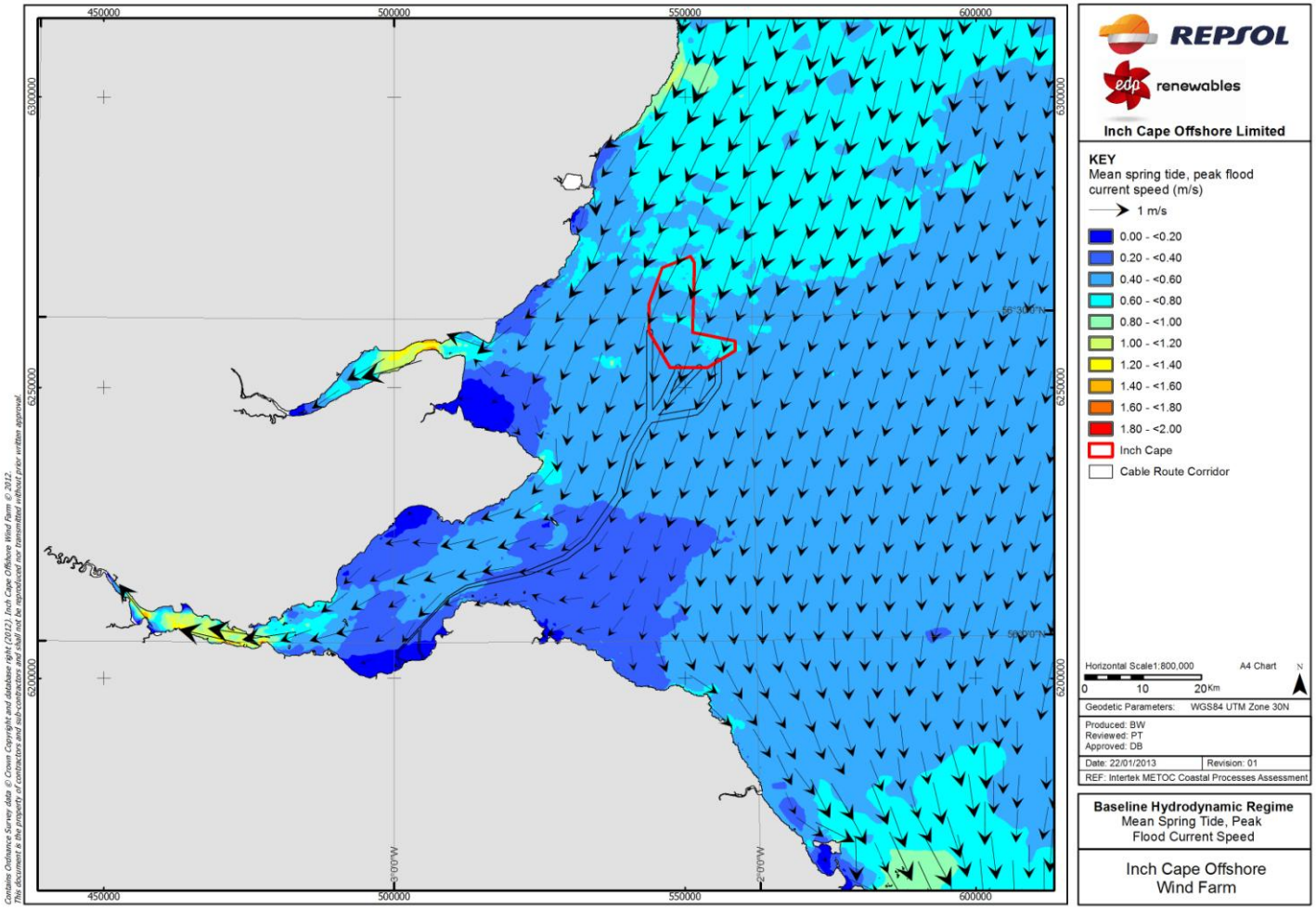


Figure 10A.2.6: Mean spring tide, peak ebb currents (m/s) – Regional

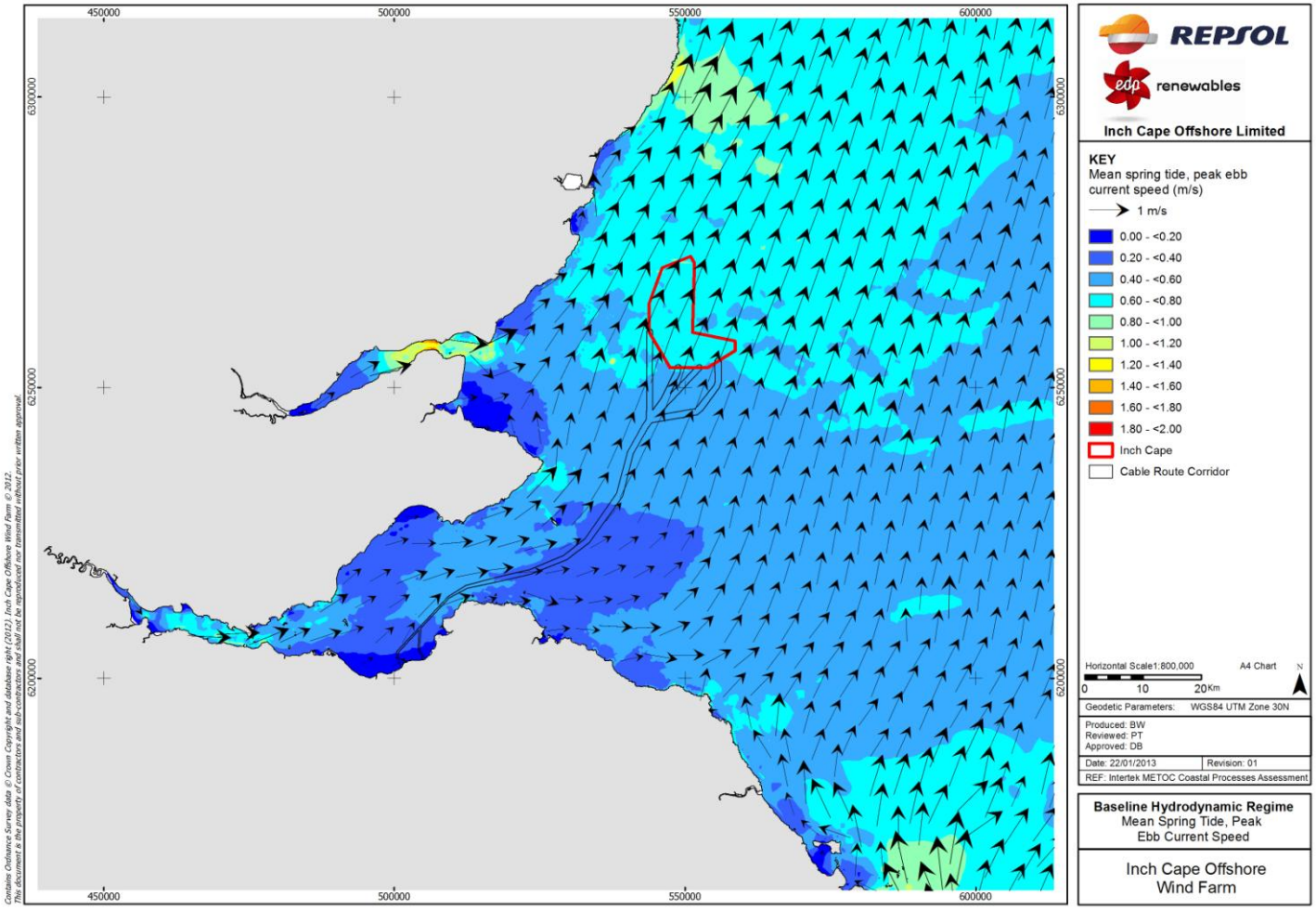


Figure 10A.2.7: Mean neap tide, peak flood currents (m/s) – Regional

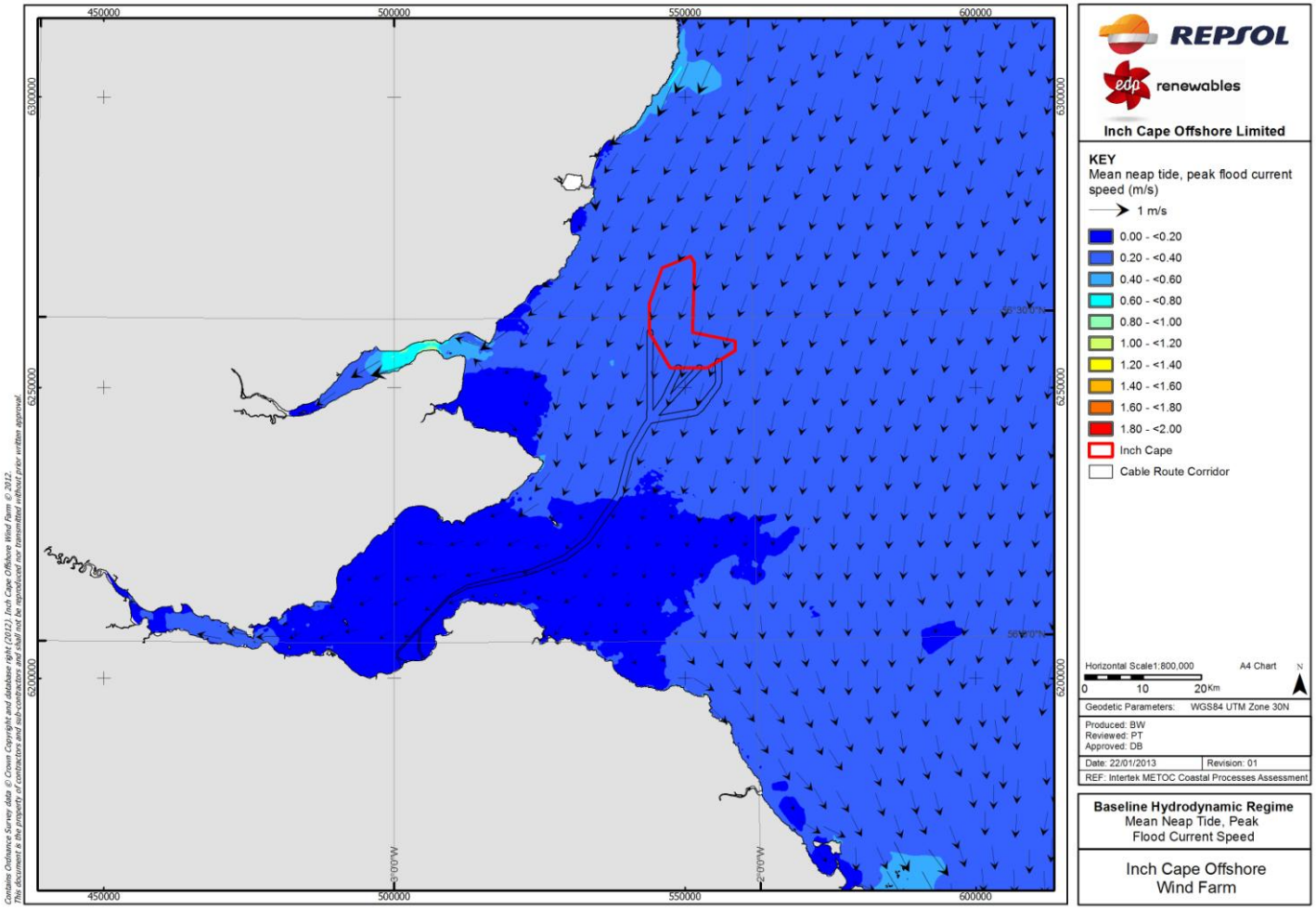


Figure 10A.2.8: Mean neap tide, peak ebb currents (m/s) – Regional

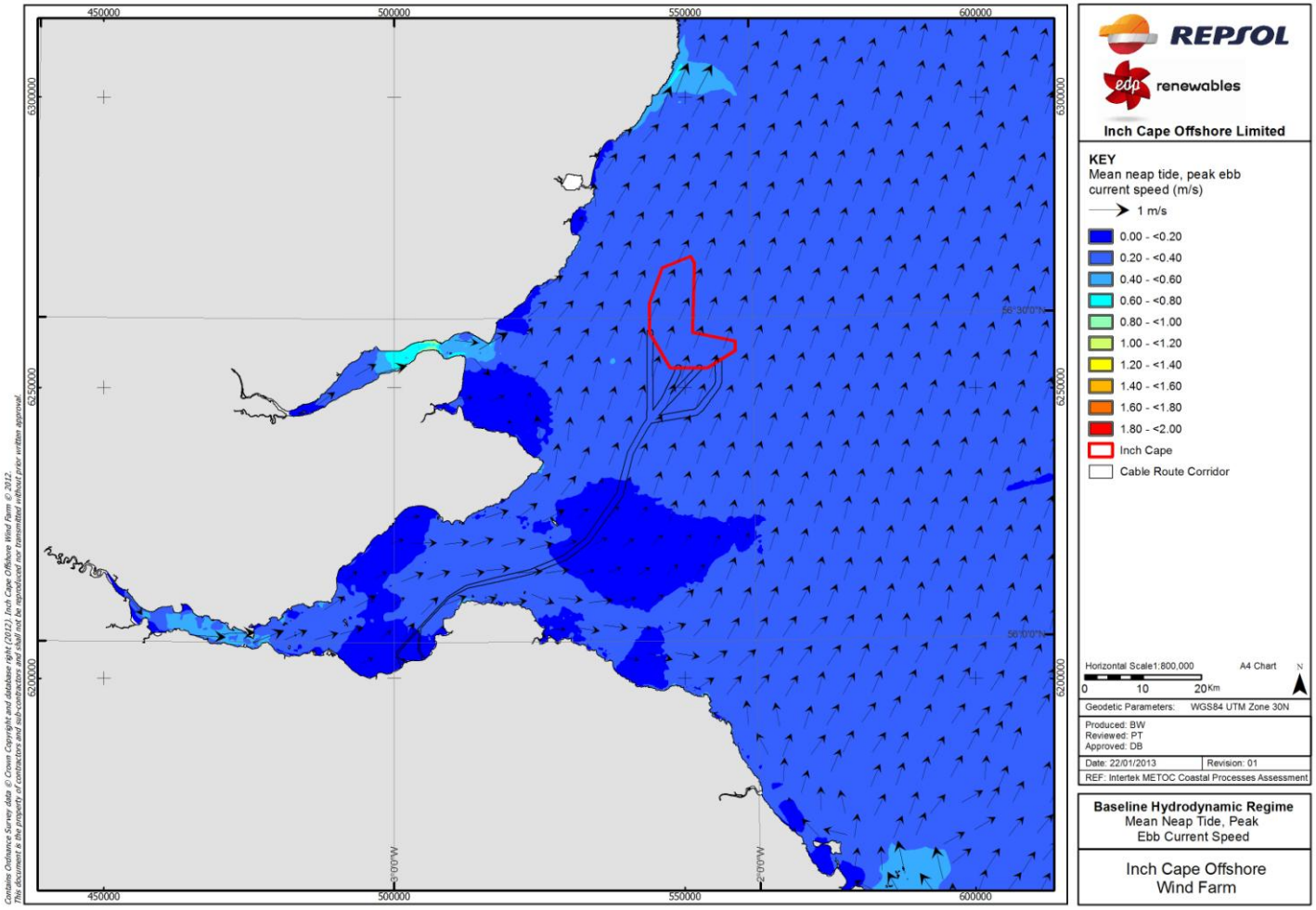


Figure 10A.2.9: 50-percentile currents (m/s) over a mean spring and neap tide – Regional

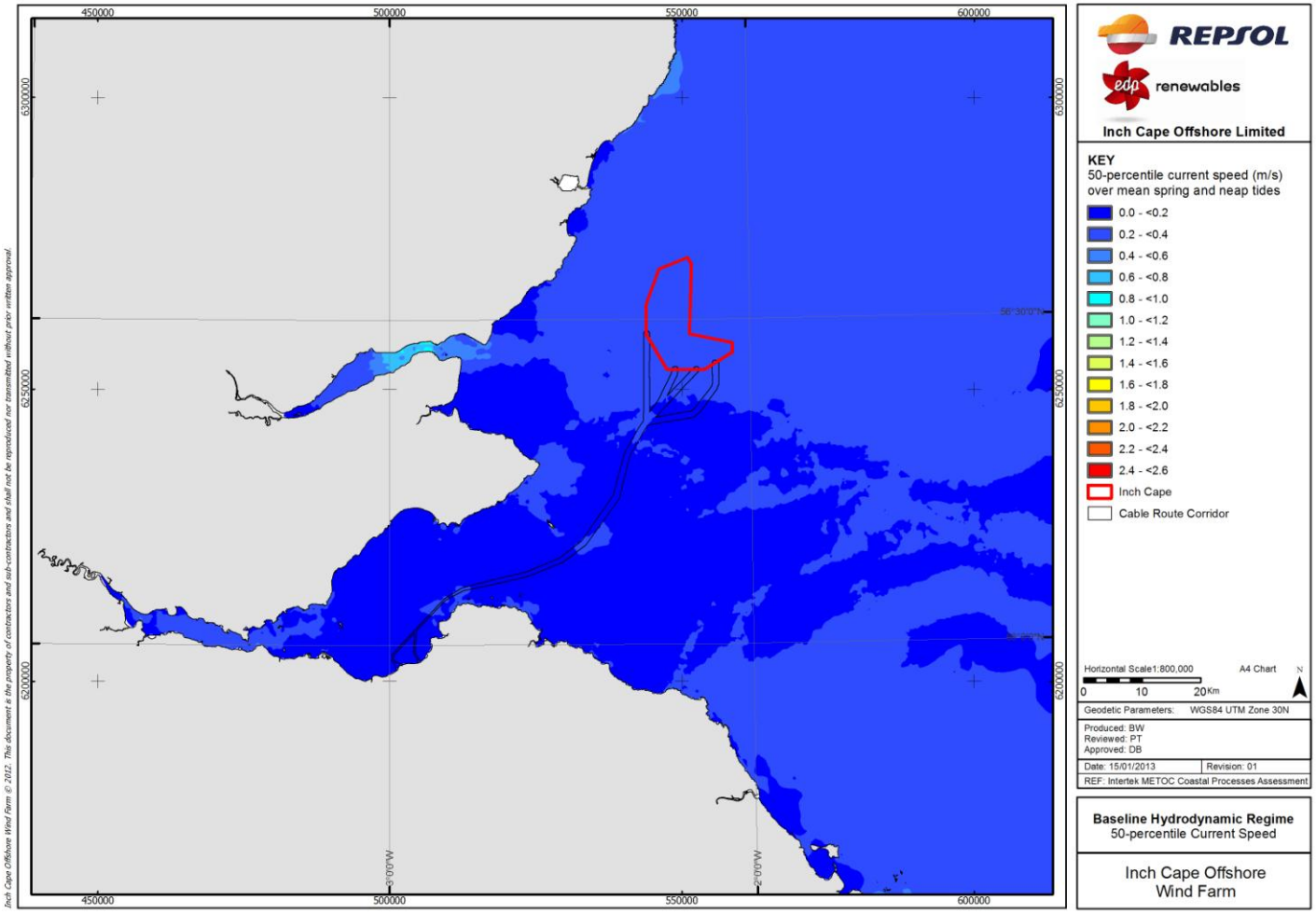


Figure 10A.2.10: 90-percentile currents (m/s) over a mean spring and neap tide – Regional

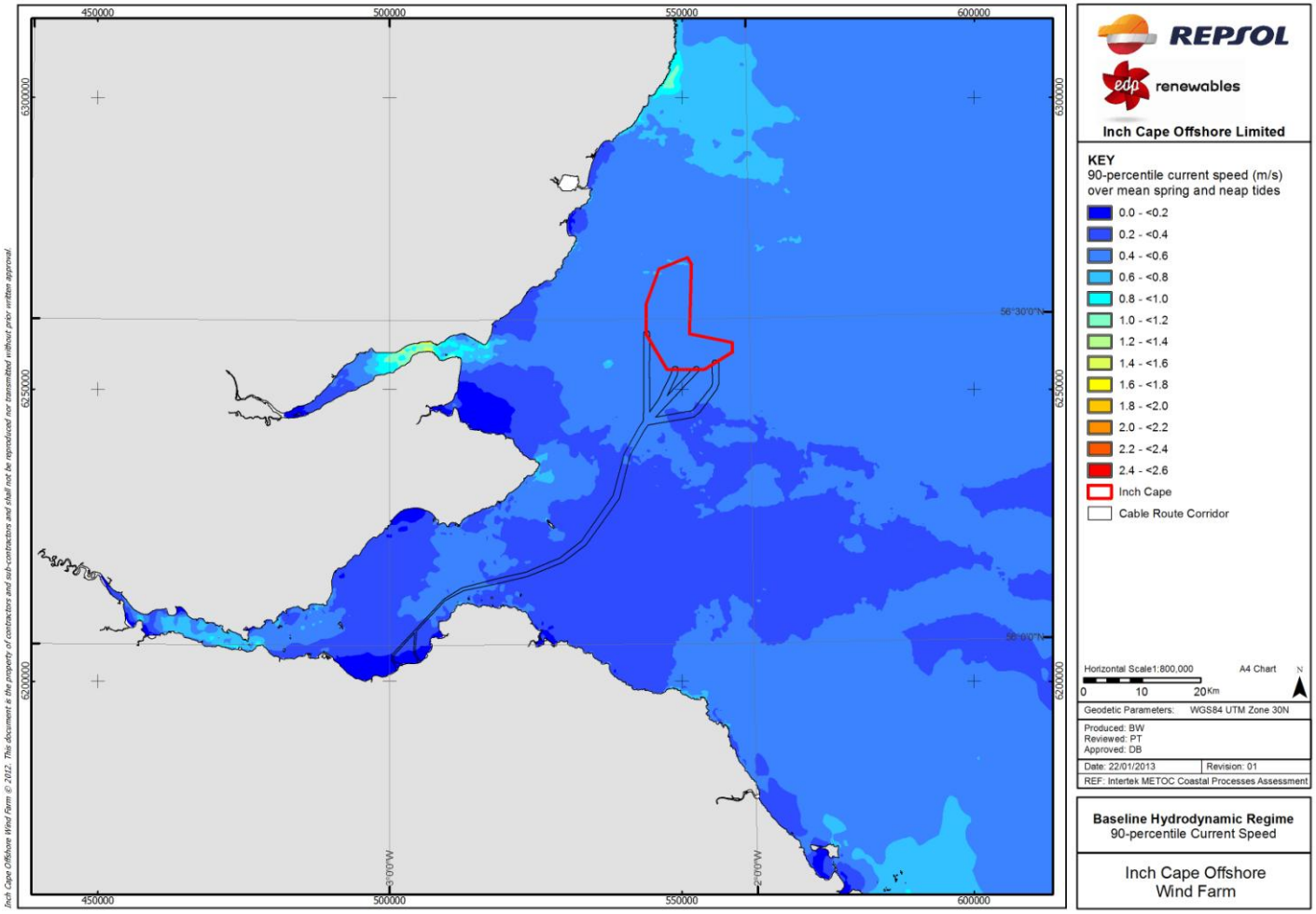


Figure 10A.2.11: 95-percentile currents (m/s) over a mean spring and neap tide – Regional

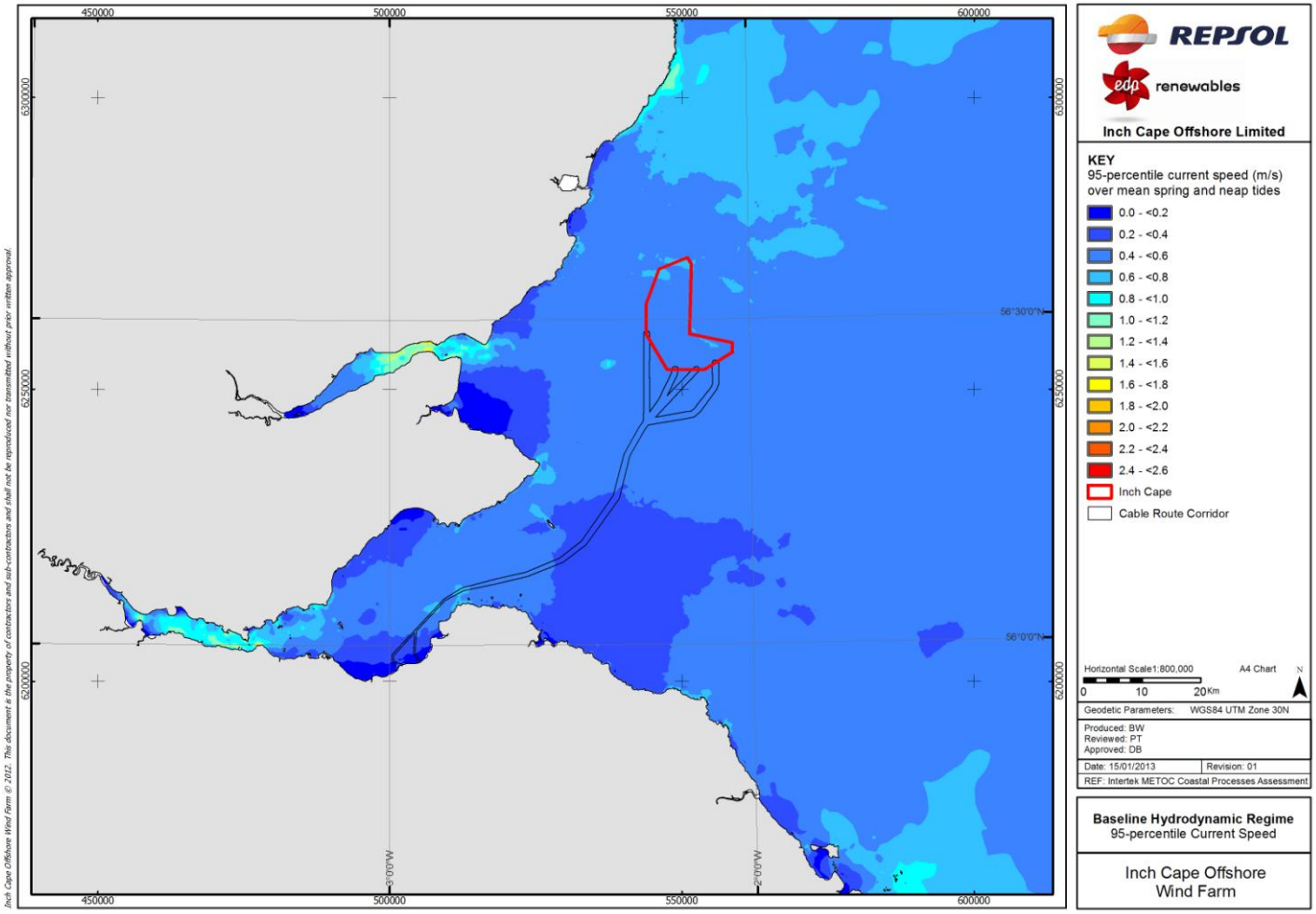


Figure 10A.2.12: 99-percentile currents (m/s) over a mean spring and neap tide – Regional

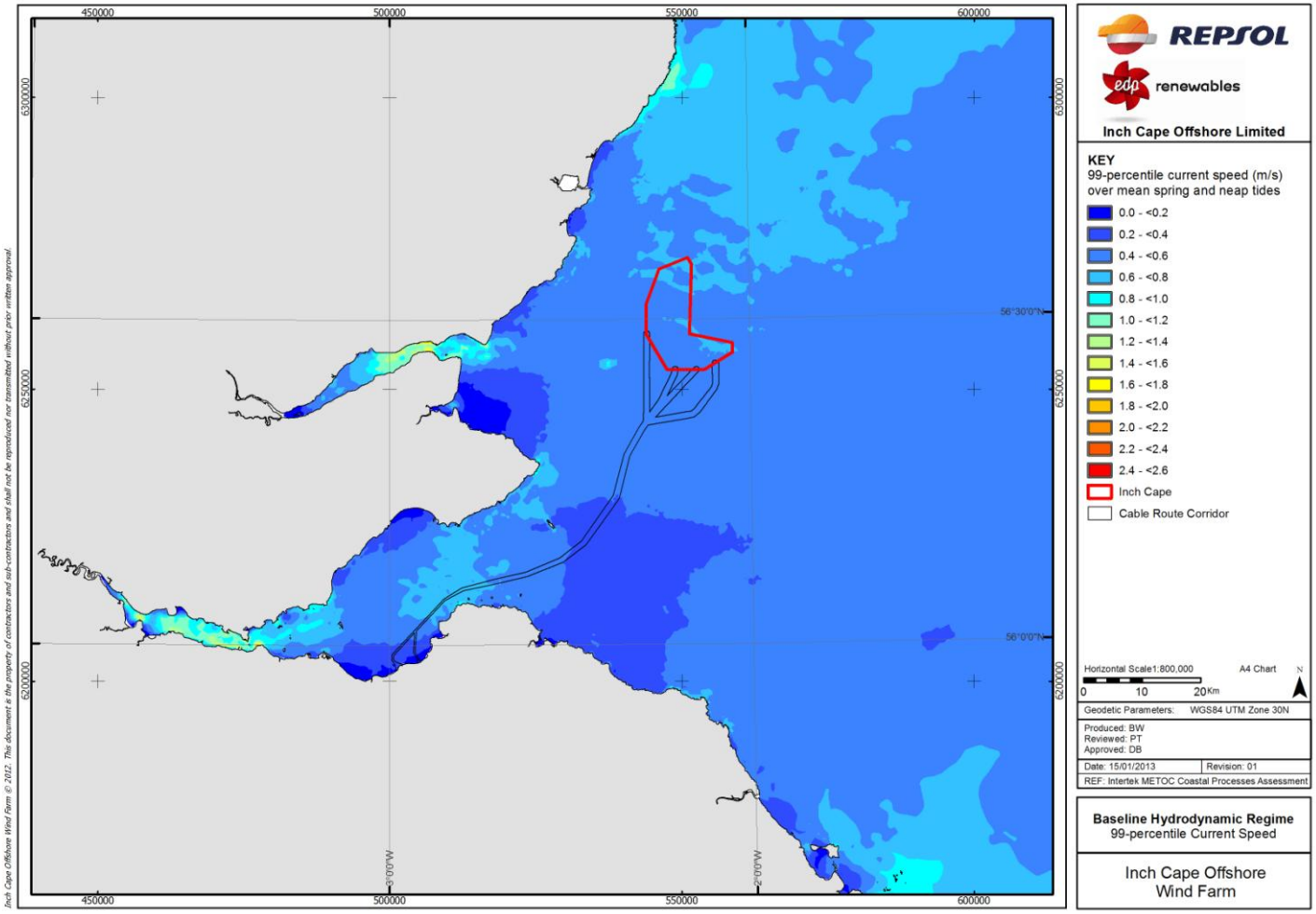


Figure 10A.2.13: Mean spring tide, high water (HW) level (m) – Inch Cape OWF (near-field) scale

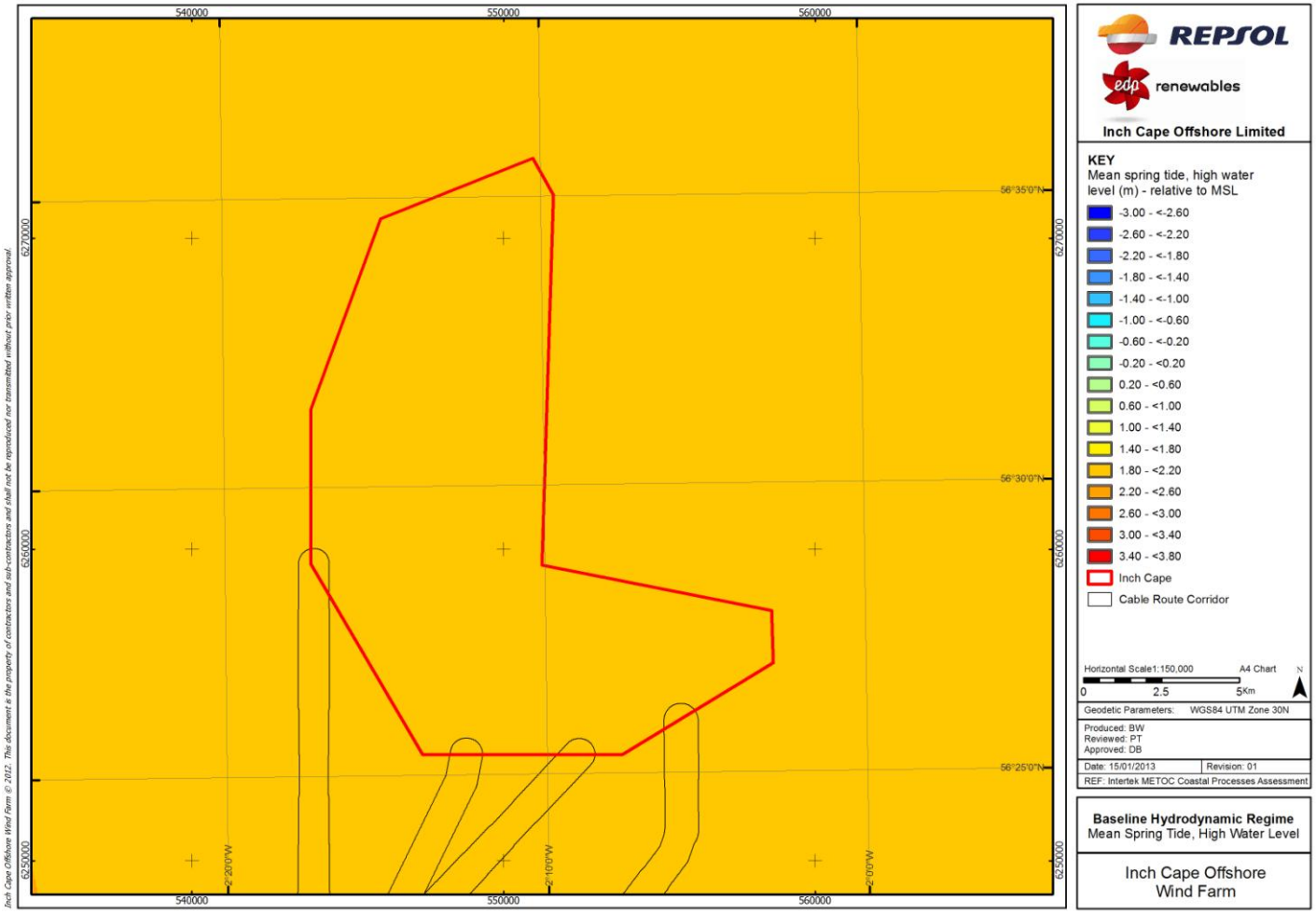


Figure 10A.2.14: Mean spring tide, low water (LW) level (m) – Inch Cape OWF (near-field) scale

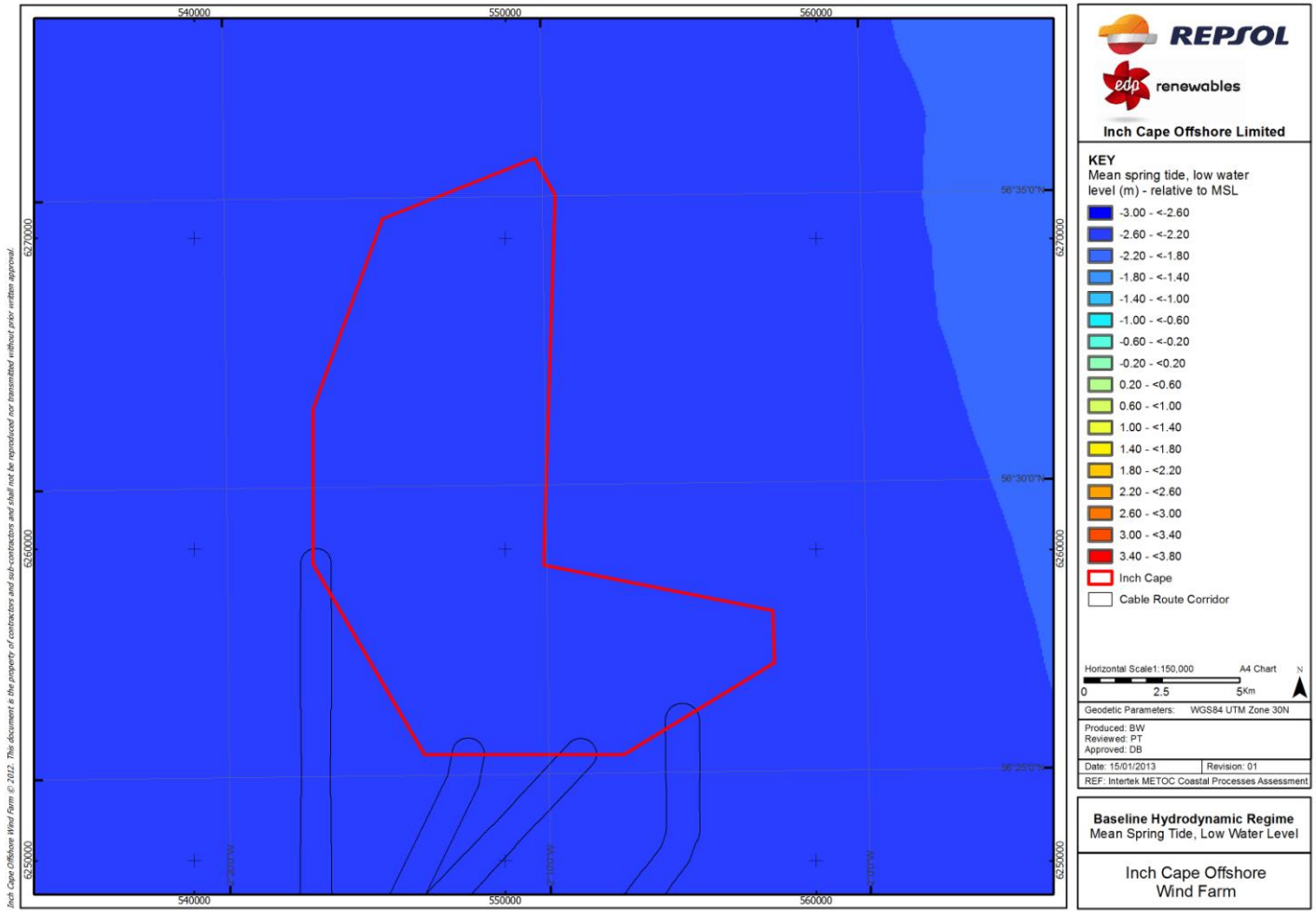


Figure 10A.2.15: Mean neap tide, high water (HW) level (m) – Inch Cape OWF (near-field) scale

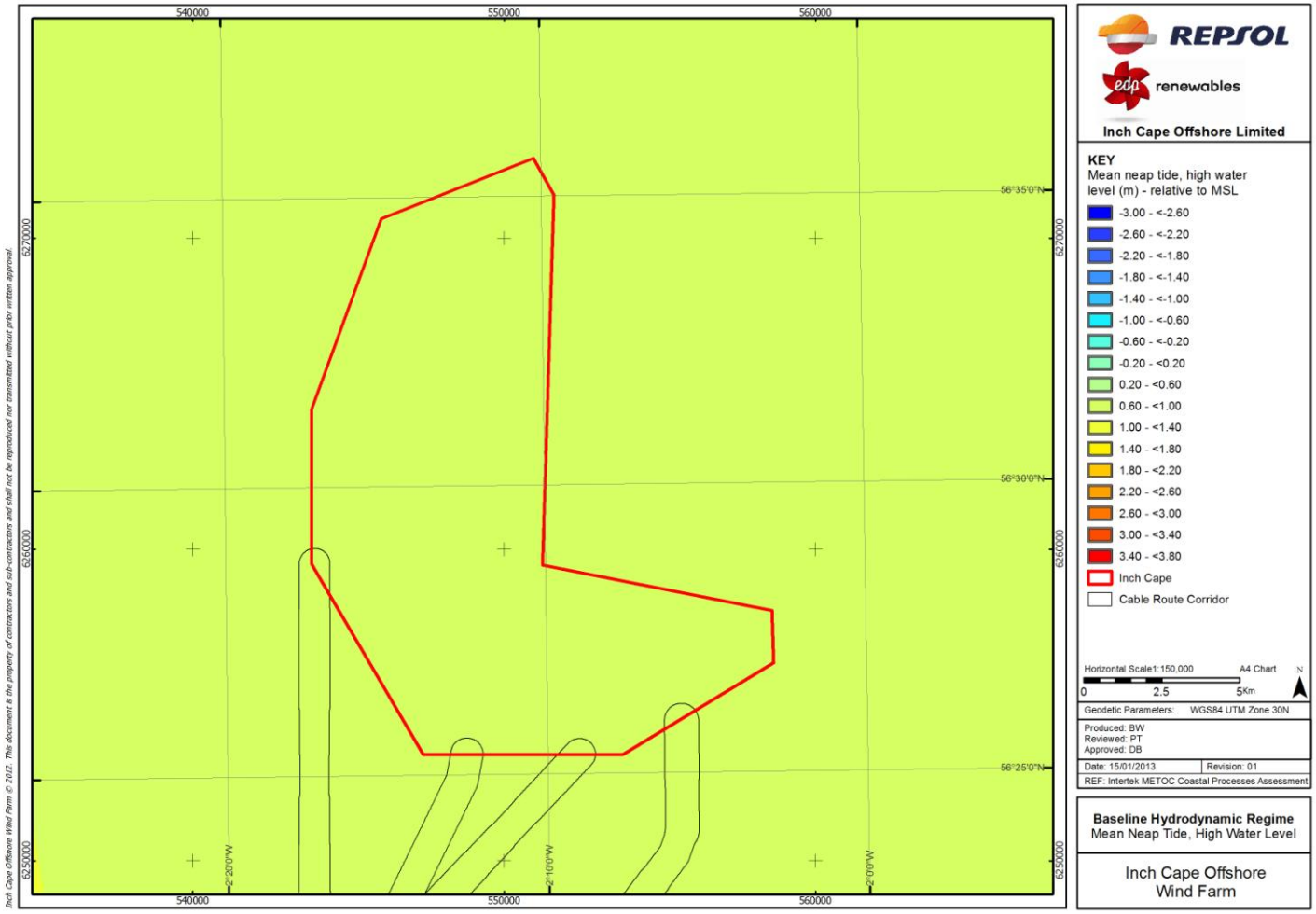


Figure 10A.2.16: Mean neap tide, low water (LW) level (m) – Inch Cape OWF (near-field) scale

