



Awel y Môr Offshore Wind Farm

Category 6: Environmental Statement

Volume 4, Annex 2.4: Seafloor and Shallow Geological Results (Array) (Part 11)

Date: April 2022

Revision: A

Application Reference: 6.4.2.4.11

Pursuant to: APFP Regulation 5(2)(a)



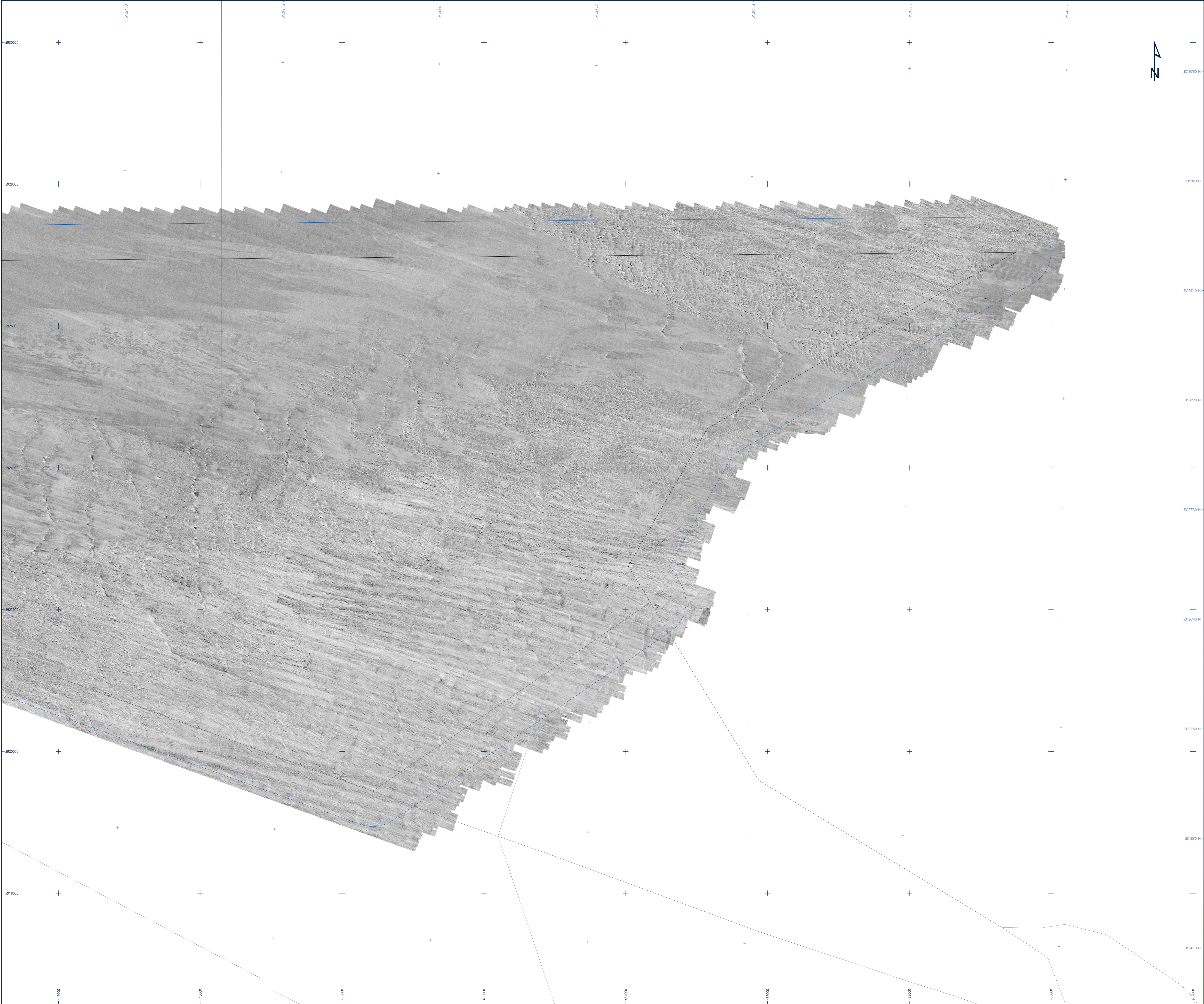
REVISION	DATE	STATUS/ REASON FOR ISSUE	AUTHOR:	CHECKED BY:	APPROVED BY:
A	March 2022	ES	Fugro	RWE	RWE

www.awelymor.cymru

RWE Renewables UK
Swindon Limited

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T +44 (0)8456 720 090
www.rwe.com

Registered office:
RWE Renewables UK
Swindon Limited
Windmill Hill Business Park
Whitehill Way
Swindon



- Legend**
- UTM Grid
 - Geographical Grid
 - Chart Extent
 - Wind Farm Extent
 - Array Survey Extent
 - Export Cable Route Survey Extent

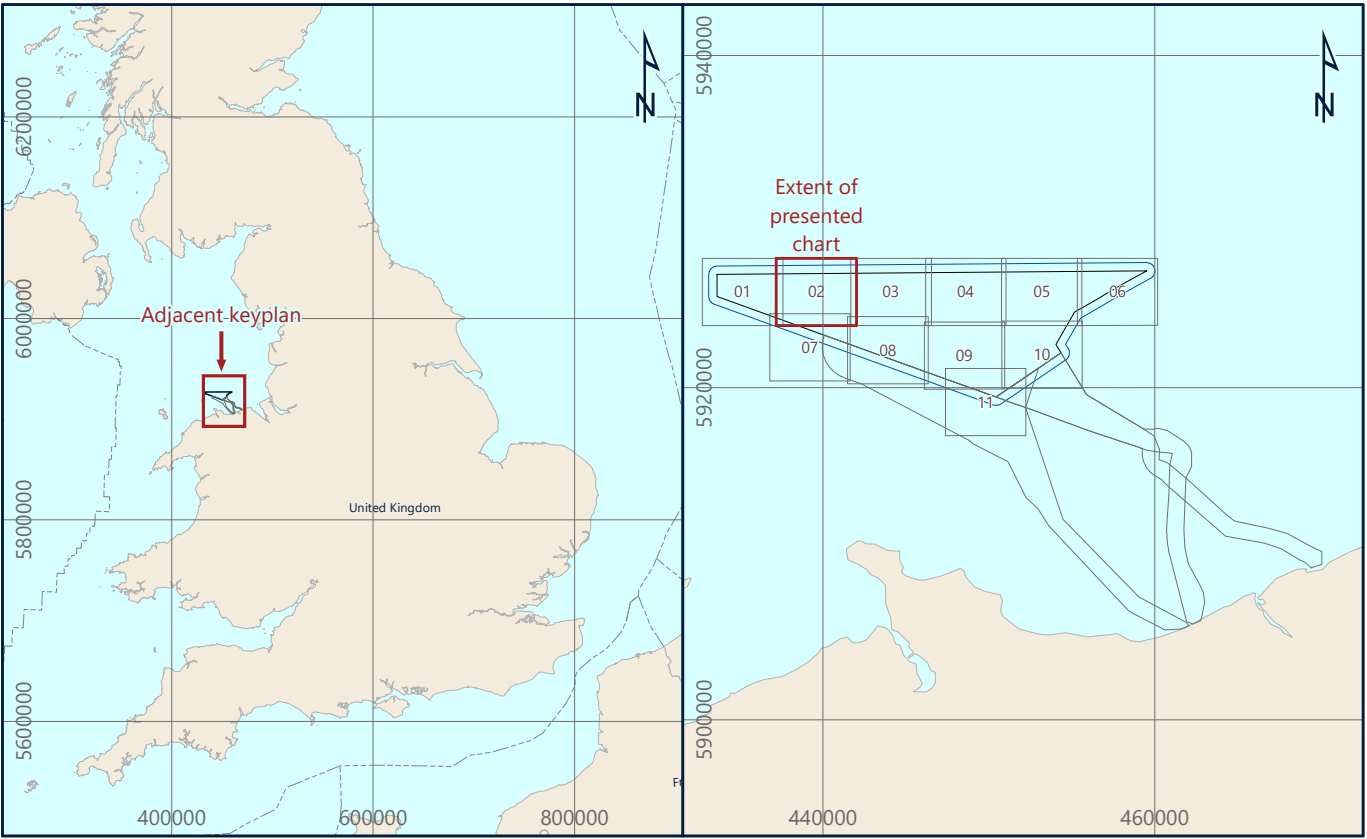
Notes

1) Side scan sonar mosaic created from Edgetech 4205 simultaneous bi-frequency (230 / 540 / 850 kHz), processed with a 0.1 m cell size.

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Geodetic Parameters

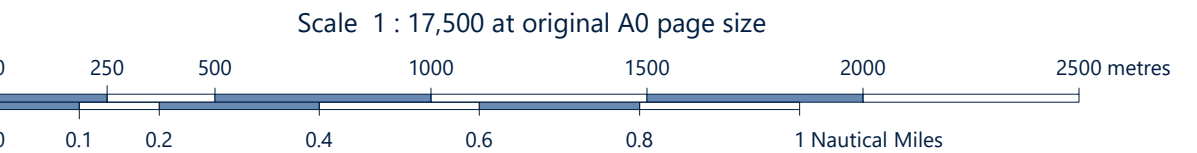
Geodetic datum	World Geodetic System 1984
Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



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Fugro
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Tel: +44 23 9220 3500

SIDE SCAN SONAR MOSAIC OVERVIEW
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

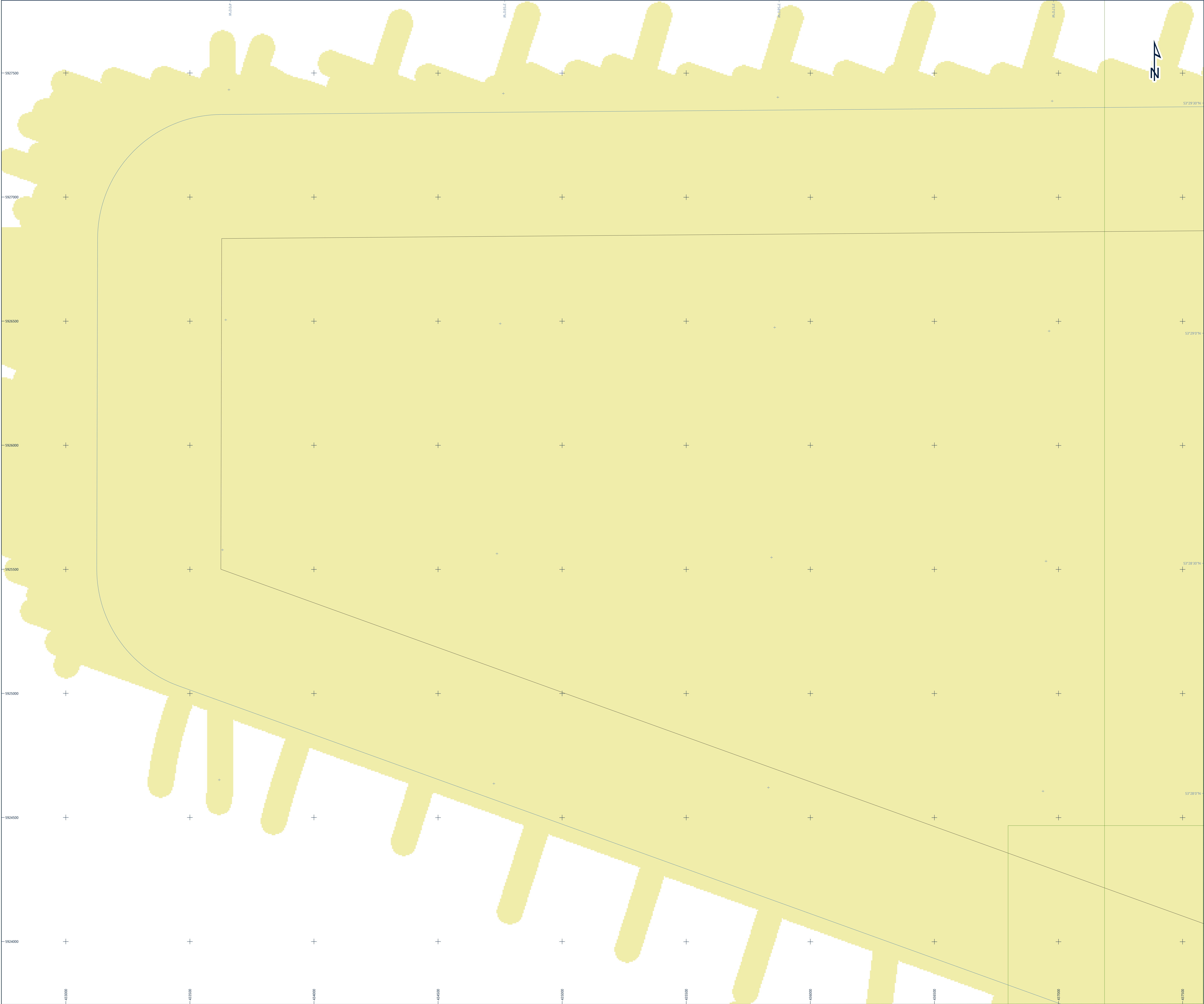


Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	01 December 2020	Final Issue - Revision 1	OOT	DS	SB	BPT
02	04 February 2021	Final Relissue - Revision 2	OOT	DS	SB	BPT
-	-	-	-	-	-	-
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_SideScanSonarMosaic_Overview_02		02 of 02