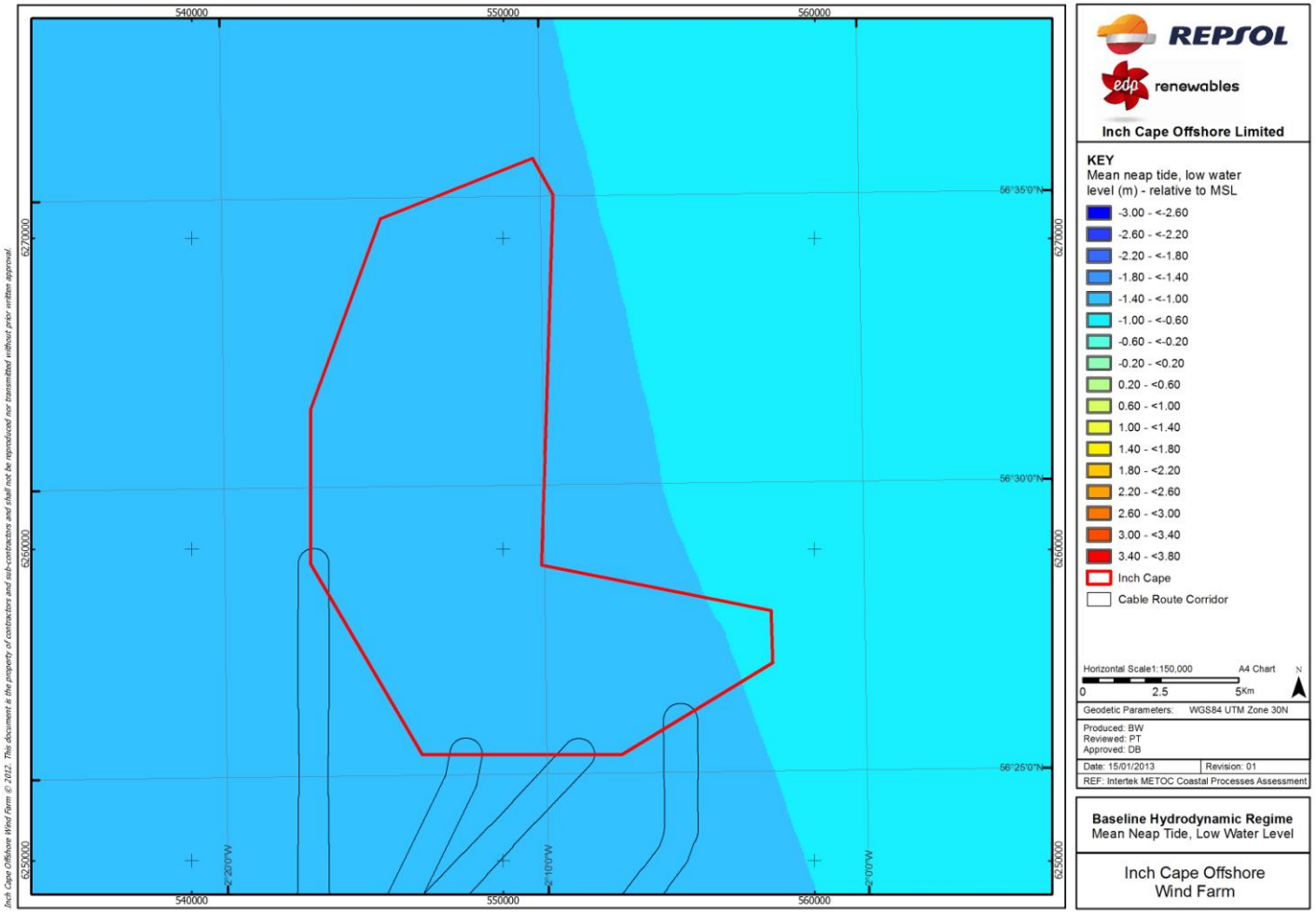


Figure 10A.2.17: Mean spring tide, peak flood currents (m/s) – Inch Cape OWF (near-field) scale

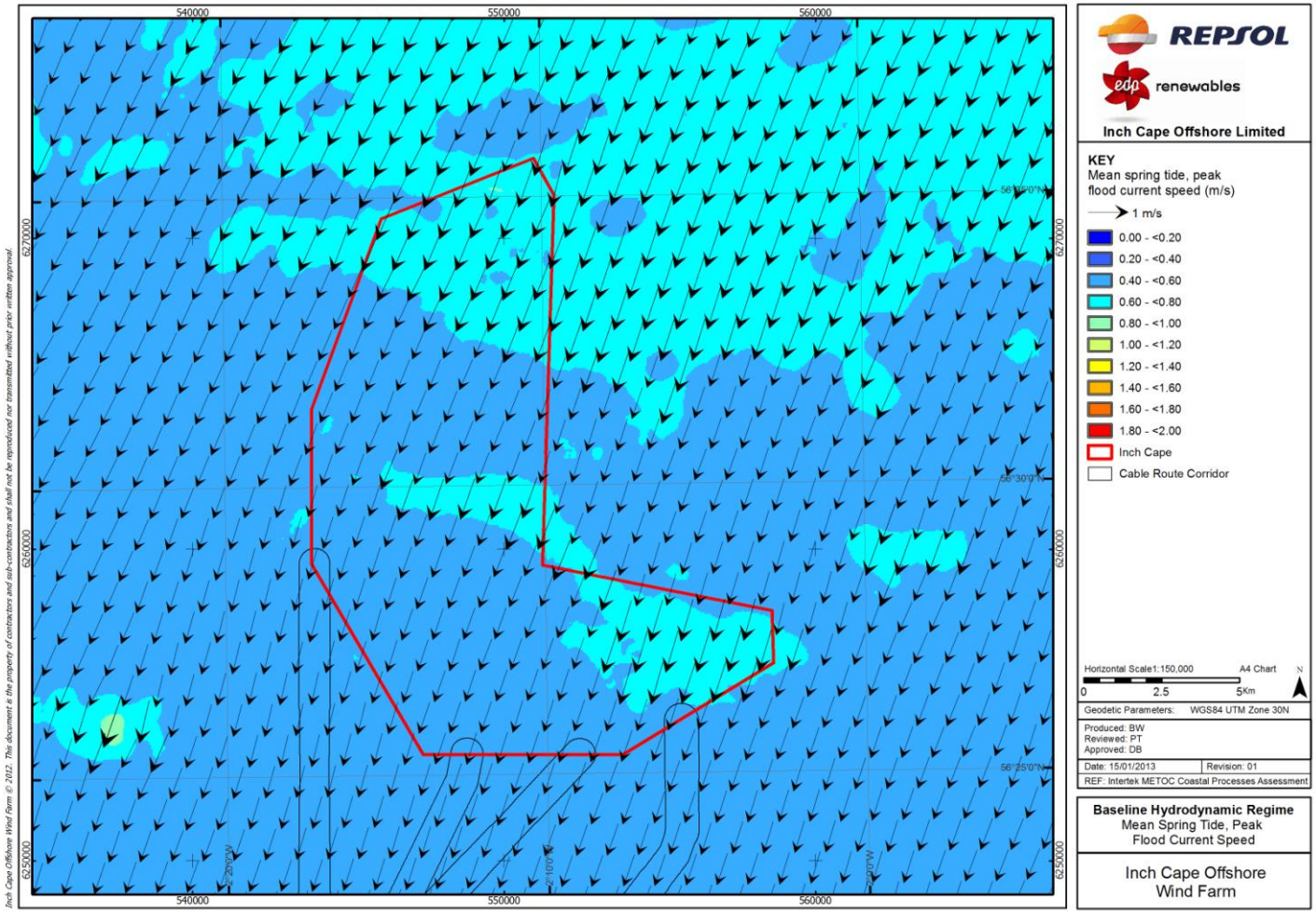


Figure 10A.2.18: Mean spring tide, peak ebb currents (m/s) – Inch Cape OWF (near-field) scale

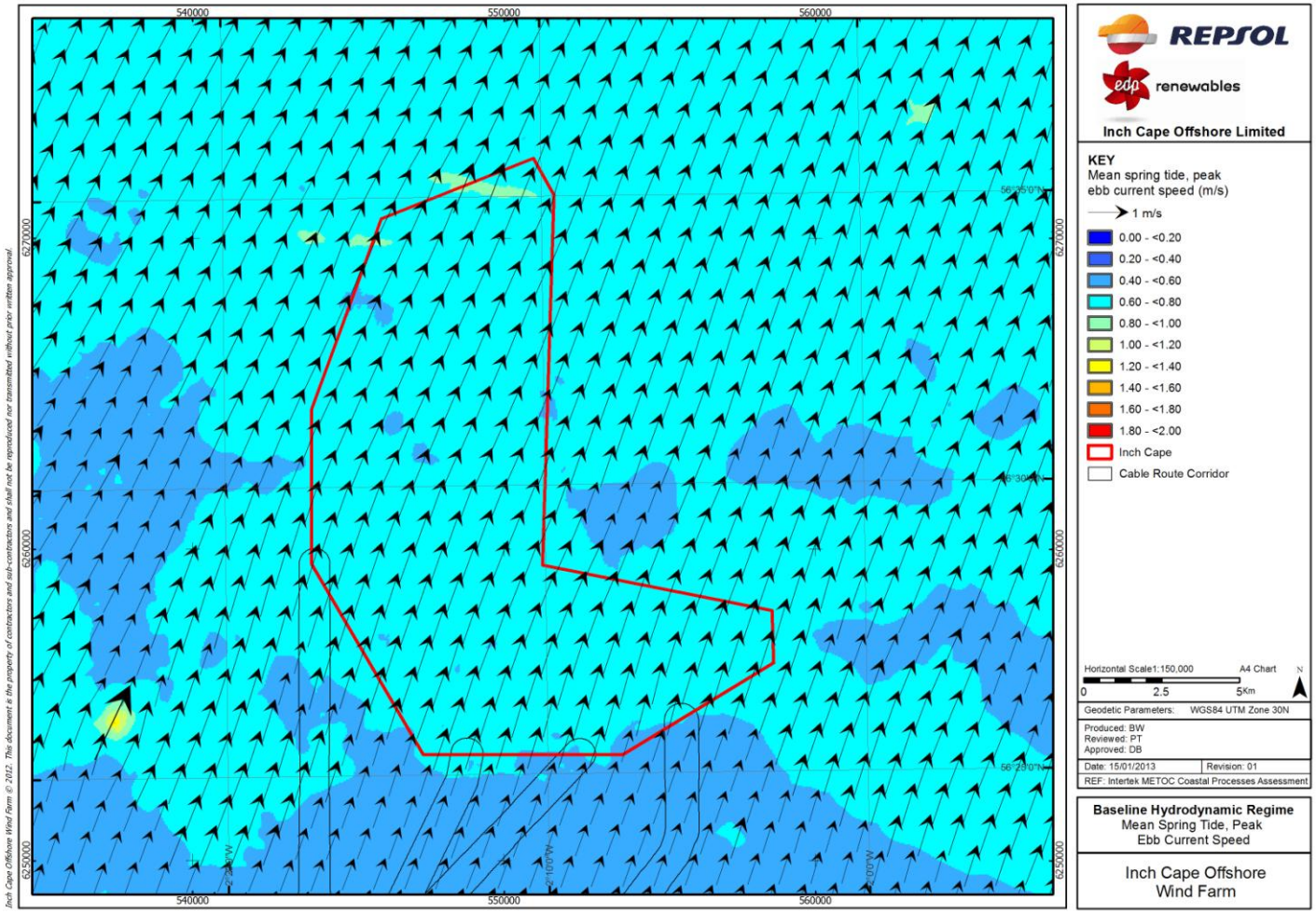


Figure 10A.2.19: Mean neap tide, peak flood currents (m/s) – Inch Cape OWF (near-field) scale

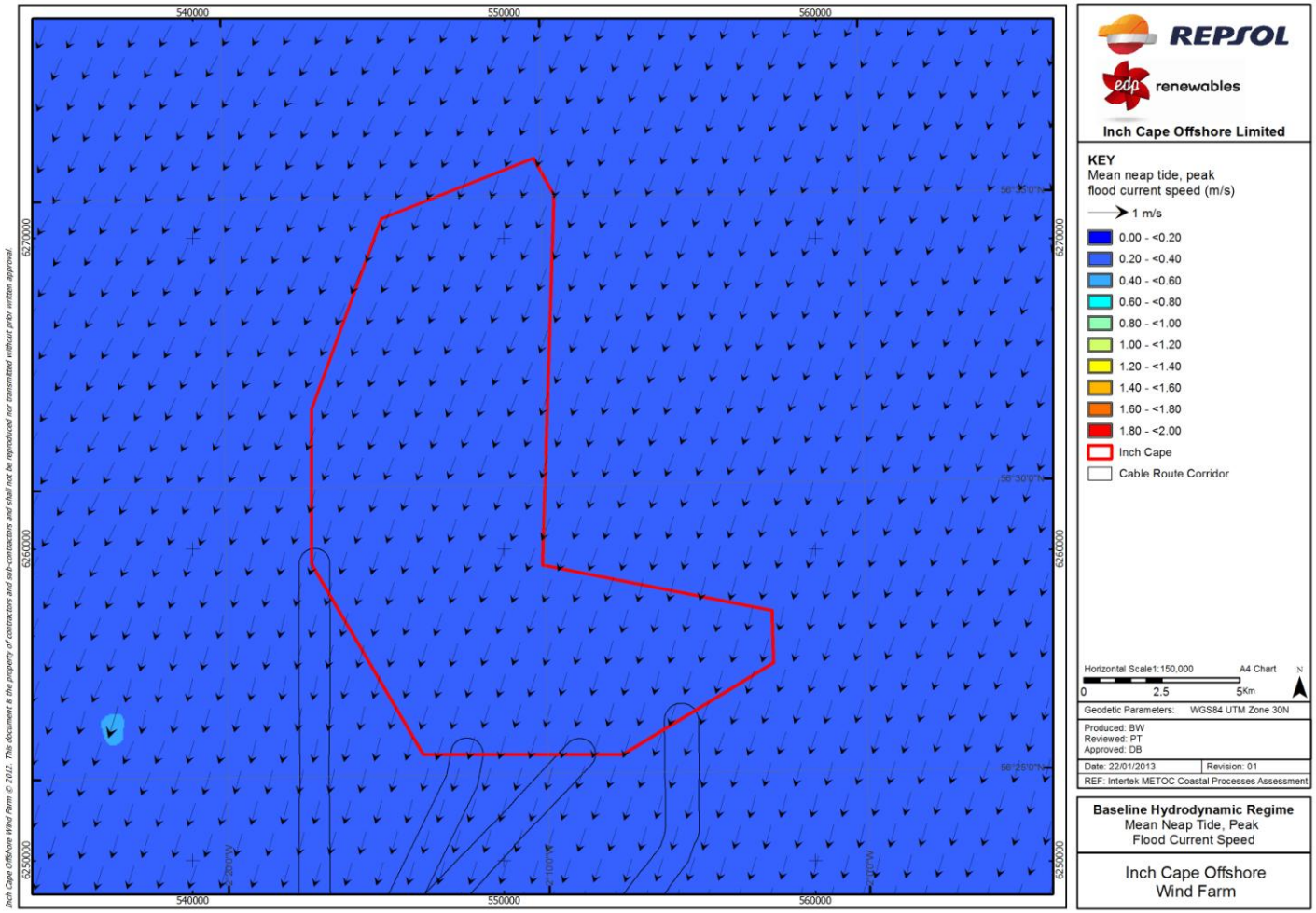


Figure 10A.2.20: Mean neap tide, peak ebb currents (m/s) – Inch Cape OWF (near-field) scale

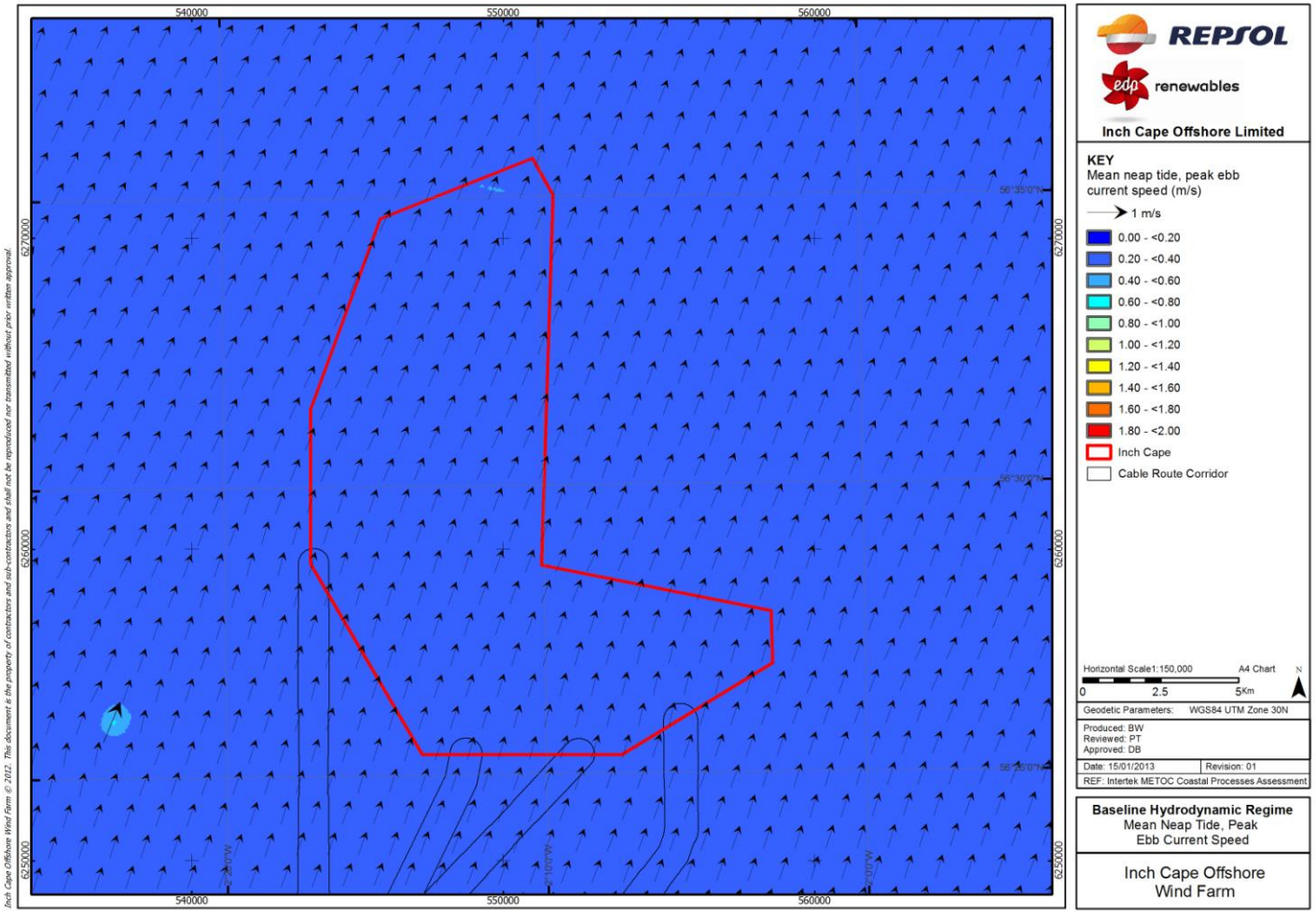


Figure 10A.2.21: 50-percentile currents (m/s) over a mean spring and neap tide – Inch Cape OWF (near-field) scale

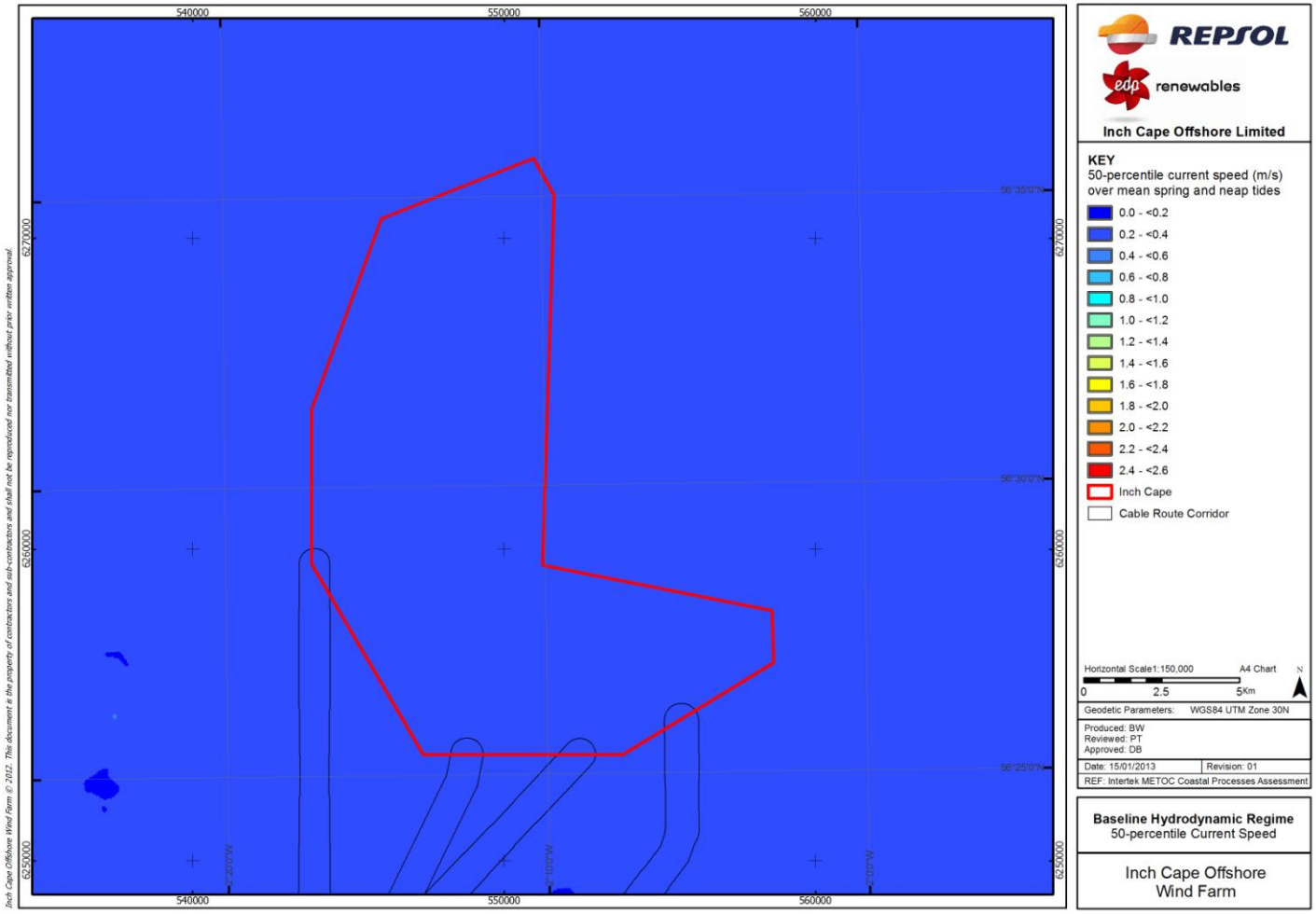


Figure 10A.2.22: 90-percentile currents (m/s) over a mean spring and neap tide – Inch Cape OWF (near-field) scale

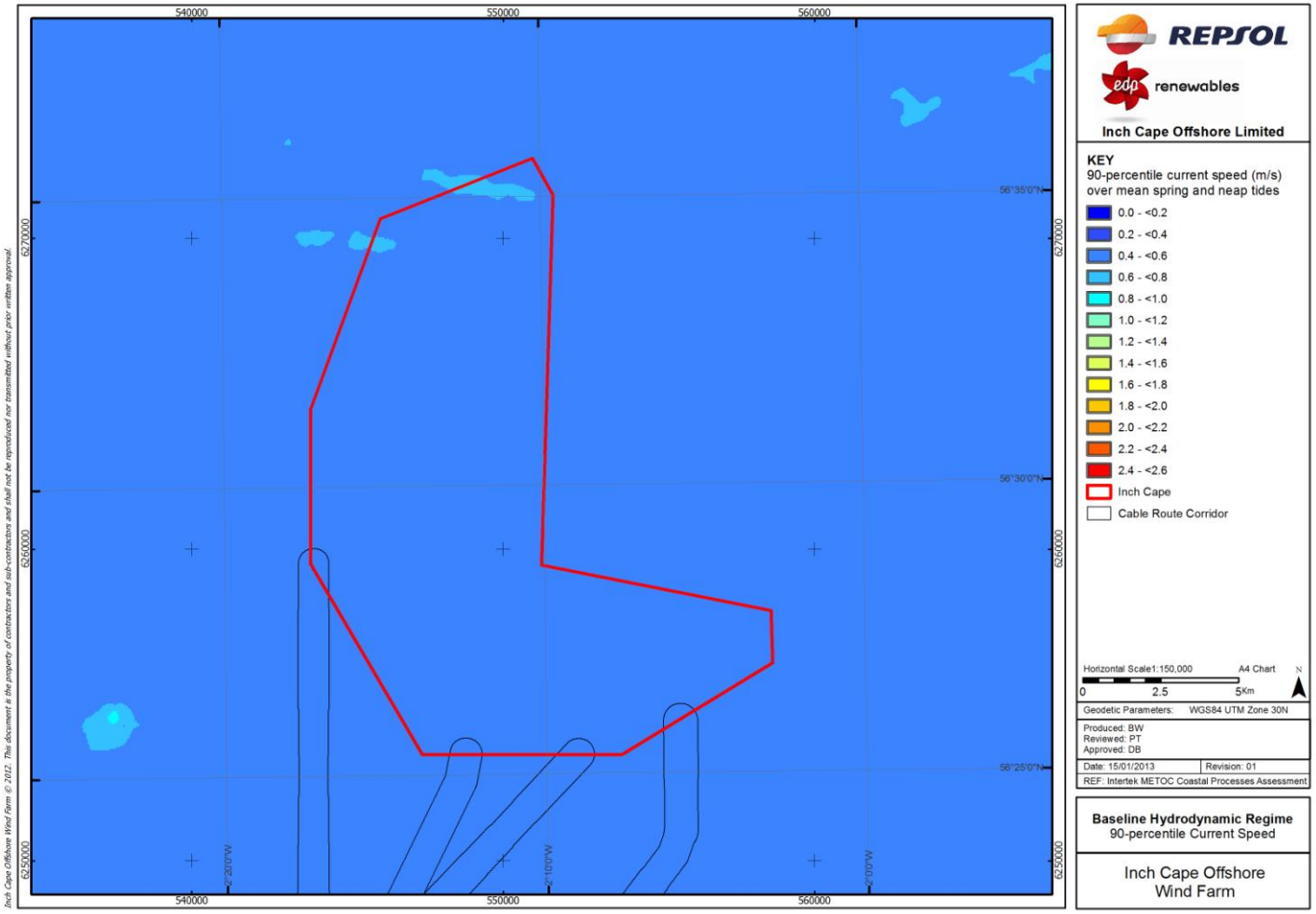


Figure 10A.2.23: 95-percentile currents (m/s) over a mean spring and neap tide – Inch Cape OWF (near-field) scale

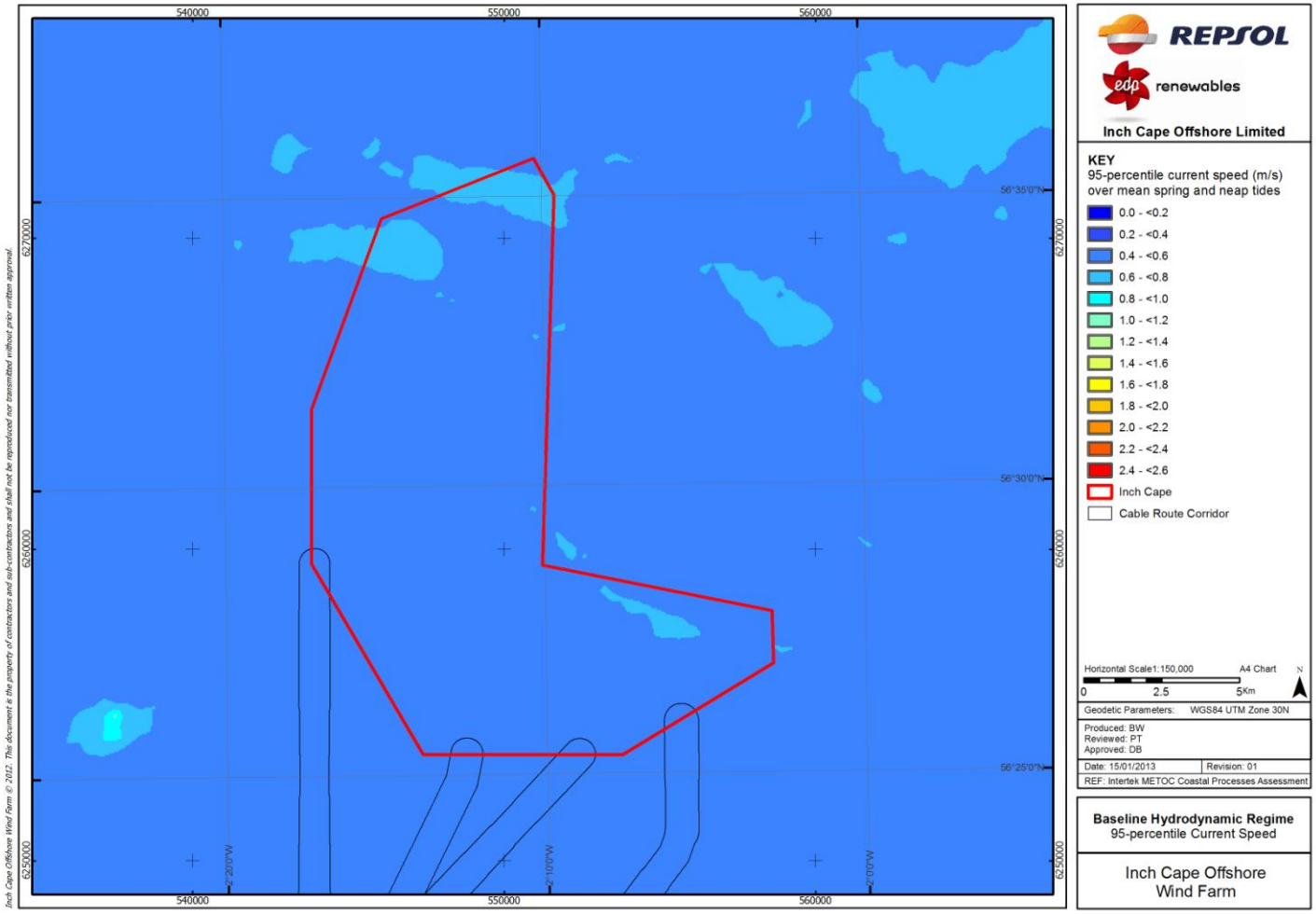
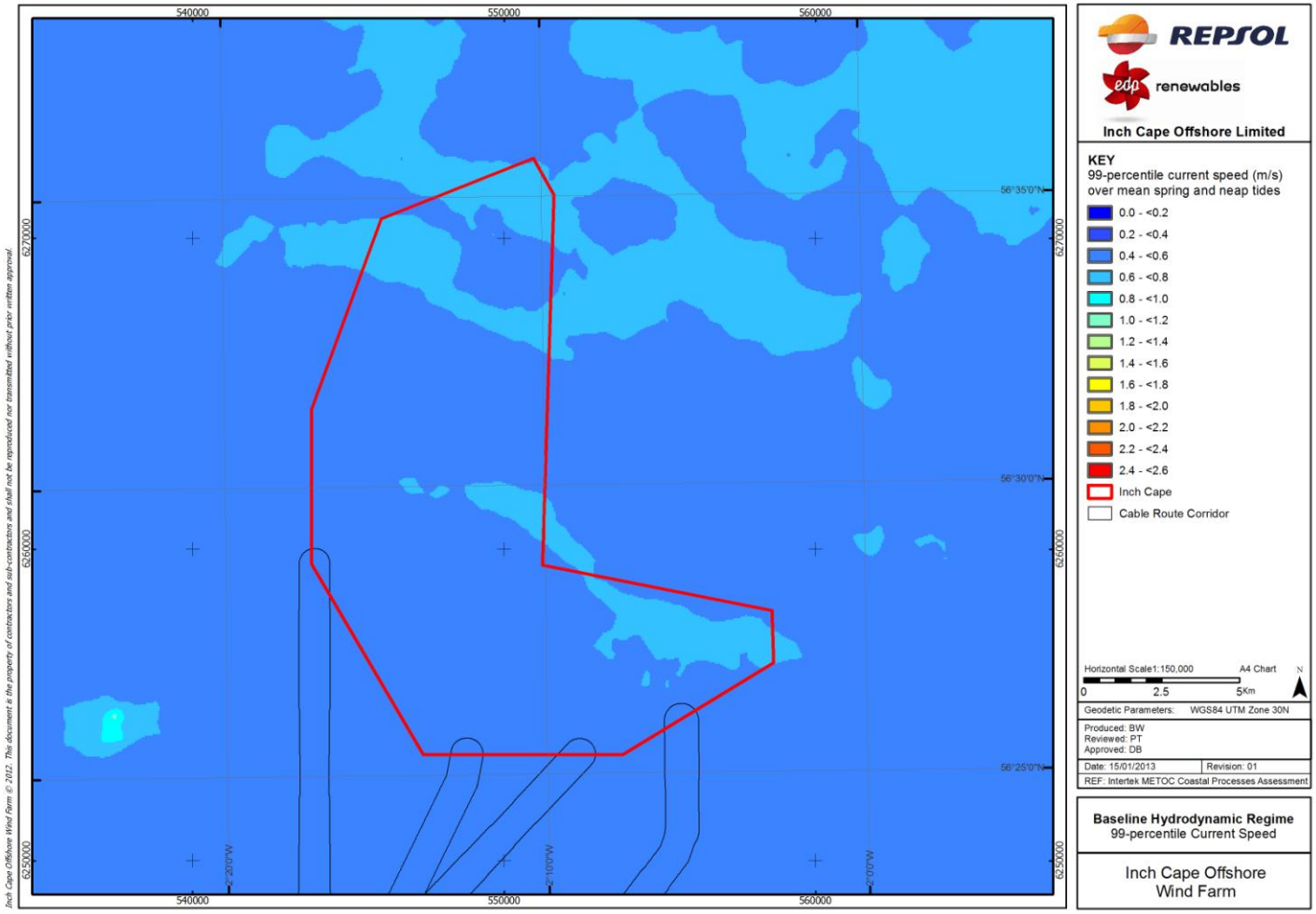


Figure 10A.2.24: 99-percentile currents (m/s) over a mean spring and neap tide – Inch Cape OWF (near-field) scale