Appendix G

Charts – R01 Holocene Sediment
Isochore



Legend

- UTM Grid
 - Geographical Grid
 - Chart Extent
 - Windfarm Extent
 - Array Survey Extent
 - Export Cable Route Survey Extent
 - MetMast C Borehole
- R01 Holocene Upper Sediment Isochore Thickness (m)**
- ≤ 2.0
 - 2.1 - 4.0
 - 4.1 - 6.0
 - 6.1 - 8.0
 - > 8.0
- Sediment Isochore at 2 m Interval
- Area of No Interpretation

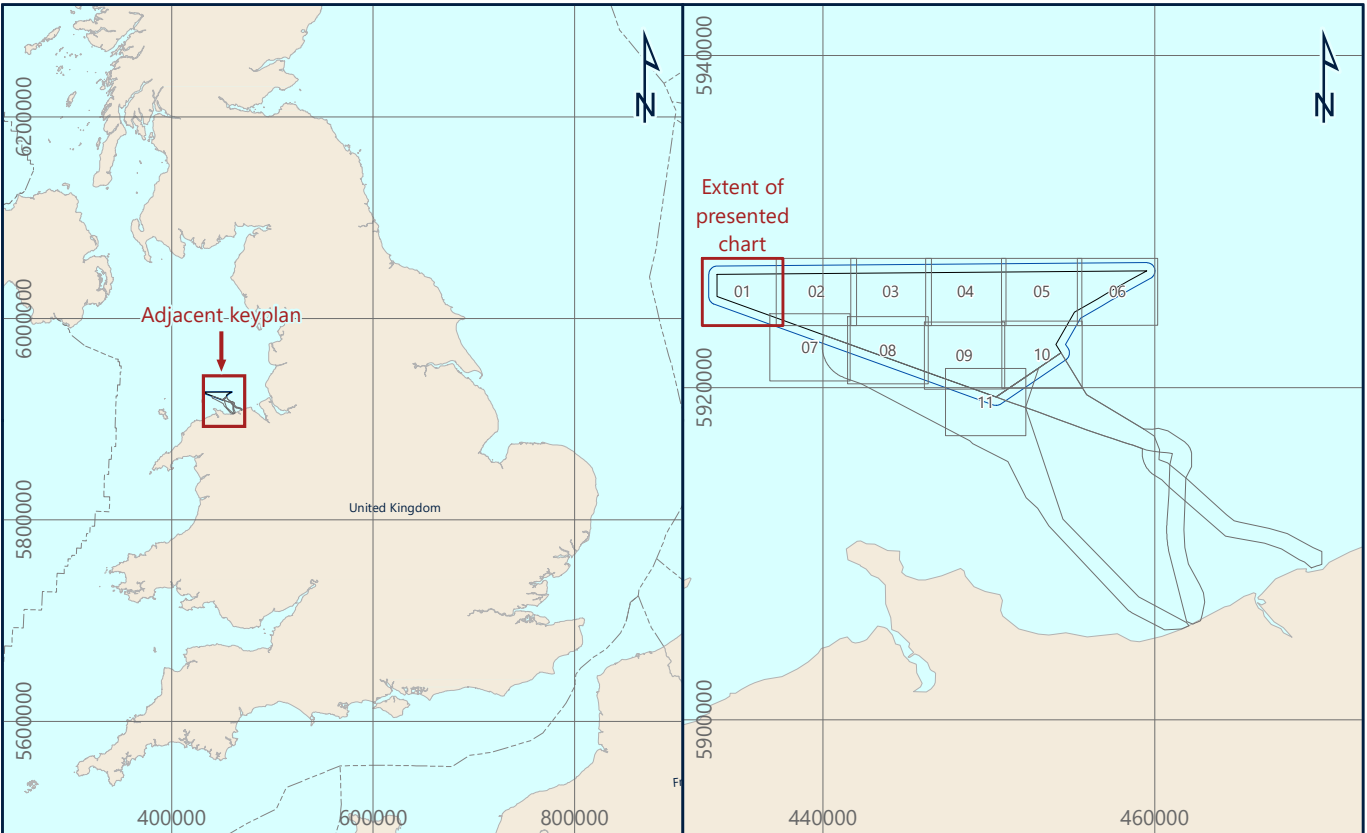
Notes

- 1) Sub-bottom profiler interpretation was conducted using Innonar Medium SES-2000 parametric sub-bottom profiler data.
- 2) Grids have been derived from SBP data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019)
- 3) Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochore have been gridded with a 5 m cell size.

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Geodetic Parameters

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Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
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Fugro

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Tel: +44 23 9220 5500



R01 HOLOCENE UPPER SEDIMENT ISOCHORE AWEL Y MÔR OFFSHORE WIND FARM GEOPHYSICAL SURVEY 2020 UK IRISH SEA

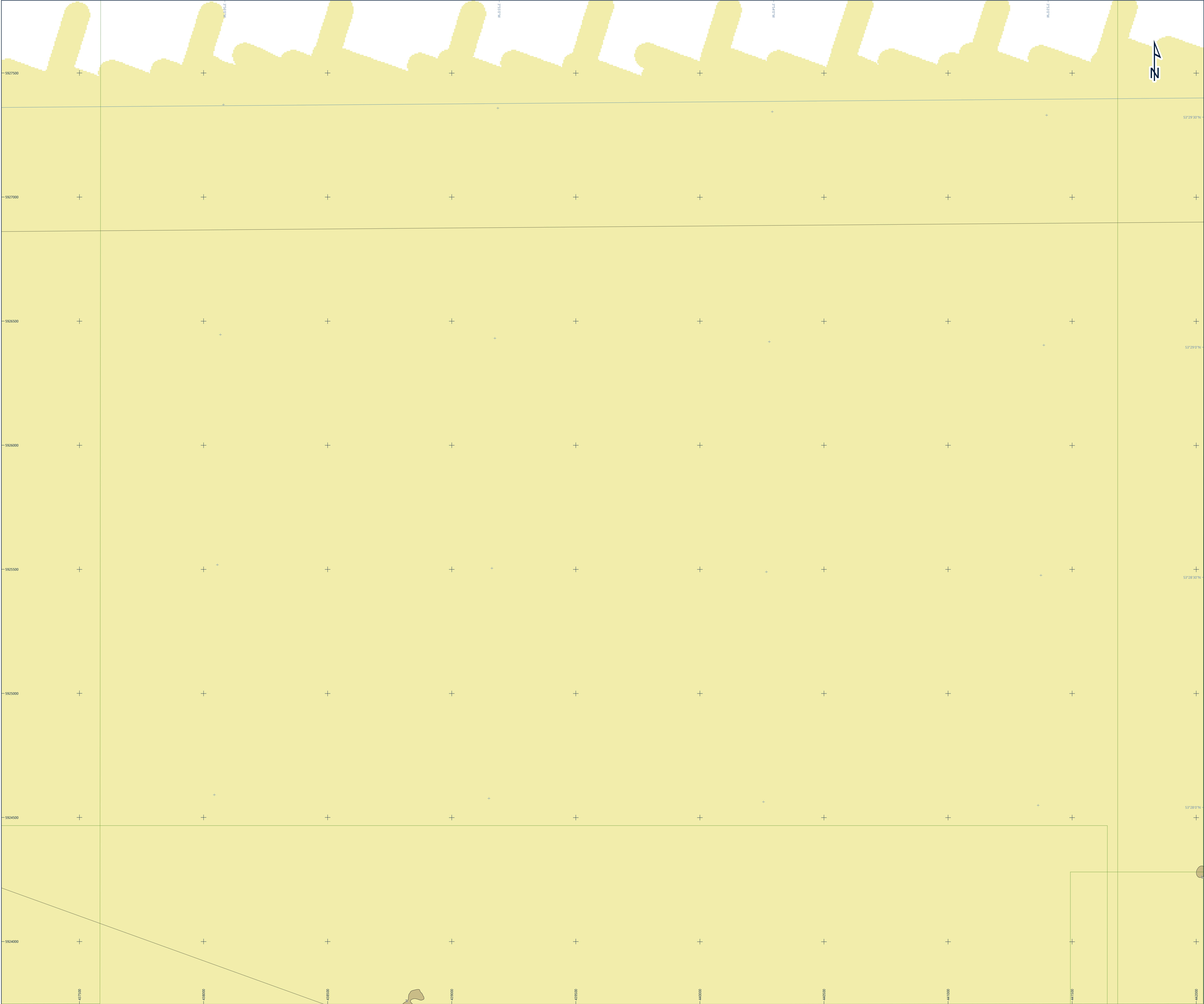
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0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
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-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name	Chart No.	
200655_Array_R01_Holocene_Upper_SedimentIsochore_01	01 of 11	



Legend

- UTM Grid
 - Geographical Grid
 - Chart Extent
 - Windfarm Extent
 - Array Survey Extent
 - Export Cable Route Survey Extent
 - MetMast C Borehole
- R01 Holocene Upper Sediment Isochore Thickness (m)**
- ≤ 2.0
 - 2.1 - 4.0
 - 4.1 - 6.0
 - 6.1 - 8.0
 - > 8.0
- Sediment Isochore at 2 m Interval
- Area of No Interpretation

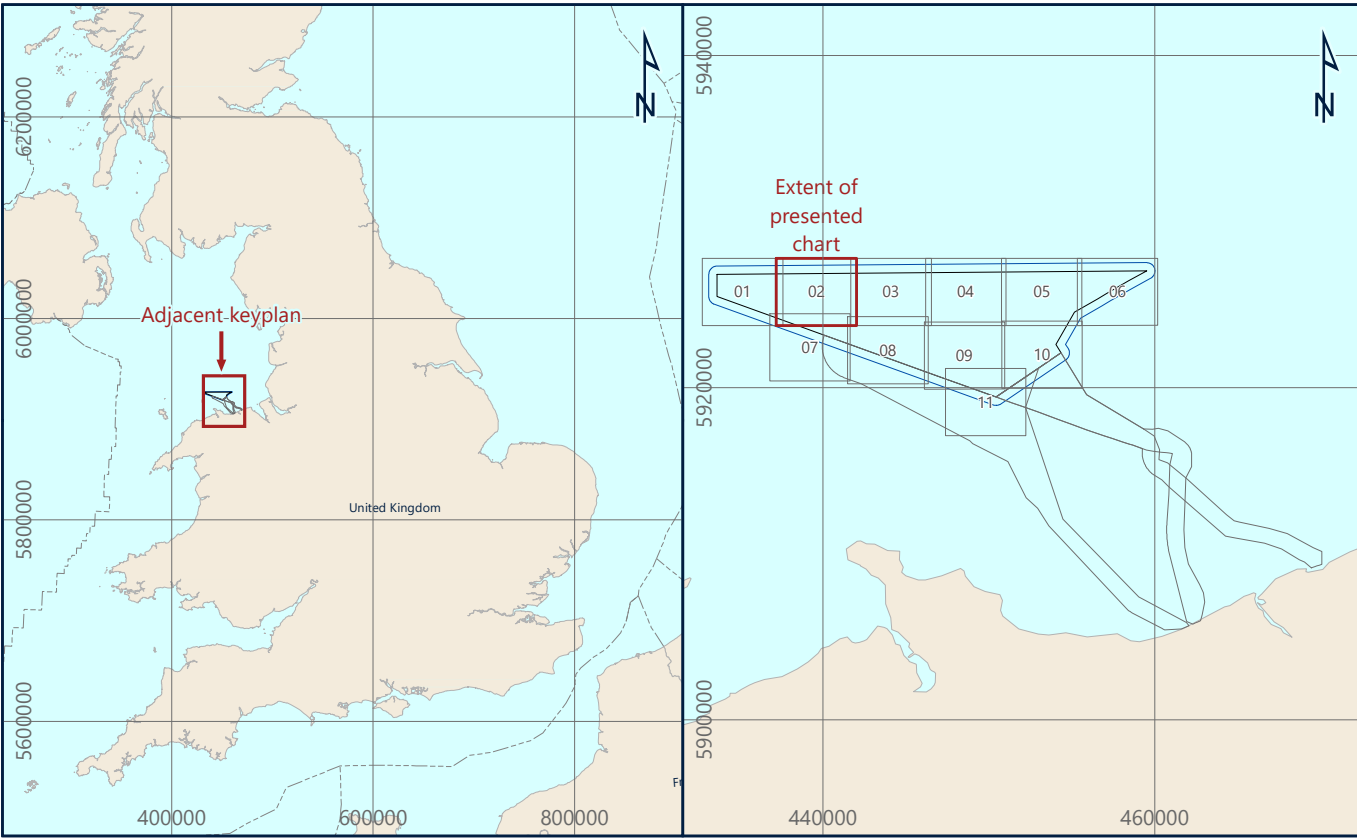
Notes

- 1) Sub-bottom profiler interpretation was conducted using Innomar Medium SES-2000 parametric sub-bottom profiler data.
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- 3) Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochore have been gridded with a 5 m cell size.

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Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



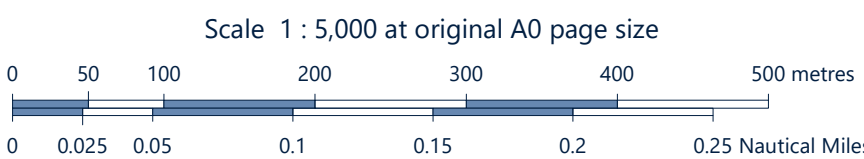
Awel Y Môr Offshore Wind Farm Ltd
Tregaron Way, Wrenford Hill Business Park, Wrenford Way, Swanton, SWS 6PE, United Kingdom

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R01 HOLOCENE UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



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Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655.Array_R01_Holocene_Upper_SedimentIsochore_02		02 of 11



Legend

- UTM Grid
 - Geographical Grid
 - Chart Extent
 - Windfarm Extent
 - Array Survey Extent
 - Export Cable Route Survey Extent
 - MetMast C Borehole
- R01 Holocene Upper Sediment Isochore Thickness (m)**
- ≤ 2.0
 - 2.1 - 4.0
 - 4.1 - 6.0
 - 6.1 - 8.0
 - > 8.0
- Sediment Isochore at 2 m Interval
- Area of No Interpretation

Notes

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Geodetic Parameters

Geodetic datum: World Geodetic System 1984

Ellipsoid: WGS84

Semi-Major Axis: 6,378,137.000 m

Inverse Flattening: 298.257223563

Projection: WGS84 / UTM Zone 30N (EPSG: 32630)

Central Meridian (CM): 03°00'00" W

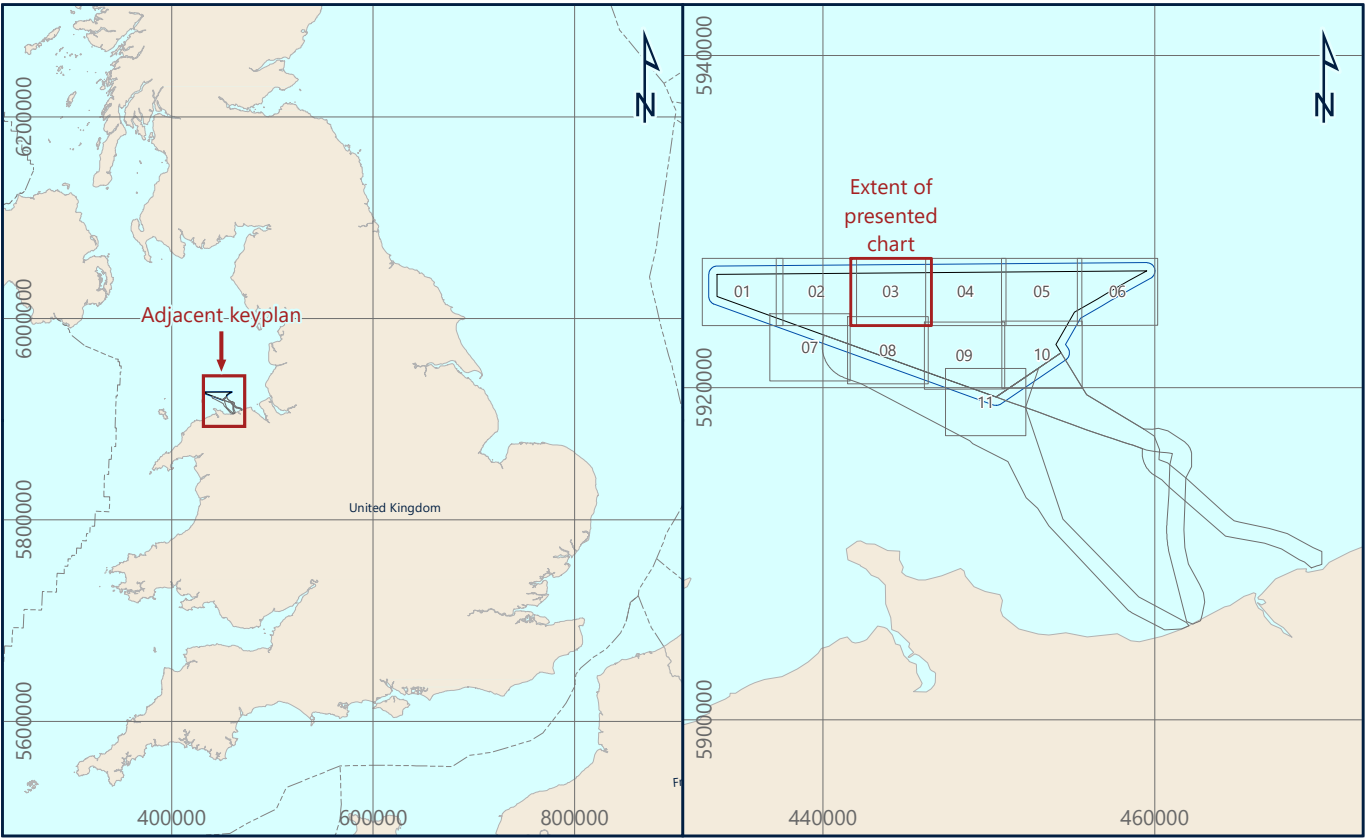
Latitude of Origin: 07°00'00" N

Fake Easting: 500,000 mE

Fake Northing: 0 mN

Scale Factor at CM: 0.9996

Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



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R01 HOLOCENE UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

Scale 1 : 5,000 at original A0 page size

0 50 100 200 300 400 500 metres

0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

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Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R01_Holocene_Upper_SedimentIsochore_03		03 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R01 Holocene Upper Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- ≥ 8.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

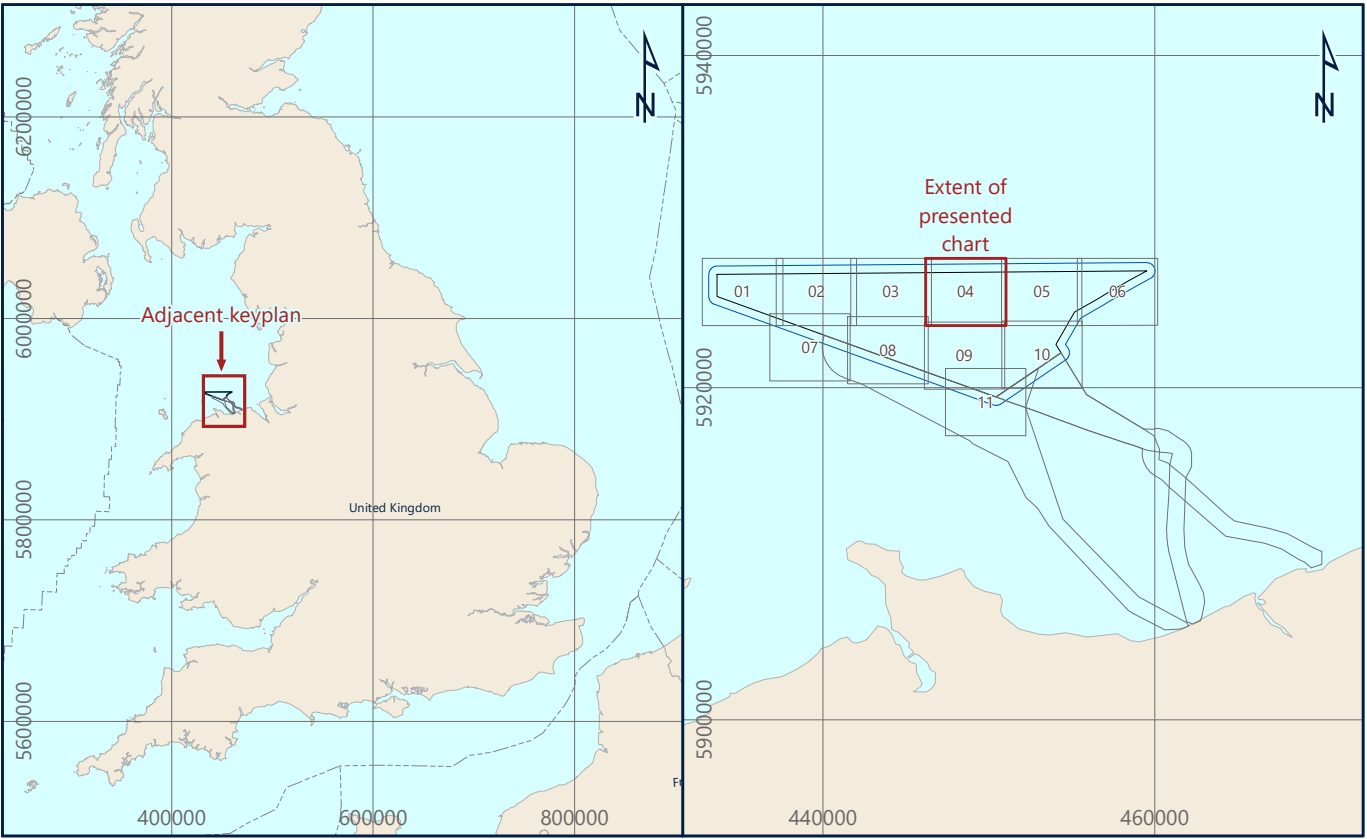
Notes

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Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	00°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
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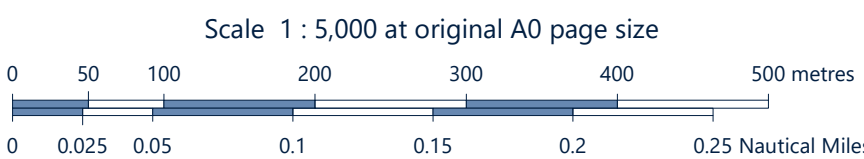
AWEL Y MÔR