Section 2: Wave climate

Figure 10A.2.25: 50%ile significant wave height (m) – Regional (far-field) scale

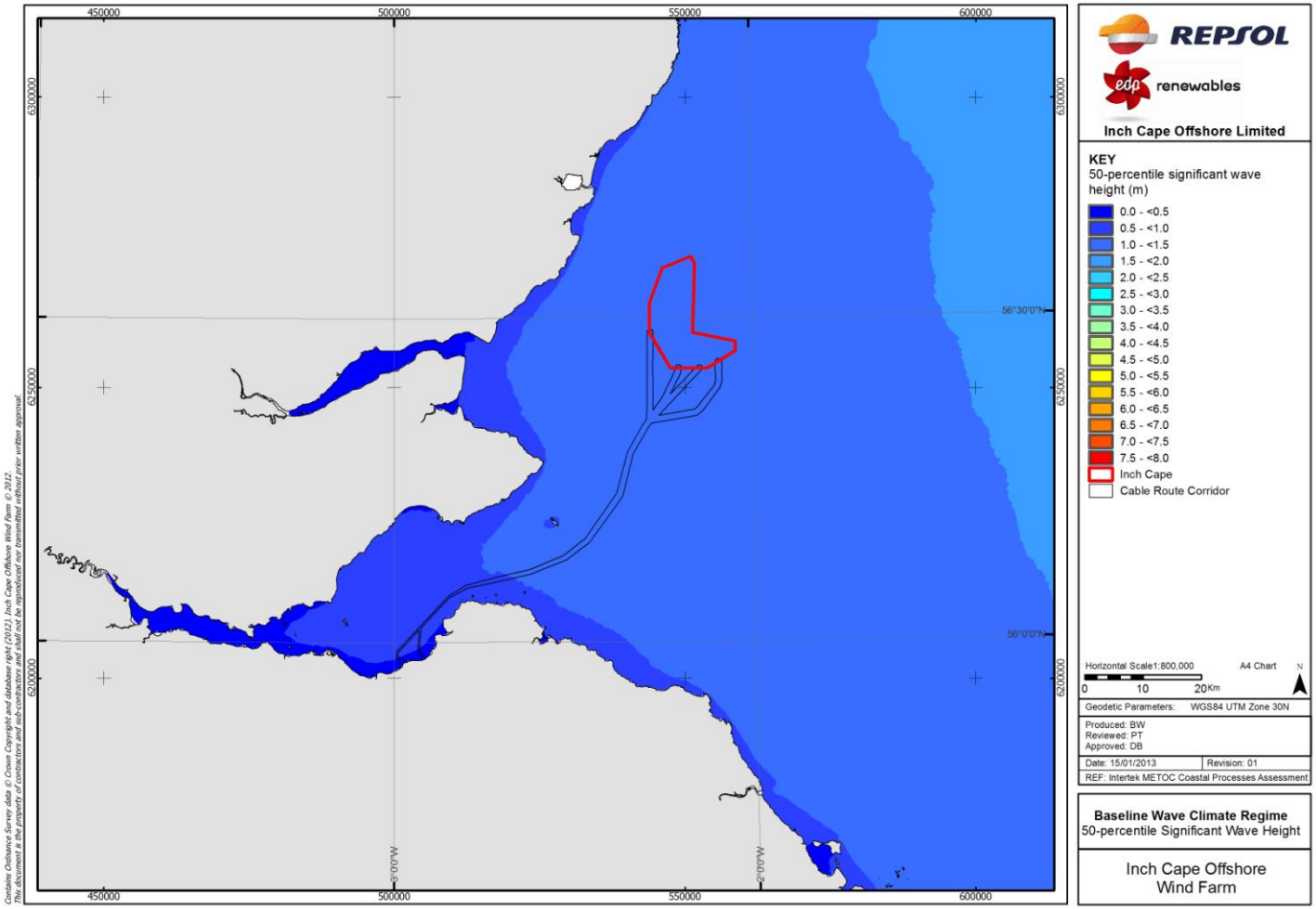


Figure 10A.2.26: 90%ile significant wave height (m) – Regional (far-field) scale

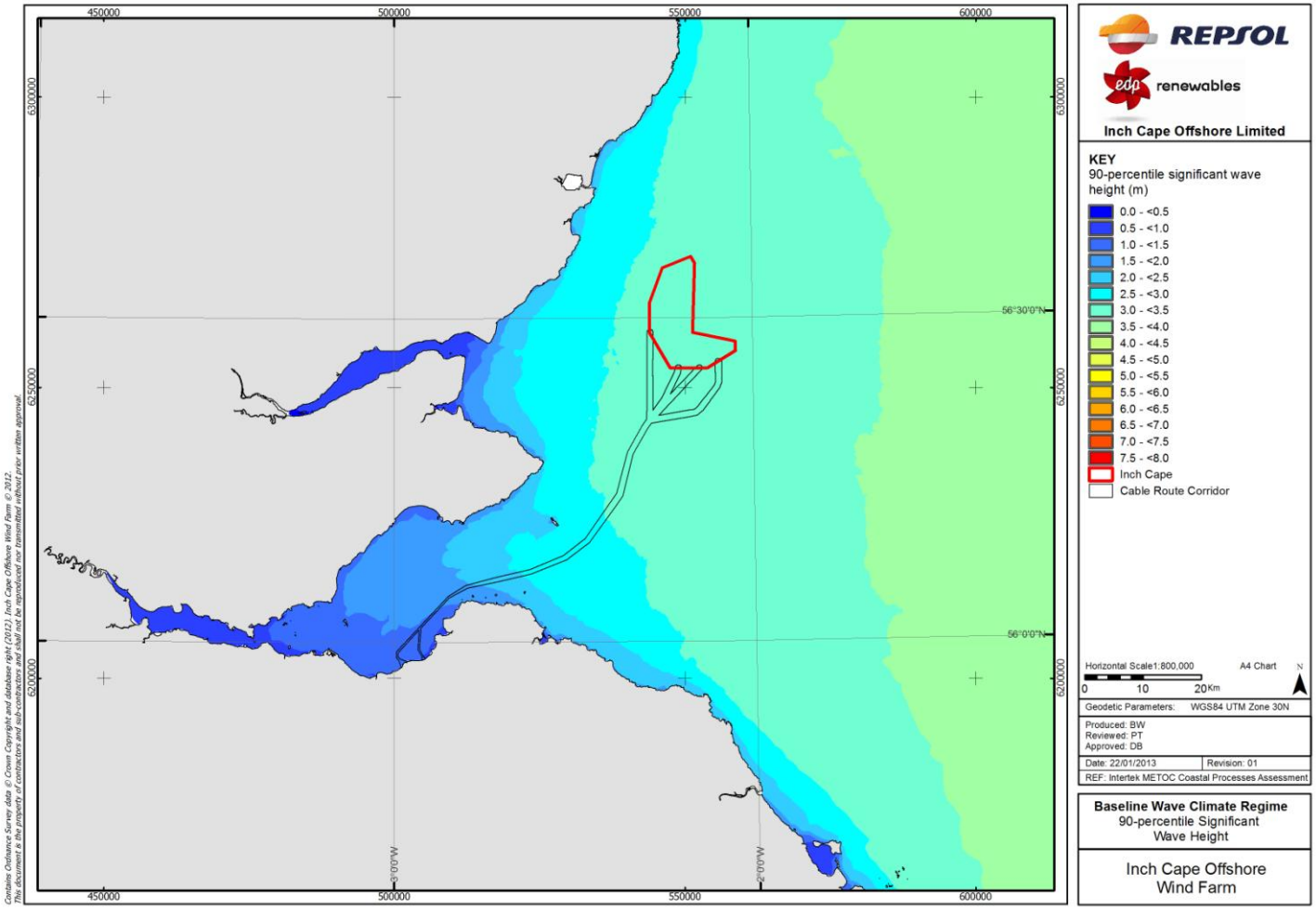


Figure 10A.2.27: 95%ile significant wave height (m) – Regional (far-field) scale

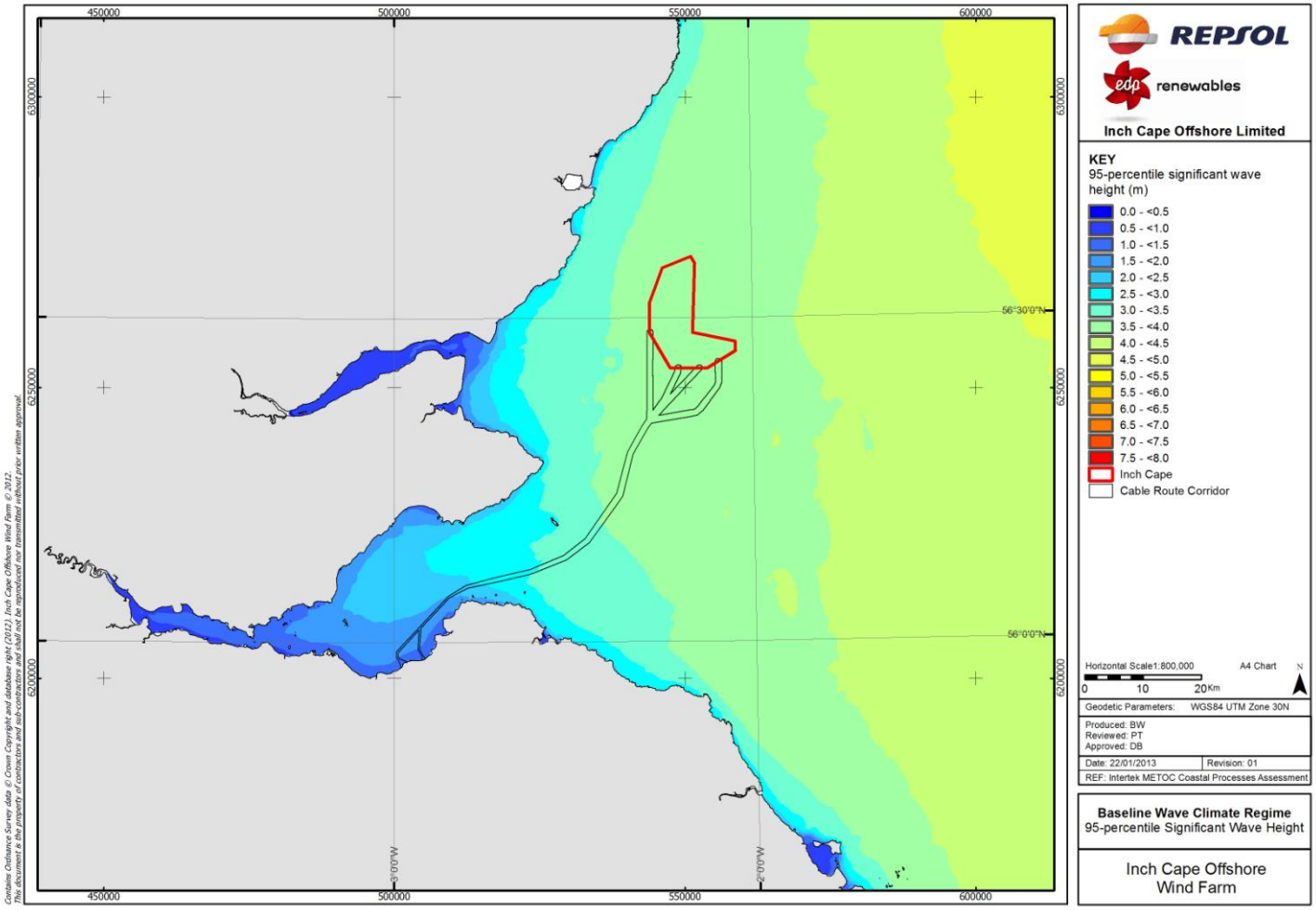


Figure 10A.2.28: 99%ile significant wave height (m) – Regional (far-field) scale

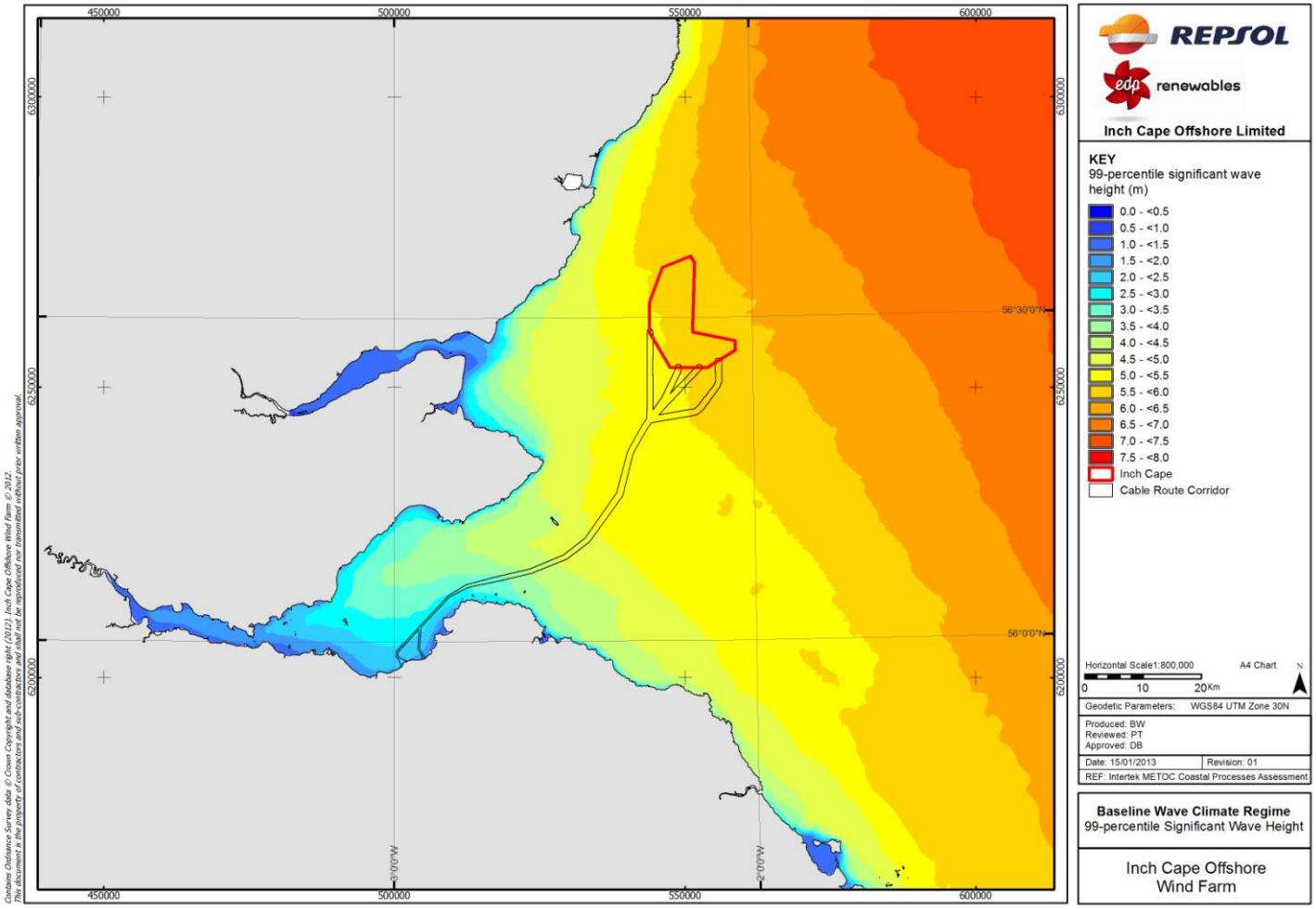


Figure 10A.2.29: 50%ile mean wave period (s) – Regional (far-field) scale

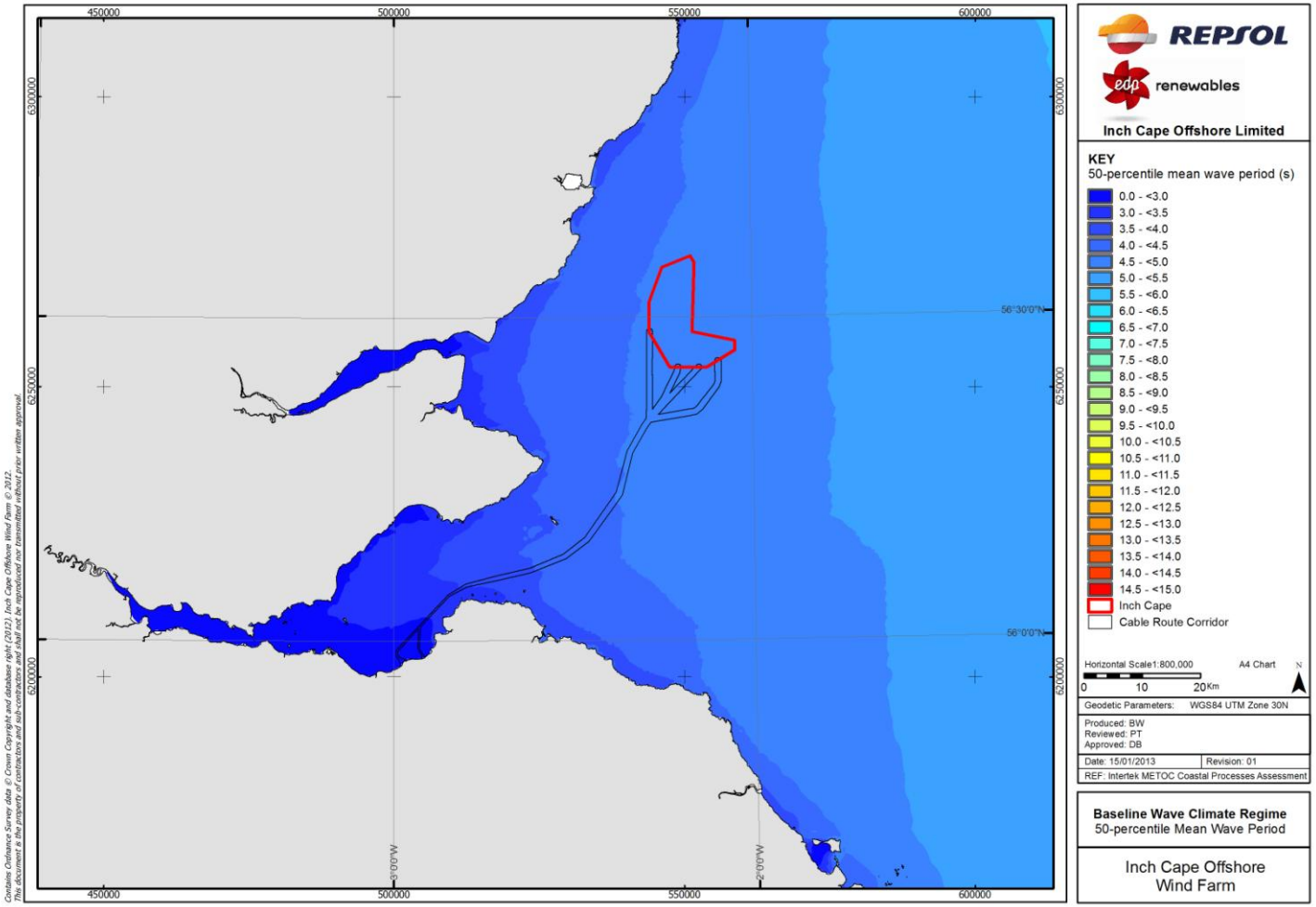


Figure 10A.2.30: 90%ile mean wave period (s) – Regional (far-field) scale

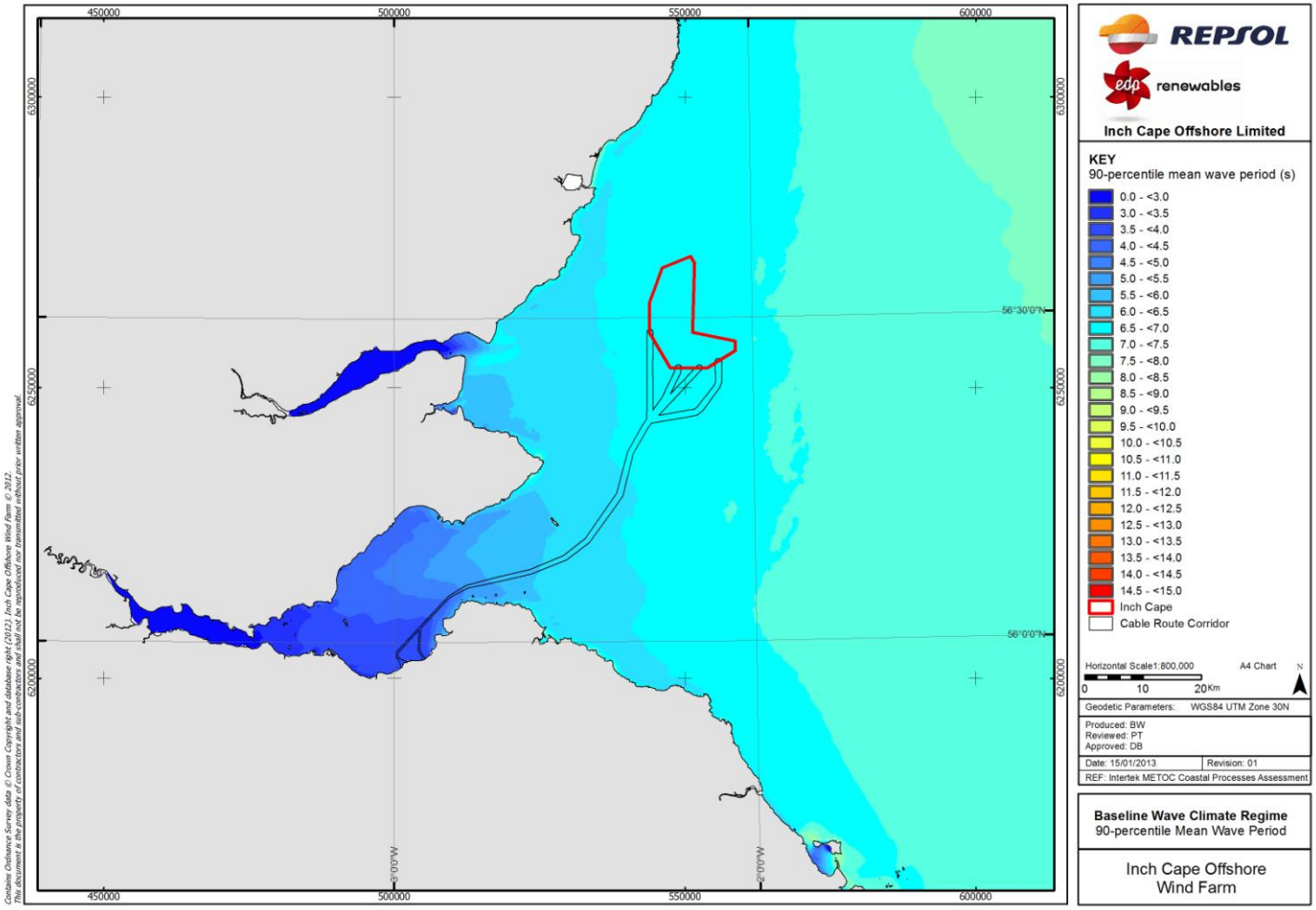


Figure 10A.2.31: 95%ile mean wave period (s) – Regional (far-field) scale

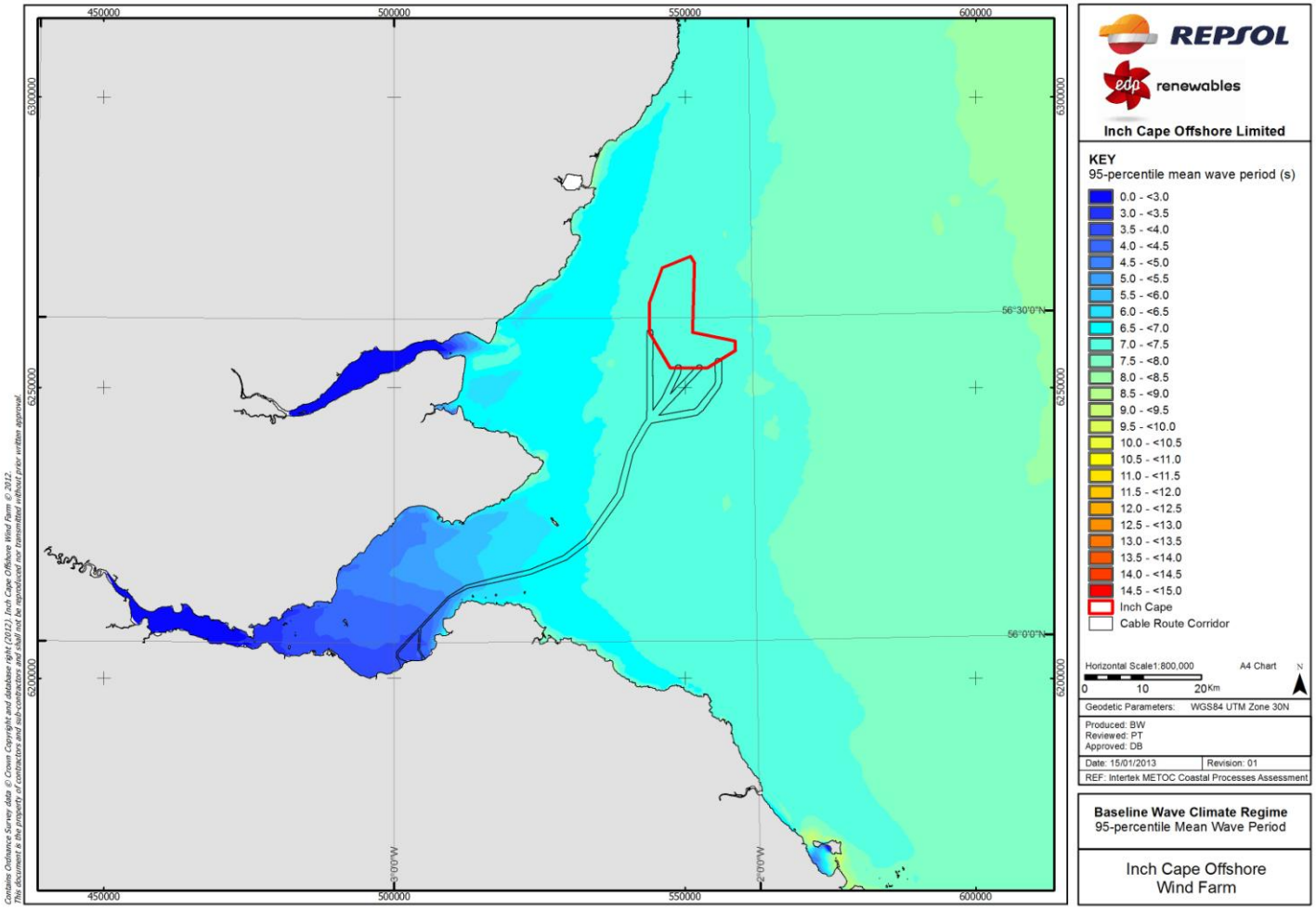


Figure 10A.2.32: 99%ile mean wave period (s) – Regional (far-field) scale

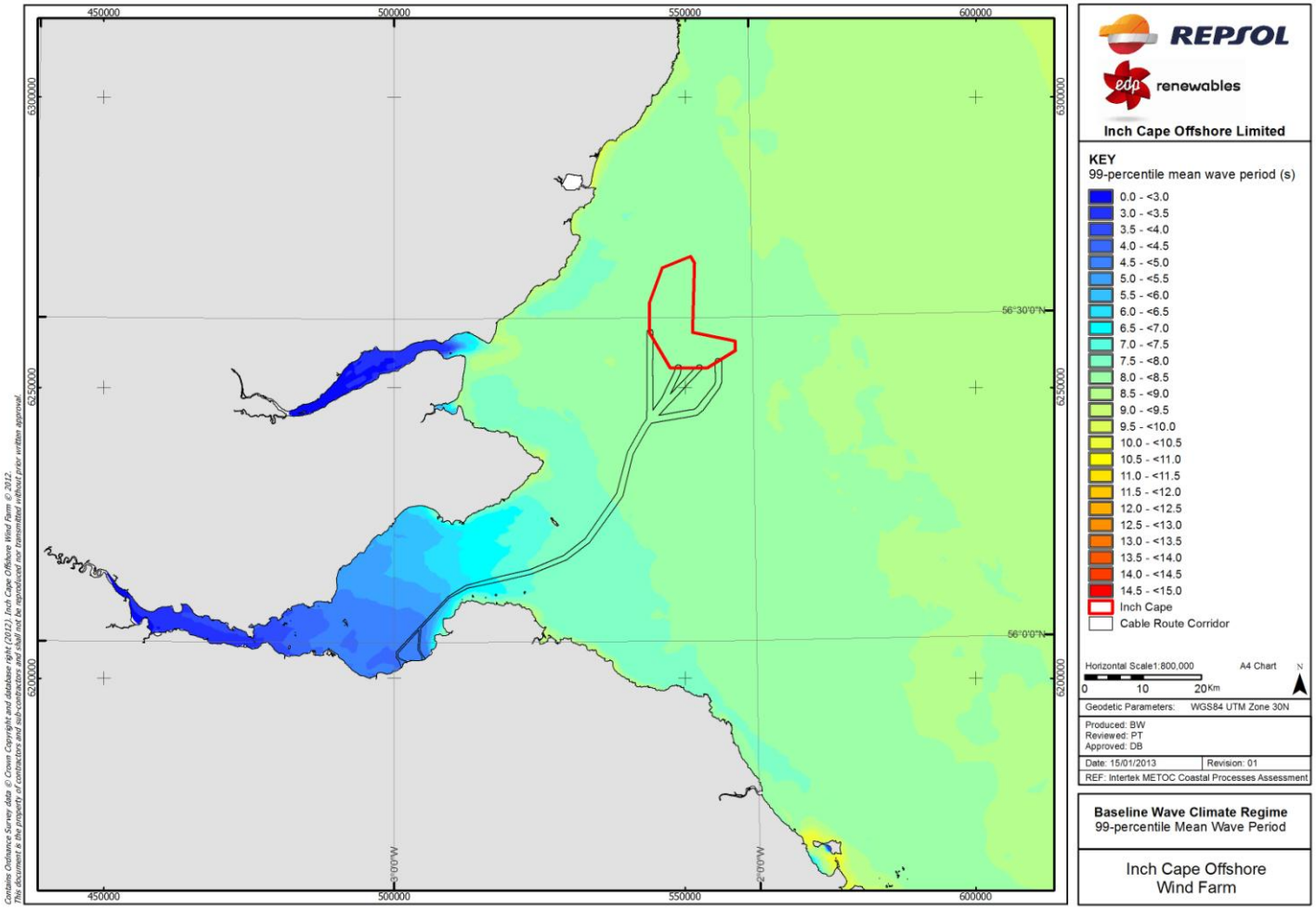


Figure 10A.2.33: 50%ile peak wave period (s) – Regional (far-field) scale

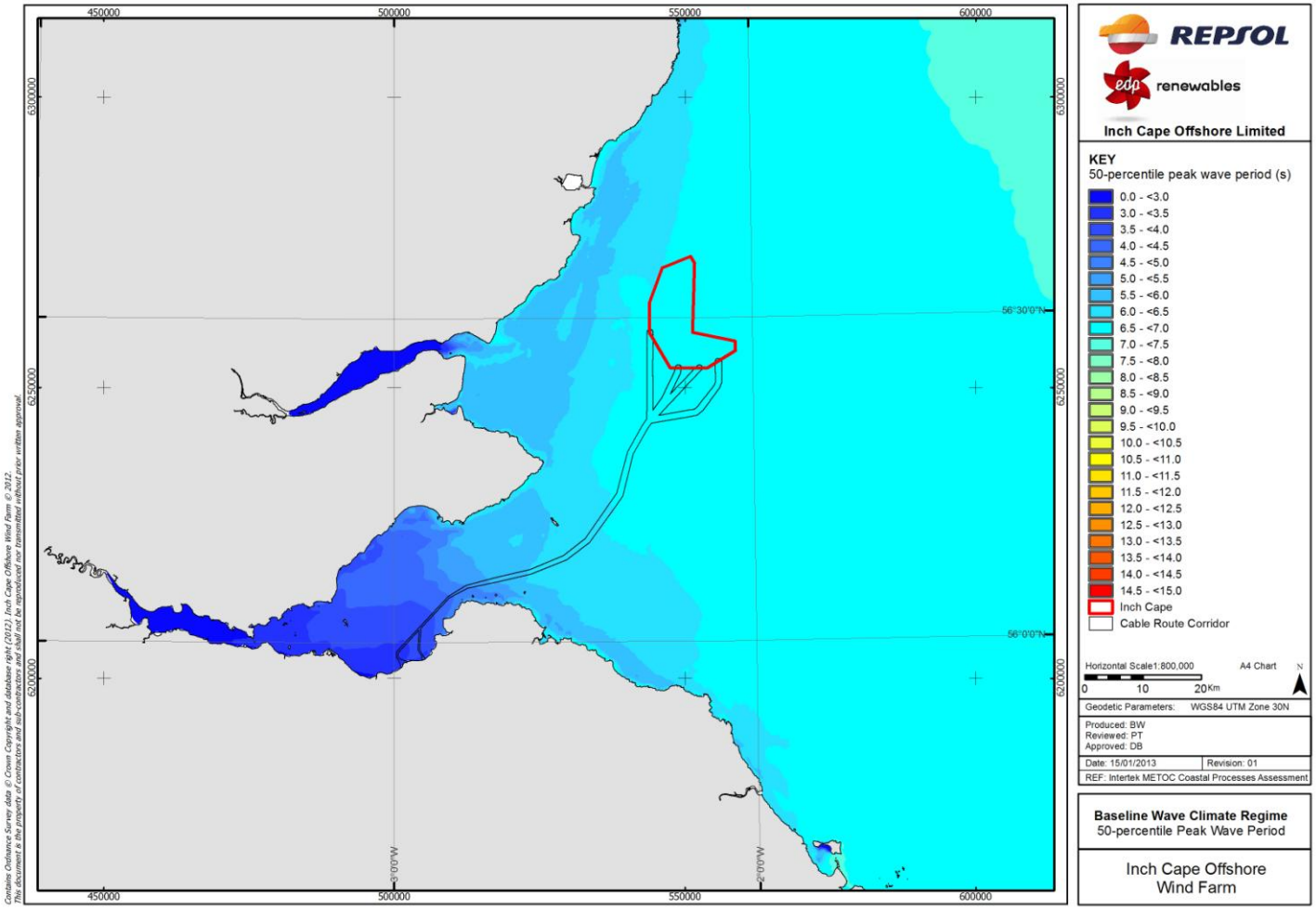
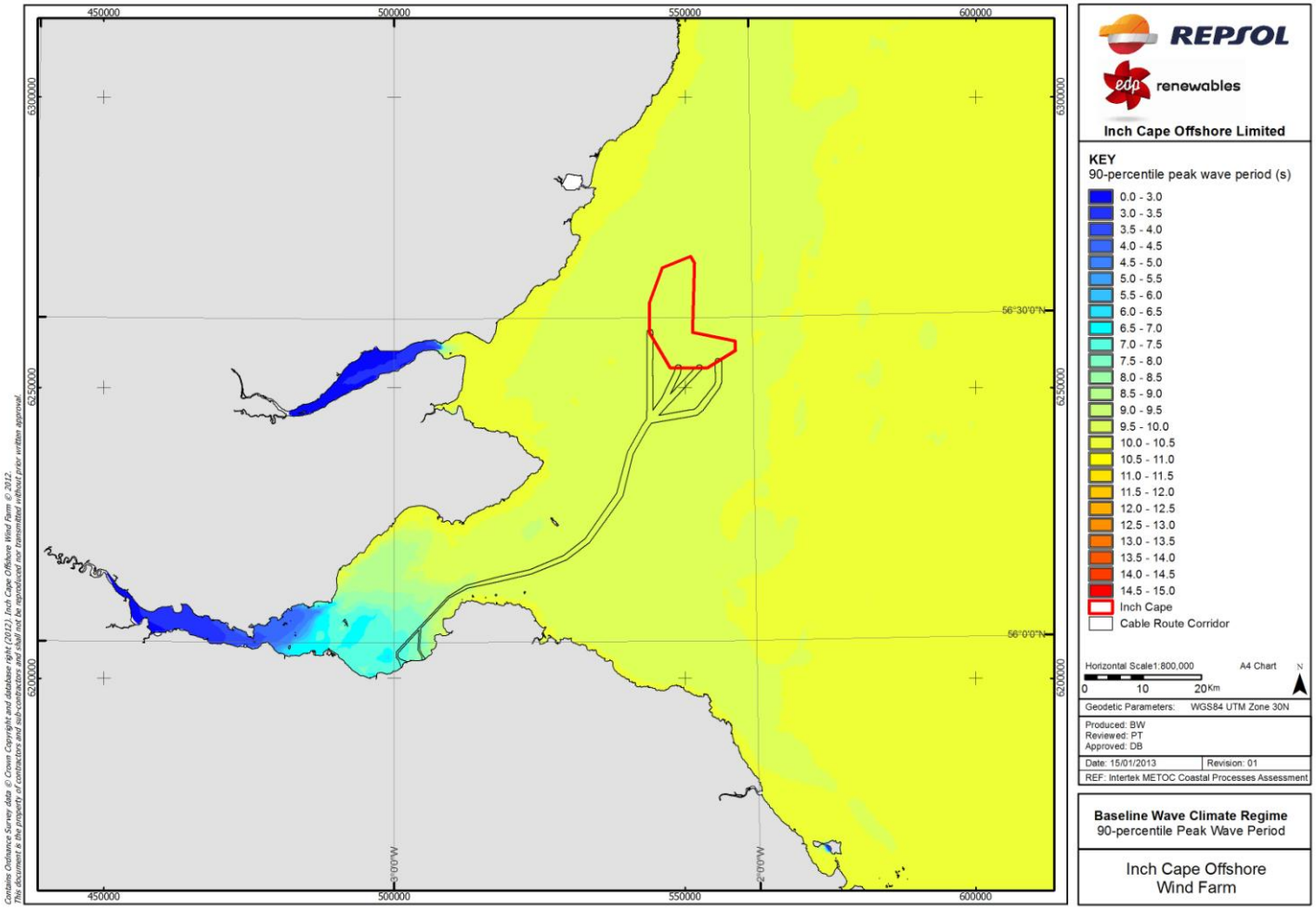


Figure 10A.2.34: 90%ile peak wave period (s) – Regional (far-field) scale



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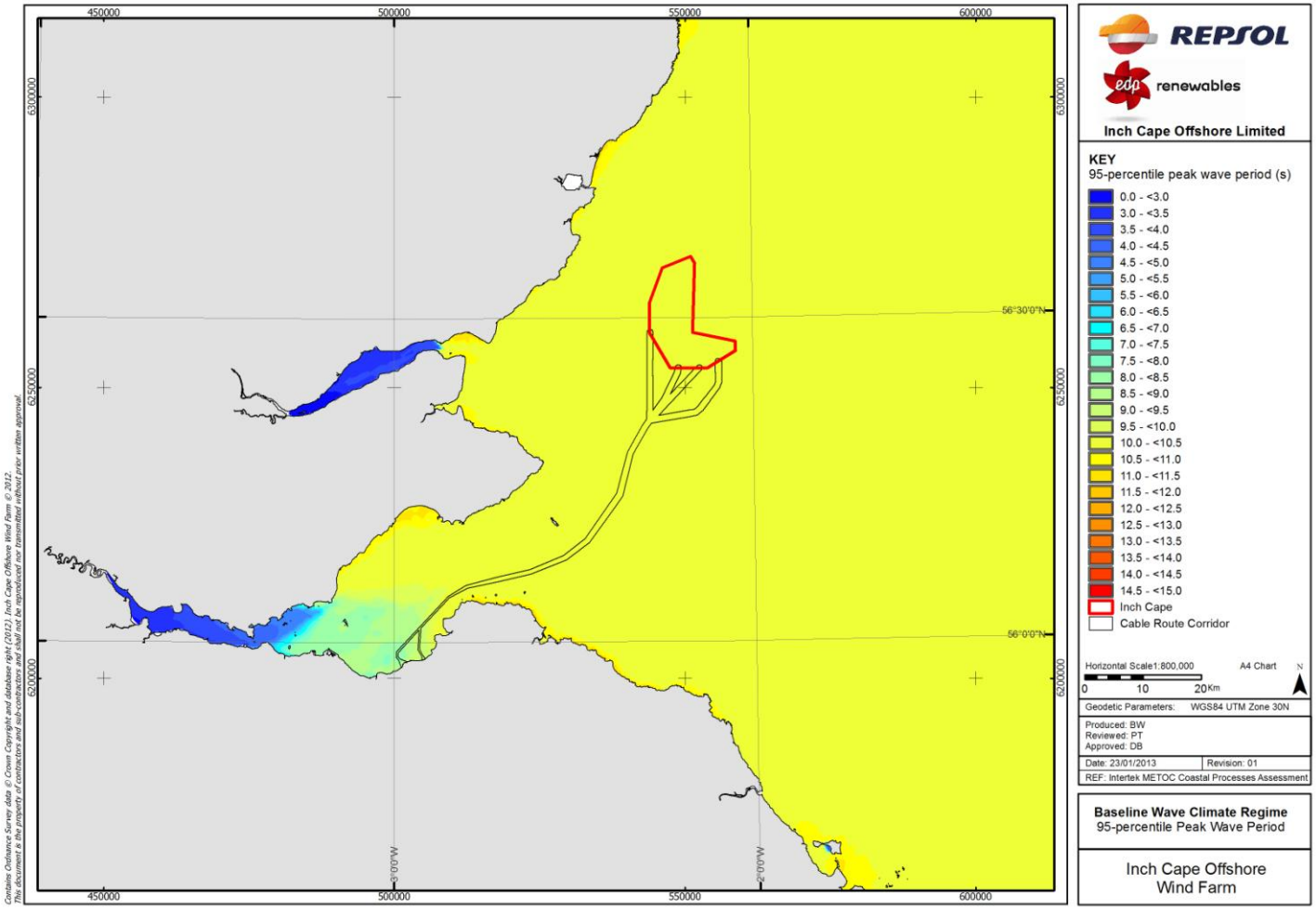


Figure 10A.2.36: 99%ile peak wave period (s) – Regional (far-field) scale

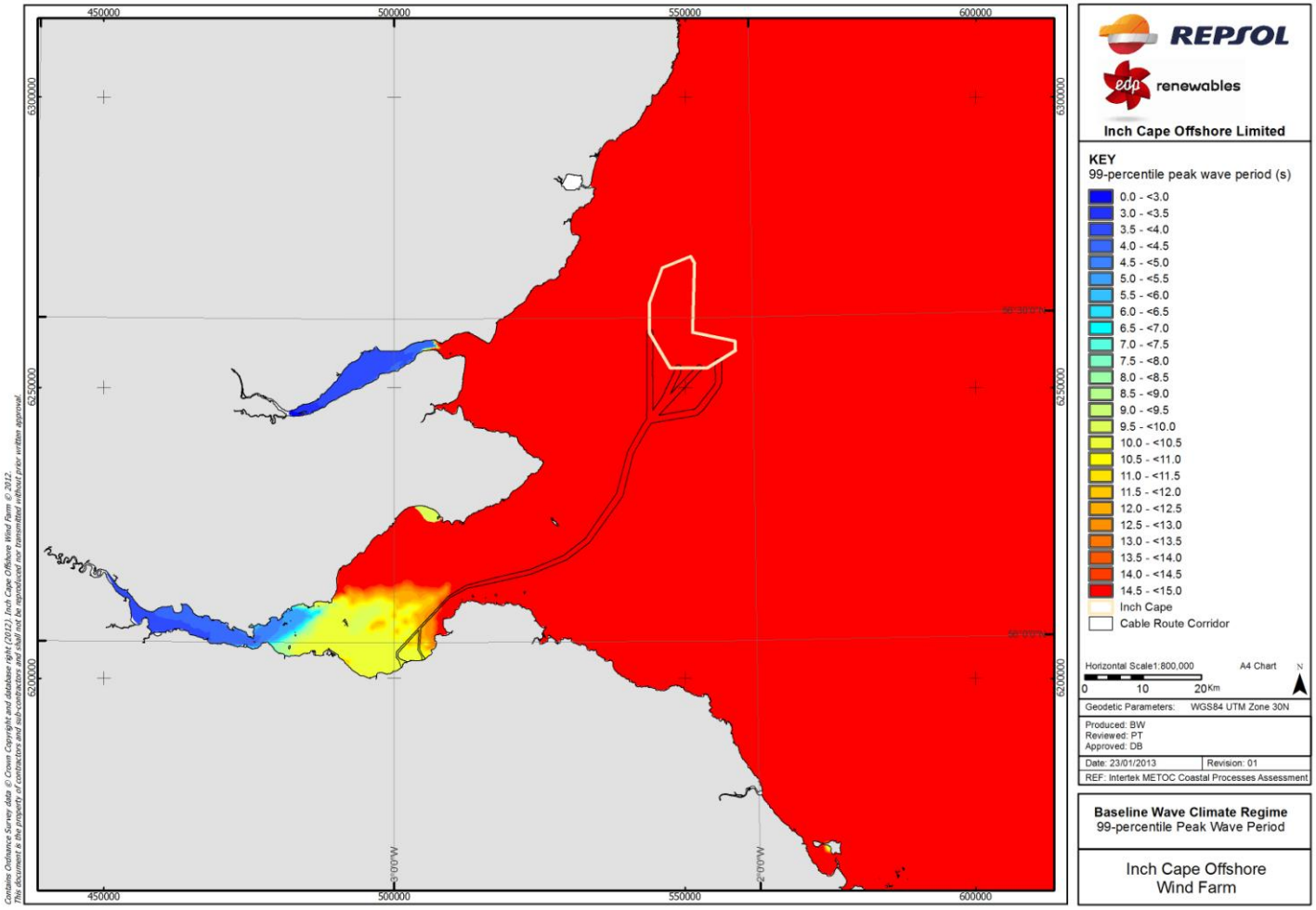


Figure 10A.2.37: Baseline 50%ile significant wave height (m) – Inch Cape OWF (near-field) scale

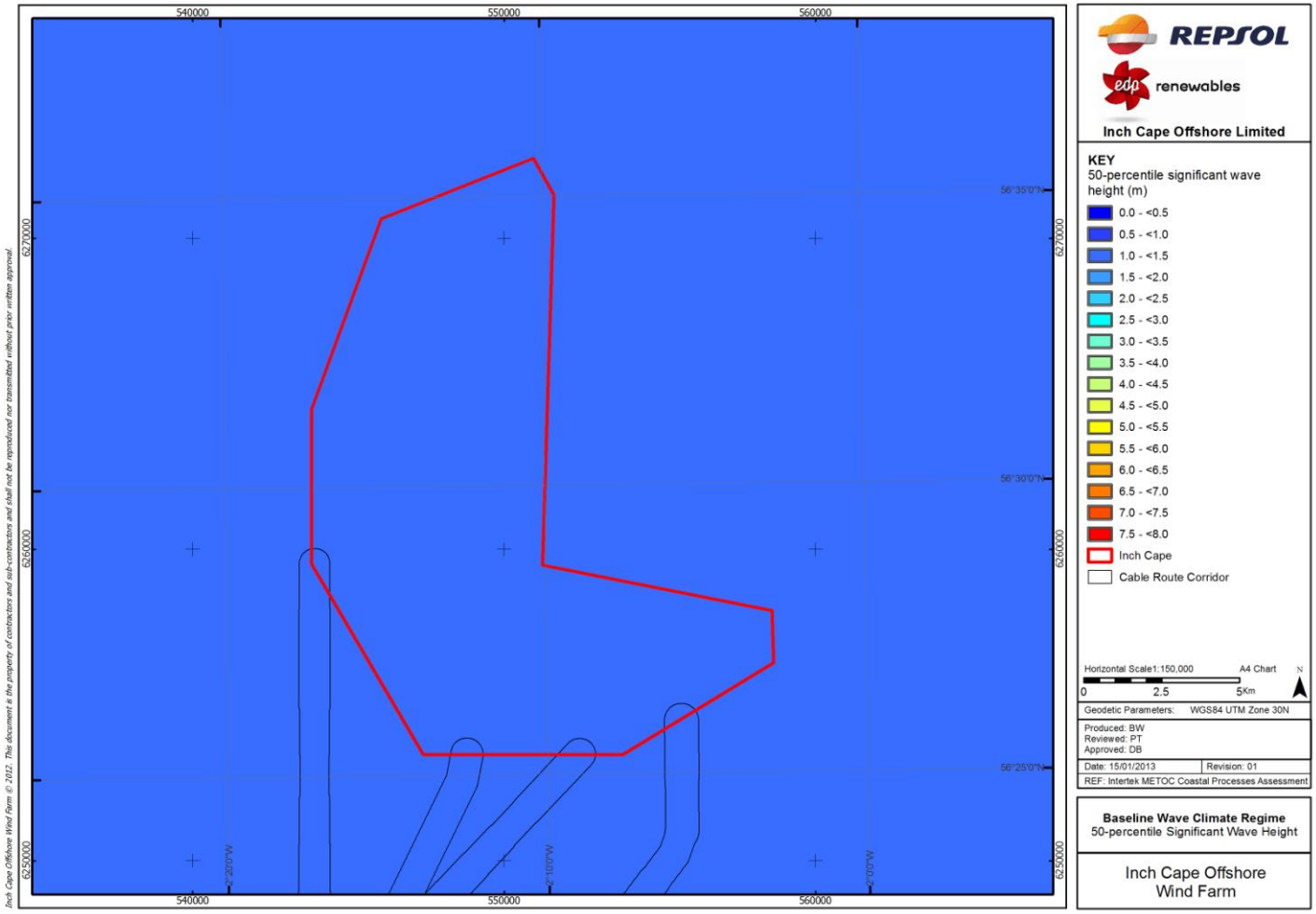


Figure 10A.2.38: Baseline 90%ile significant wave height (m) – Inch Cape OWF (near-field) scale