Fugro

Victory House, Tregear Wharf Unit 161, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 3500

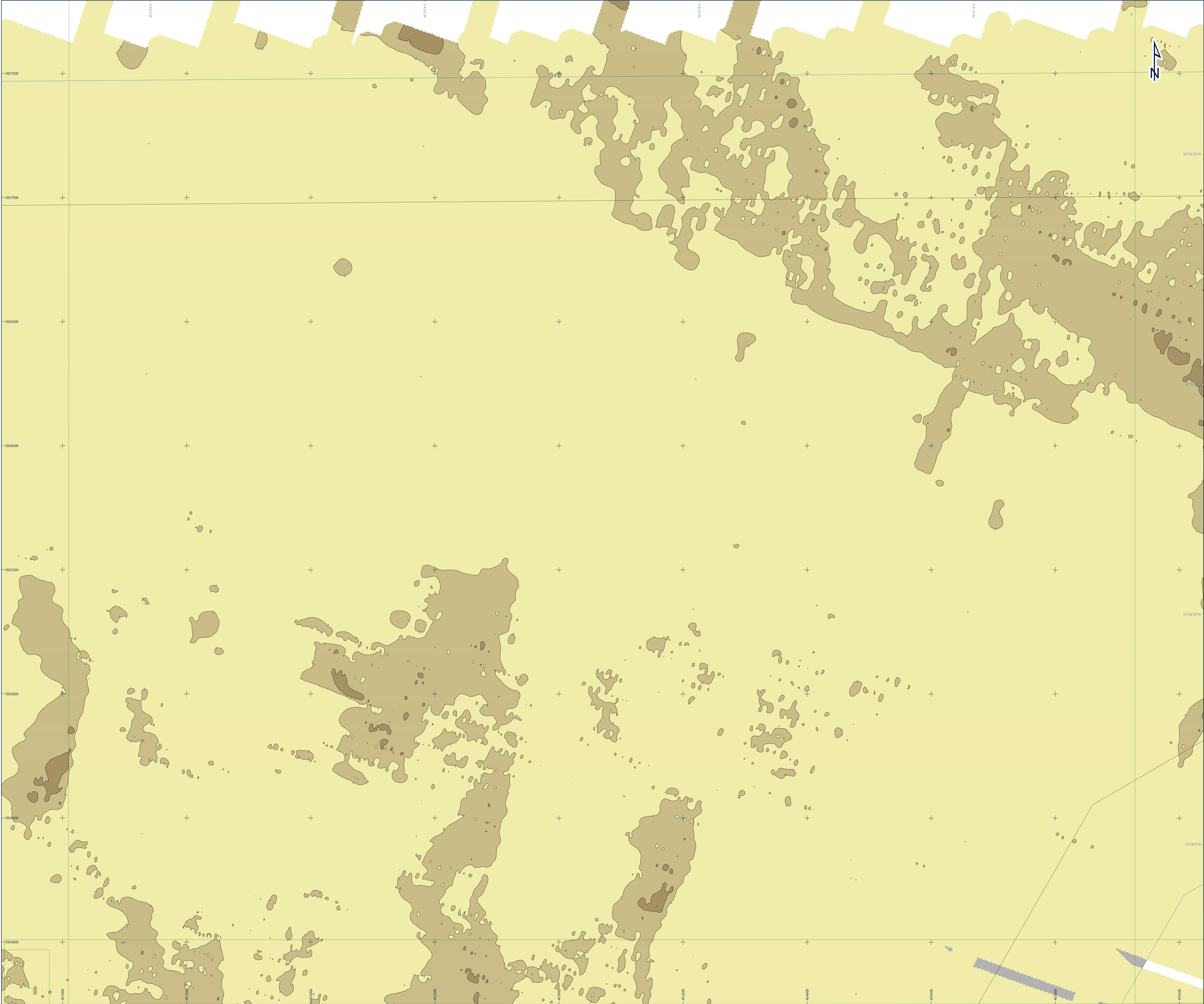


R01 HOLOCENE UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
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03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R01_Holocene_Upper_SedimentIsochore_04		04 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R01 Holocene Upper Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- ≥ 8.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

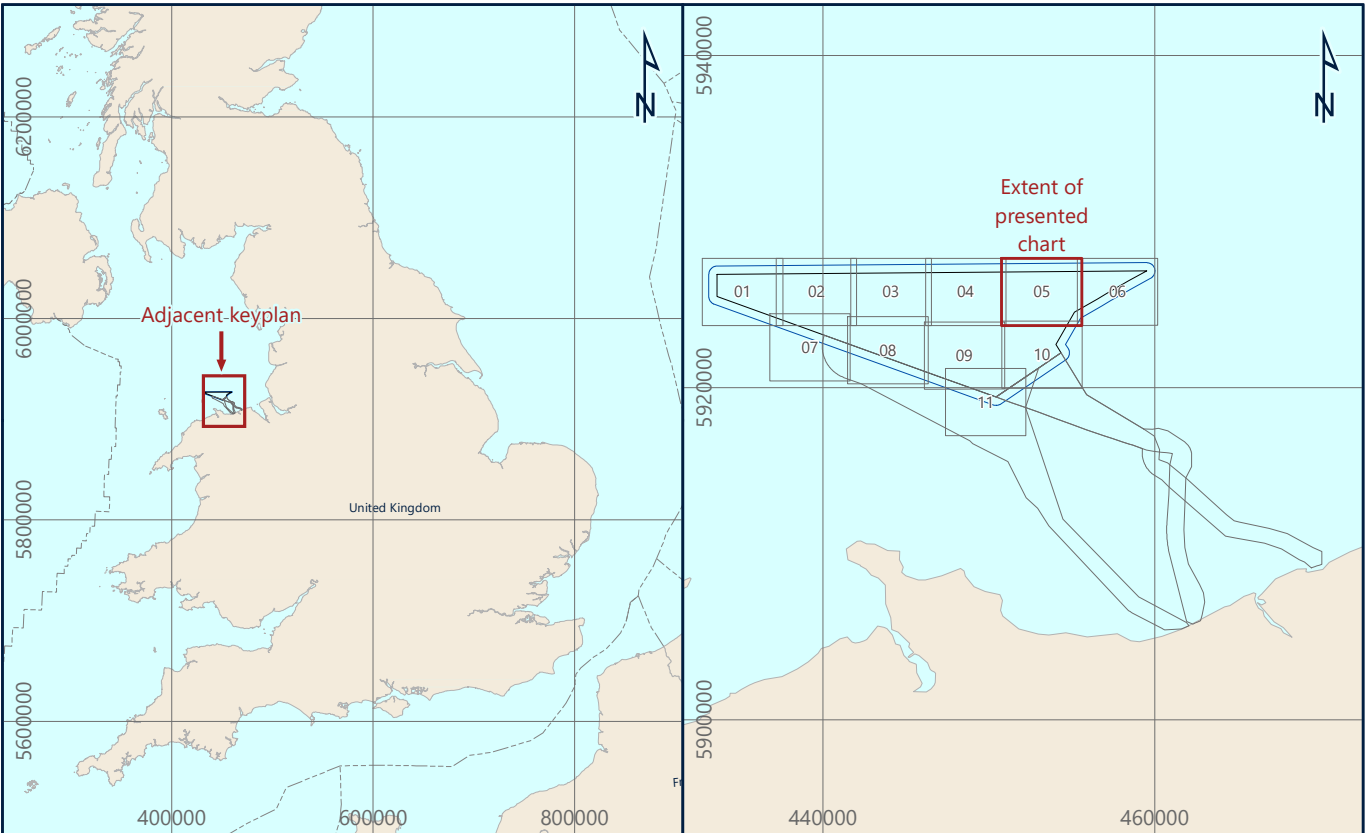
Notes

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Geodetic Parameters

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Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tigorous Way, Waindell Hill Business Park, Waindell Way, Swanton, SWS 6PE, United Kingdom

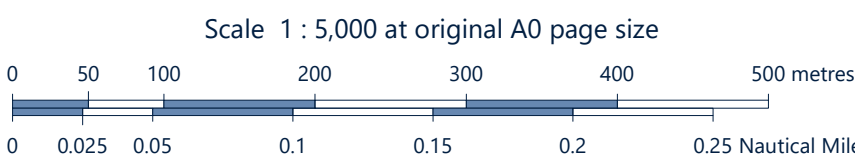
AWEL Y MÔR

Fugro

Victory House, Trellicker Wharf Unit 161, Hamilton Road, Portsmouth PO6 4PX
Tel: +44 23 9220 5500

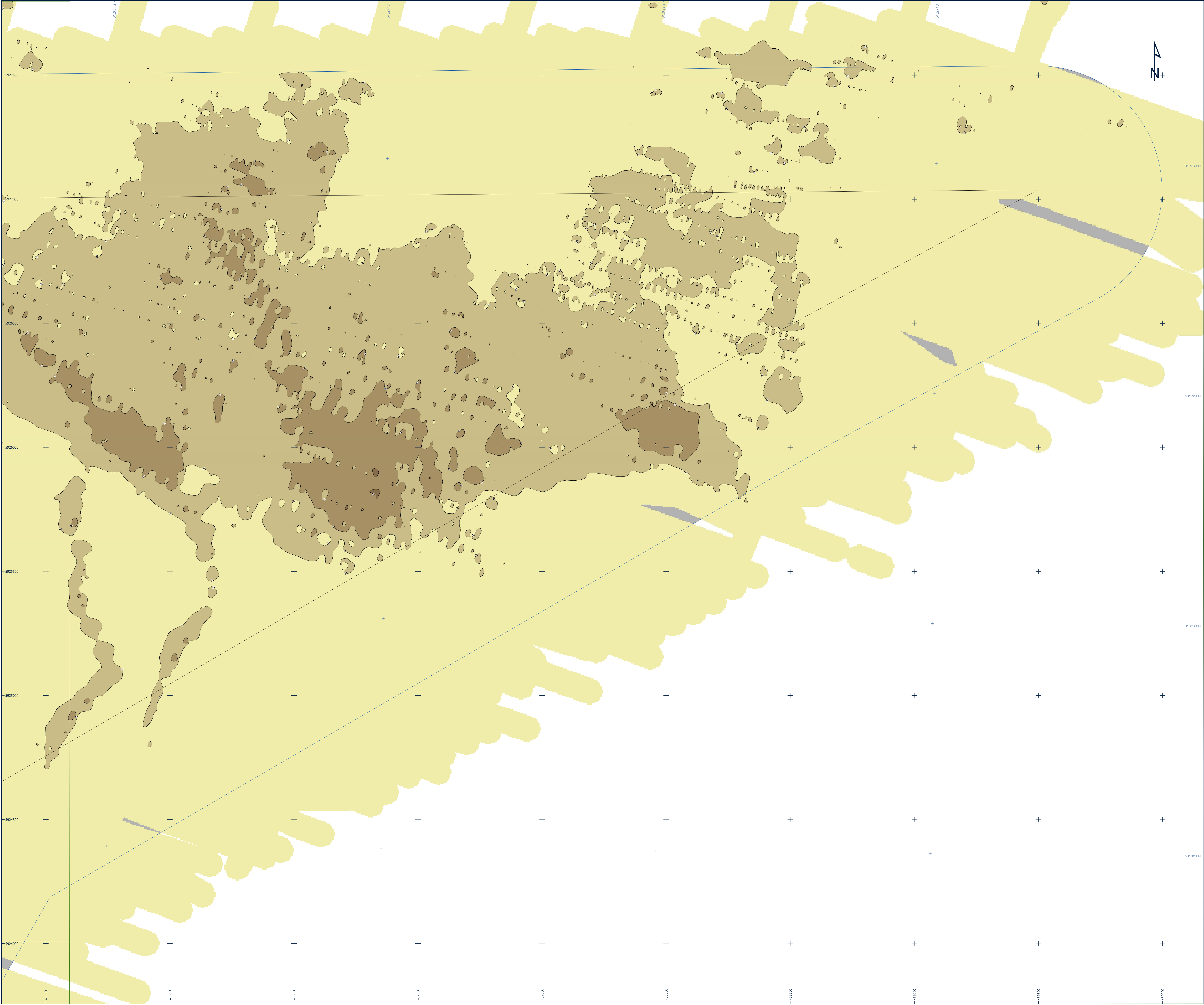


R01 HOLOCENE UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



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Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655.Array_R01.Holocene_Upper.SedimentIsochore_05		05 of 11