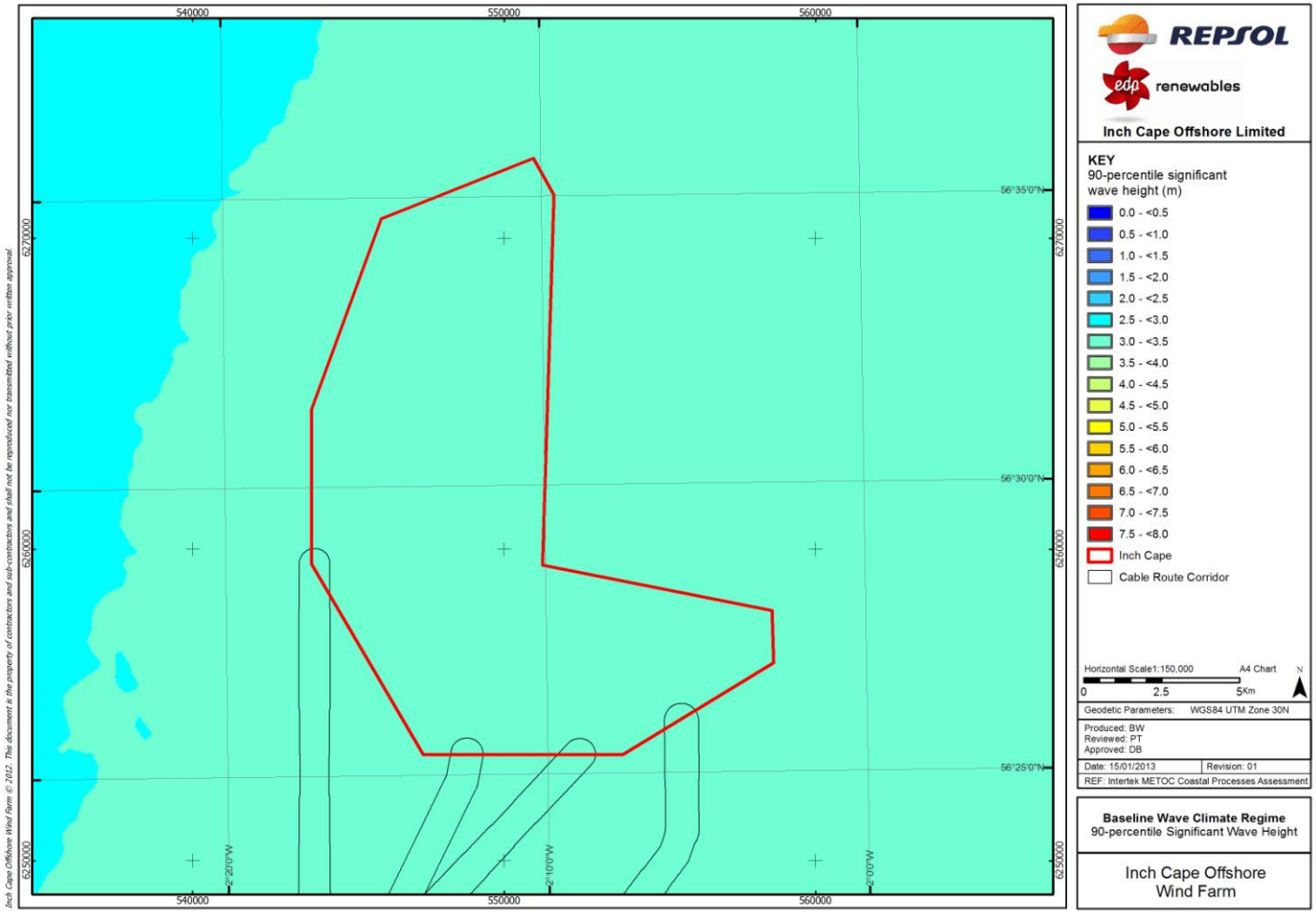


Figure 10A.2.39: Baseline 95%ile significant wave height (m) – Inch Cape OWF (near-field) scale

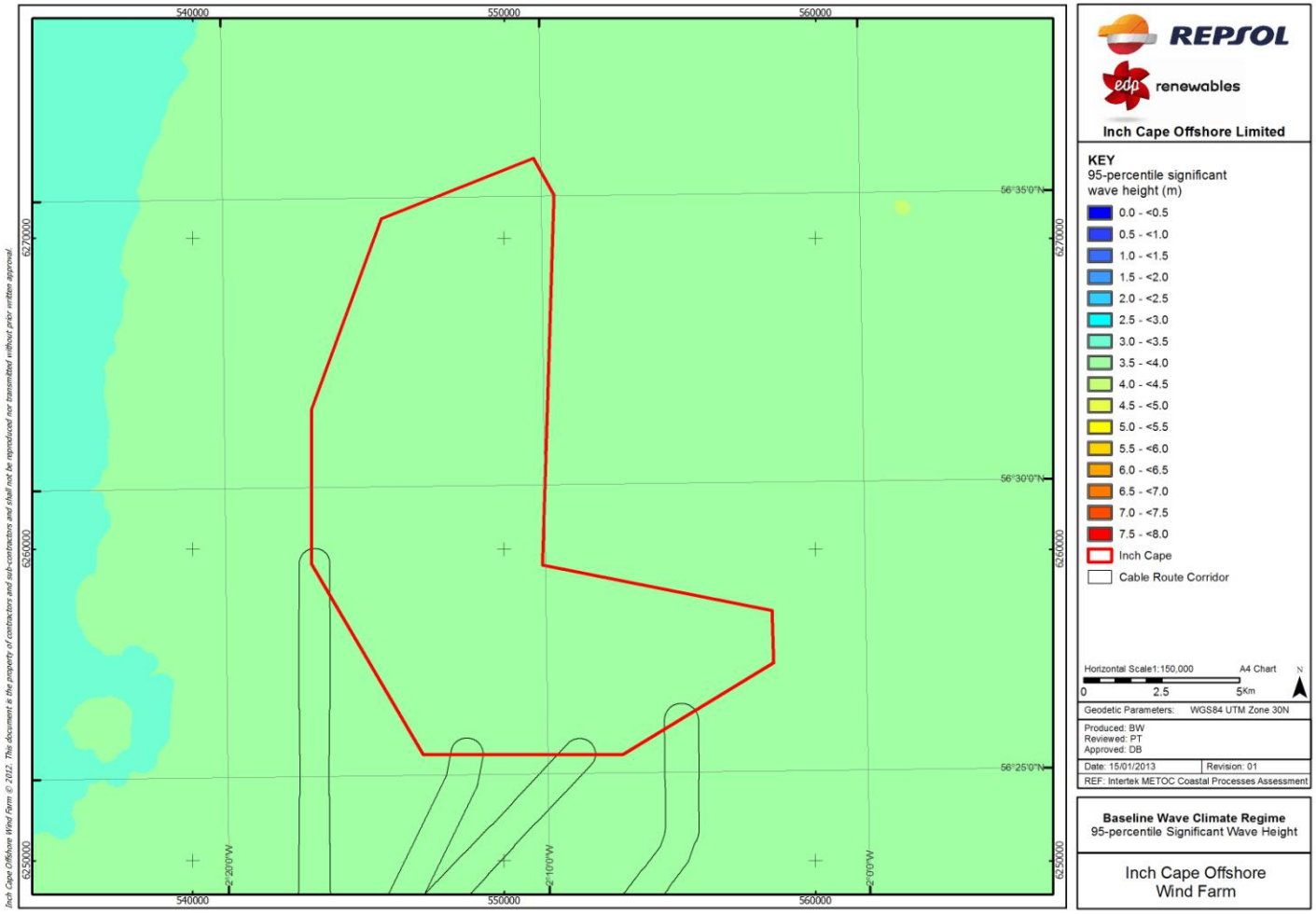


Figure 10A.2.40: Baseline 99%ile significant wave height (m) – Inch Cape OWF (near-field) scale

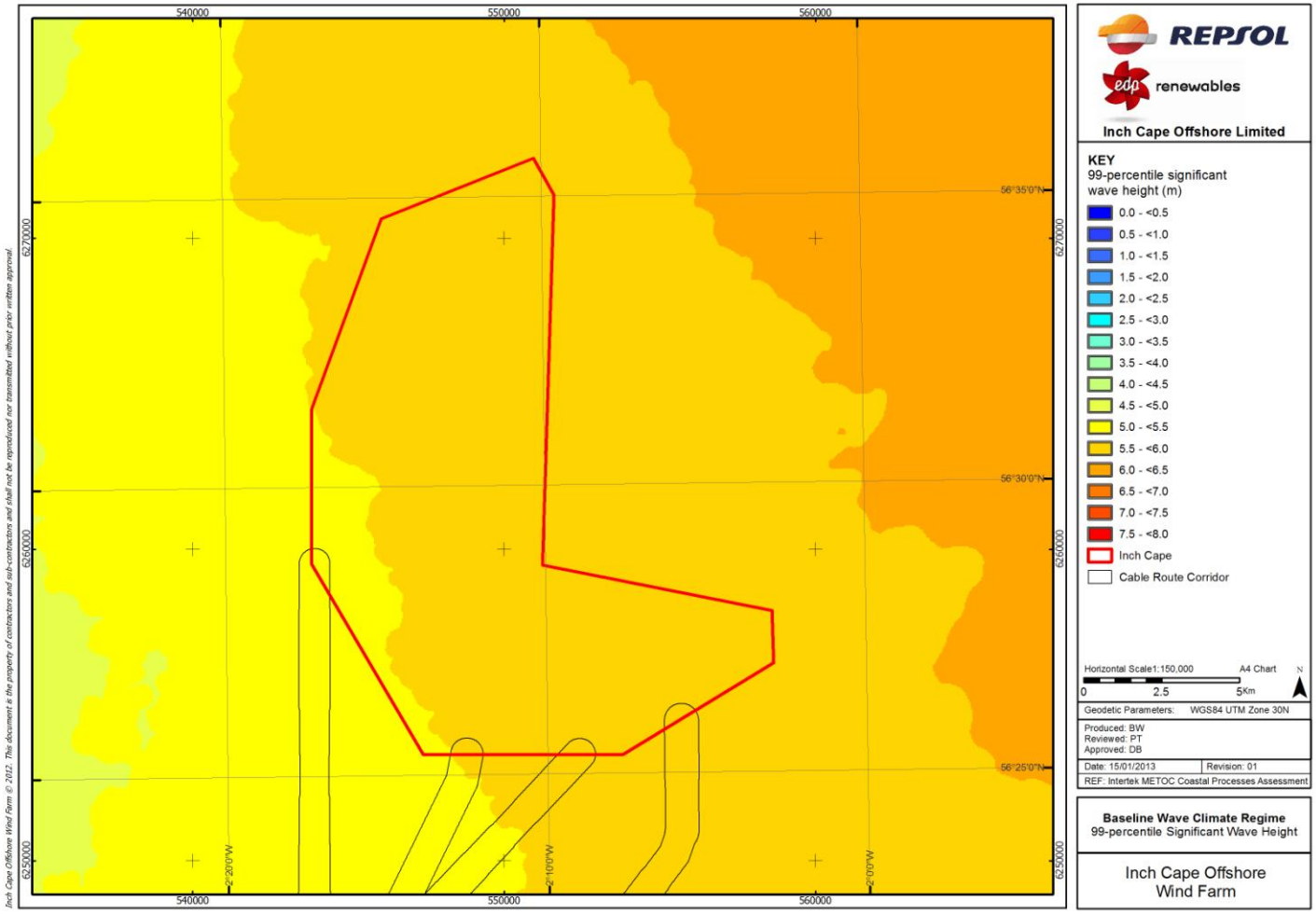


Figure 10A.2.41: Baseline 50%ile mean wave period (s) – Inch Cape OWF (near-field) scale

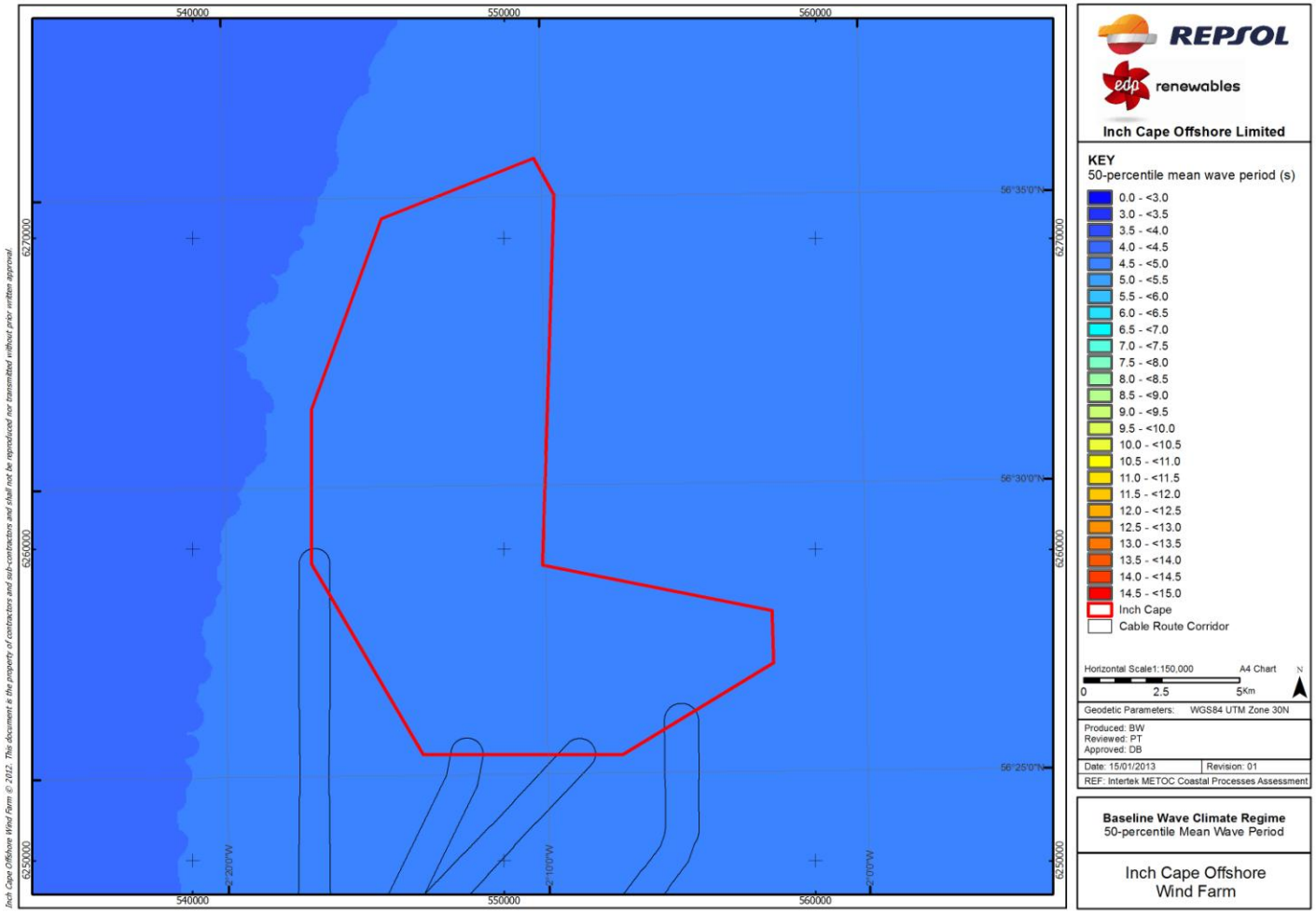


Figure 10A.2.42: Baseline 90%ile mean wave period (s) – Inch Cape OWF (near-field) scale

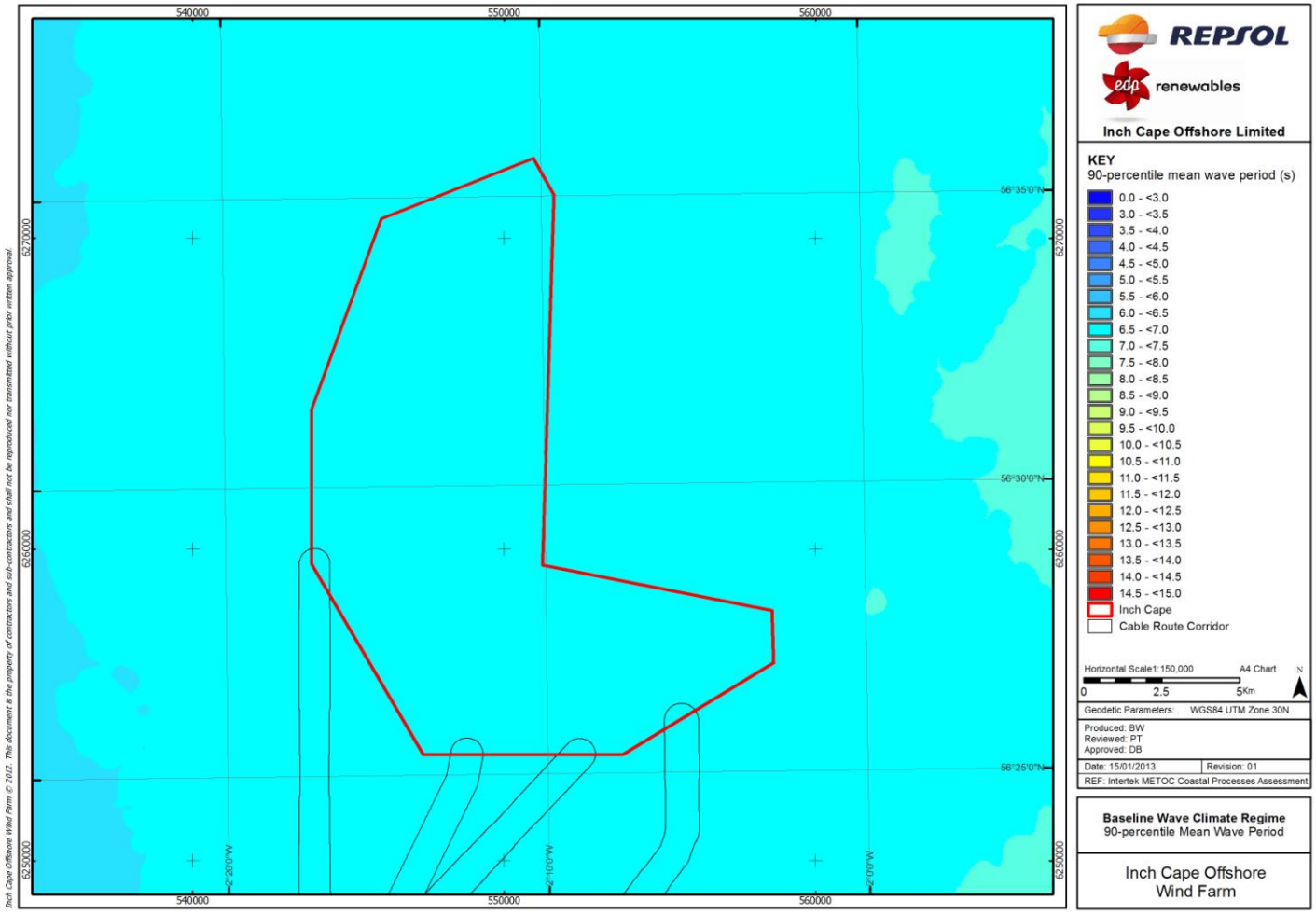


Figure 10A.2.43: Baseline 95%ile mean wave period (s) – Inch Cape OWF (near-field) scale

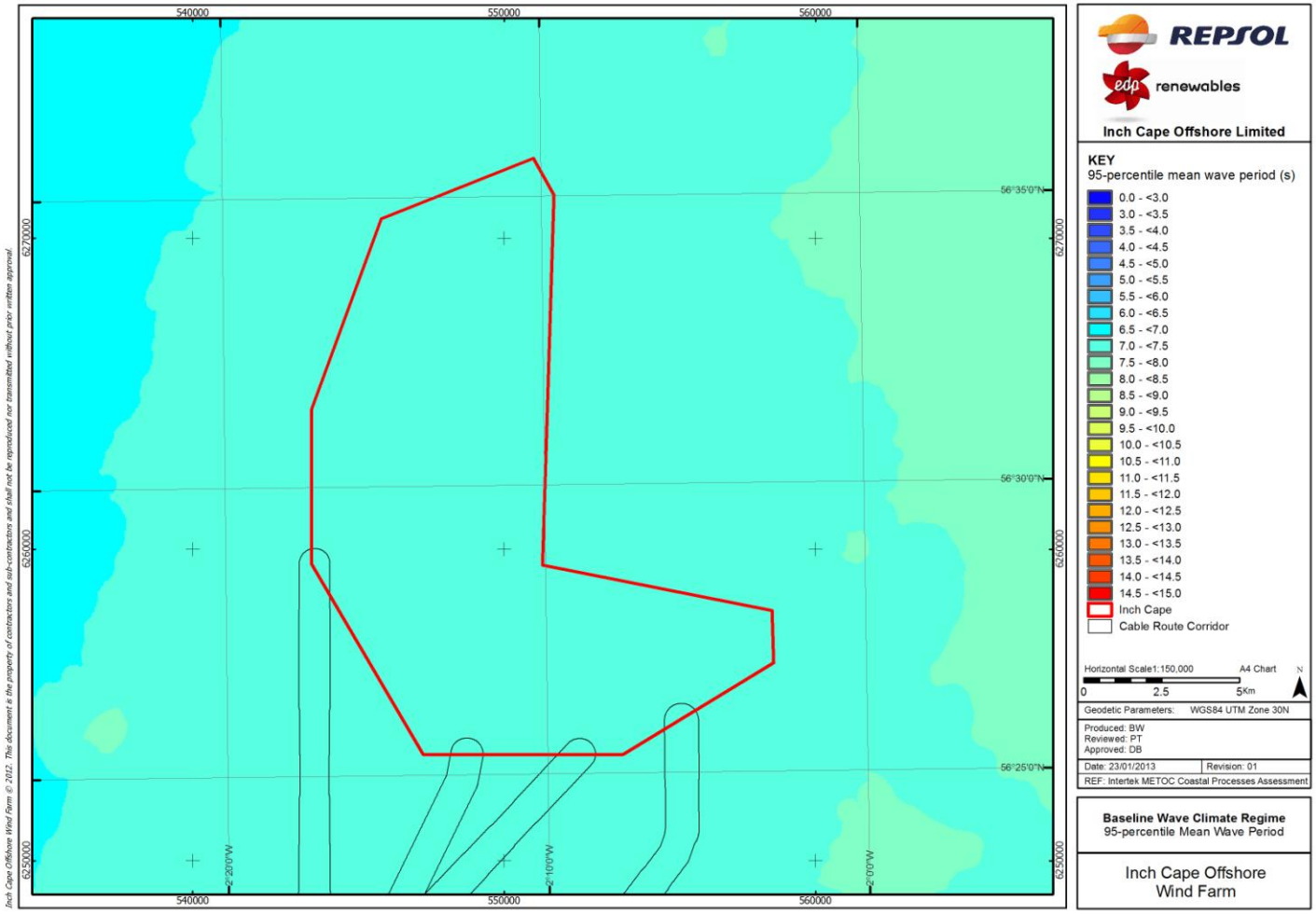


Figure 10A.2.44: Baseline 99%ile mean wave period (s) – Inch Cape OWF (near-field) scale

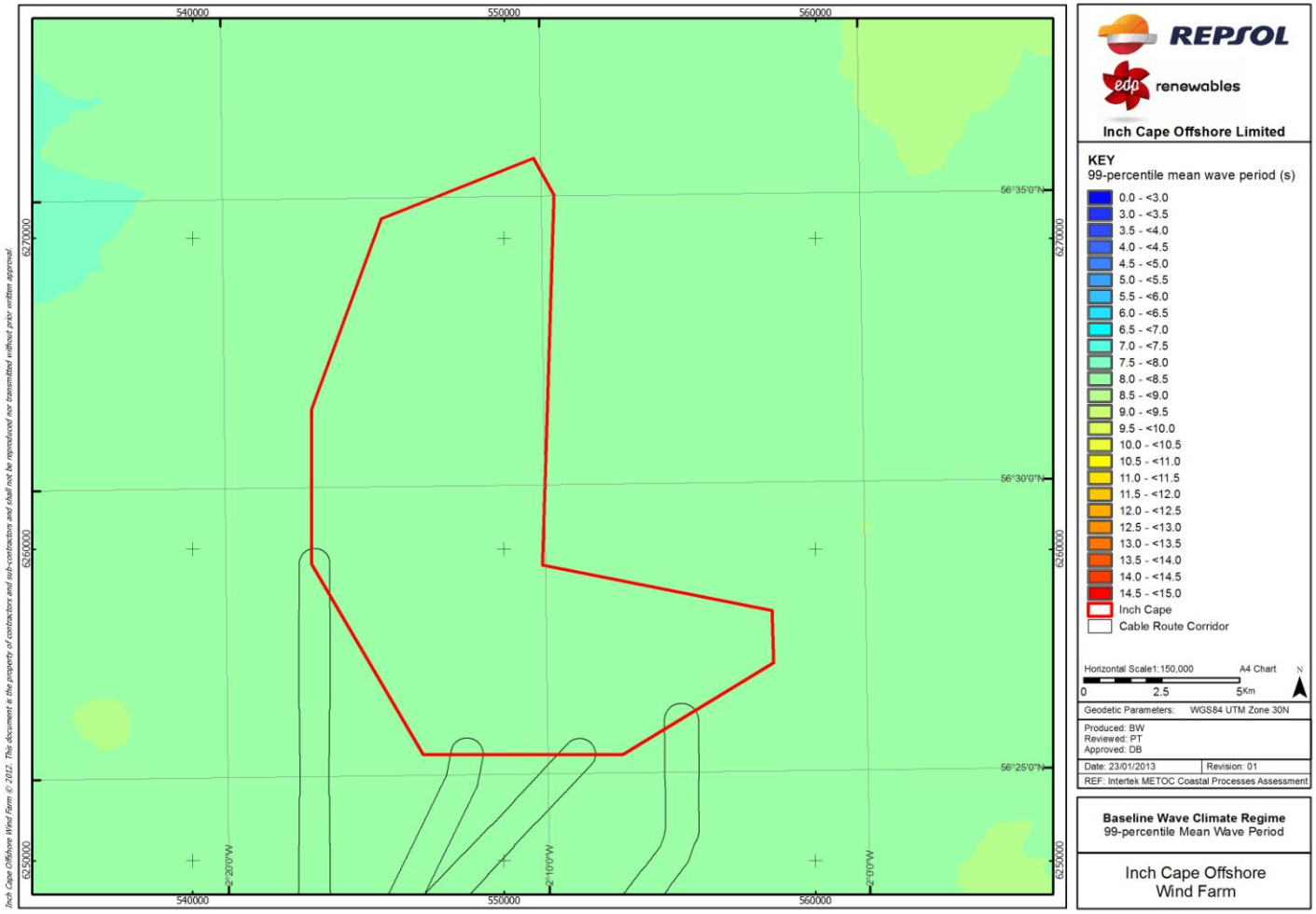


Figure 10A.2.45: Baseline 50%ile peak wave period (s) – Inch Cape OWF (near-field) scale

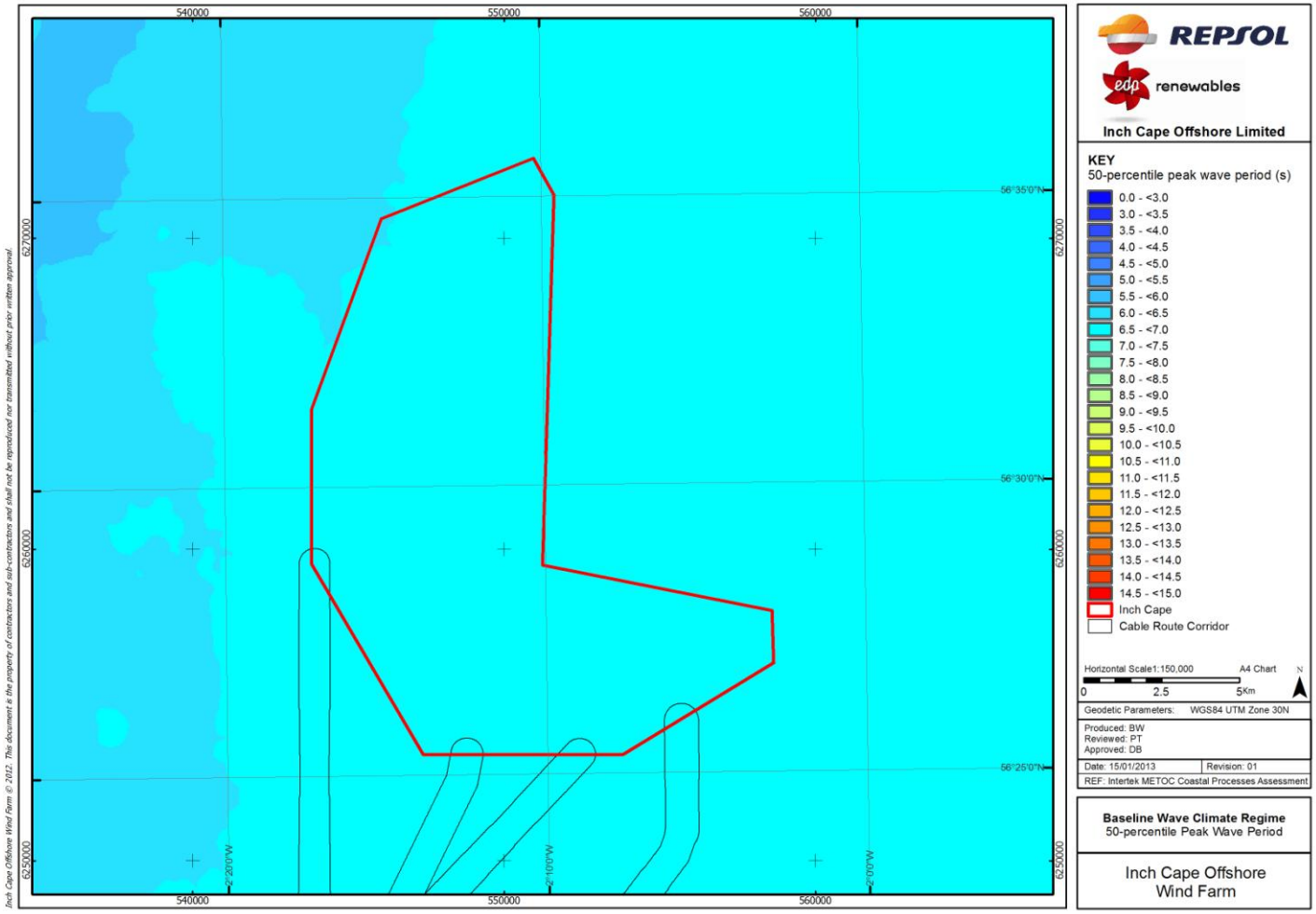


Figure 10A.2.46: Baseline 90%ile peak wave period (s) – Inch Cape OWF (near-field) scale

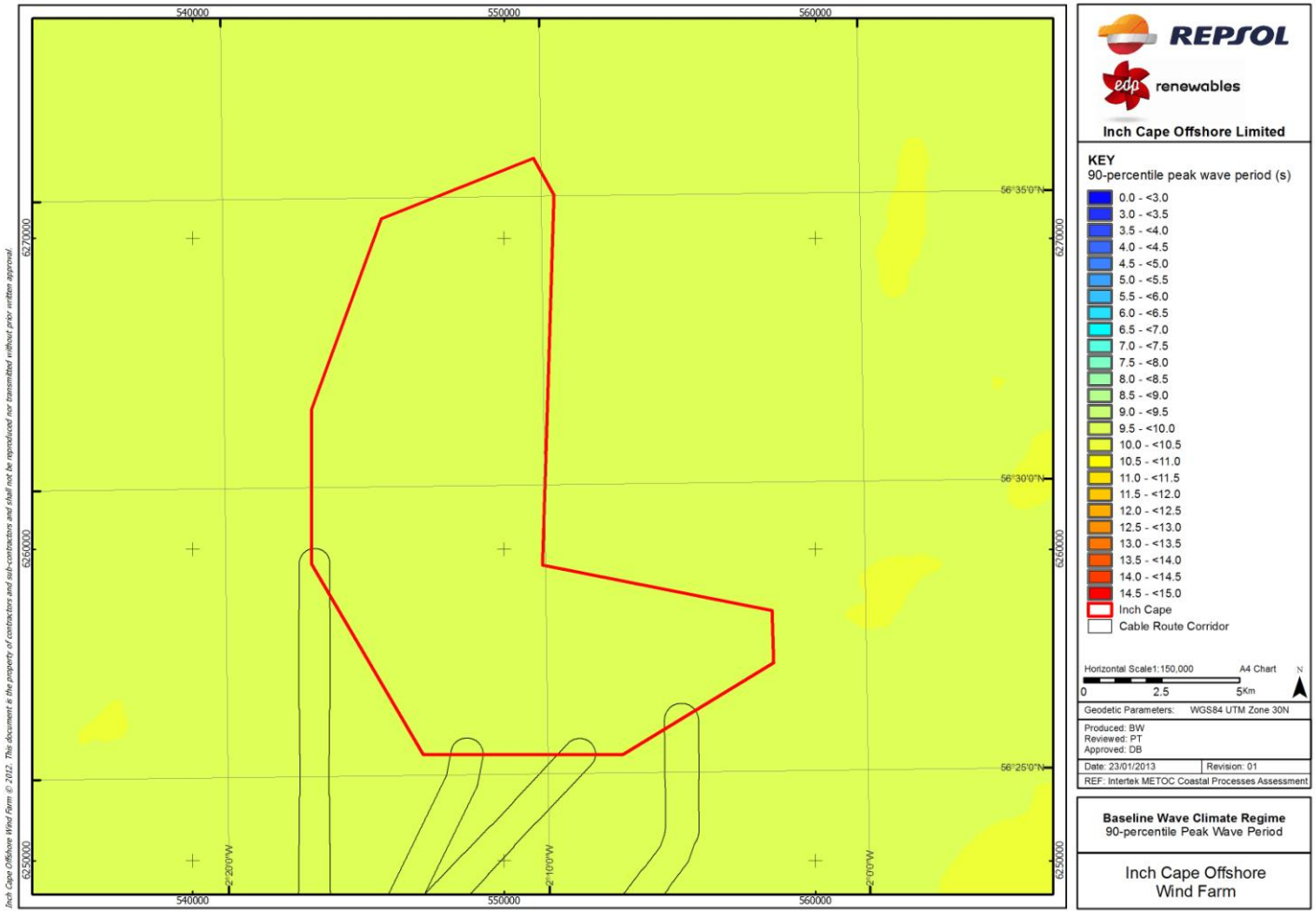


Figure 10A.2.47: Baseline 95%ile peak wave period (s) – Inch Cape OWF (near-field) scale

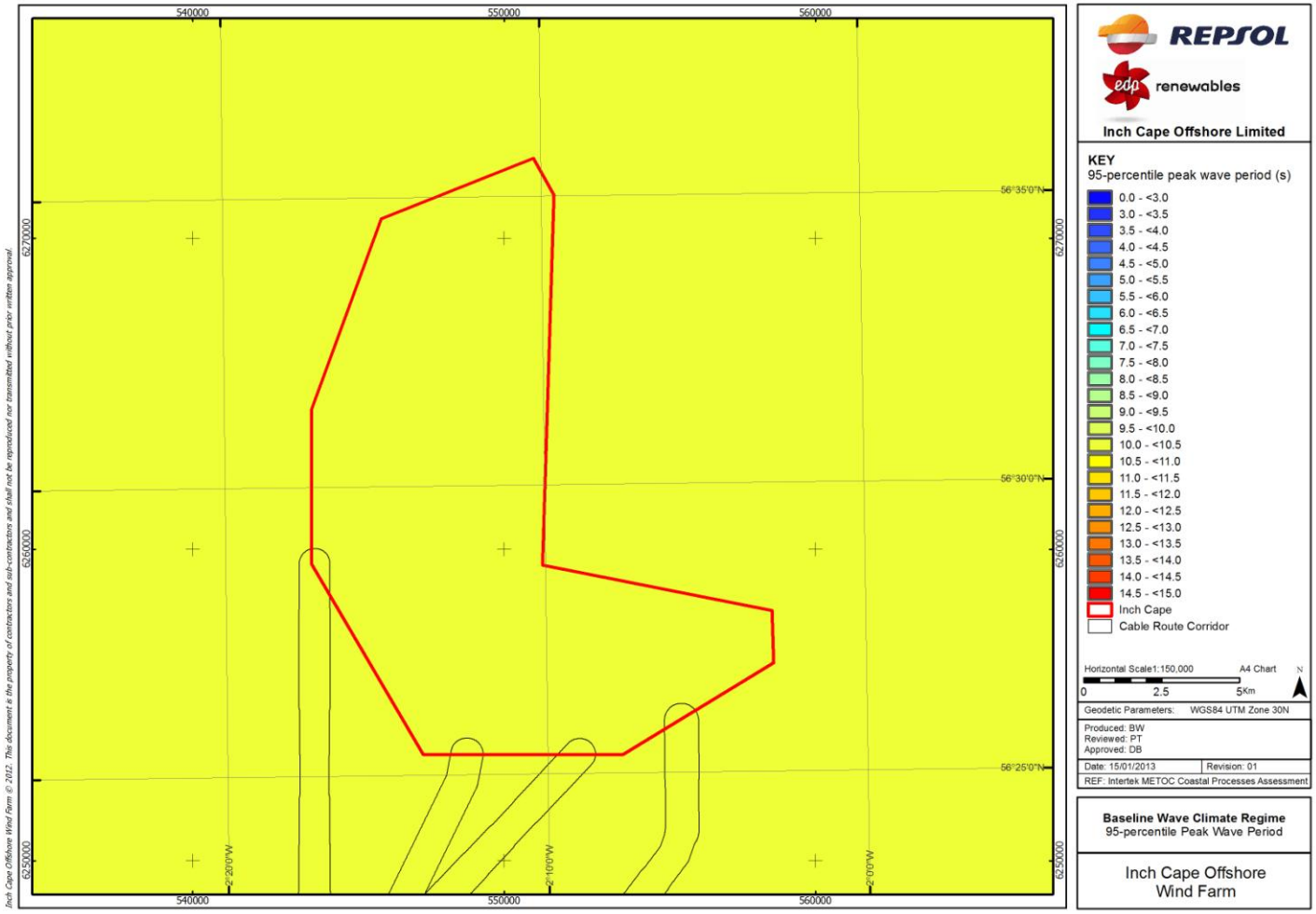


Figure 10A.2.48: Baseline 99%ile peak wave period (s) – Inch Cape OWF (near-field) scale

Section 3: Sediment regime

Figure 10A.2.49: Critical shear stress for entrainment (N/m2) – Regional (far-field) scale

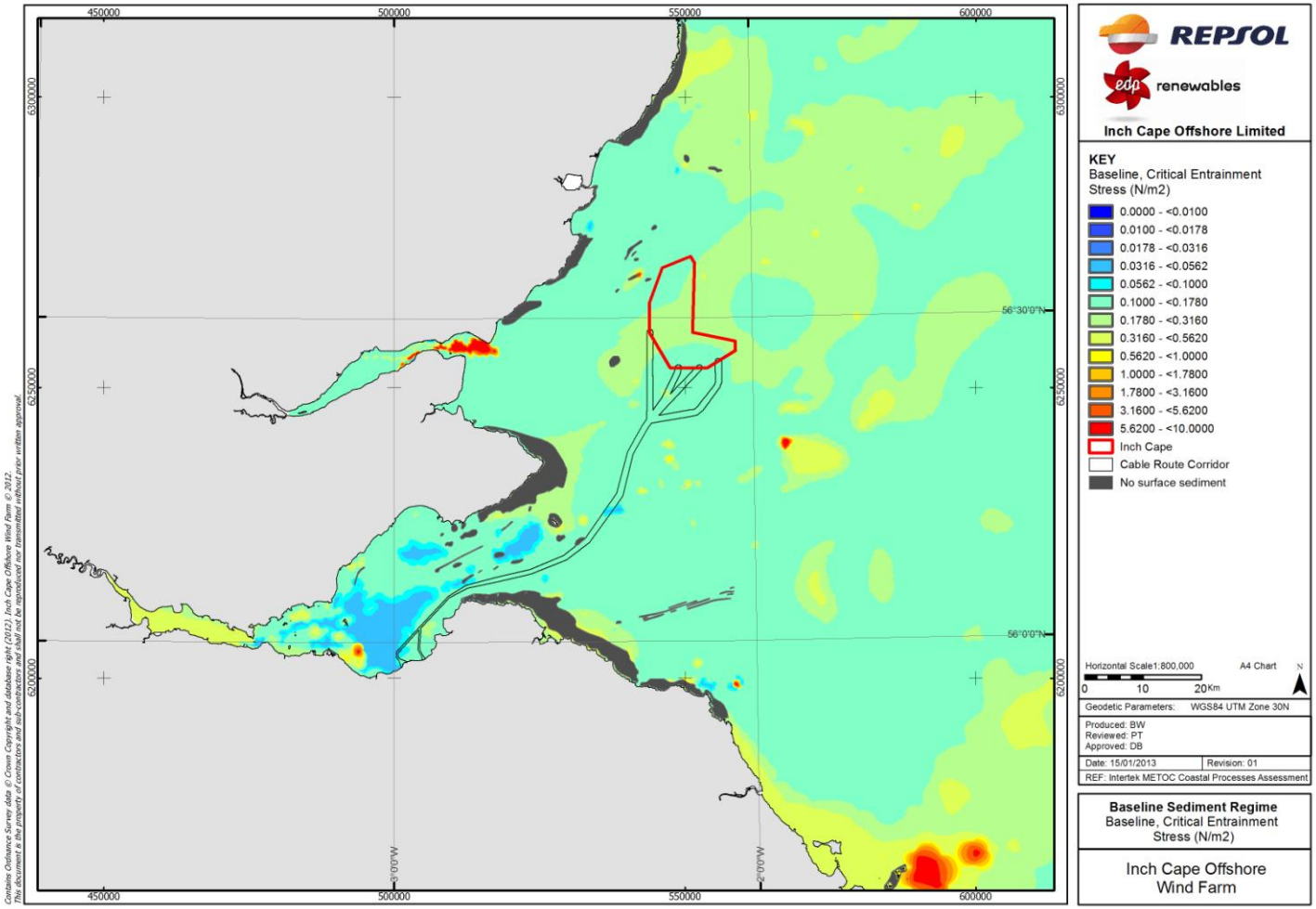


Figure 10A.2.50: 50%ile bed shear stress - due to currents (N/m2) – Regional (far-field) scale

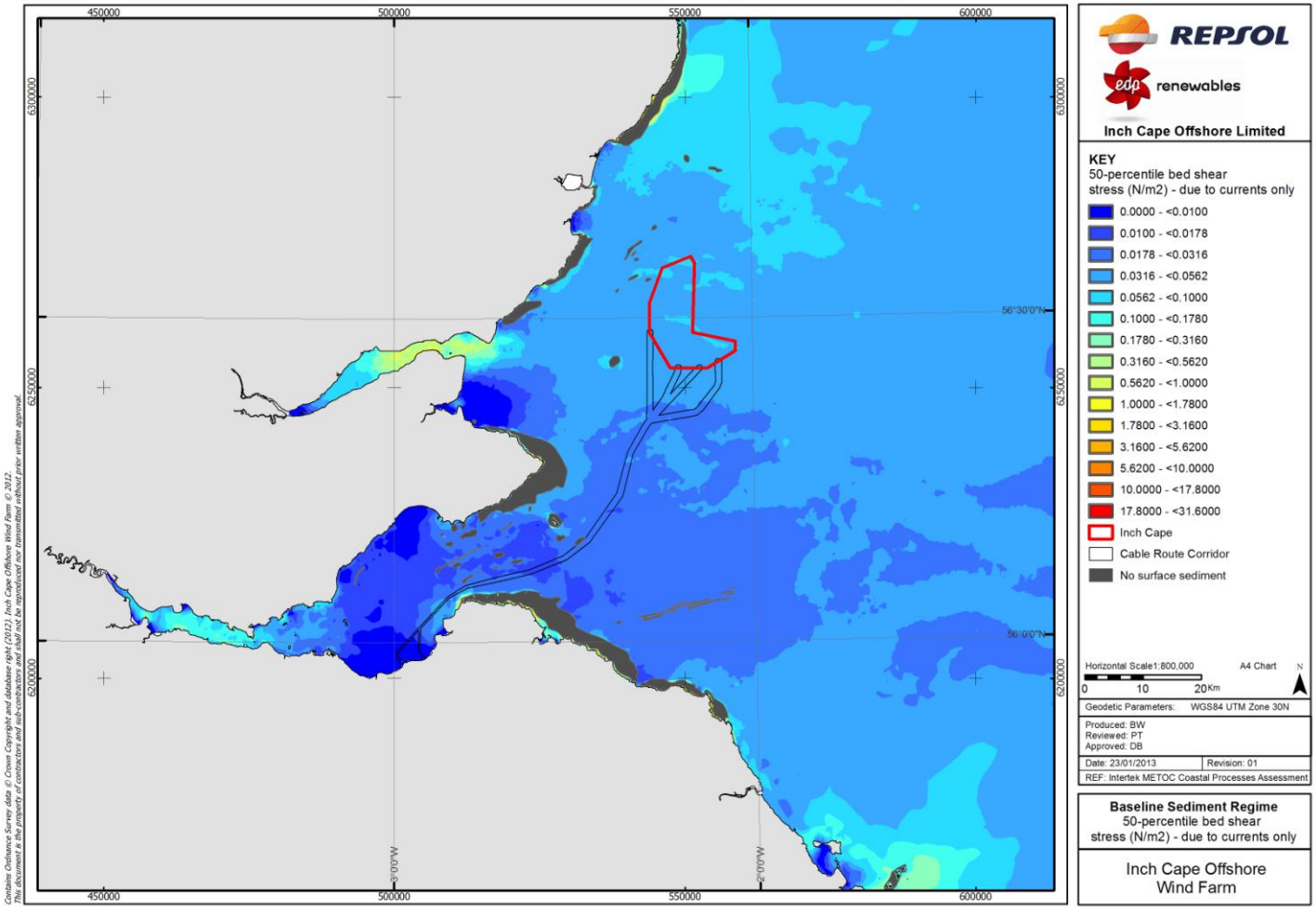


Figure 10A.2.51: 90%ile bed shear stress - due to currents (N/m2) – Regional (far-field) scale

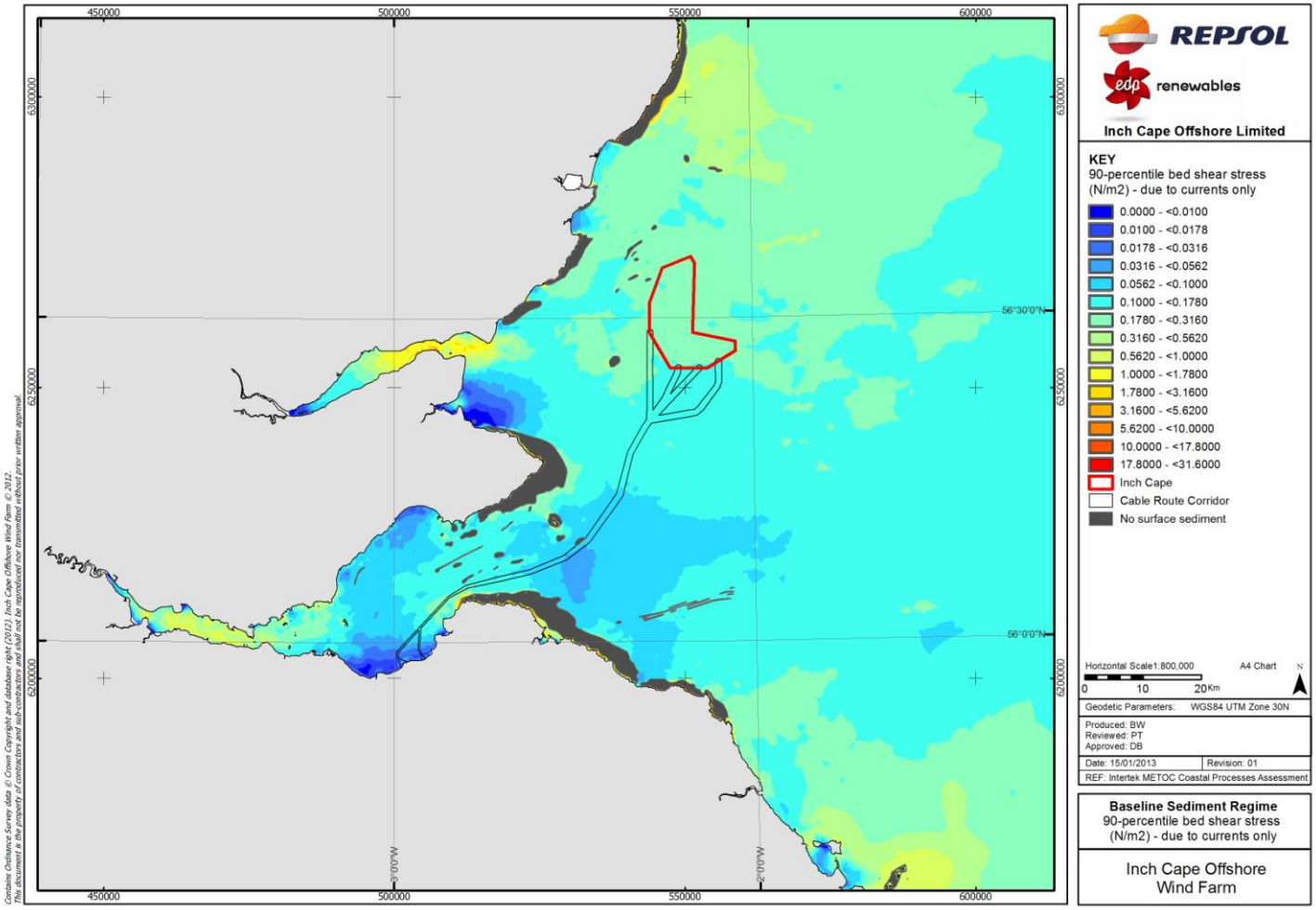


Figure 10A.2.52: 95%ile bed shear stress - due to currents (N/m2) – Regional (far-field) scale

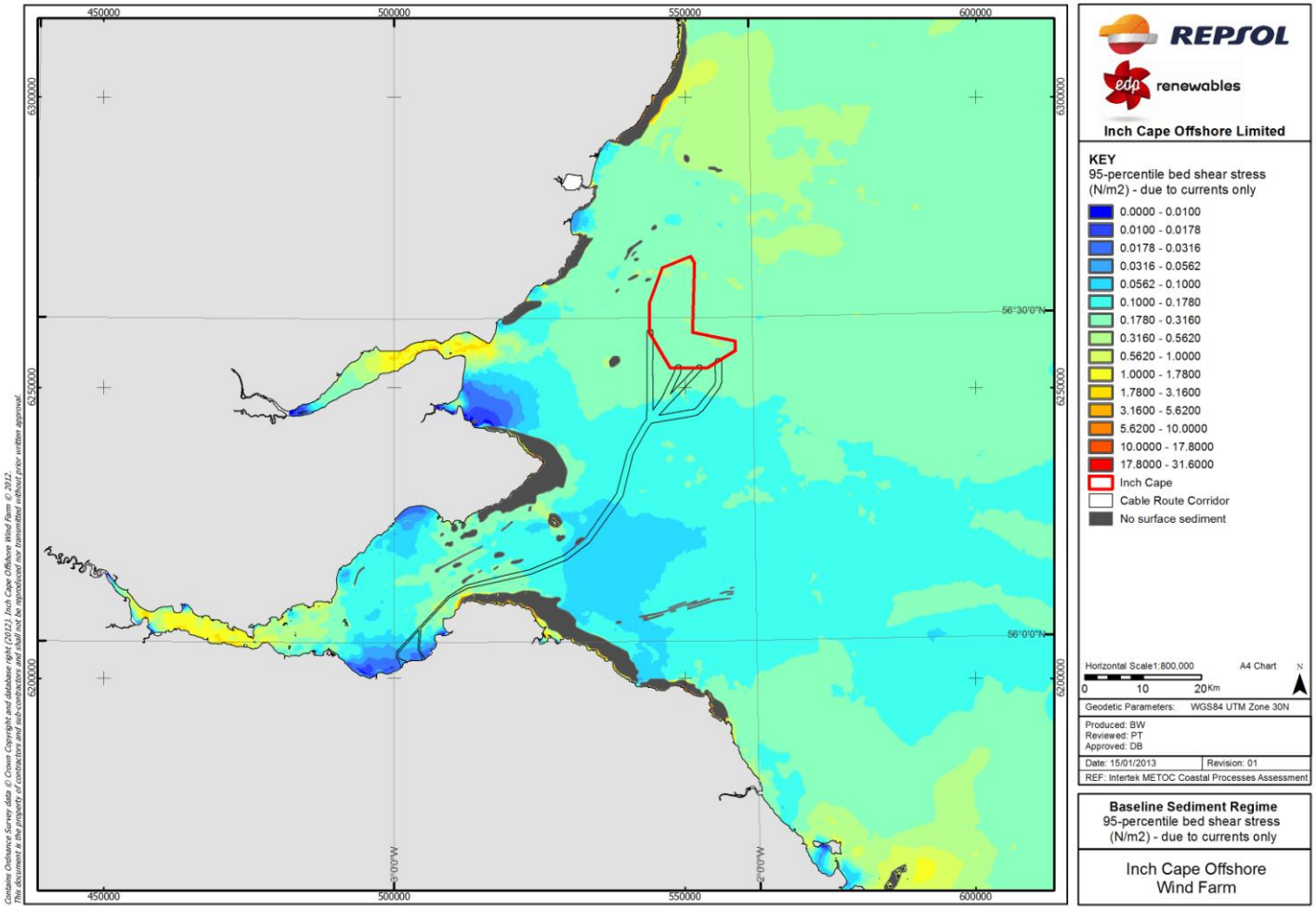


Figure 10A.2.53: 99%ile bed shear stress - due to currents (N/m2) – Regional (far-field) scale

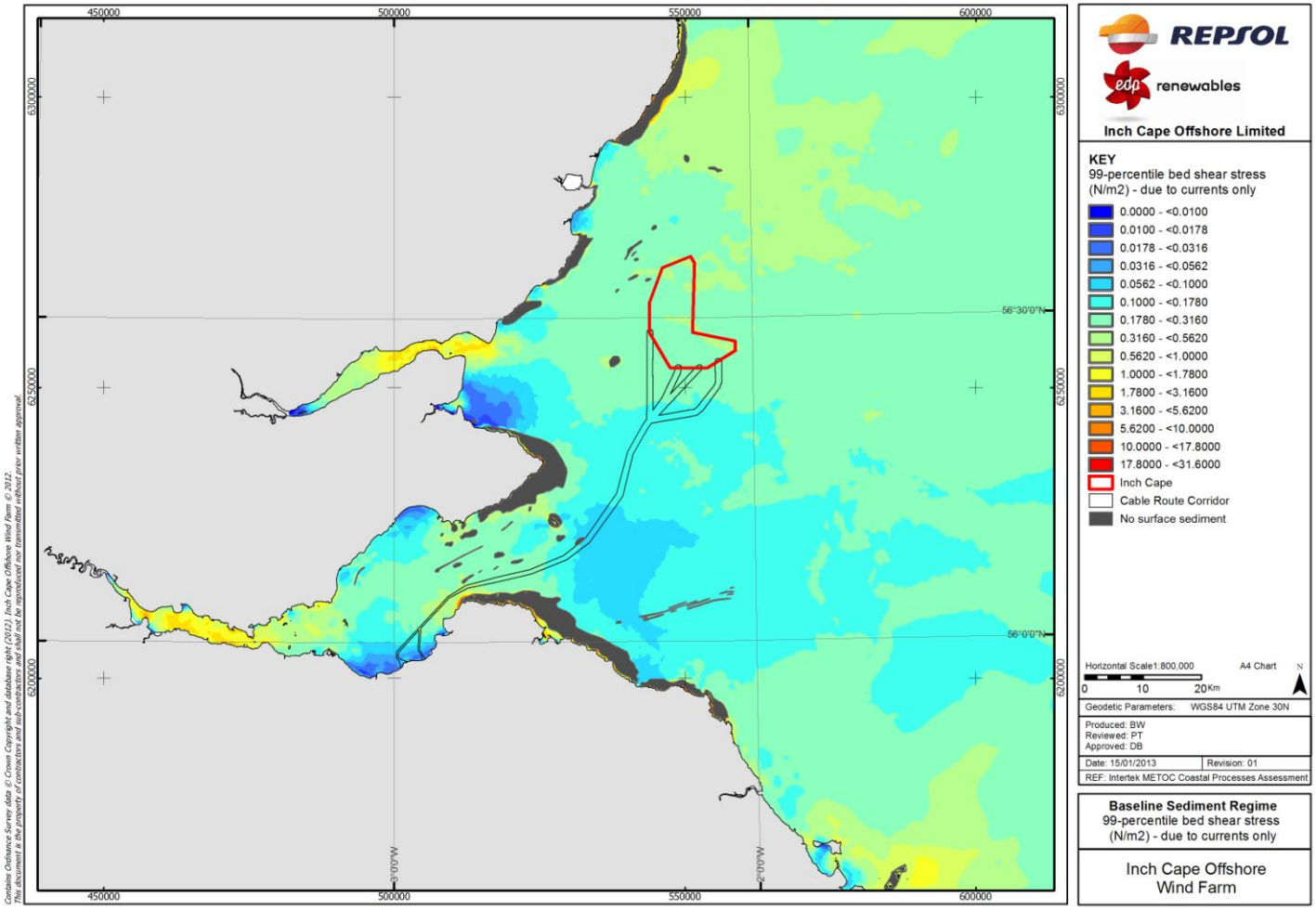


Figure 10A.2.54: 50%ile bed shear stress - due to waves (N/m2) – Regional (far-field) scale

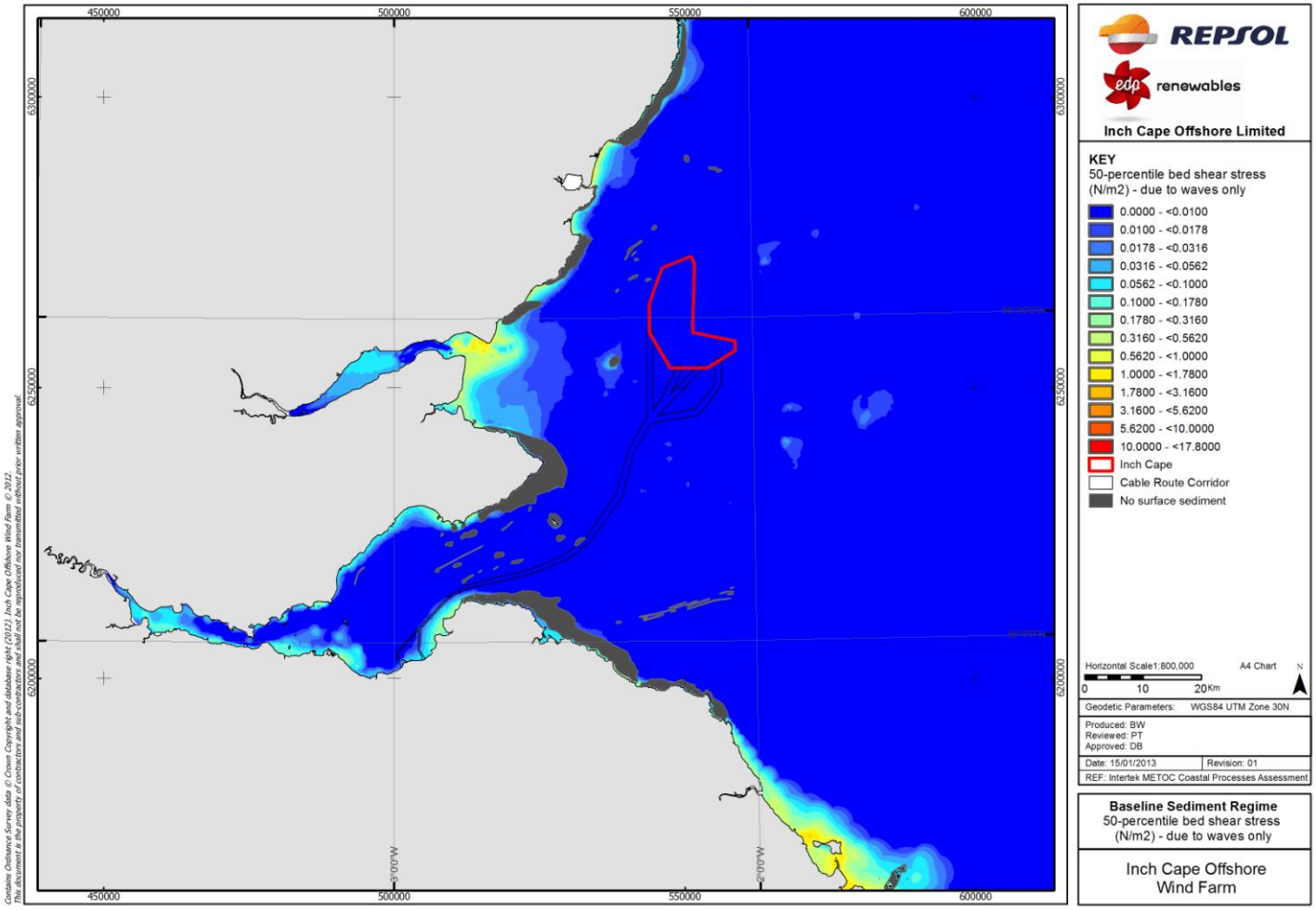


Figure 10A.2.55: 90%ile bed shear stress - due to waves (N/m2) – Regional (far-field) scale

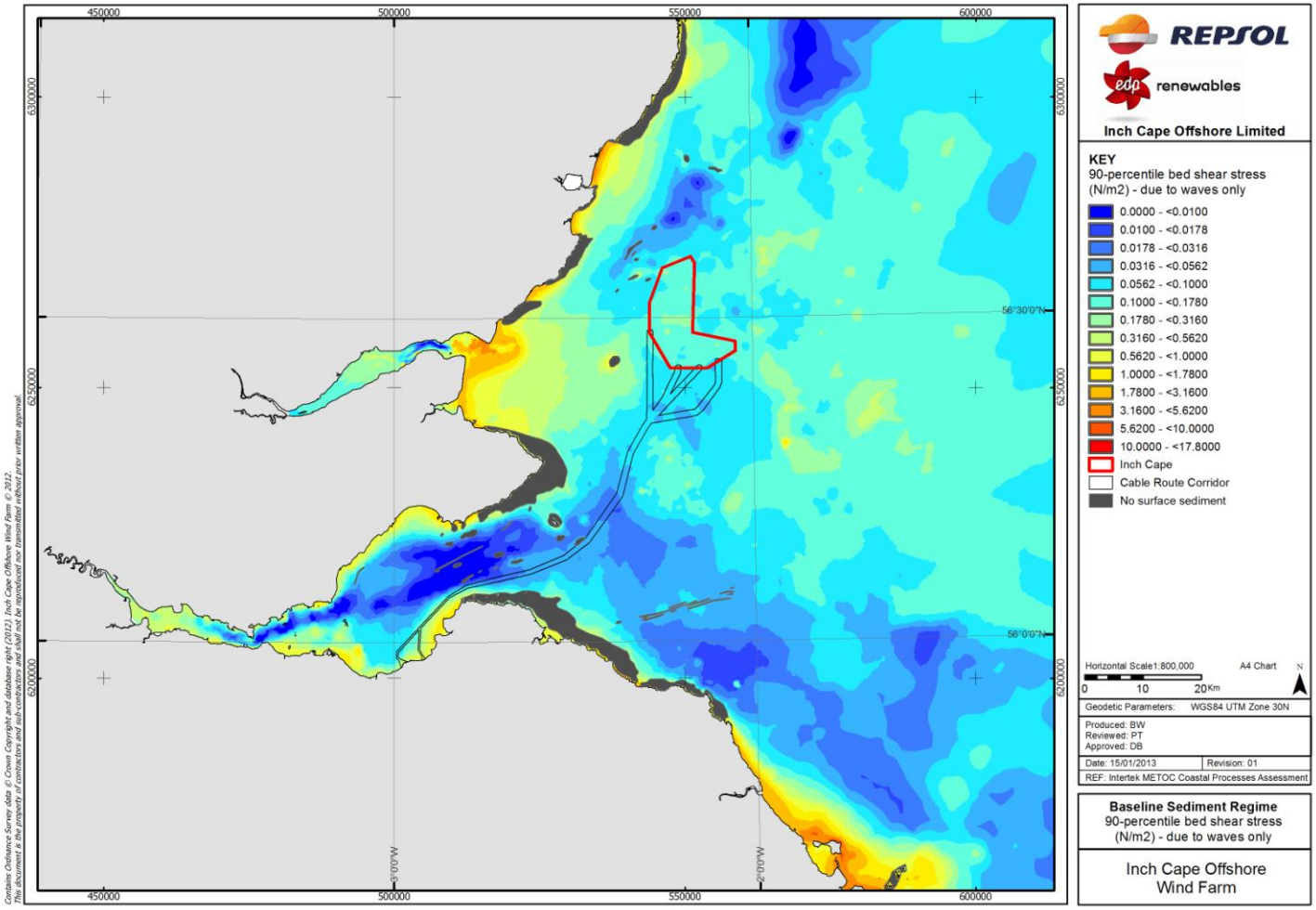


Figure 10A.2.56: 95%ile bed shear stress - due to waves (N/m2) – Regional (far-field) scale

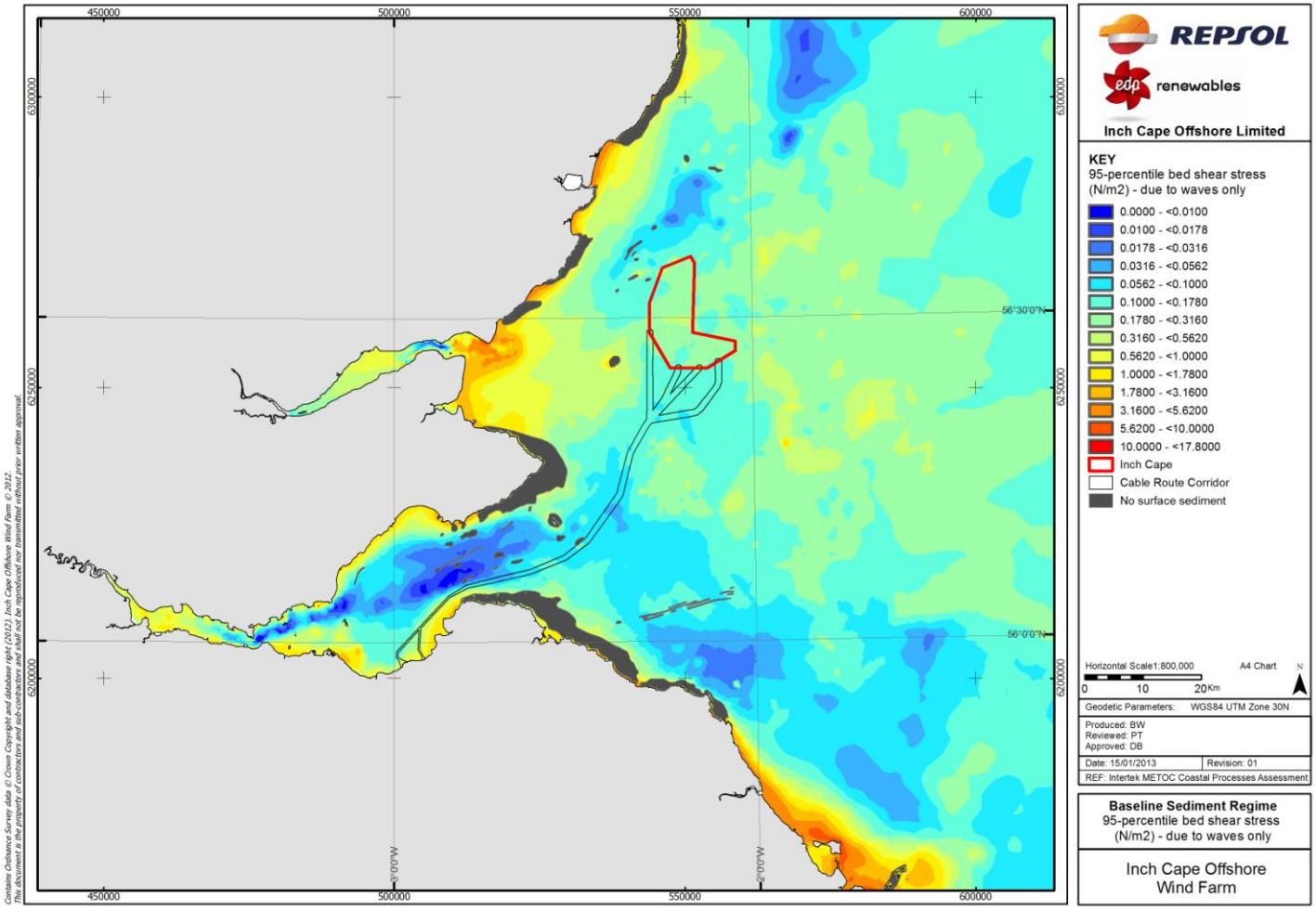


Figure 10A.2.57: 99%ile bed shear stress - due to waves (N/m2) – Regional (far-field) scale

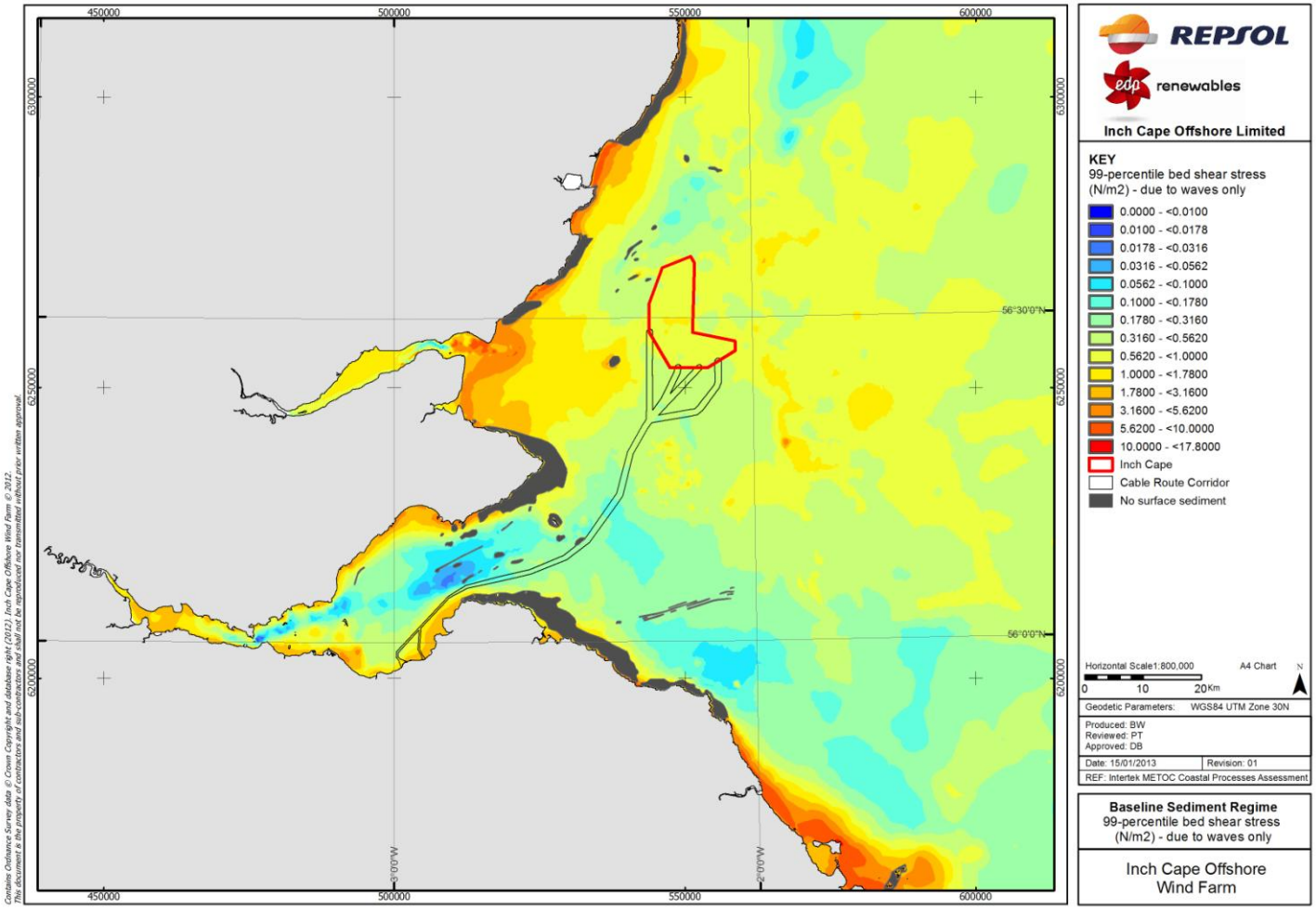


Figure 10A.2.58: 50%ile bed shear stress - due to mean combined current and waves (N/m2) – Regional (far-field) scale

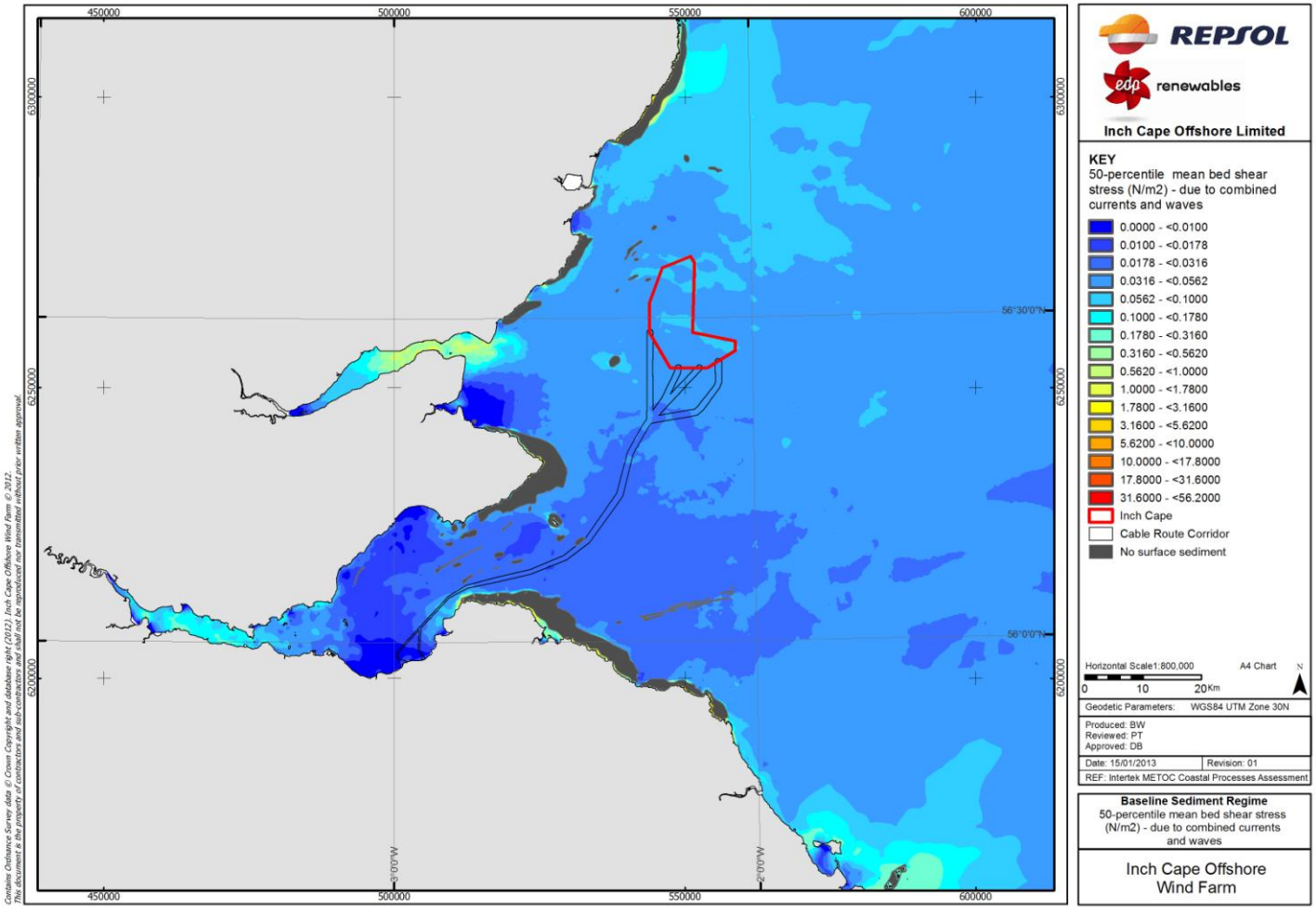


Figure 10A.2.59: 90%ile bed shear stress - due to mean combined current and waves (N/m2) – Regional (far-field) scale

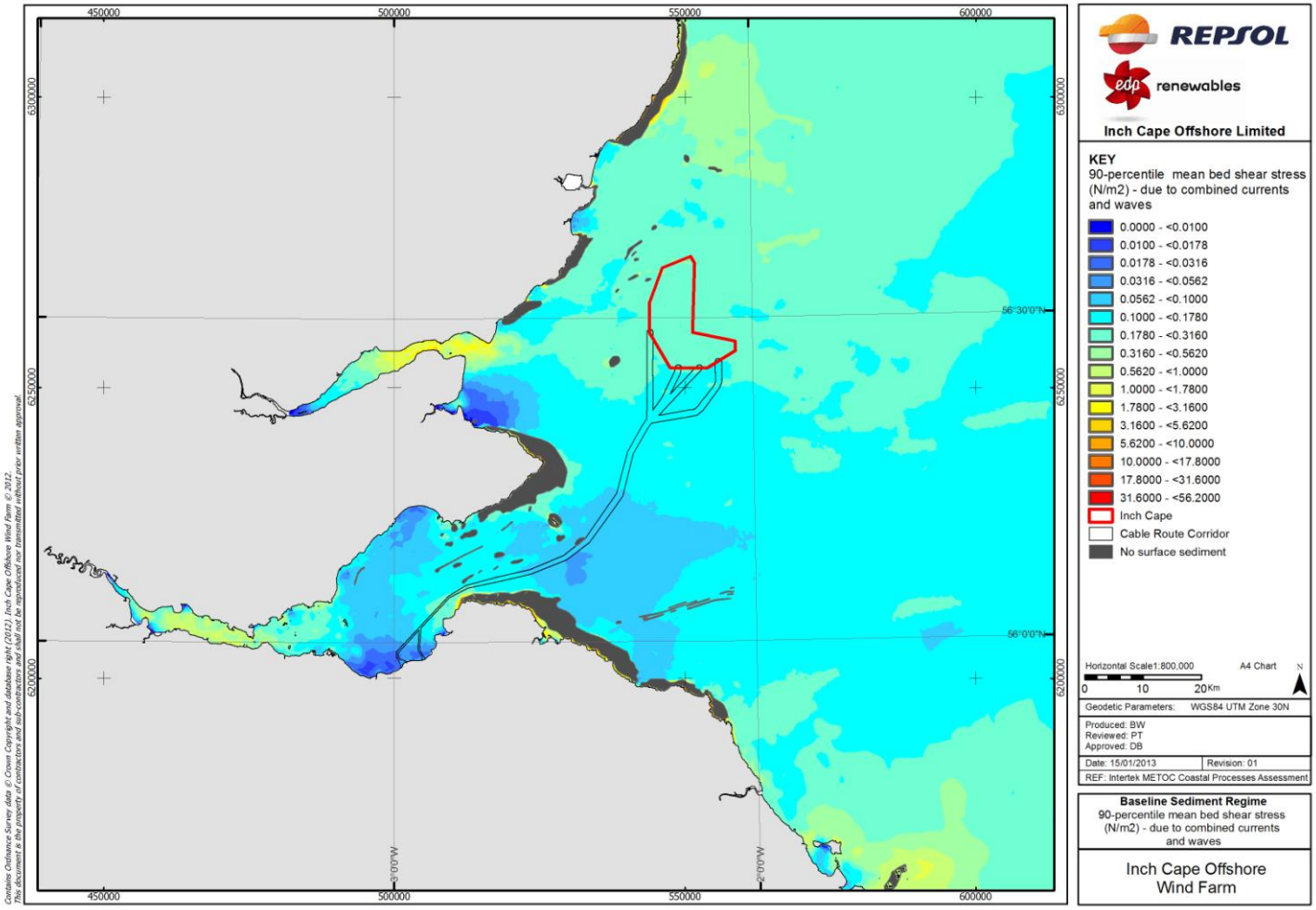


Figure 10A.2.60: 95%ile bed shear stress - due to mean combined current and waves (N/m2) – Regional (far-field) scale