Legend

- UTM Grid
 - Geographical Grid
 - Chart Extent
 - Windfarm Extent
 - Array Survey Extent
 - Export Cable Route Survey Extent
 - MetMast C Borehole
- R01 Holocene Upper Sediment Isochore Thickness (m)**
- ≤ 2.0
 - 2.1 - 4.0
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- Sediment Isochore at 2 m Interval
- Area of No Interpretation

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Semi-Major Axis: 6,378,137.000 m

Inverse Flattening: 298.257223563

Projection: WGS84 / UTM Zone 30N (EPSG: 32630)

Central Meridian (CM): 03°00'00" W

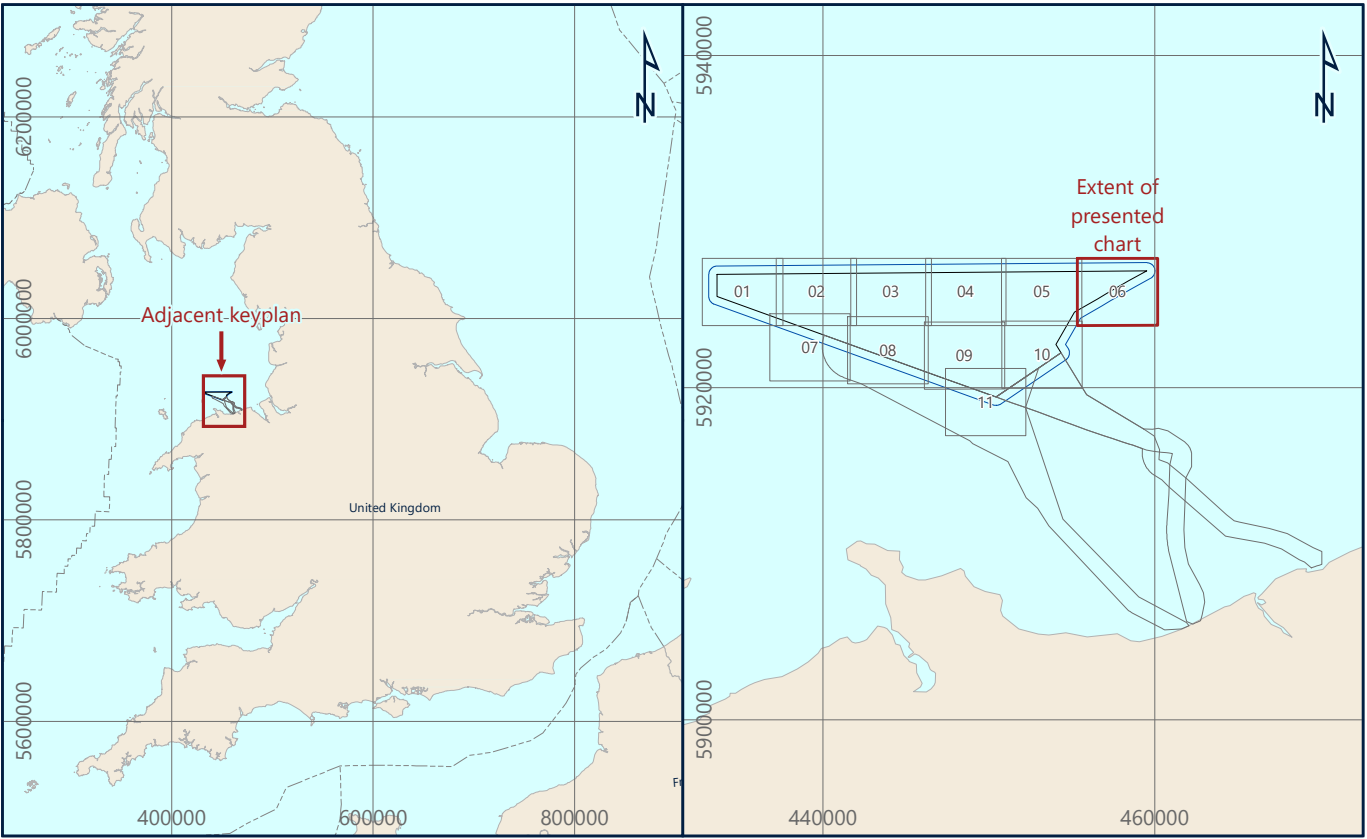
Latitude of Origin: 07°00'00" N

Fake Easting: 500,000 mE

Fake Northing: 0 mN

Scale Factor at CM: 0.9996

Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tighefnau Blyg, Werneddi Hill Business Park, Werneddi Wap, Swanton, SWS GPE, Llanelli, Gwent, NP23 5YD, Wales, UK

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FUGRO

R01 HOLOCENE UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

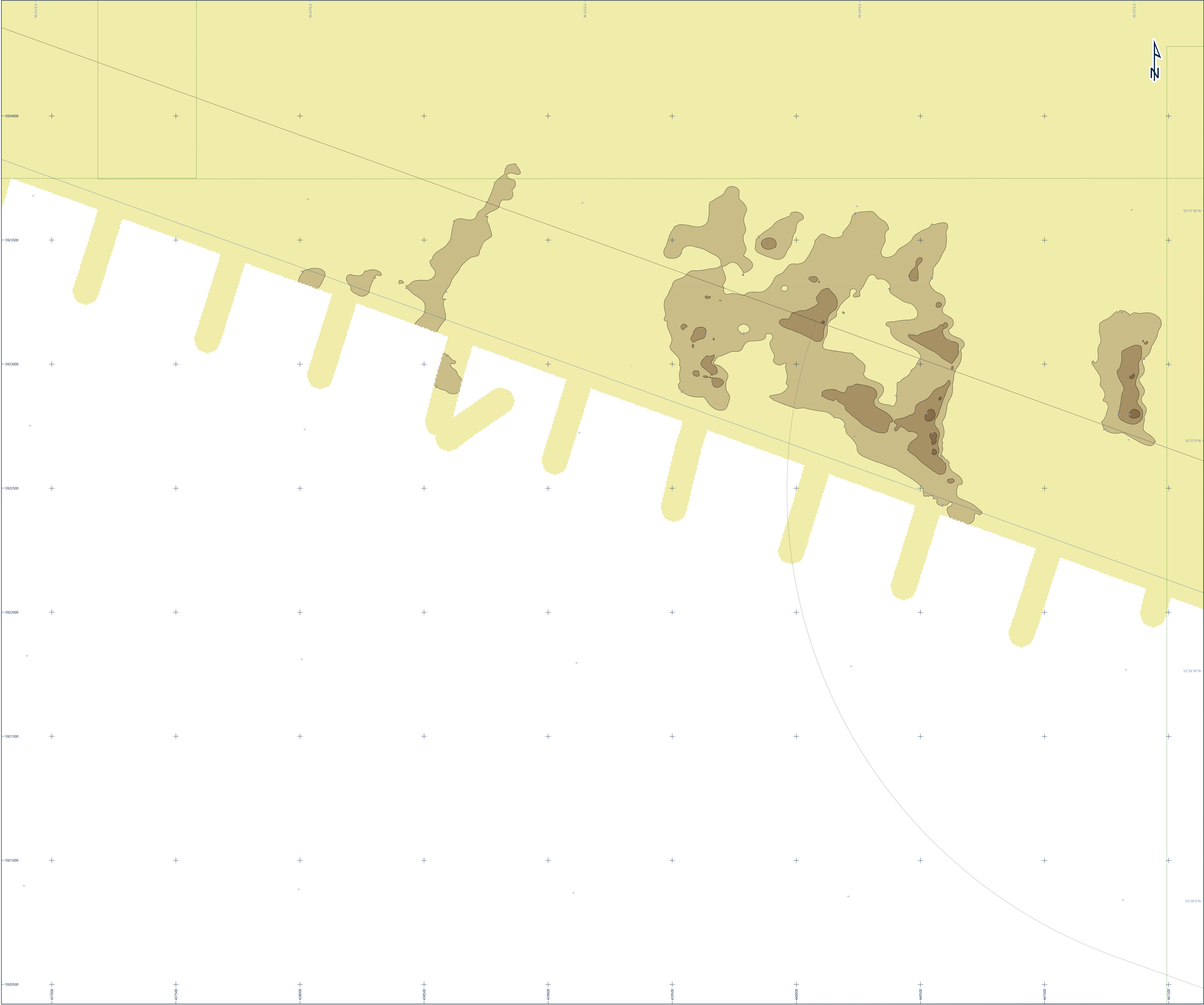
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Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655.Array_R01_Holocene_Upper_SedimentIsochore_06		06 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
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- MetMast C Borehole

R01 Holocene Upper Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- ≥ 8.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

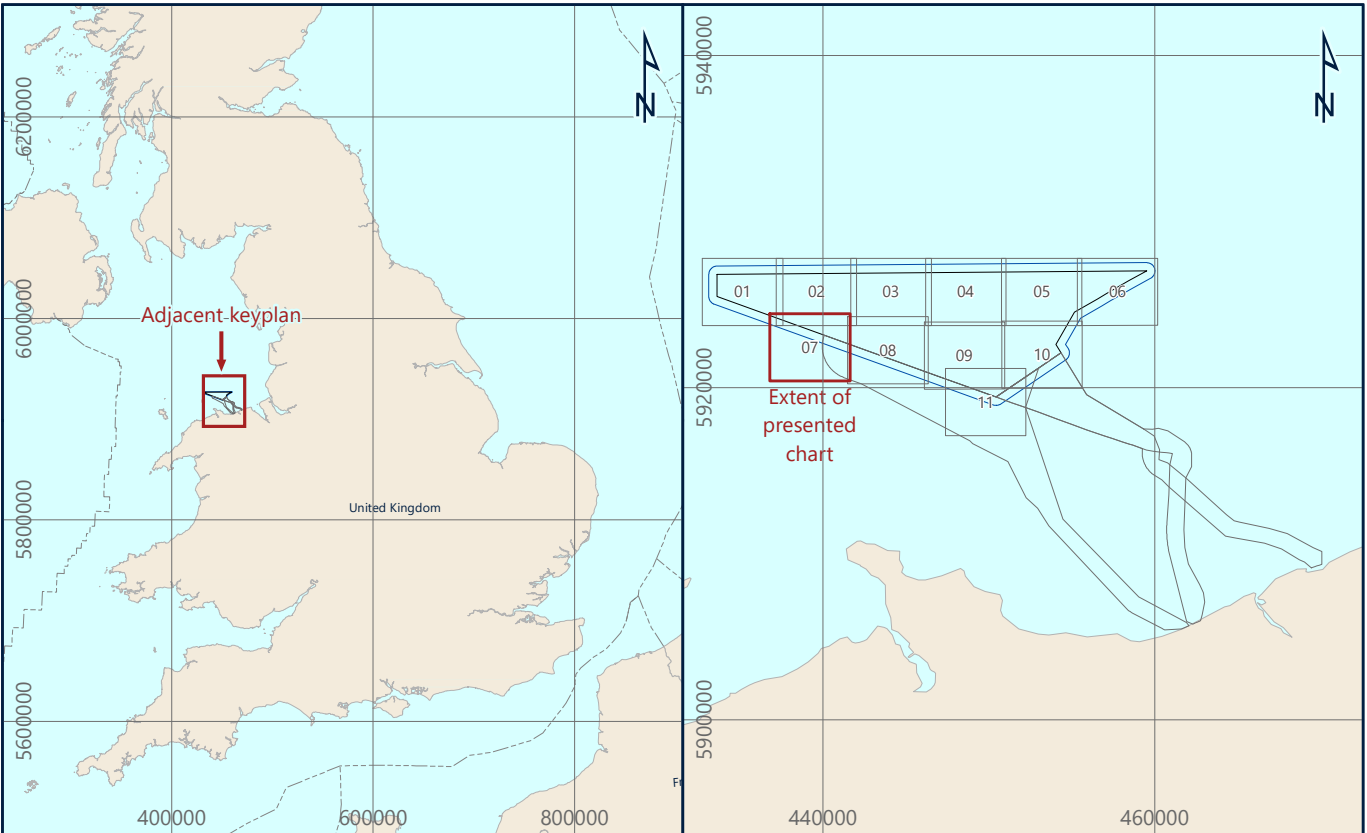
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Awel Y Môr Offshore Wind Farm Ltd
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Tel: +44 23 9220 5500