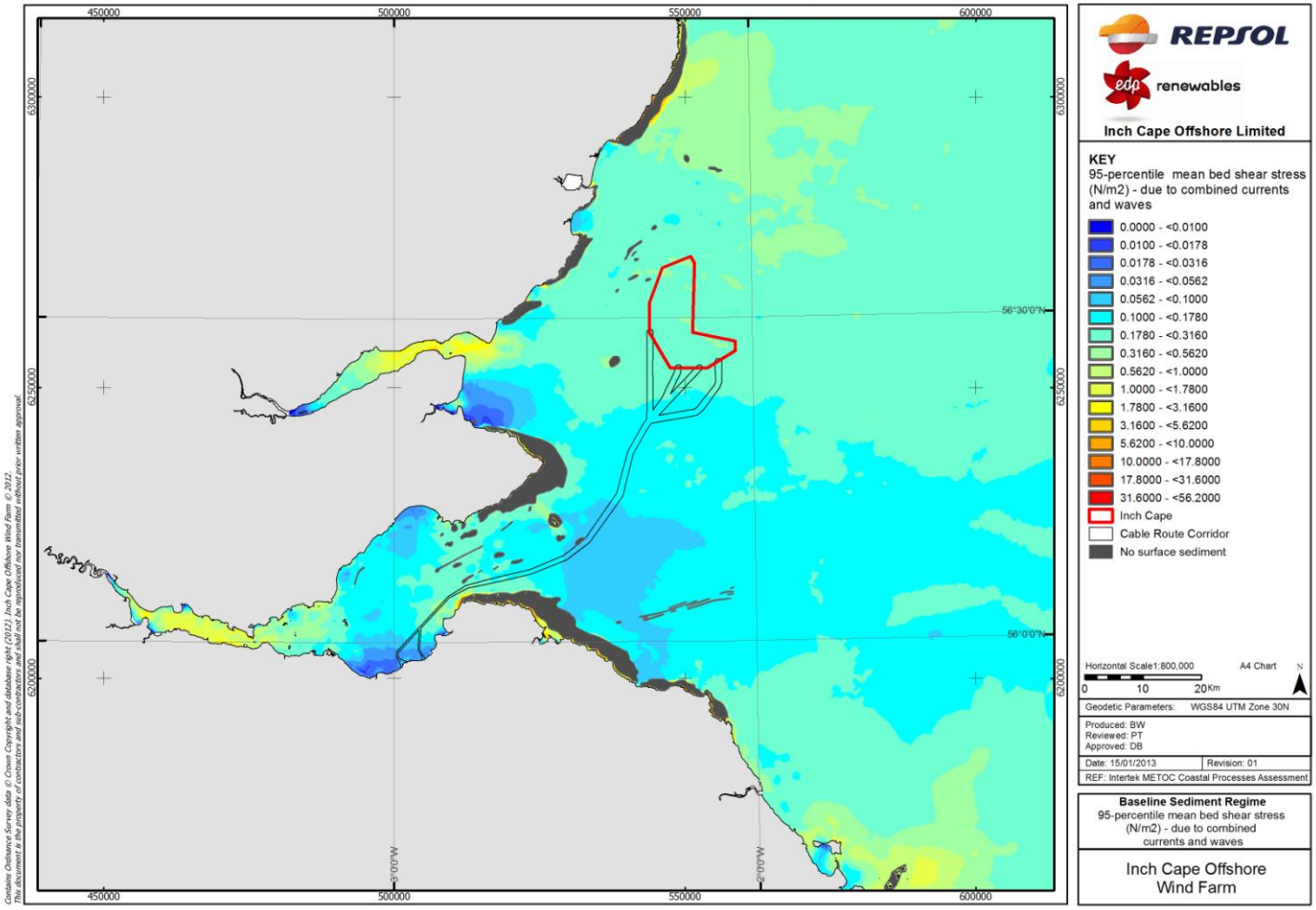


Figure 10A.2.61: 99%ile bed shear stress - due to mean combined current and waves (N/m2) – Regional (far-field) scale

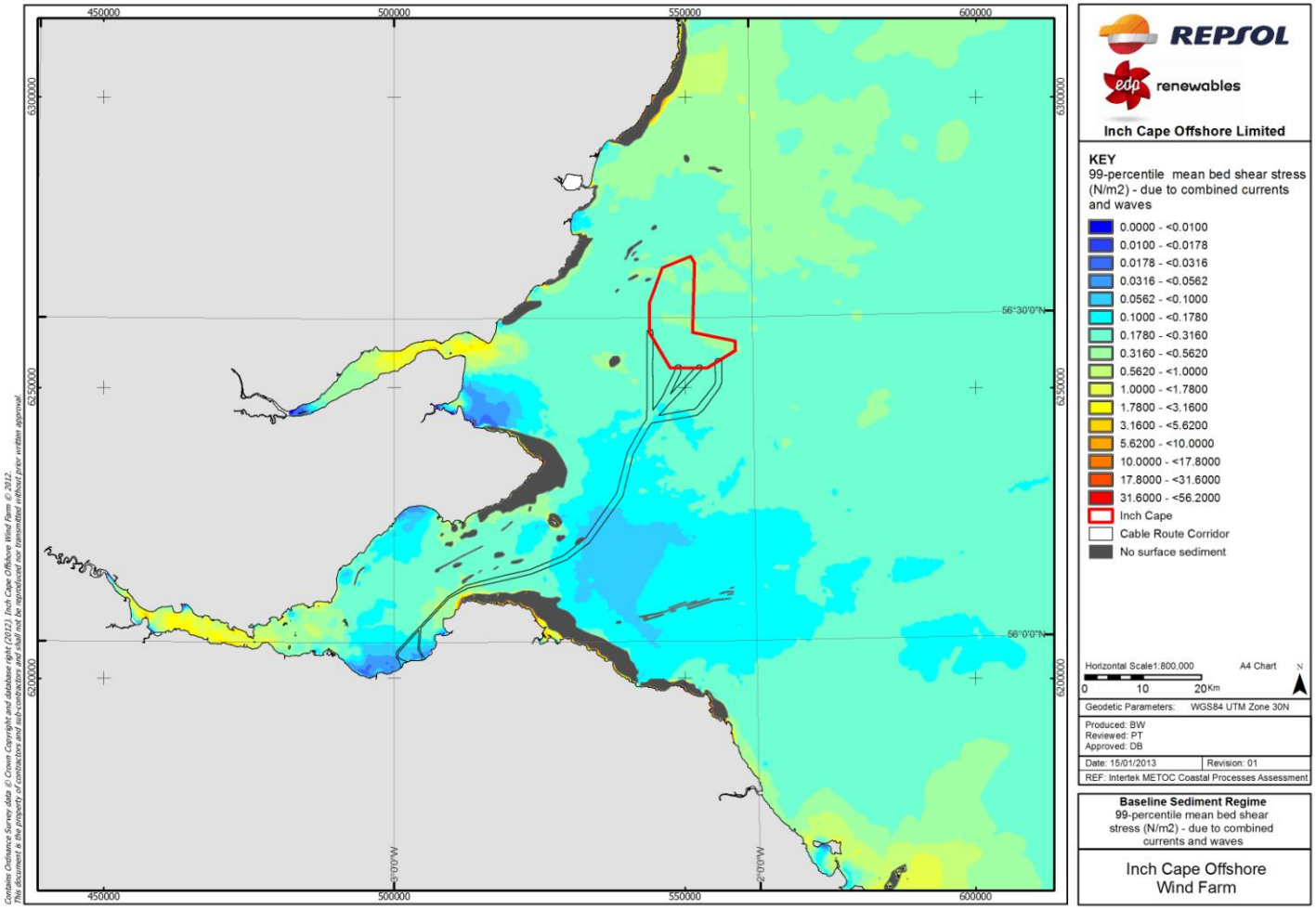


Figure 10A.2.62: 50%ile bed shear stress - due to maximum combined current and waves (N/m2) – Regional (far-field) scale

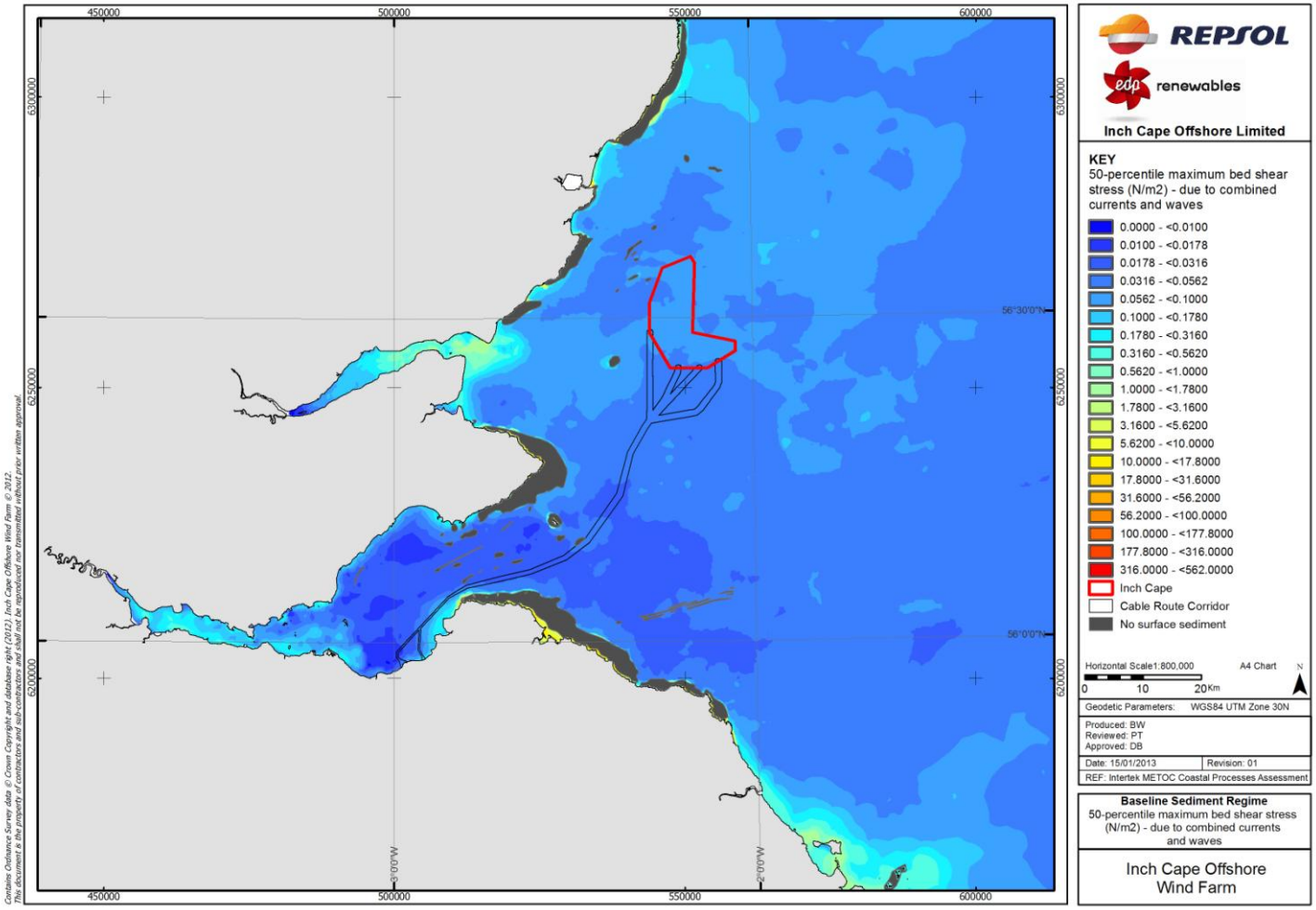


Figure 10A.2.63: 90%ile bed shear stress - due to maximum combined current and waves (N/m2) – Regional (far-field) scale

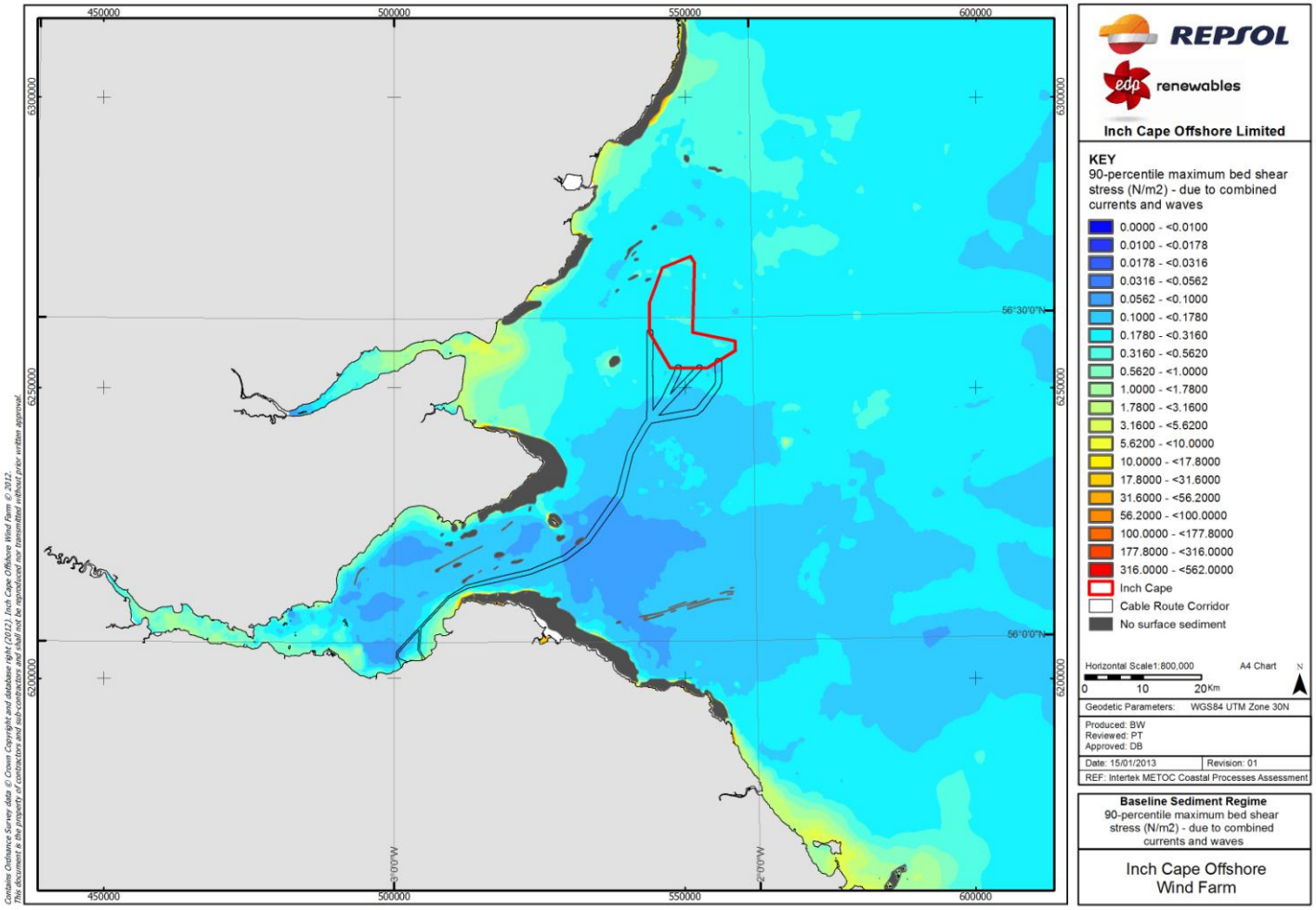


Figure 10A.2.64: 95%ile bed shear stress - due to maximum combined current and waves (N/m2) – Regional (far-field) scale

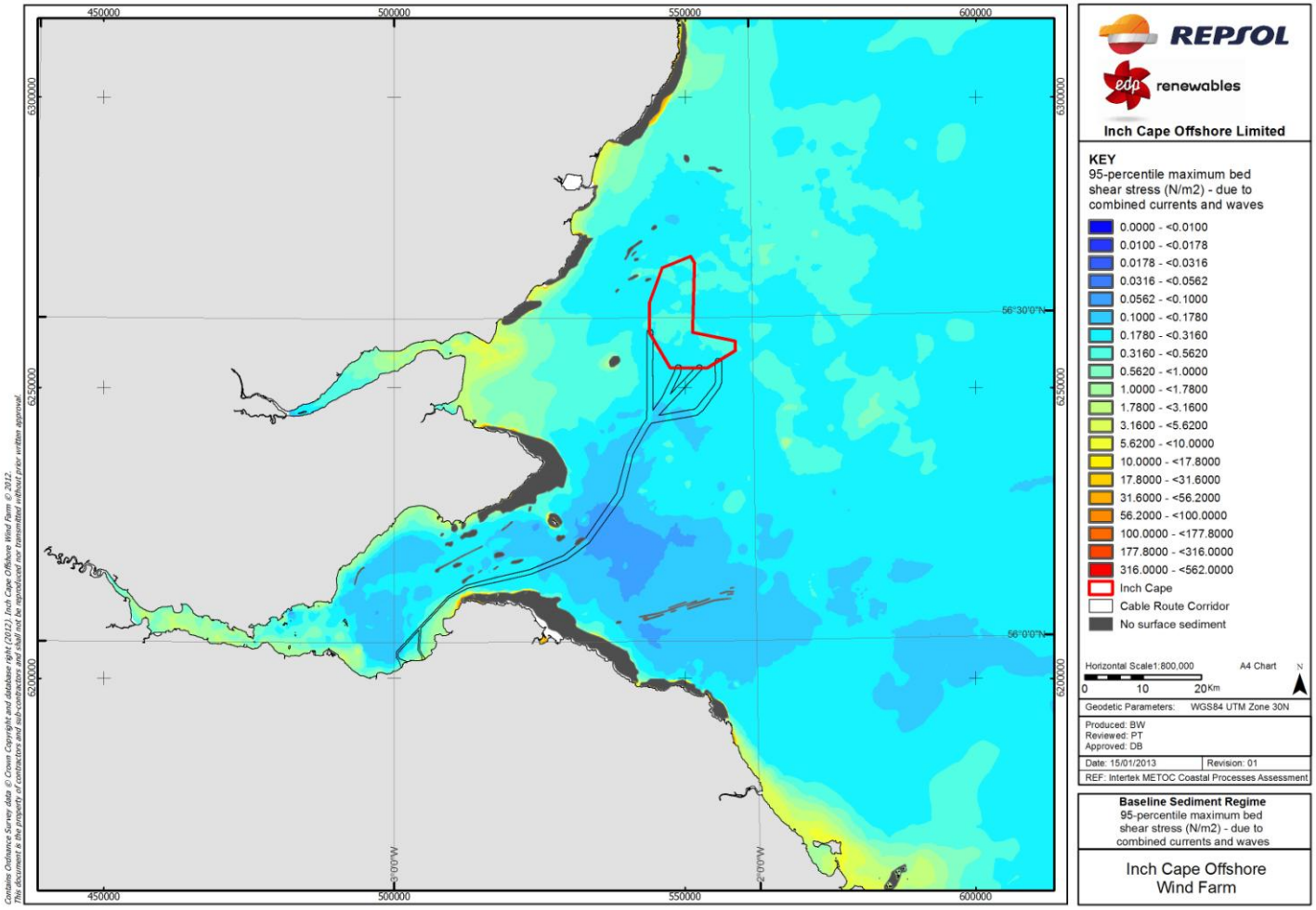


Figure 10A.2.65: 99%ile bed shear stress - due to maximum combined current and waves (N/m2) – Regional (far-field) scale

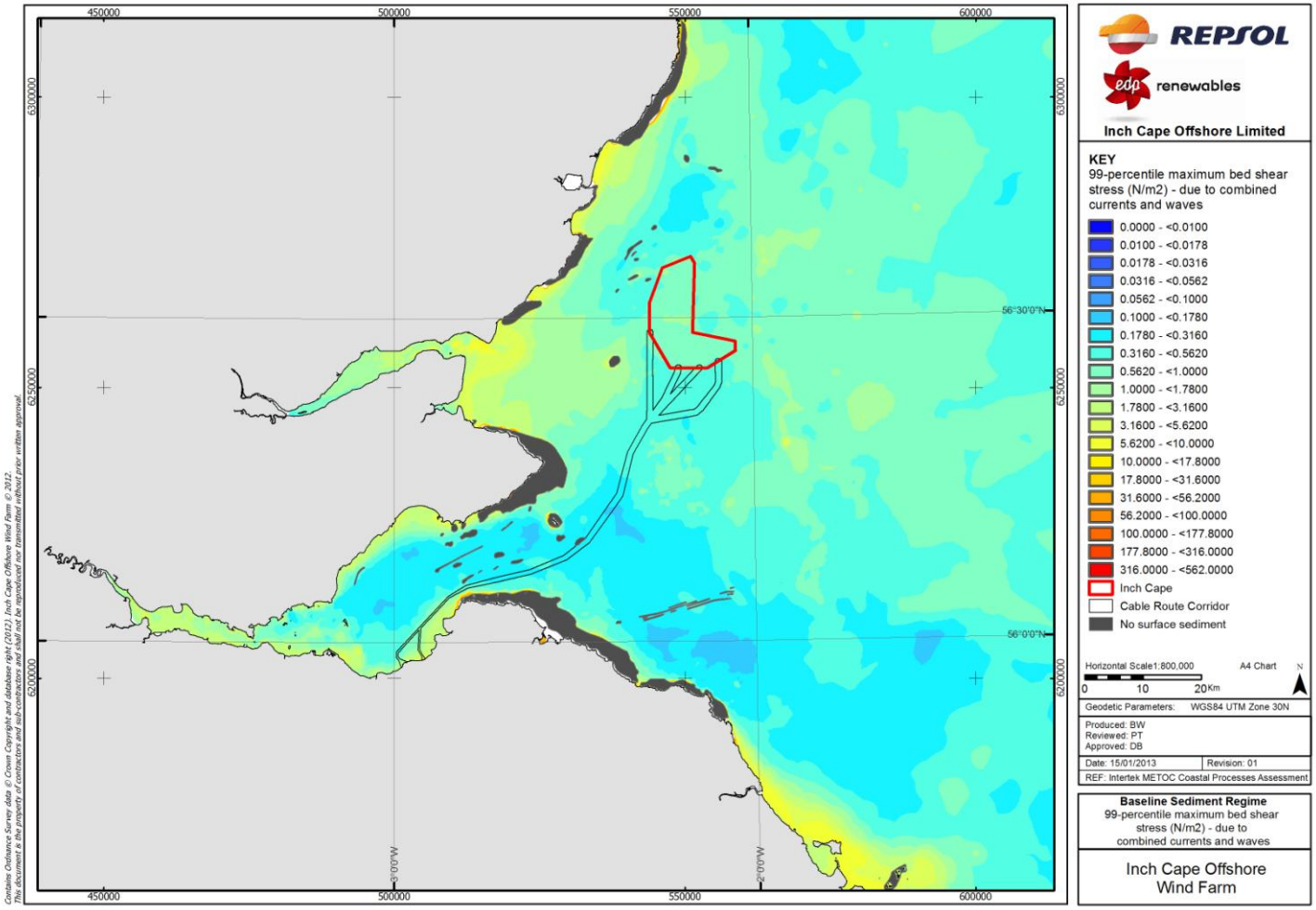


Figure 10A.2.66: Exceedance of the critical shear stress for entrainment due to mean combined bed shear stress – Regional (far-field) scale

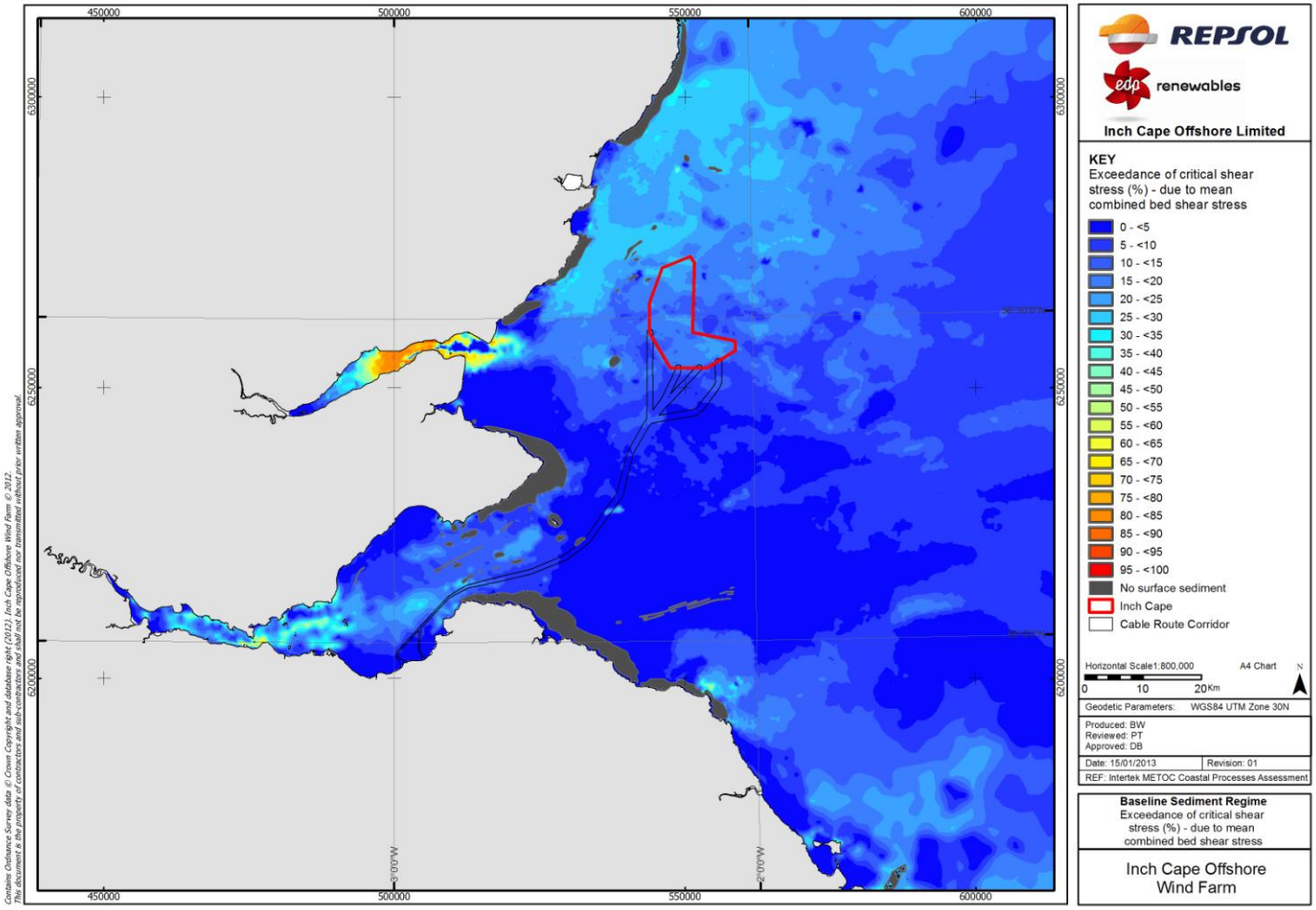


Figure 10A.2.67: Exceedance of the critical shear stress for entrainment due to maximum combined bed shear stress – Regional (far-field) scale

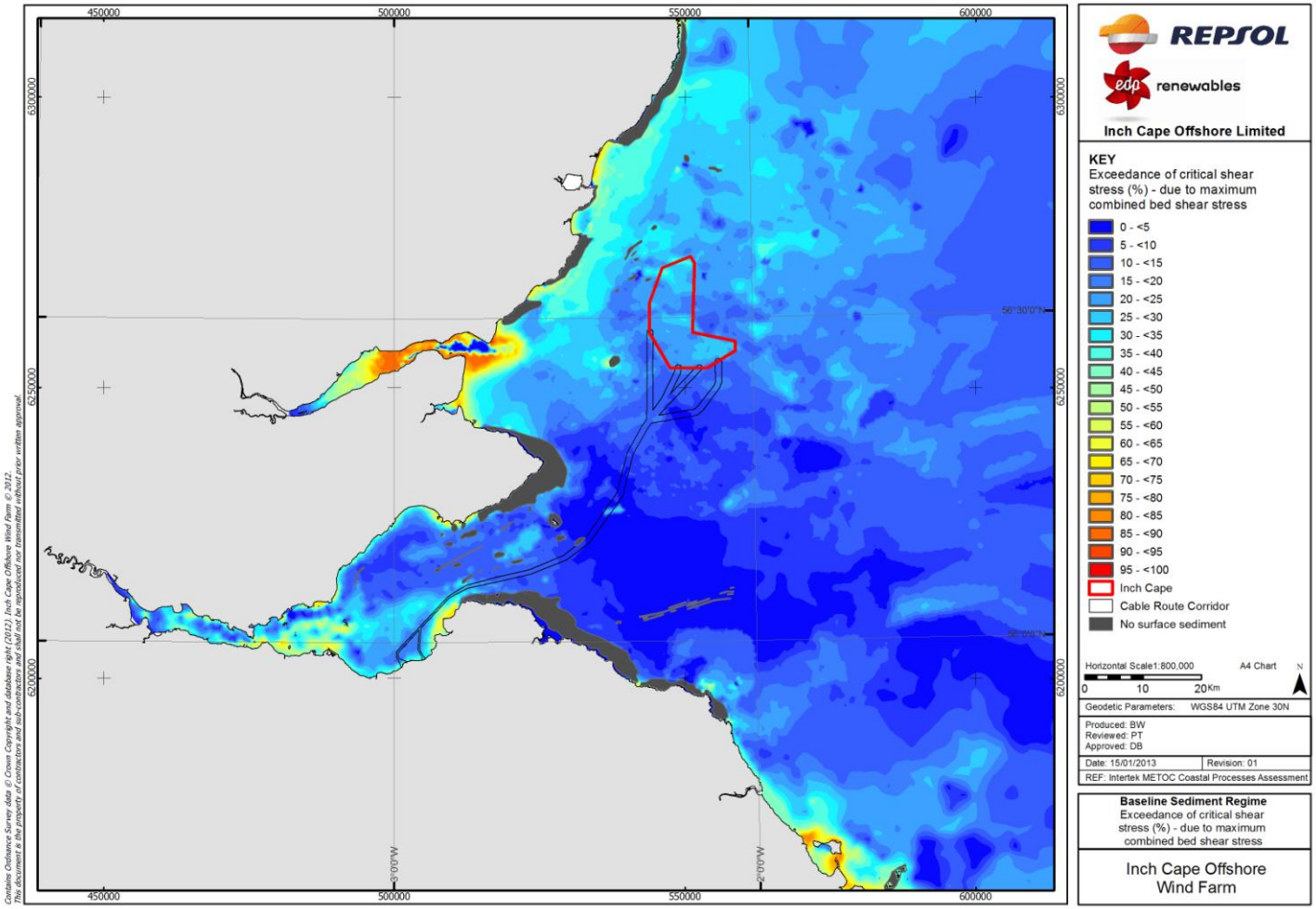


Figure 10A.2.68: Critical shear stress for entrainment (N/m2) – Inch Cape OWF (near-field) scale

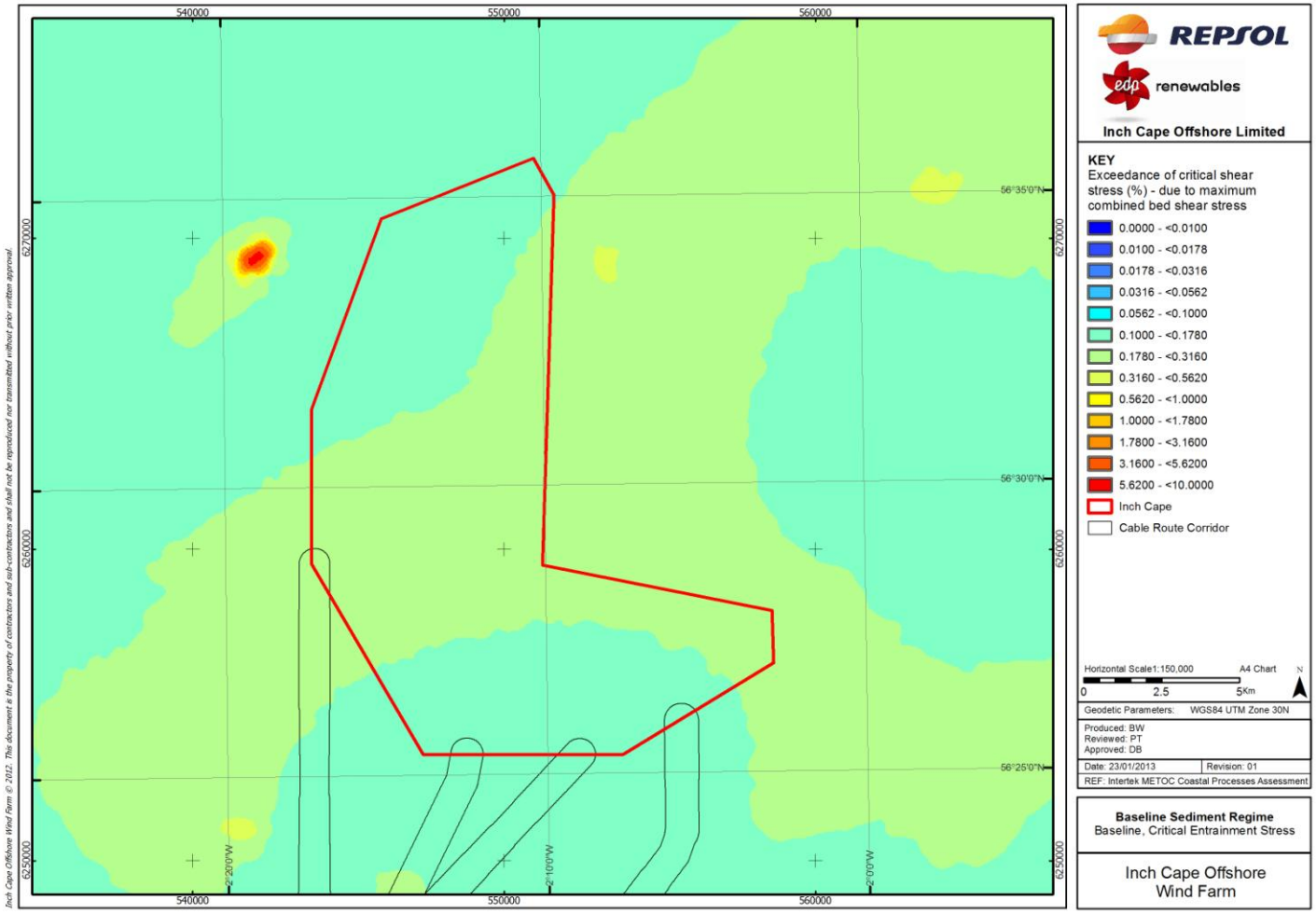


Figure 10A.2.69: 50%ile bed shear stress - due to currents (N/m2) – Inch Cape OWF (near-field) scale

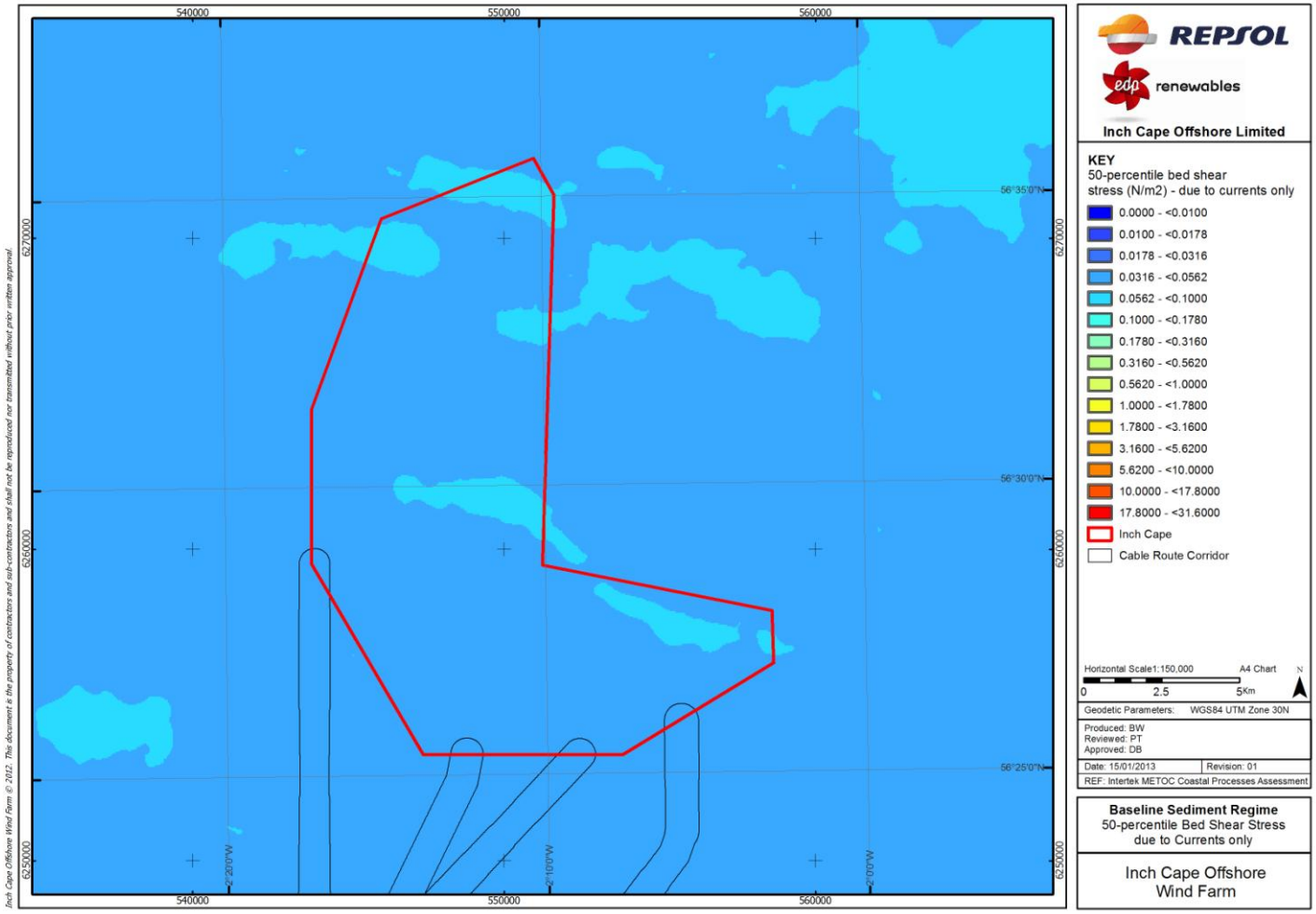


Figure 10A.2.70: 90%ile bed shear stress - due to currents (N/m2) – Inch Cape OWF (near-field) scale

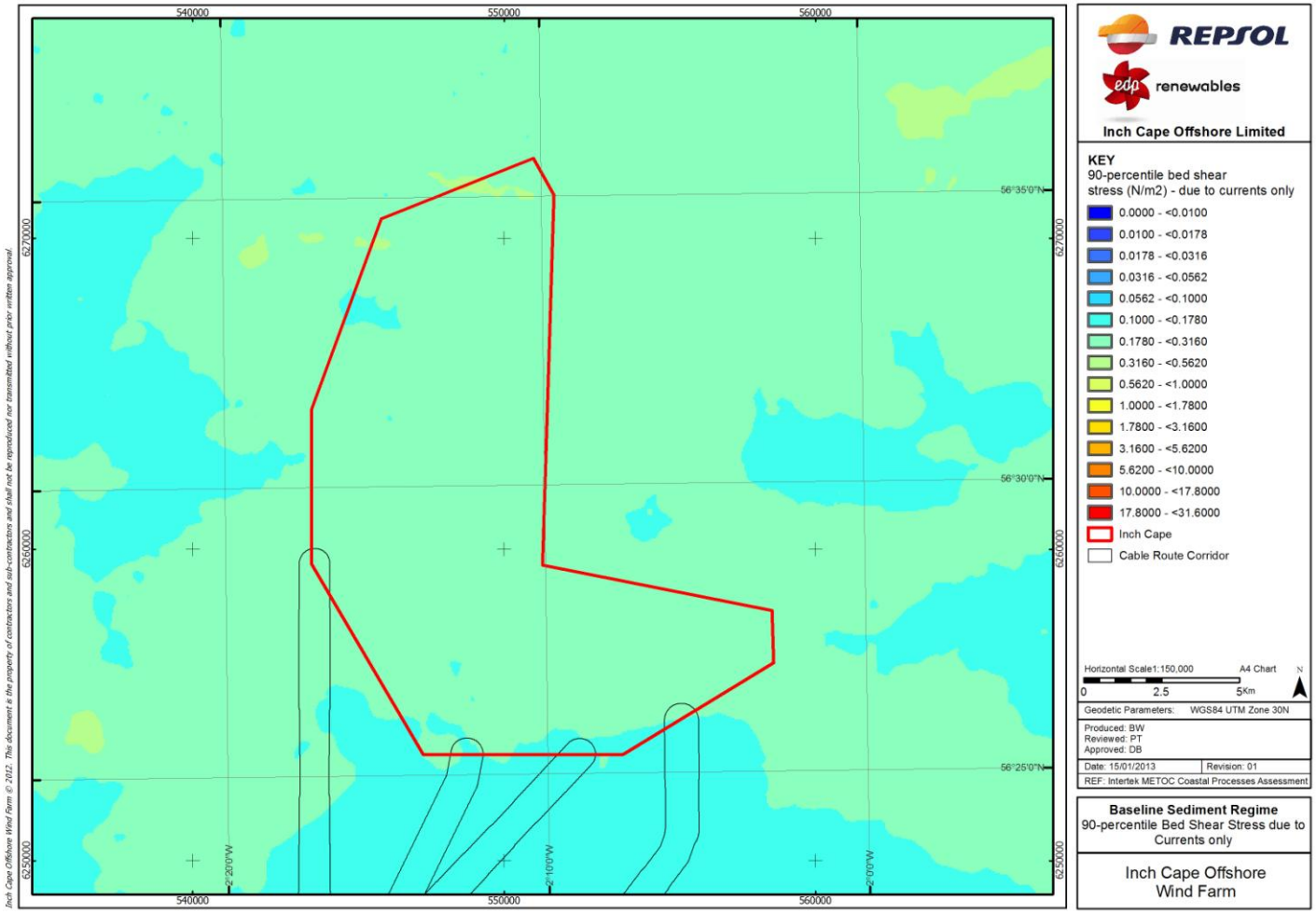


Figure 10A.2.71: 95%ile bed shear stress - due to currents (N/m2) – Inch Cape OWF (near-field) scale

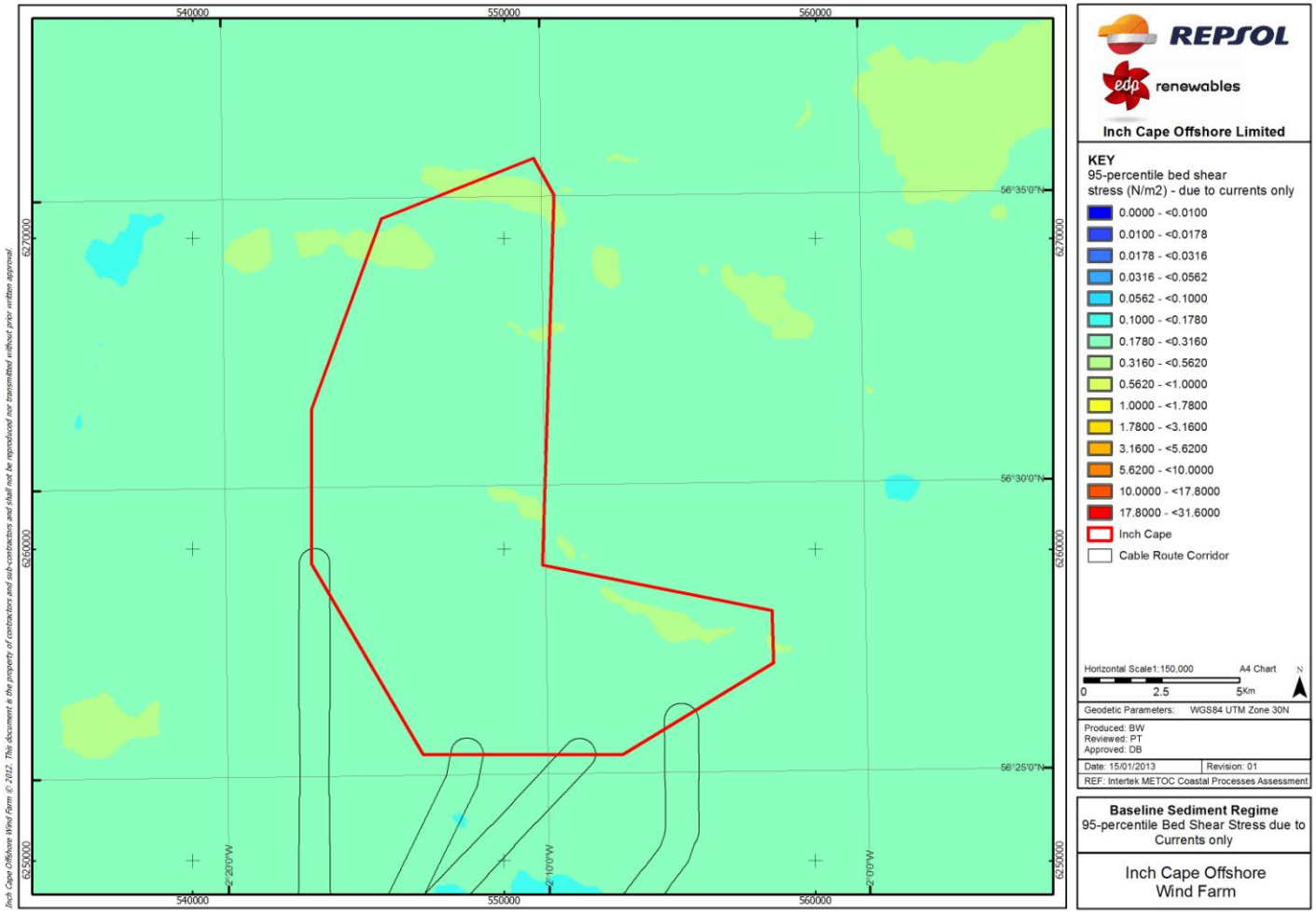


Figure 10A.2.72: 99%ile bed shear stress - due to currents (N/m2) – Inch Cape OWF (near-field) scale

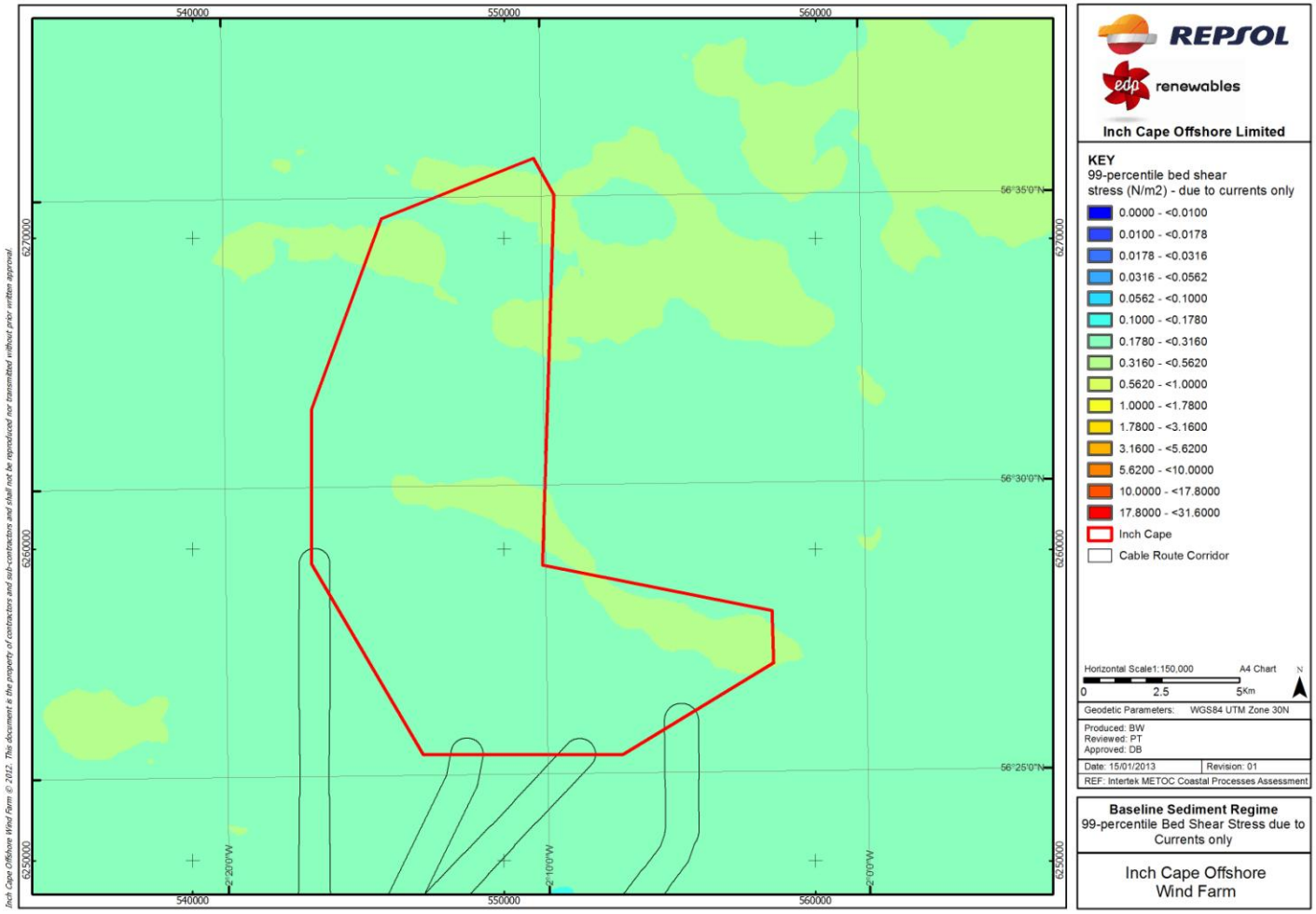


Figure 10A.2.73: 50%ile bed shear stress - due to waves (N/m2) – Inch Cape OWF (near-field) scale

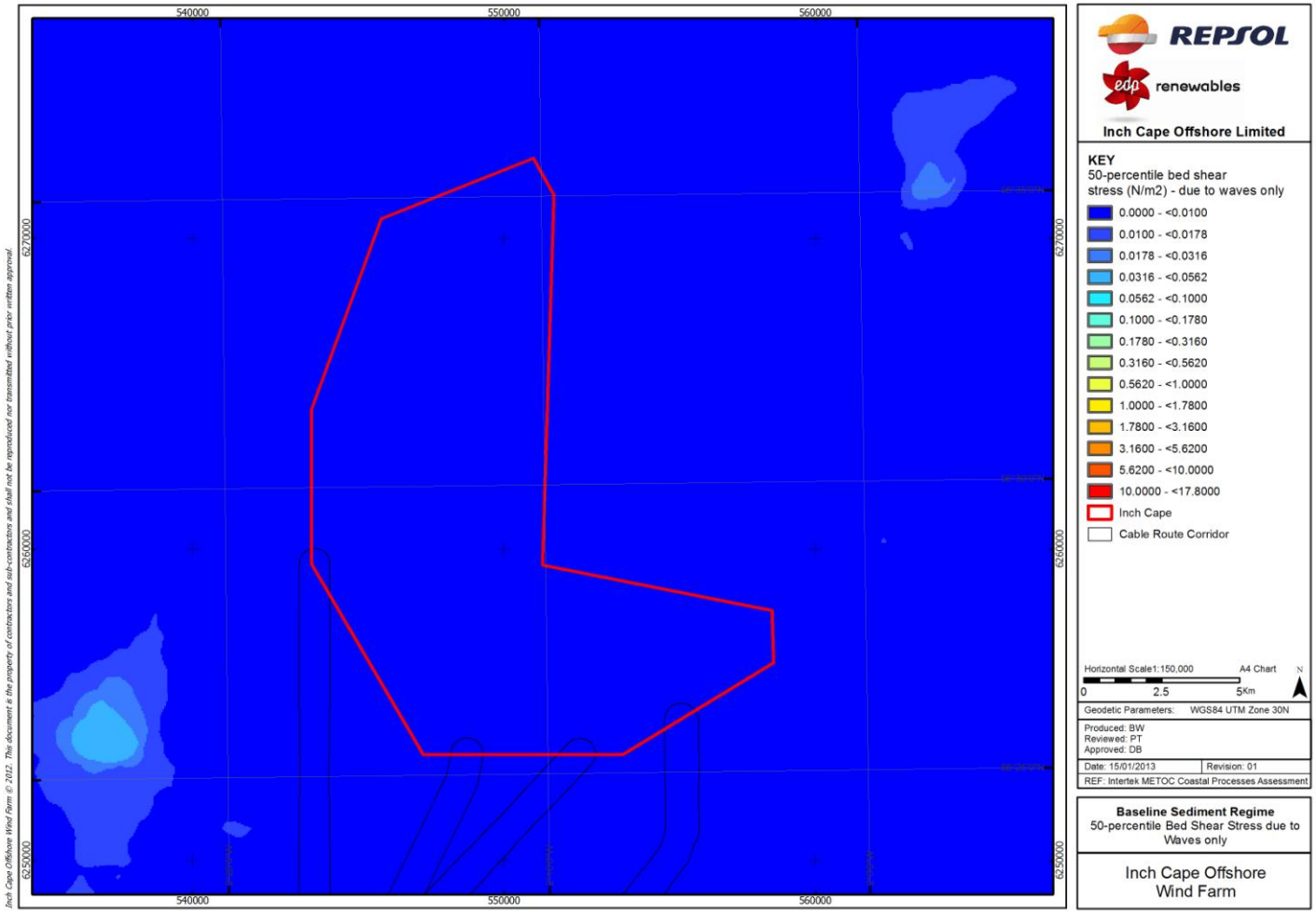


Figure 10A.2.74: 90%ile bed shear stress - due to waves (N/m2) – Inch Cape OWF (near-field) scale

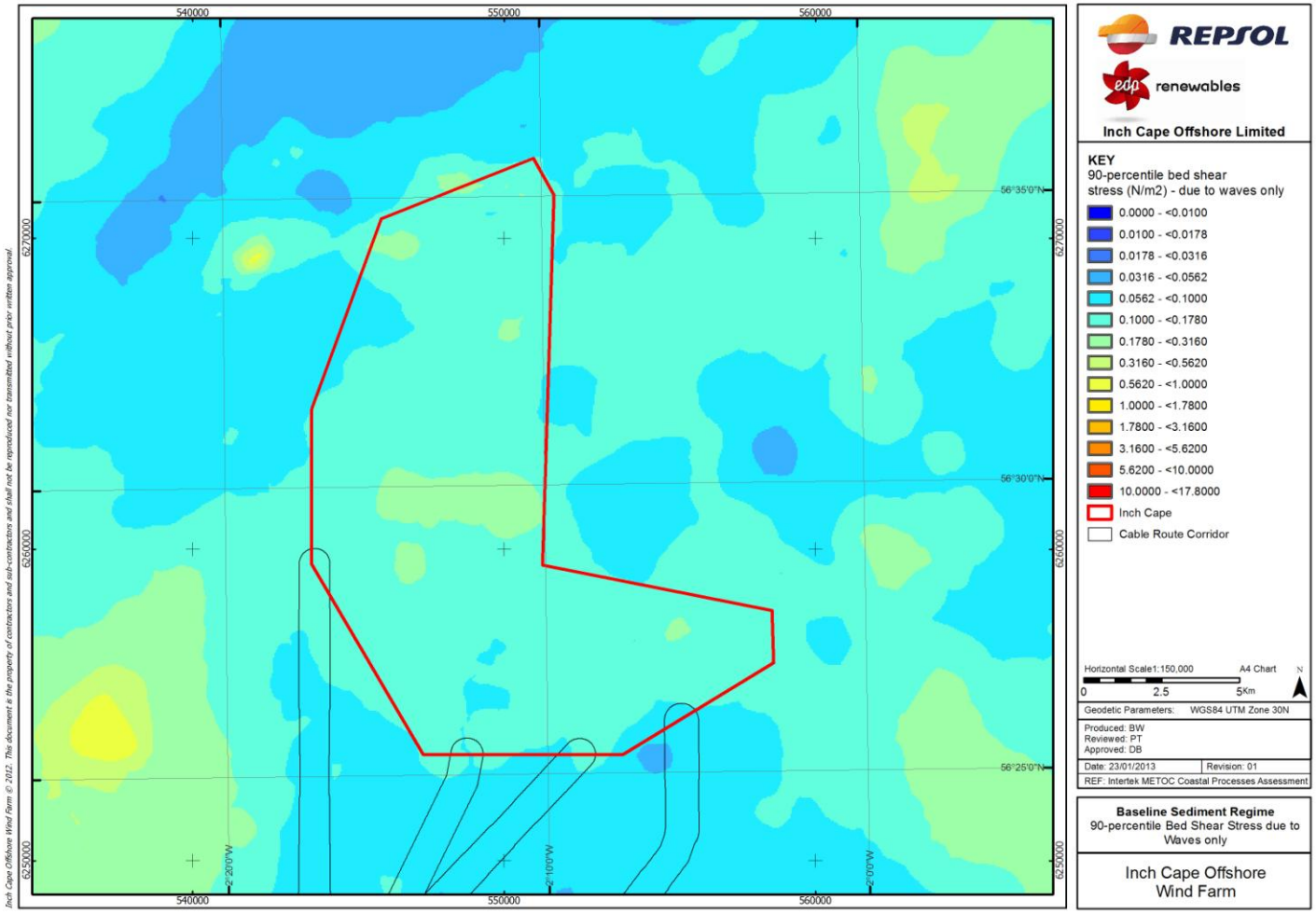


Figure 10A.2.75: 95%ile bed shear stress - due to waves (N/m2) – Inch Cape OWF (near-field) scale

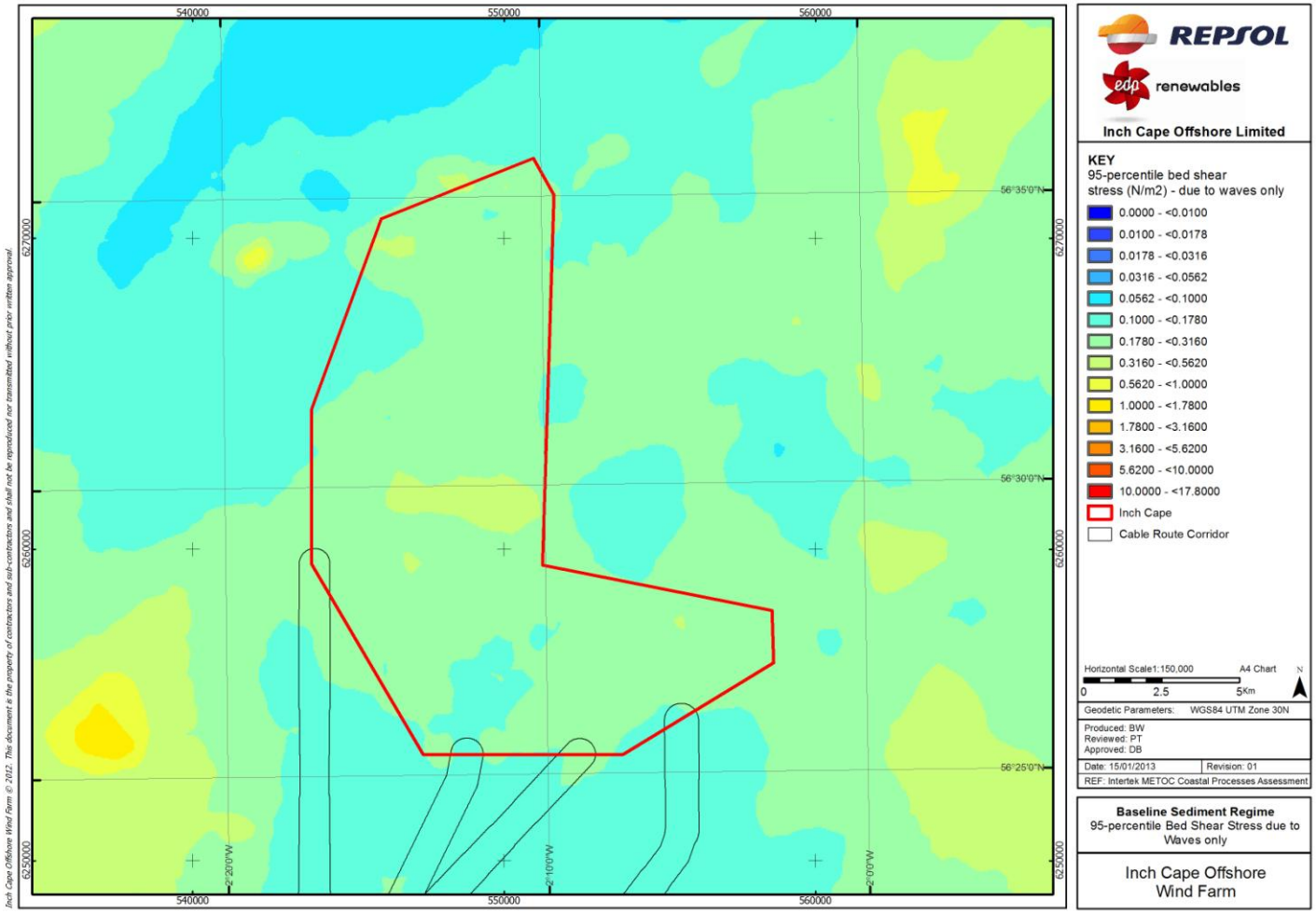


Figure 10A.2.76: 99%ile bed shear stress - due to waves (N/m2) – Inch Cape OWF (near-field) scale

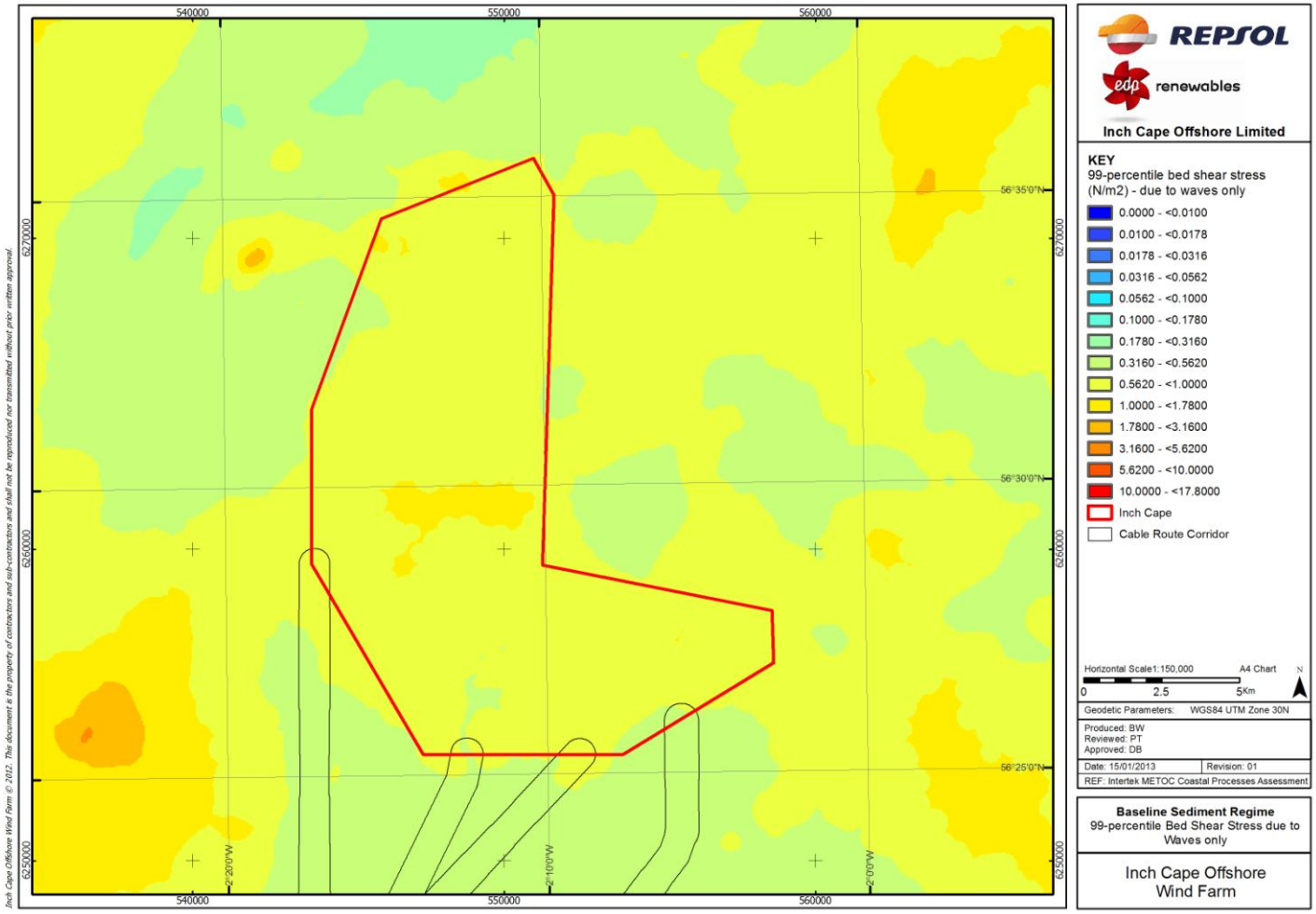


Figure 10A.2.77: 50%ile bed shear stress - due to mean combined current and waves (N/m2) – Inch Cape OWF (near-field) scale

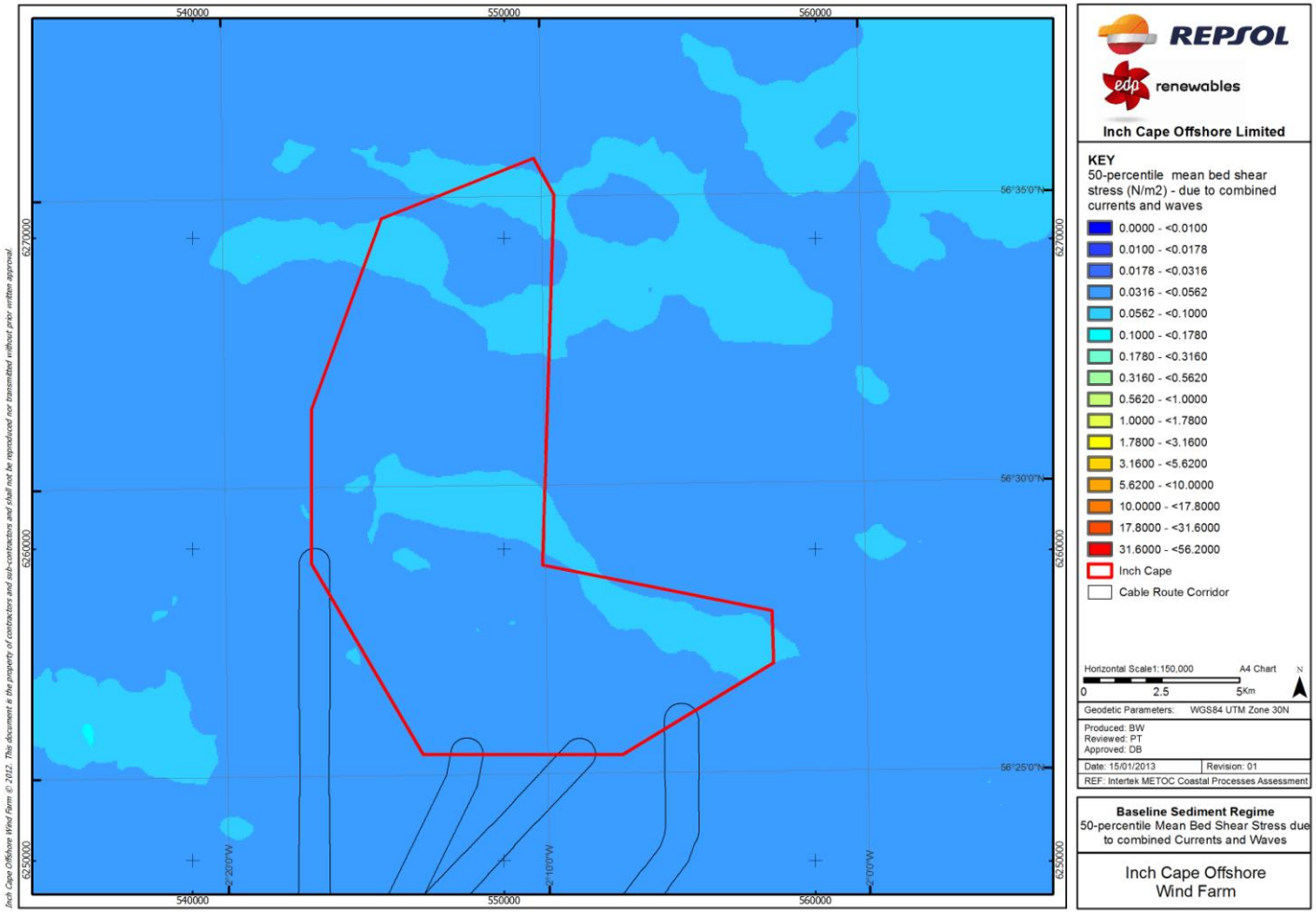


Figure 10A.2.78: 90%ile bed shear stress - due to mean combined current and waves (N/m2) – Inch Cape OWF (near-field) scale

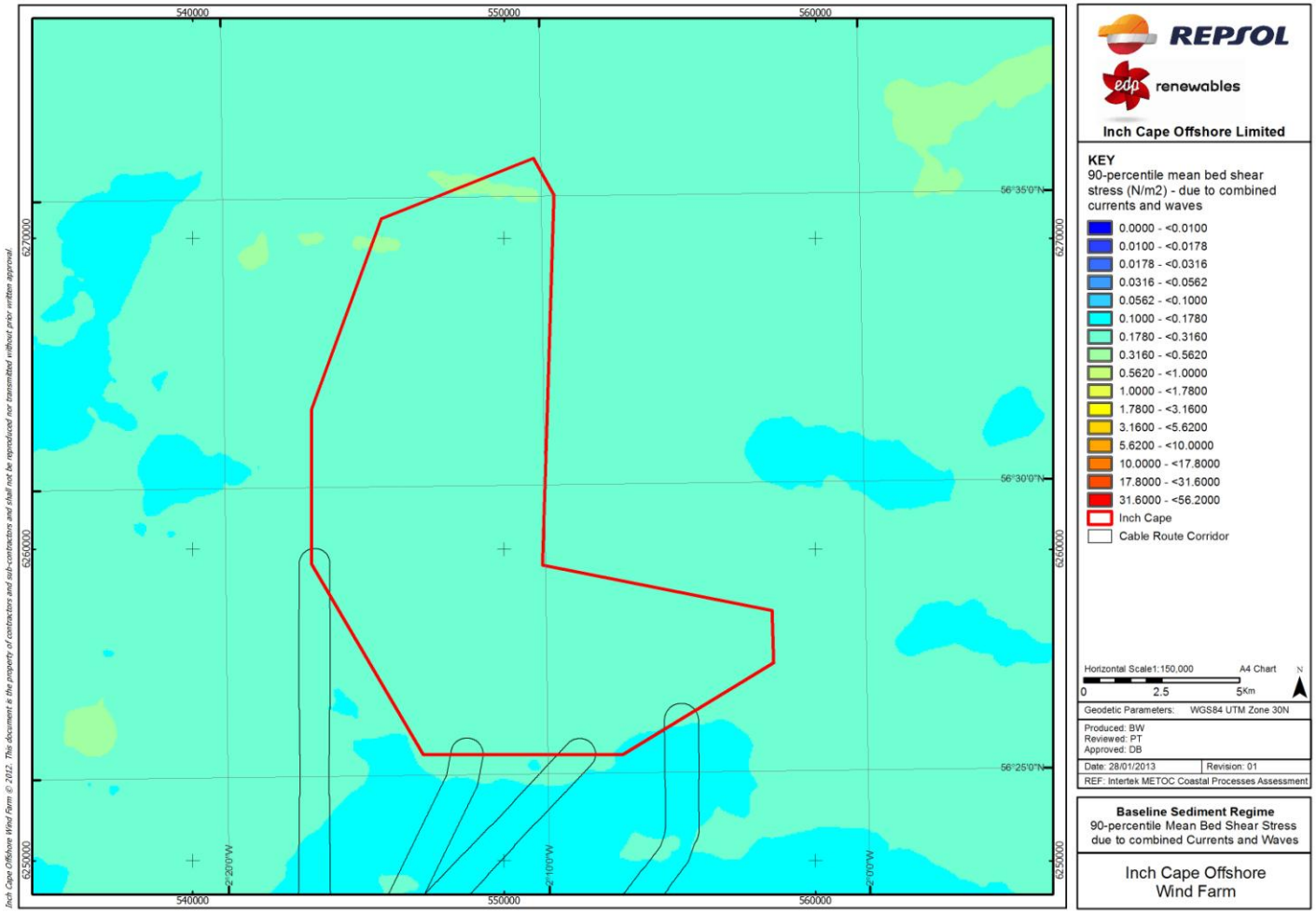


Figure 10A.2.79: 95%ile bed shear stress - due to mean combined current and waves (N/m2) – Inch Cape OWF (near-field) scale

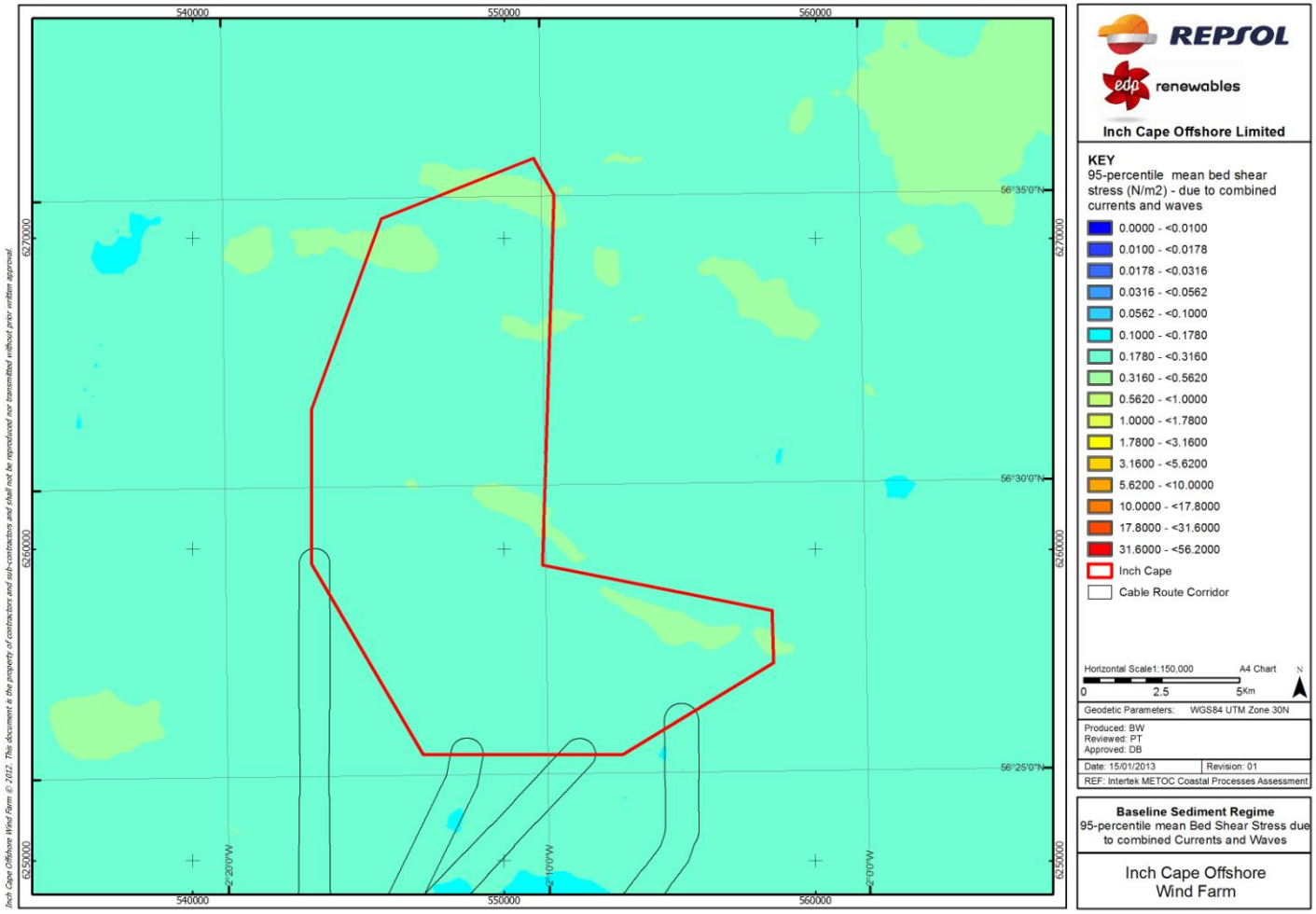


Figure 10A.2.80: 99%ile bed shear stress - due to mean combined current and waves (N/m2) – Inch Cape OWF (near-field) scale

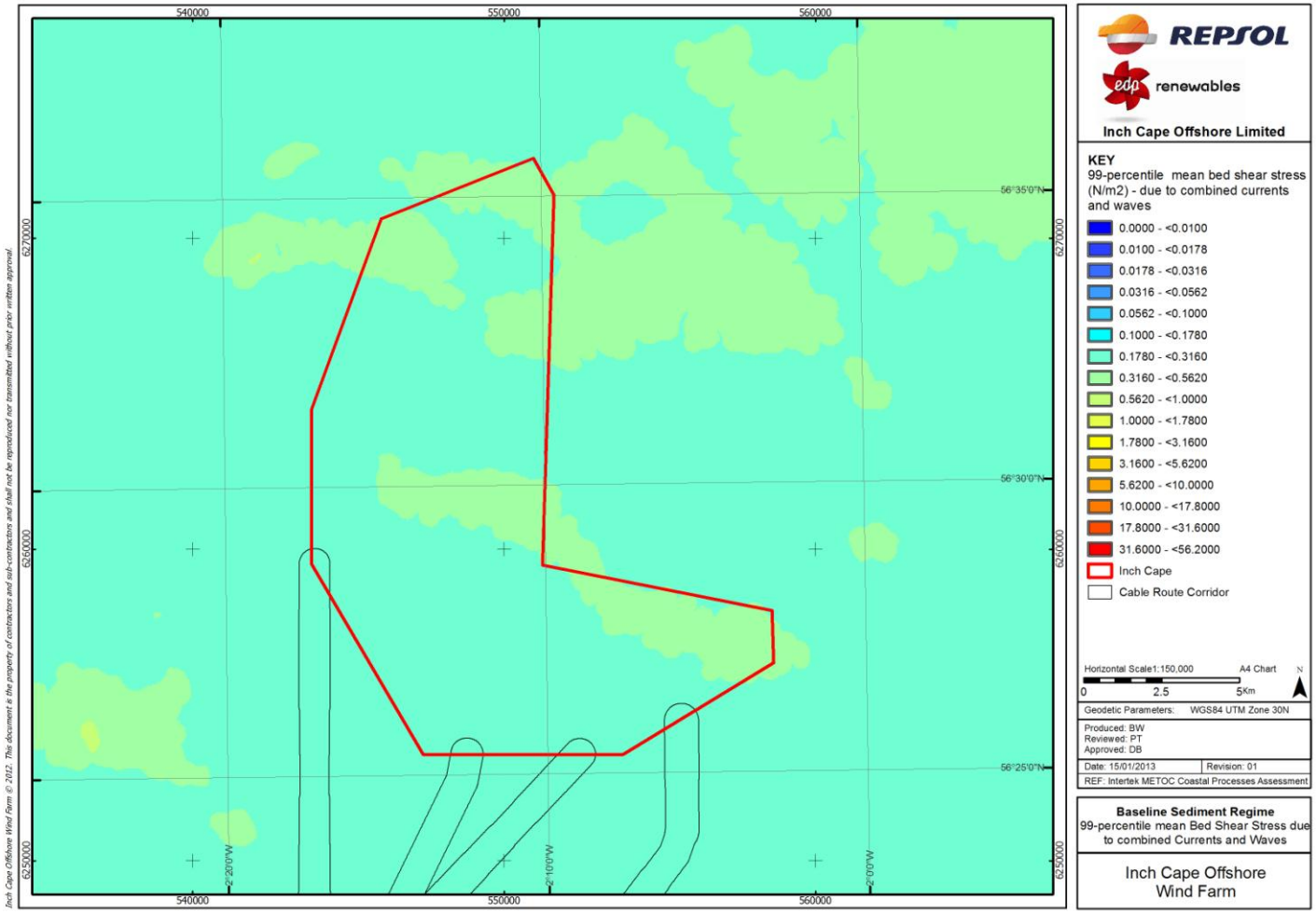


Figure 10A.2.81: 50%ile bed shear stress - due to maximum combined current and waves (N/m2) – Inch Cape OWF (near-field) scale

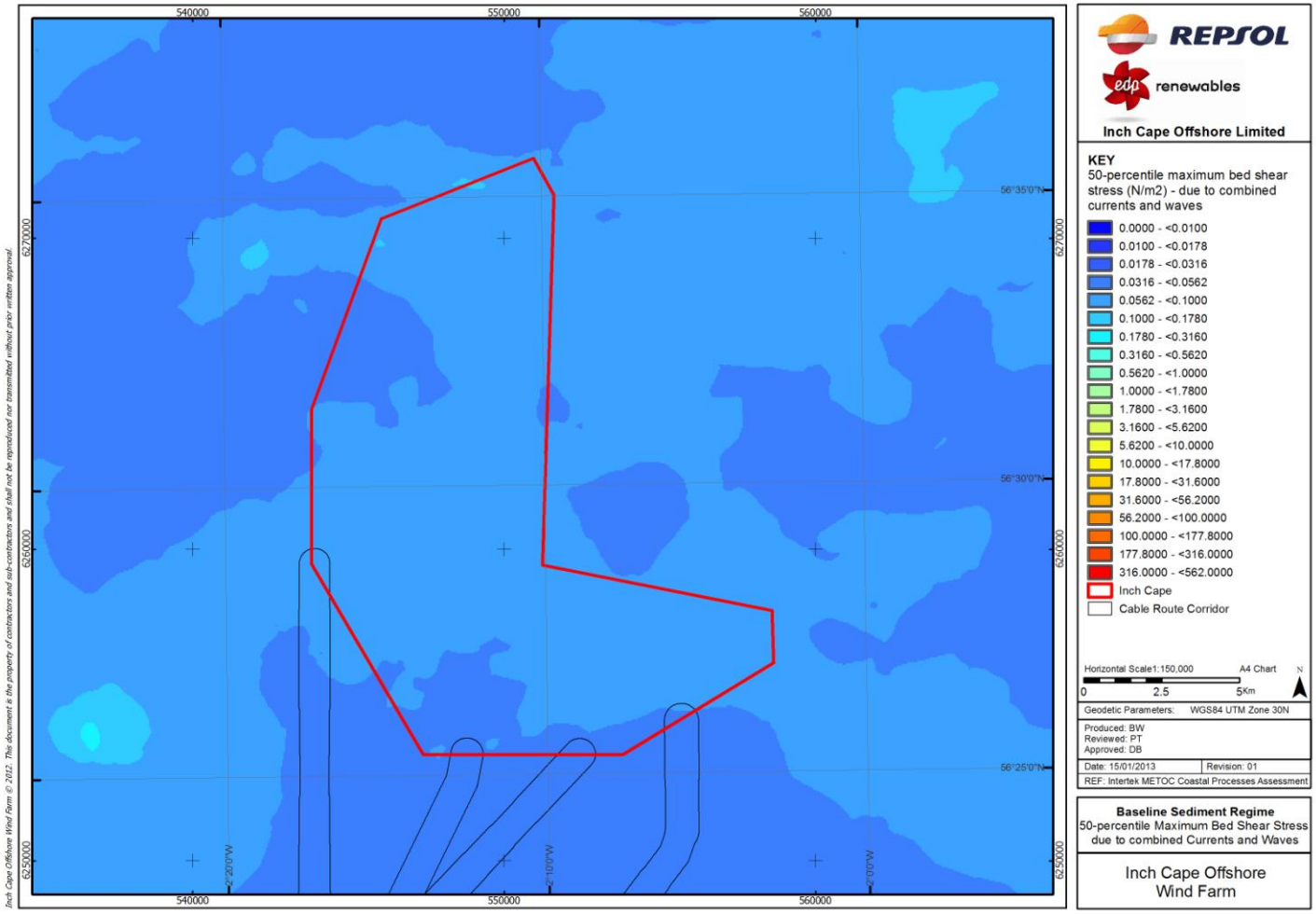


Figure 10A.2.82: 90%ile bed shear stress - due to maximum combined current and waves (N/m2) – Inch Cape OWF (near-field) scale