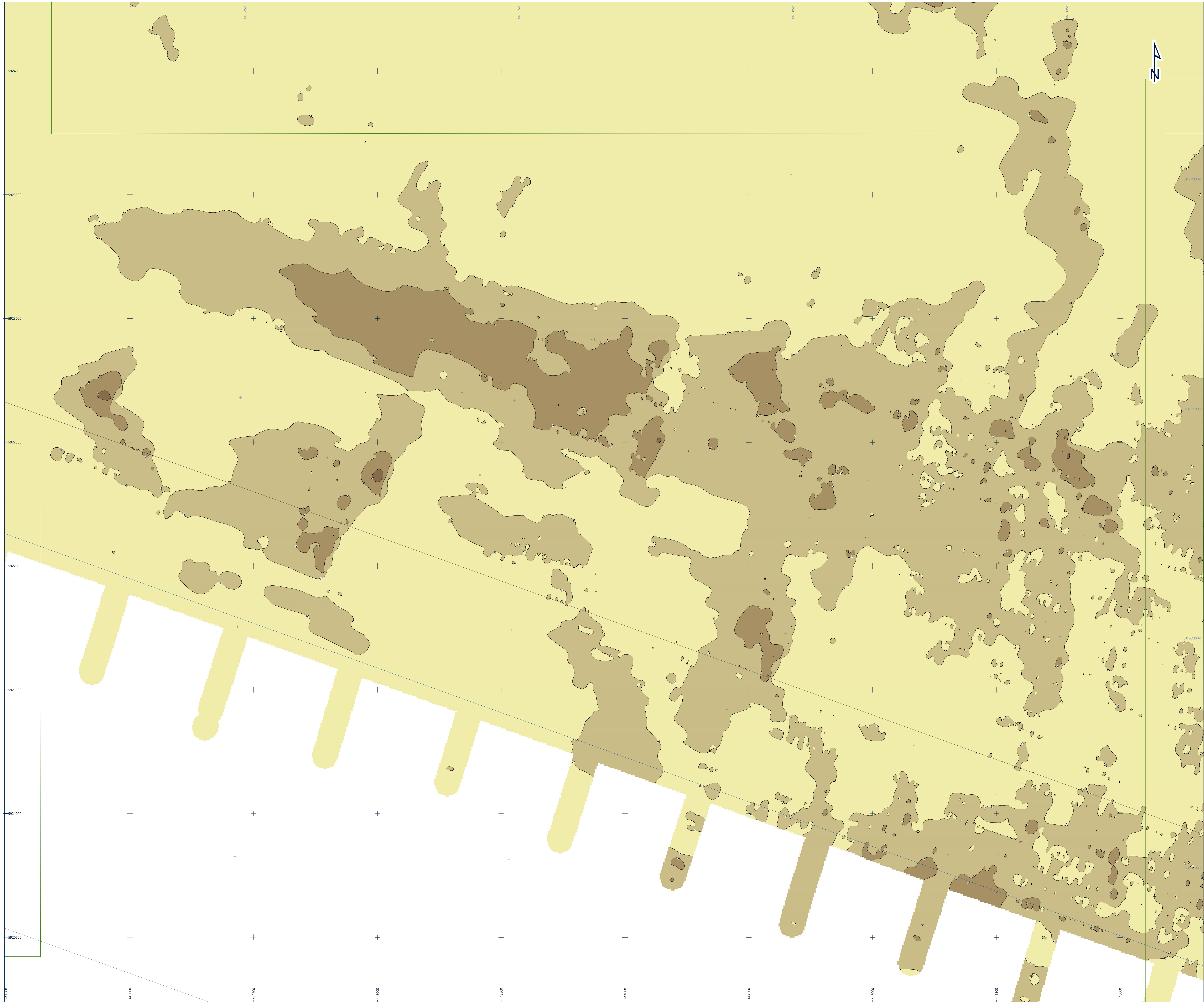


R01 HOLOCENE UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

Scale 1 : 5,000 at original A0 page size
0 50 100 200 300 400 500 metres
0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

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02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
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-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name	Chart No.	
200655.Array_R01_Holocene_Upper_SedimentIsochore_07	07 of 11	



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R01 Holocene Upper Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- > 8.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

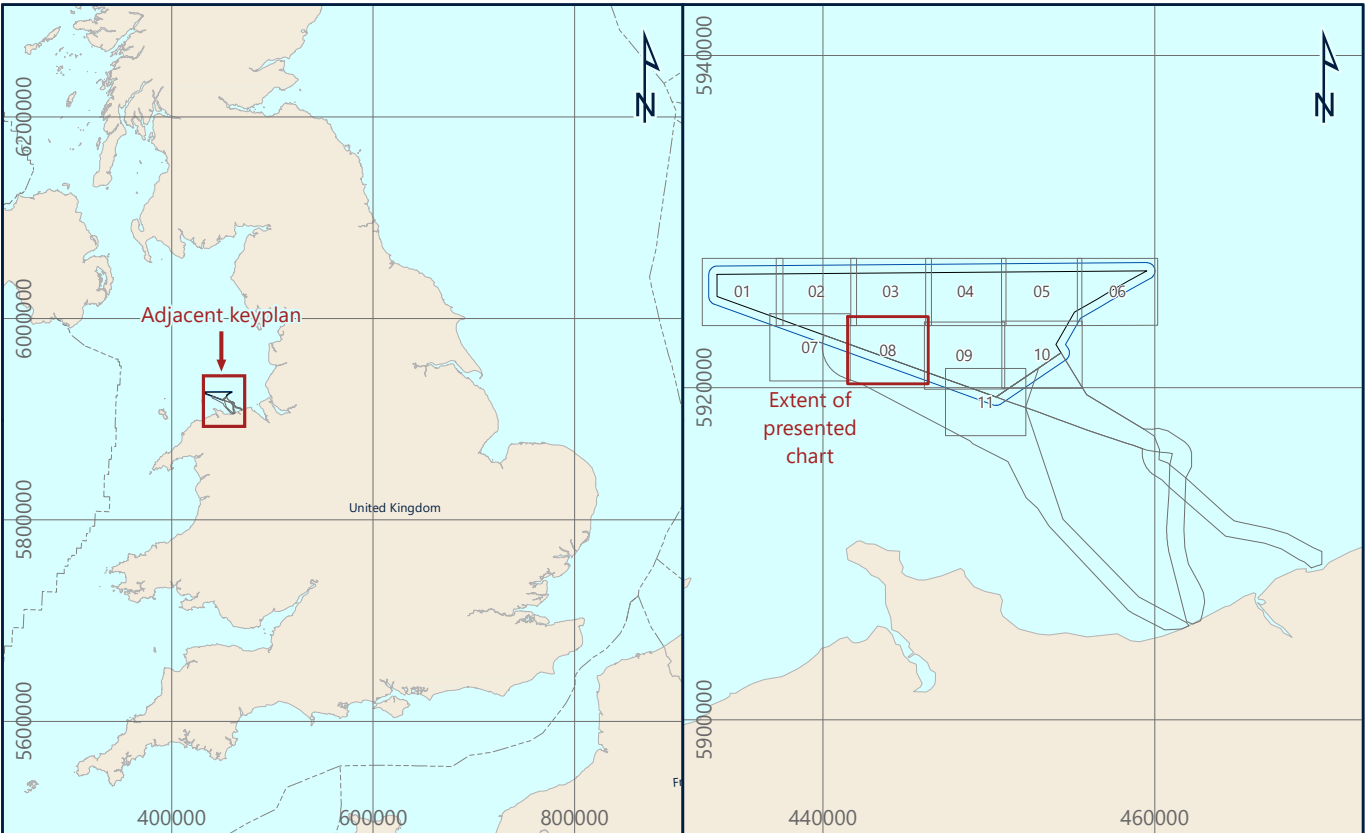
Notes

- 1) Sub-bottom profiler interpretation was conducted using Innomar Medium 555-2000 parametric sub-bottom profiler data.
- 2) Grids have been derived from SBP data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019).
- 3) Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochores have been gridded with a 5 m cell size.

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Geodetic Parameters

Geodetic datum: World Geodetic System 1984
Ellipsoid: WGS84
Semi-Major Axis: 6,378,137.000 m
Inverse Flattening: 298.257222563
Projection: WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM): 07°00'00" W
Latitude of Origin: 07°00'00" N
False Easting: 500,000 mE
False Northing: 0 mN
Scale Factor at CM: 0.9996
Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregaron Bldg, Wernall Hill Business Park, Wernall Way, Swanton, SWS 6PE, United Kingdom

AWEL Y MÔR

Fugro

Victory House, Treglar Wharf Unit 161, Hamilton Road, Porchester PO6 4PX
Tel: +44 23 9220 5500

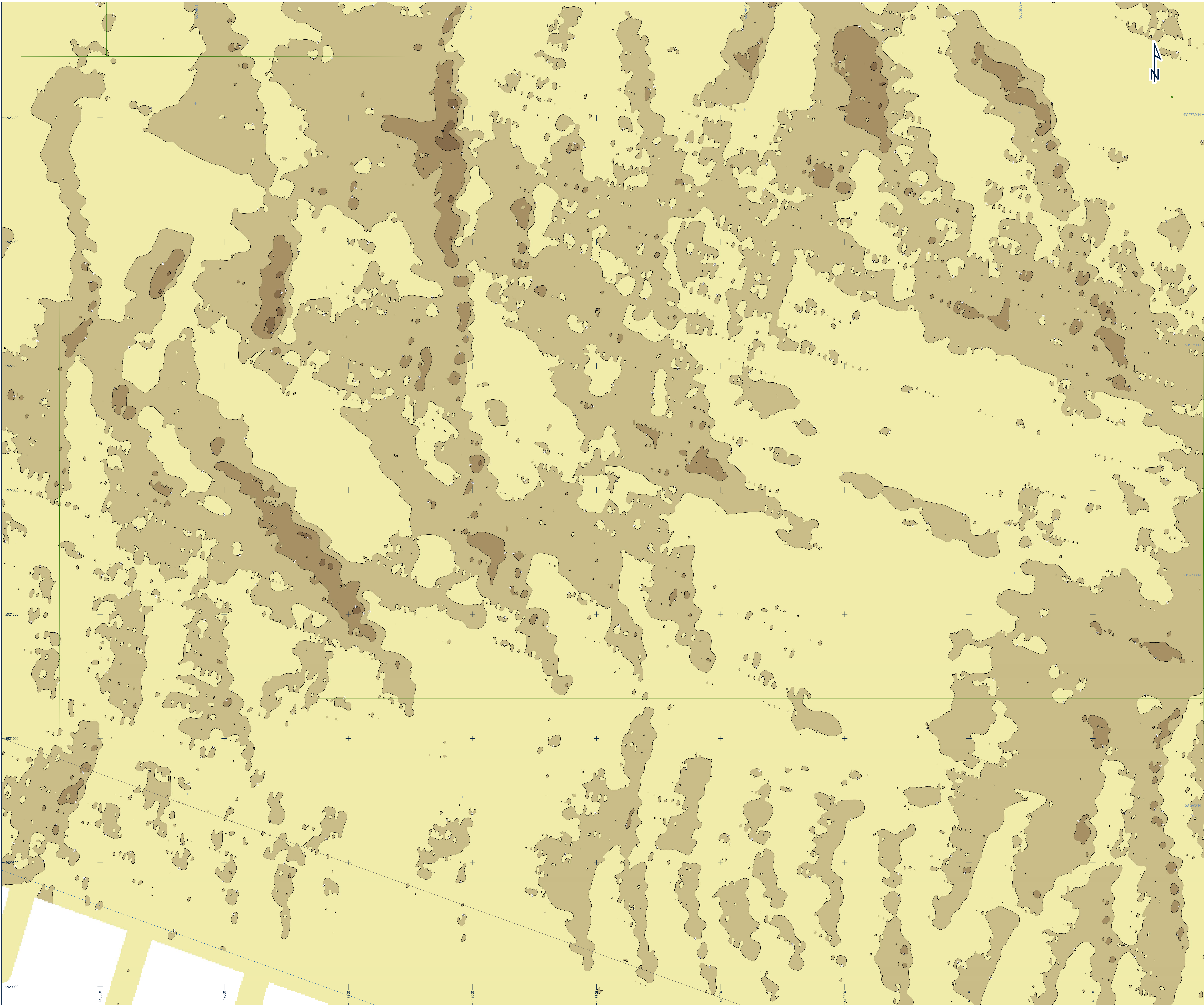


R01 HOLOCENE UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

Scale 1 : 5,000 at original A0 page size
0 50 100 200 300 400 500 metres
0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R01_Holocene_Upper_SedimentIsochore_08		08 of 11



Legend

- UTM Grid
 - Geographical Grid
 - Chart Extent
 - Windfarm Extent
 - Array Survey Extent
 - Export Cable Route Survey Extent
 - MetMast C Borehole
- R01 Holocene Upper Sediment Isochore Thickness (m)**
- ≤ 2.0
 - 2.1 - 4.0
 - 4.1 - 6.0
 - 6.1 - 8.0
 - > 8.0
- Sediment Isochore at 2 m Interval
- Area of No Interpretation

Notes

- 1) Sub-bottom profiler interpretation was conducted using Innonar Medium SES-2000 parametric sub-bottom profiler data.
- 2) Grids have been derived from SBP data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019).
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Geodetic Parameters

Geodetic datum: World Geodetic System 1984

Ellipsoid: WGS84

Semi-Major Axis: 6,378,137.000 m

Inverse Flattening: 298.257223563

Projection: WGS84 / UTM Zone 30N (EPSG: 32630)

Central Meridian (CM): 03°00'00" W

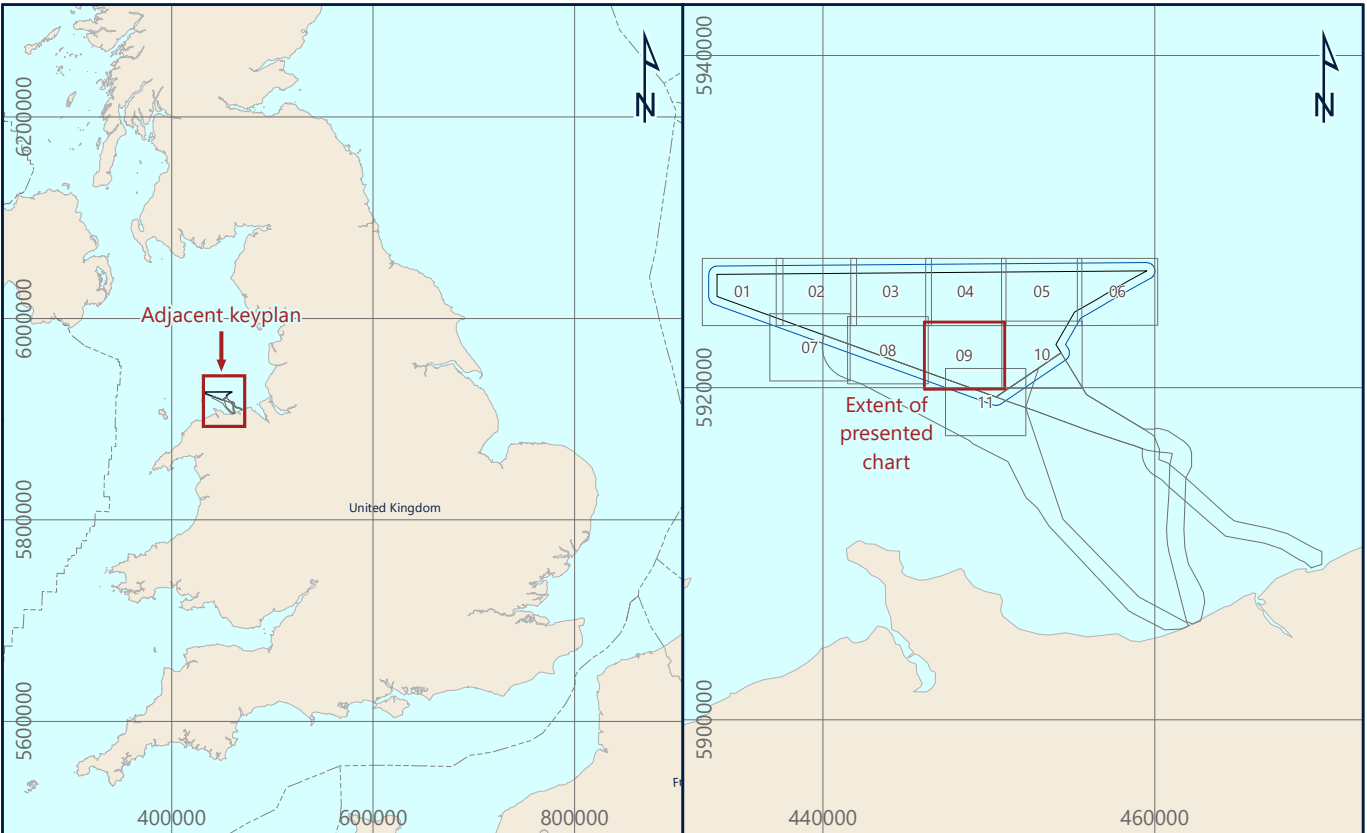
Latitude of Origin: 07°00'00" N

Fake Easting: 500,000 mE

Fake Northing: 0 mN

Scale Factor at CM: 0.9996

Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tigwrys Bldg, Wernall Hill Business Park, Wernall Way, Swanton, SWS 9PE, United Kingdom

AWEL Y MÔR

Fugro

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Tel: +44 23 9228 3500

fugro

R01 HOLOCENE UPPER SEDIMENT ISOCHORE AWEL Y MÔR OFFSHORE WIND FARM GEOPHYSICAL SURVEY 2020 UK IRISH SEA

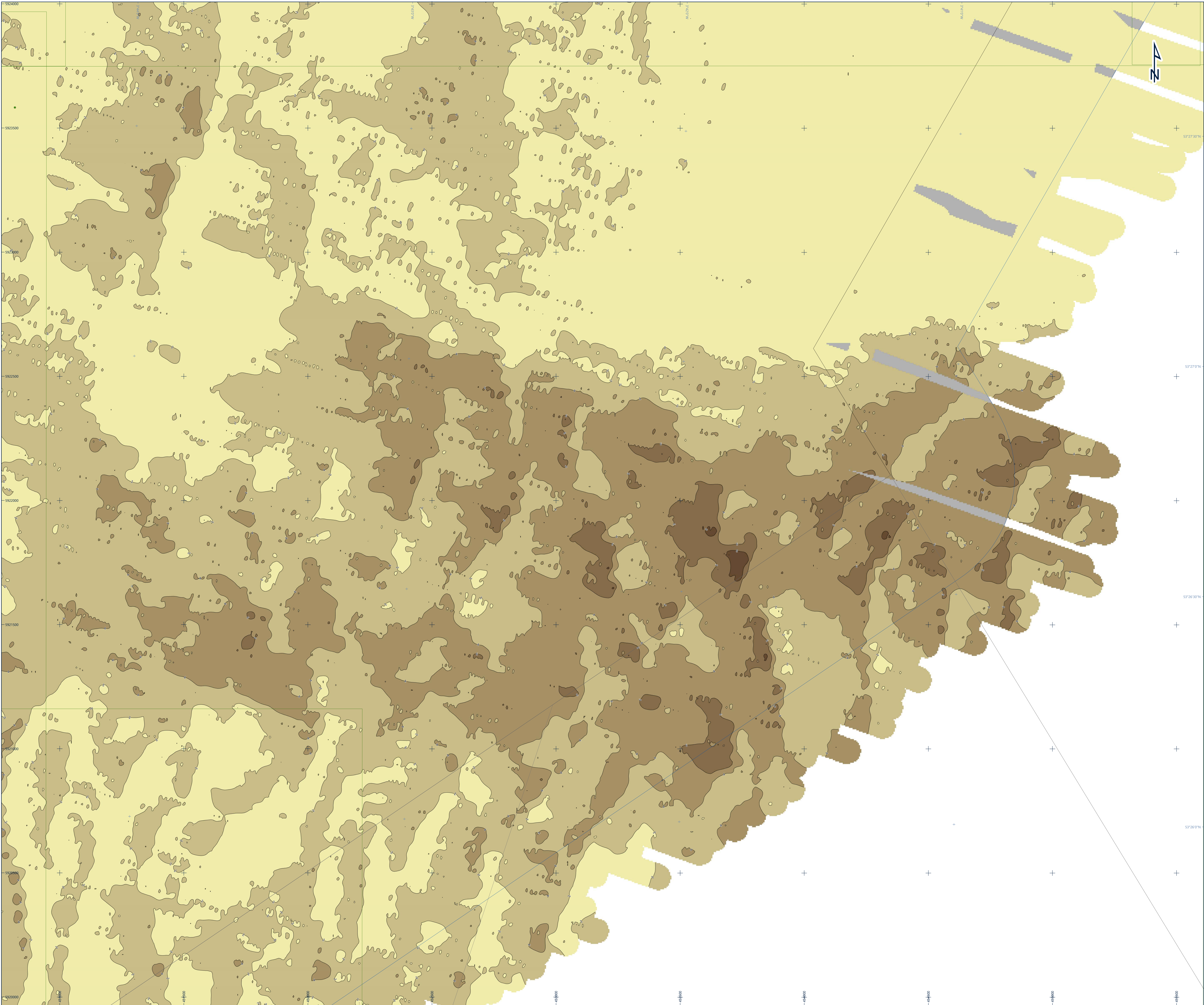
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0 50 100 200 300 400 500 metres

0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
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03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R01_Holocene_Upper_SedimentIsochore_09		09 of 11



Legend

- UTM Grid
 - Geographical Grid
 - Chart Extent
 - Windfarm Extent
 - Array Survey Extent
 - Export Cable Route Survey Extent
 - MetMast C Borehole
- R01 Holocene Upper Sediment Isochore Thickness (m)**
- ≤ 2.0
 - 2.1 - 4.0
 - 4.1 - 6.0
 - 6.1 - 8.0
 - > 8.0
- Sediment Isochore at 2 m Interval
- Area of No Interpretation

Notes

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Geodetic Parameters

Geodetic datum: World Geodetic System 1984

Ellipsoid: WGS84

Semi-Major Axis: 6,378,137.000 m

Inverse Flattening: 298.257223563

Projection: WGS84 / UTM Zone 30N (EPSG: 32630)