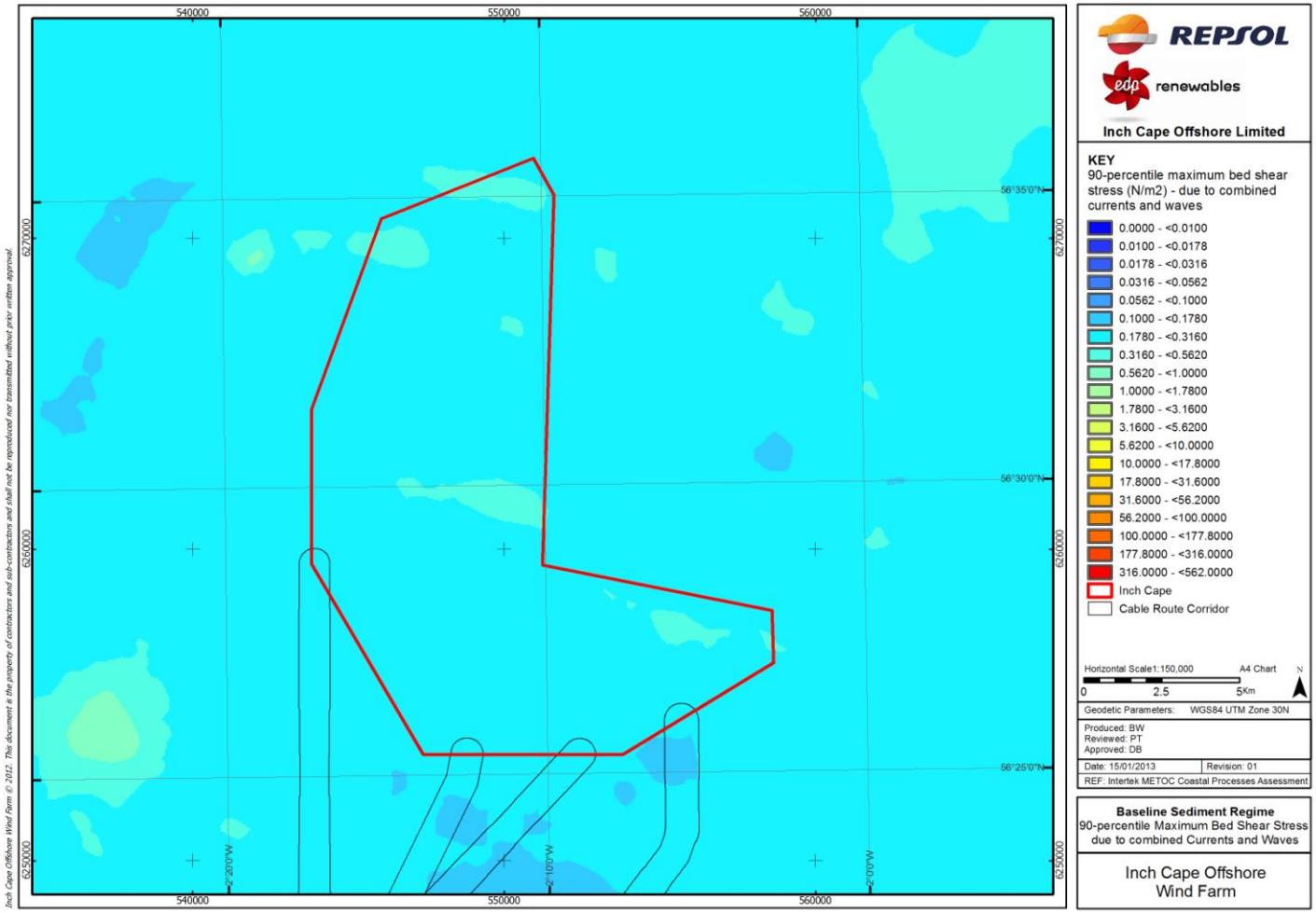


Figure 10A.2.83: 95%ile bed shear stress - due to maximum combined current and waves (N/m2) – Inch Cape OWF (near-field) scale

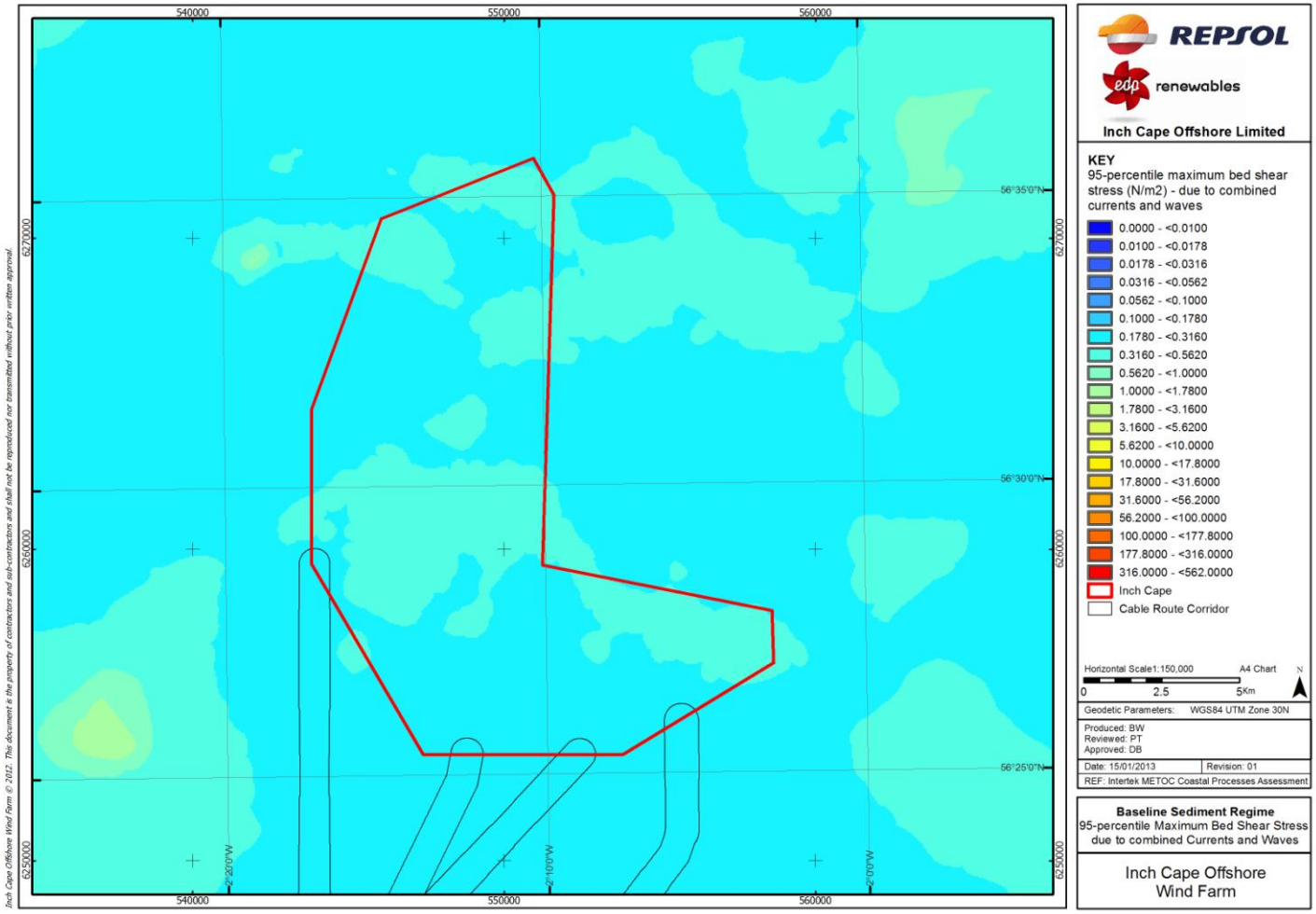


Figure 10A.2.84: 99%ile bed shear stress - due to maximum combined current and waves (N/m2) – Inch Cape OWF (near-field) scale

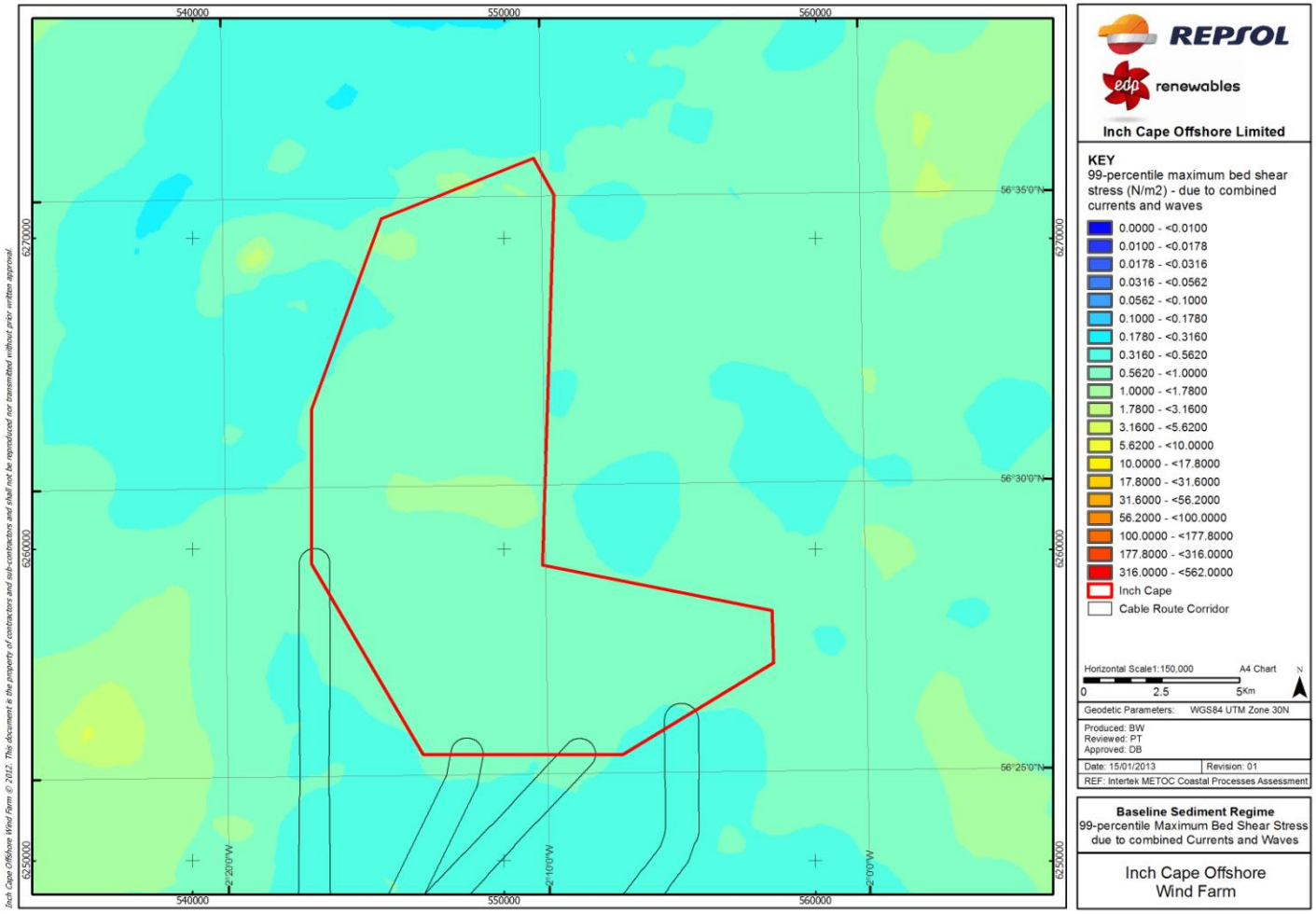


Figure 10A.2.85: Exceedance of the critical shear stress for entrainment due to mean combined bed shear stress – Inch Cape OWF (near-field) scale

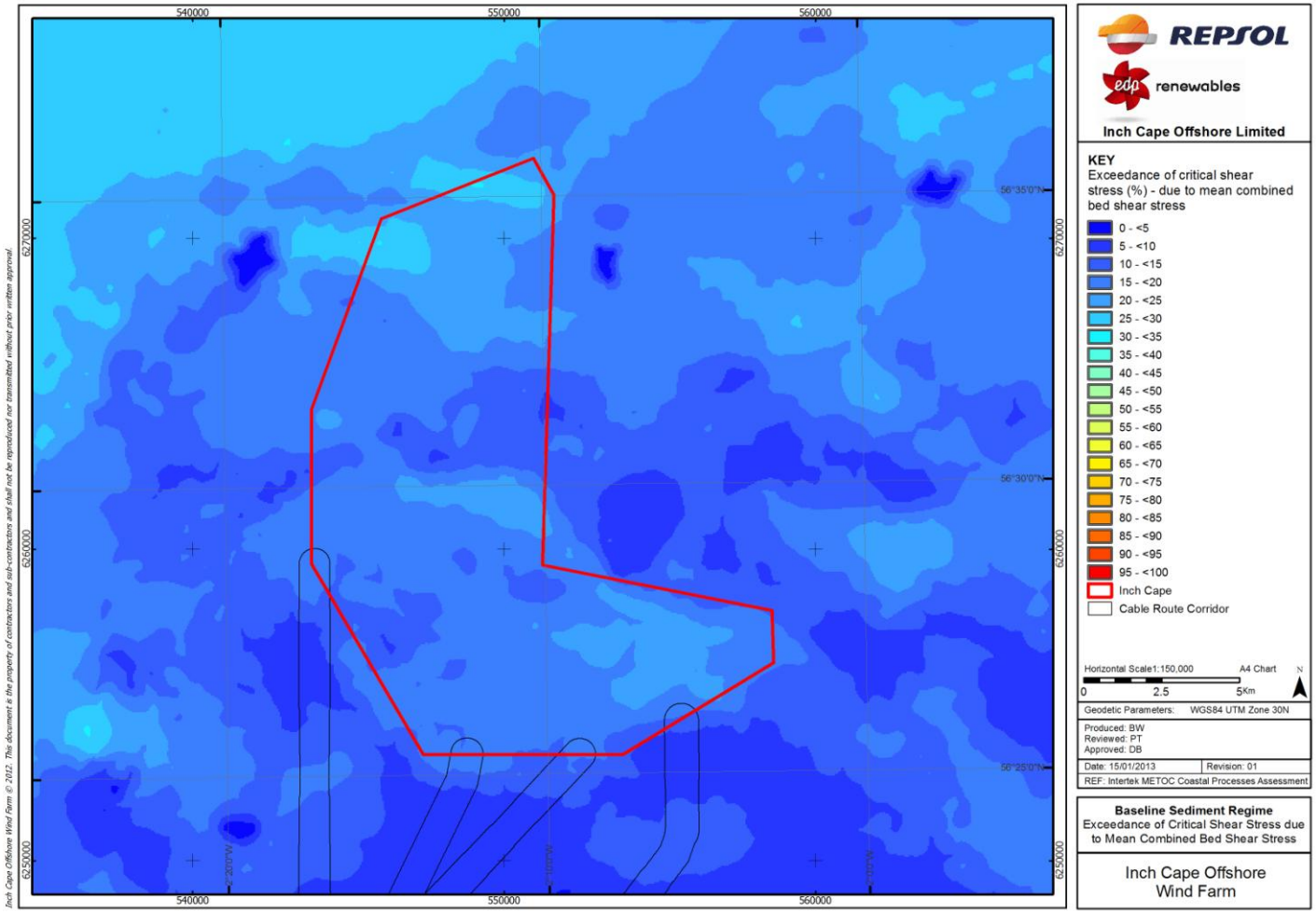
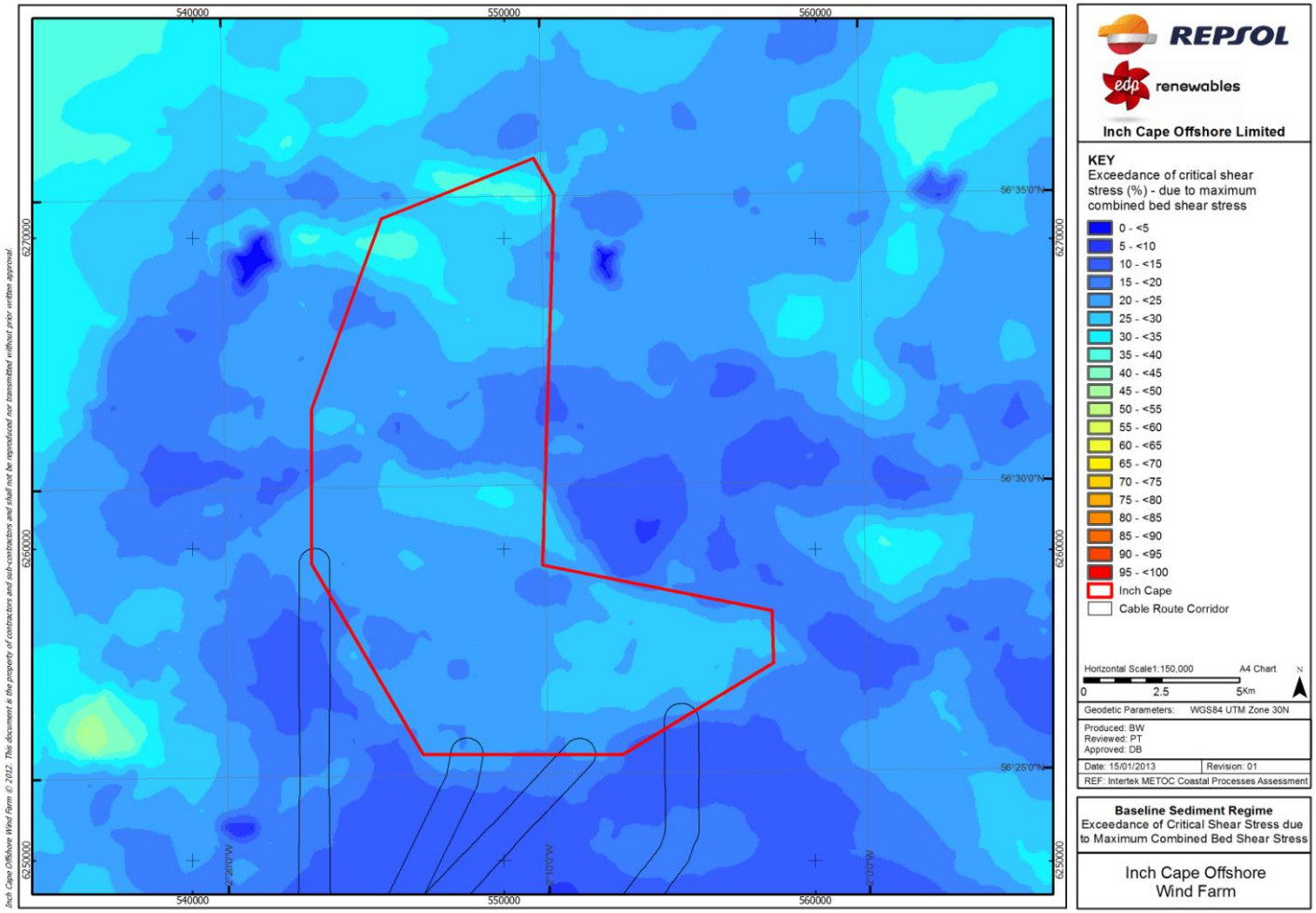


Figure 10A.2.86: Exceedance of the critical shear stress for entrainment due to maximum combined bed shear stress – Inch Cape OWF (near-field) scale



Section 4: Summary of Model Performance

Figure 10A.2.87: Inch Cape ACDP Spring Modelled Tidal Elevations against Predicted Field Data

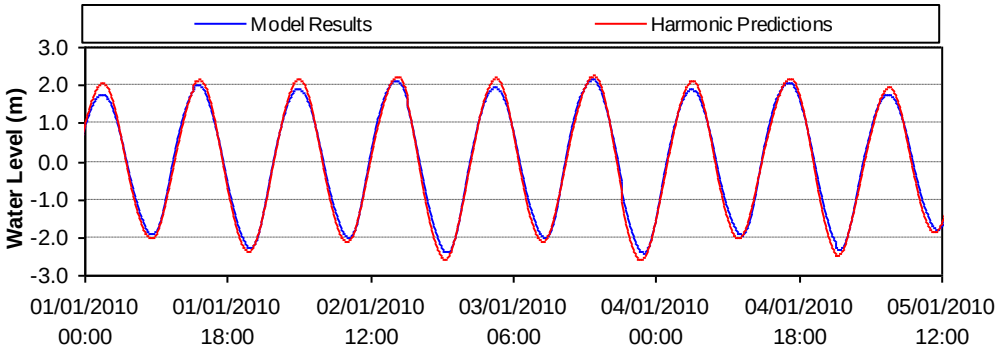


Figure 10A.2.88: Inch Cape ADCP Spring Modelled Tidal Currents Speed (ms^{-1}) and Current Direction (deg T) against Predicted Field Data

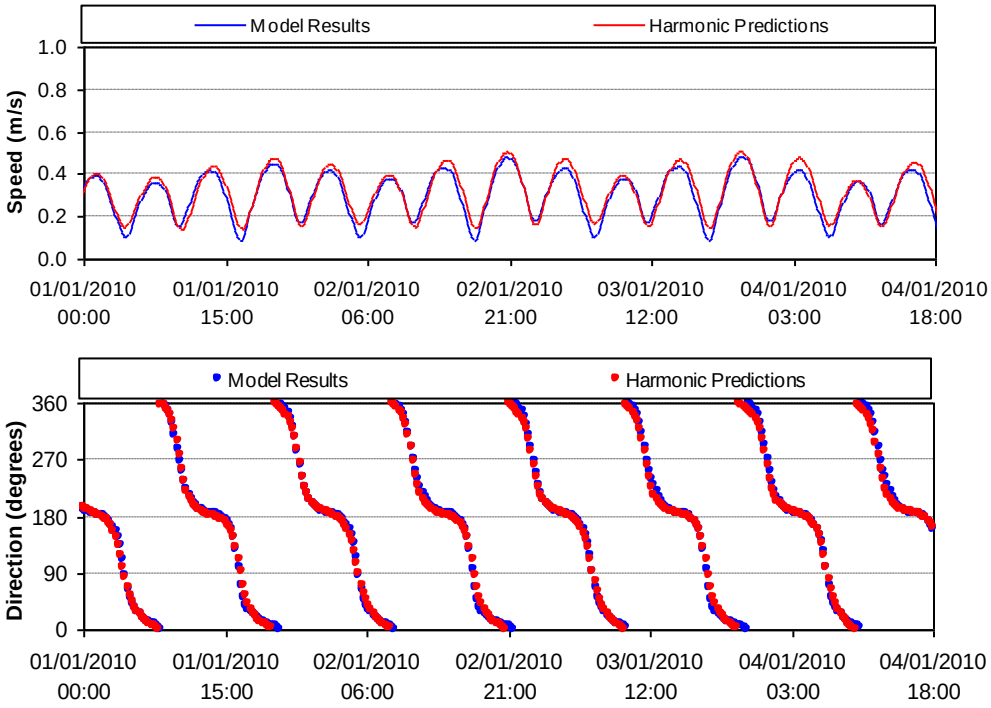


Figure 10A.2.89: Inch Cape ACDP Neap Modelled Tidal Elevations against Predicted Field Data

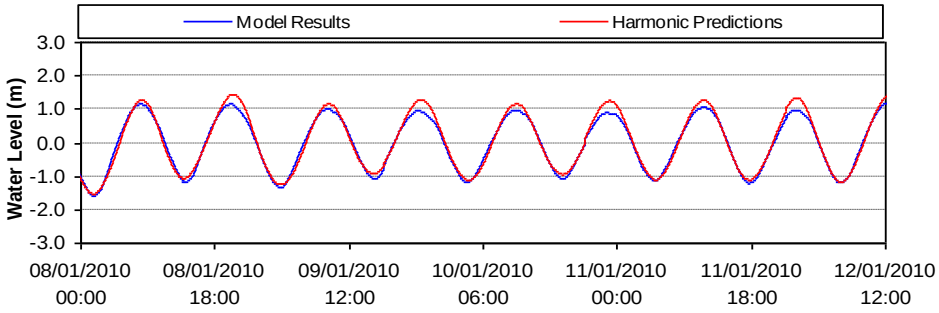


Figure 10A.2.90: Inch Cape ADCP Neap Modelled Tidal Currents Speed (ms^{-1}) and Current Direction (deg T) against Predicted Field Data

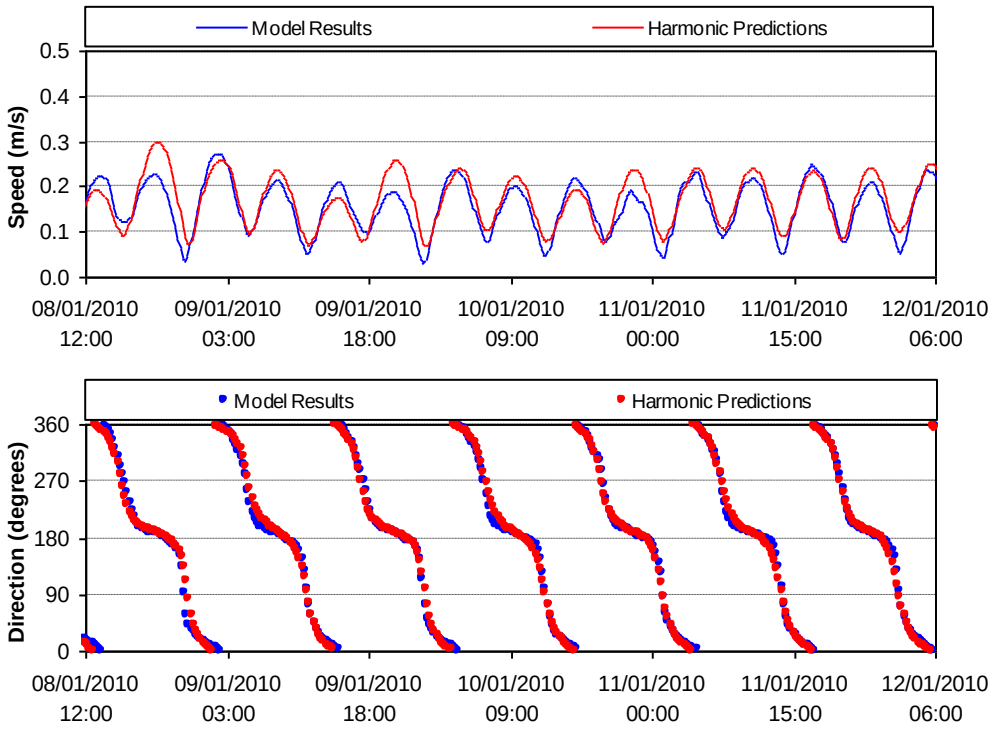


Figure 10A.2.91: Easterly Storm Event - Inch Cape, Waverider Buoy Modelled Hs (m), Tp (s) and Wave Direction (deg T) against Measured Field Data

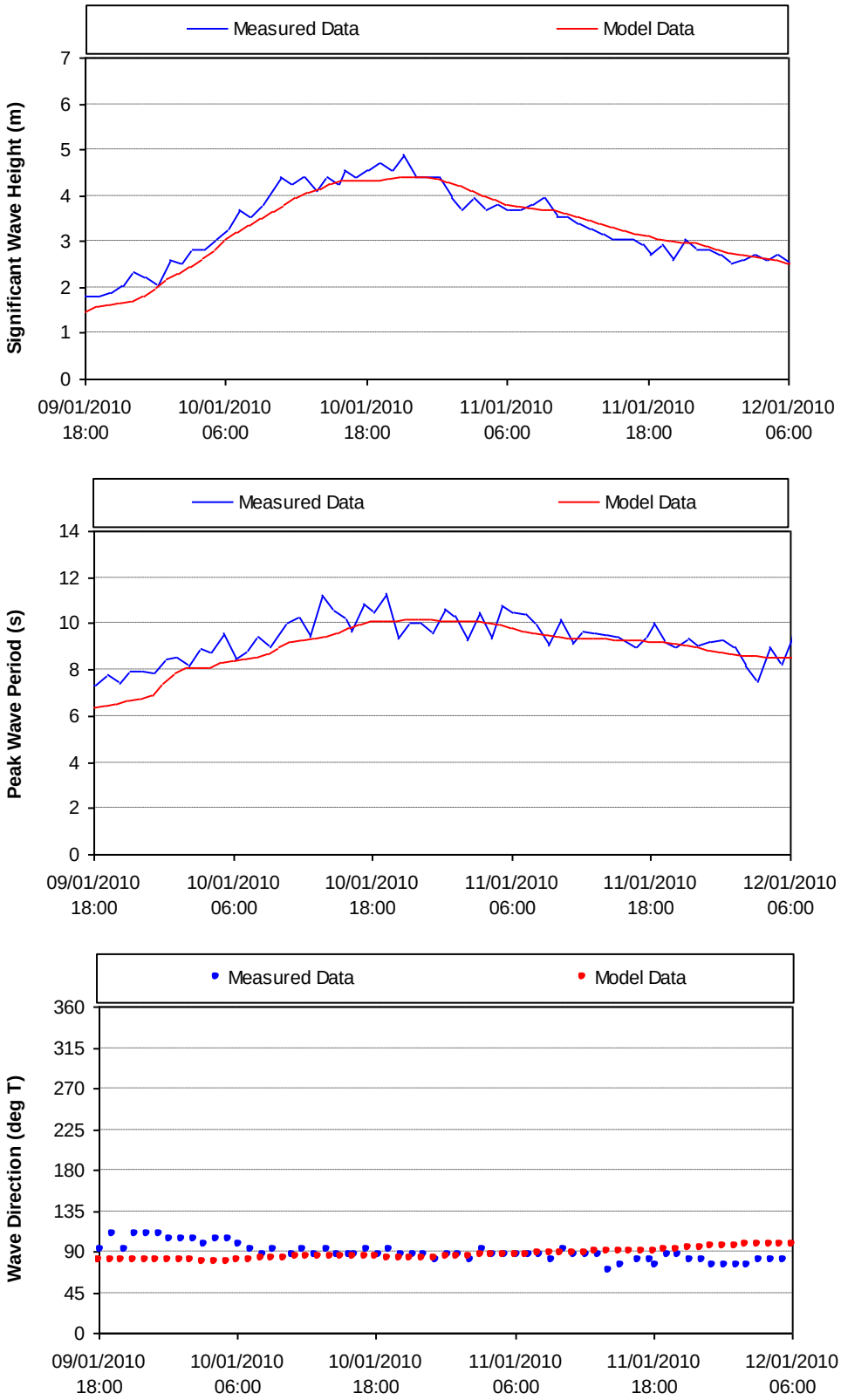


Figure 10A.2.92: Offshore Wind Event – Inch Cape, Waverider Buoy Modelled H_s (m), T_p (s) and Wave Direction (deg T) against Measured Field Data

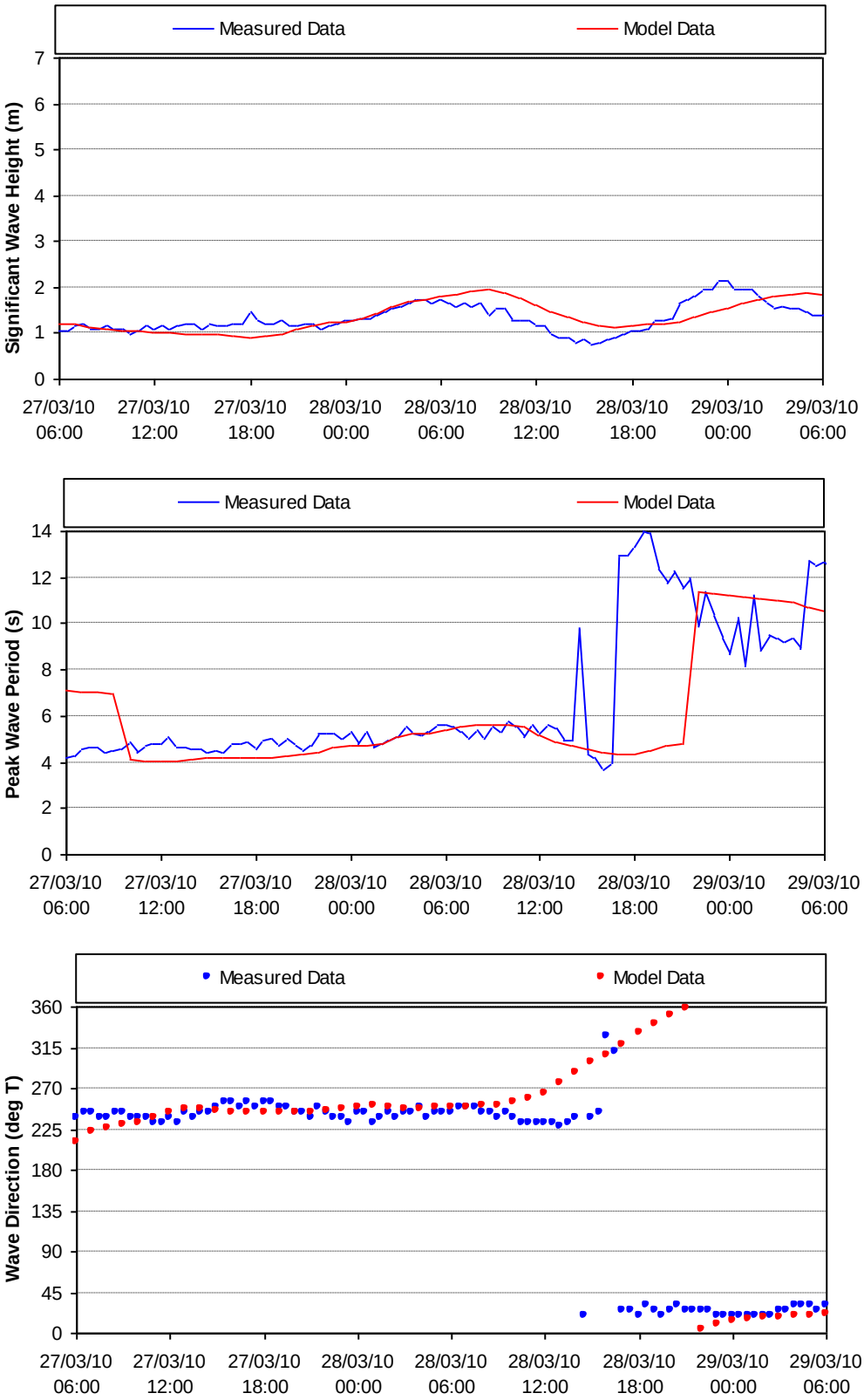


Figure 10A.2.93: Northerly Storm Event – Inch Cape, Waverider Buoy Modelled H_s (m), T_p (s) and Wave Direction (deg T) against Measured Field Data

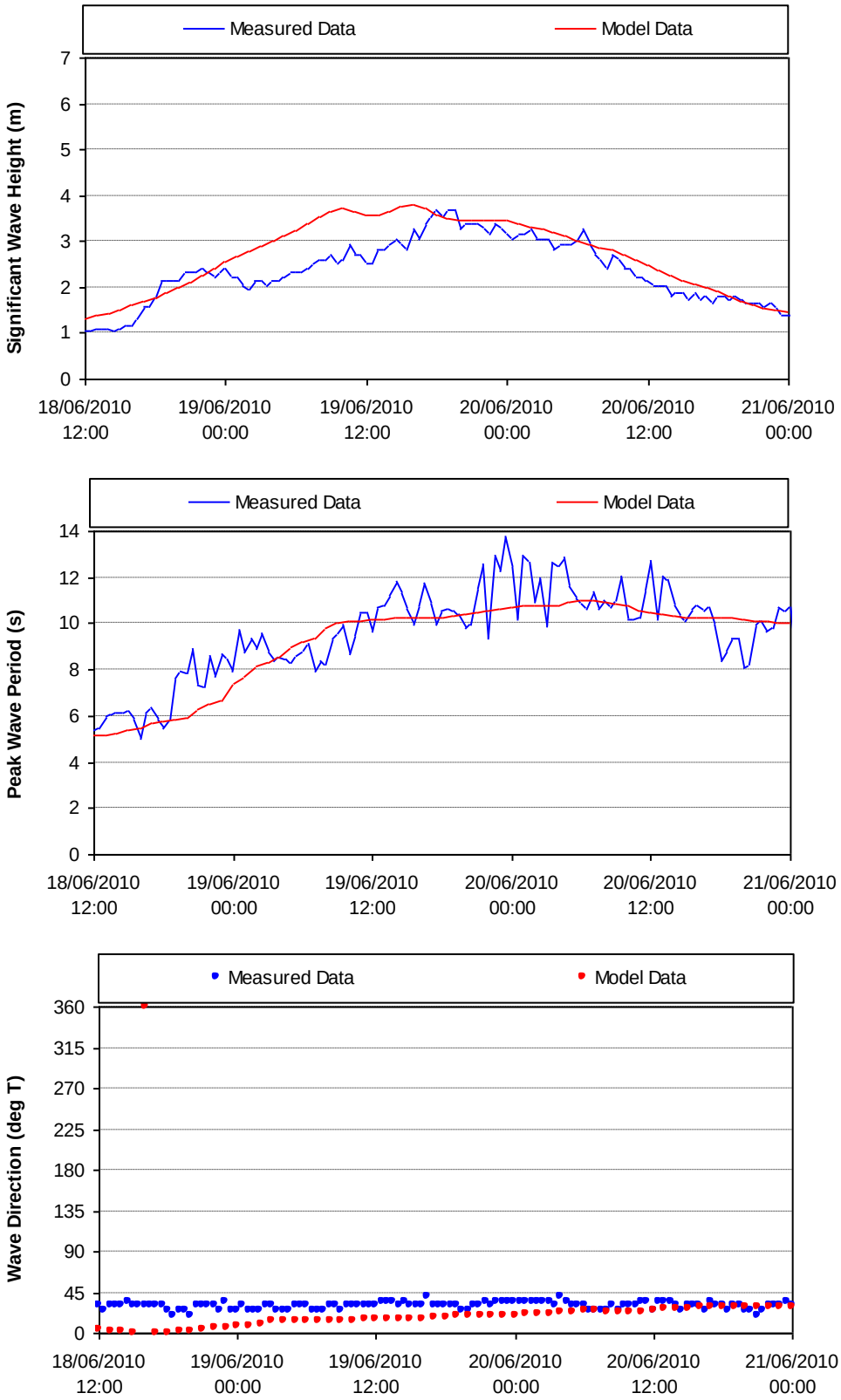


Figure 10A.2.94: Southeasterly Storm Event – Inch Cape, Waverider Buoy Modelled Hs (m), Tp (s) and Wave Direction (deg T) against Measured Field Data

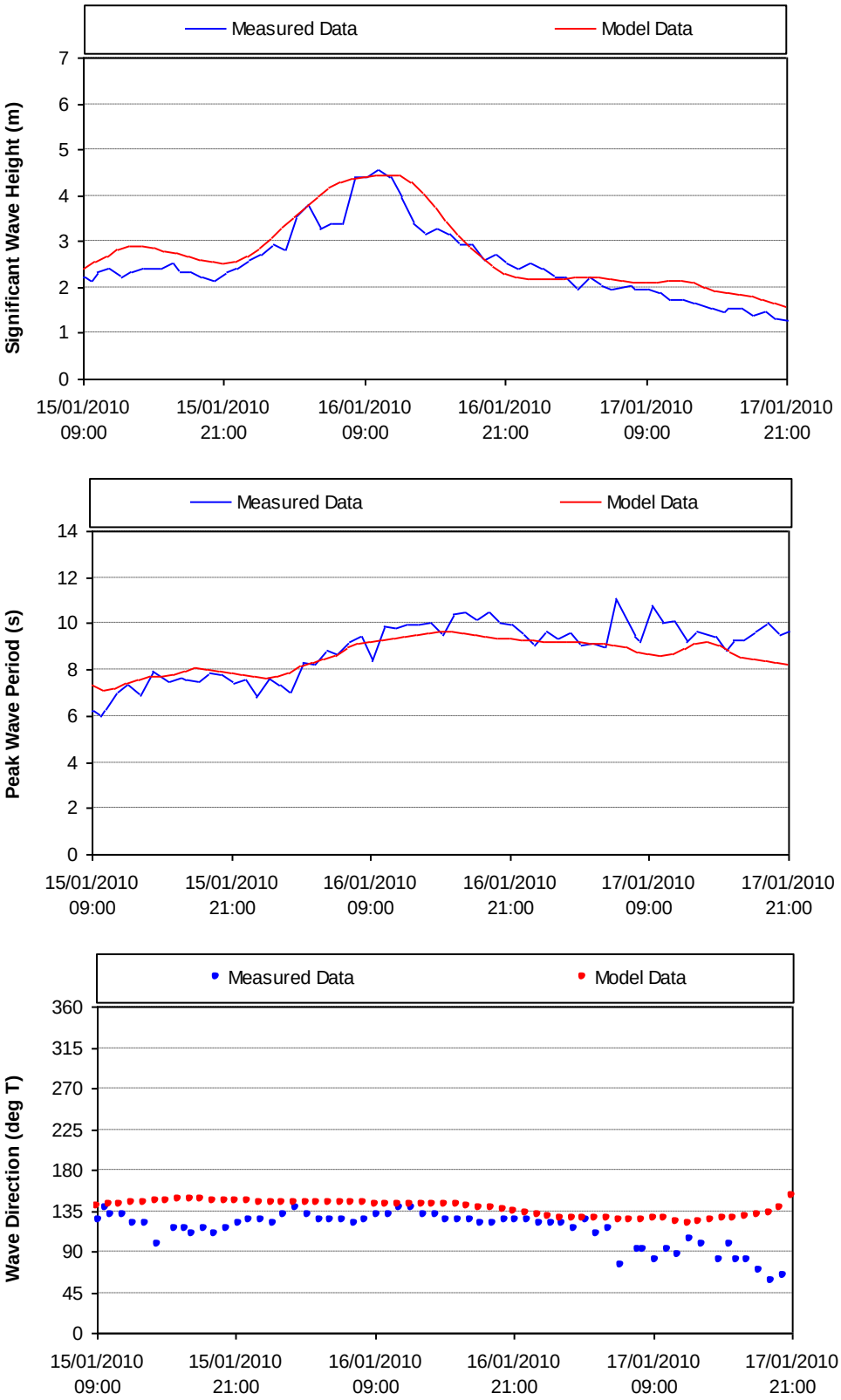


Figure 10A.2.95: Offshore Wind Event – Inch Cape, Waverider Buoy Modelled H_s (m), T_p (s) and Wave Direction (deg T) against Measured Field Data