Central Meridian (CM): 03°00'00" W

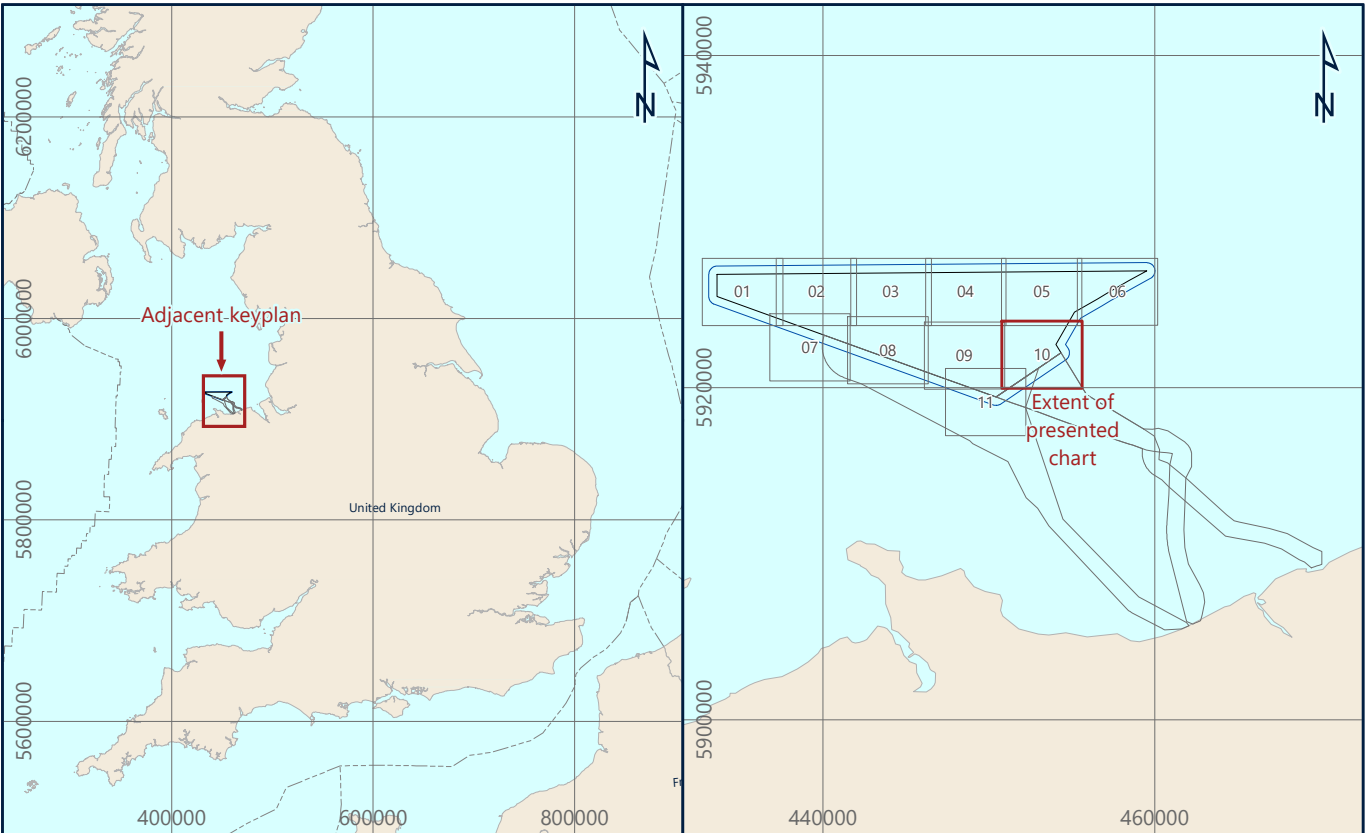
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Fake Easting: 500,000 mE

Fake Northing: 0 mN

Scale factor at CM: 0.9996

Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tigwrys Bwg, Wernall Hill Business Park, Wernall Way, Swanton, SWS 6PG, United Kingdom

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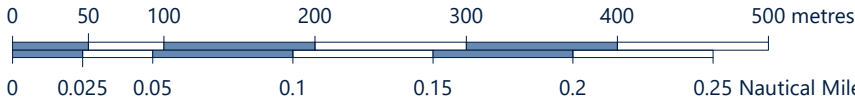
Fugro

Victory House, Trellicker Wharf Unit 161, Hamilton Road, Portsmouth PO6 4PX
Tel: +44 23 9220 3500



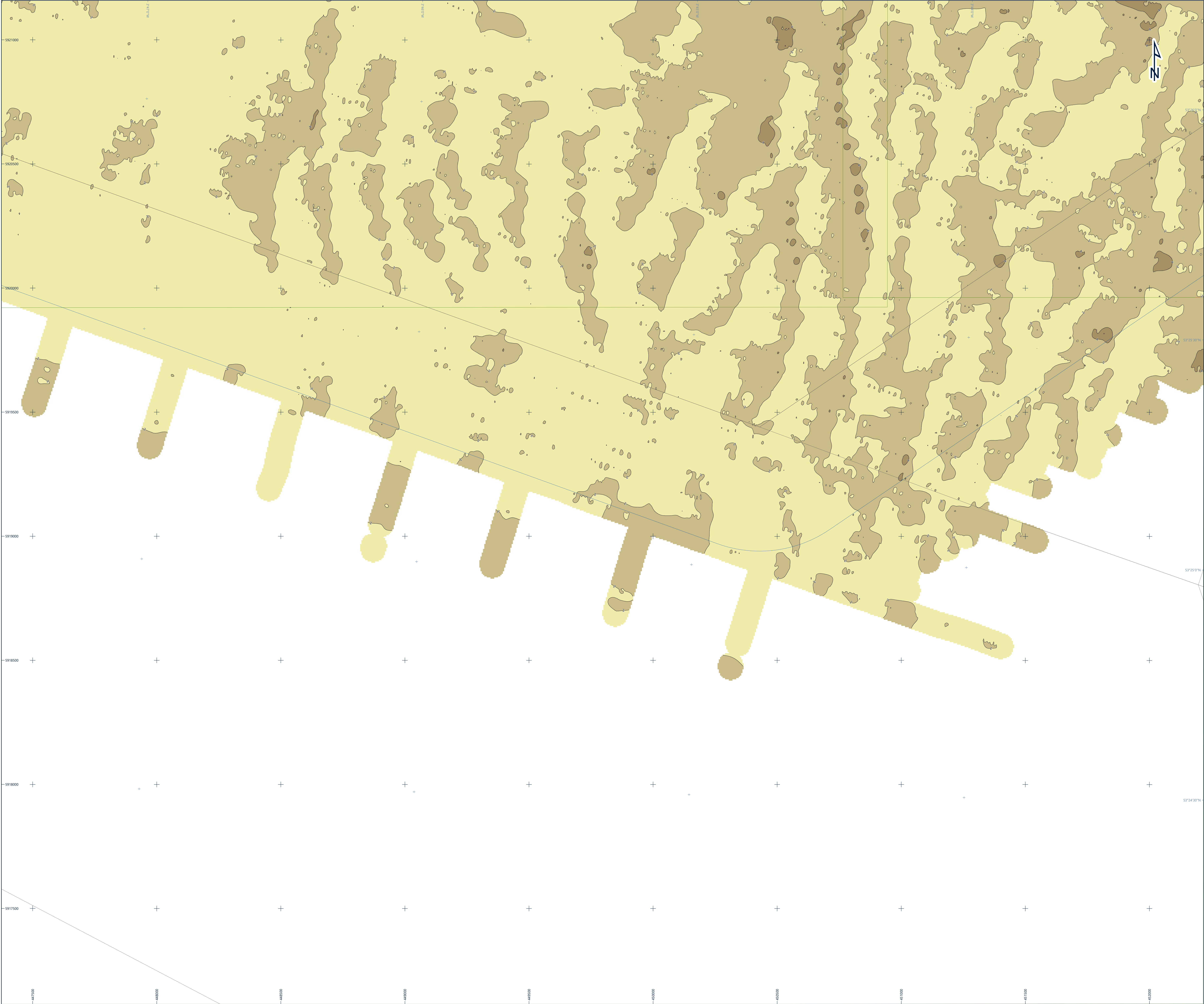
R01 HOLOCENE UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

Scale 1 : 5,000 at original A0 page size



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03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655.Array_R01_Holocene_Upper_SedimentIsochore_10		10 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole
- R01 Holocene Upper Sediment Isochore Thickness (m)
- Sediment Isochore at 2 m Interval
- Area of No Interpretation

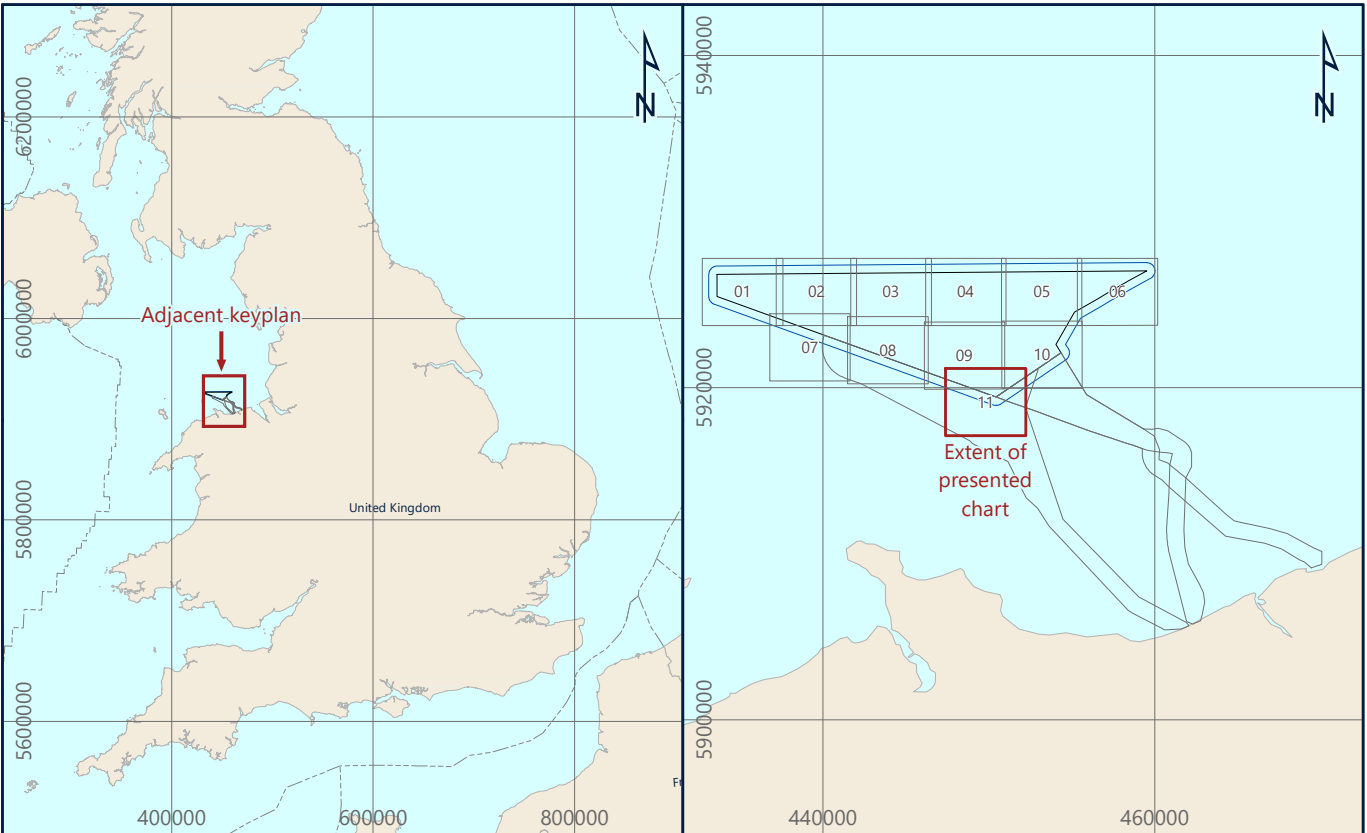
Notes

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Geodetic Parameters

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Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tighefnau Blyg, Wernand Hill Business Park, Wernand Way, Sarnon, SWS 9PE, United Kingdom

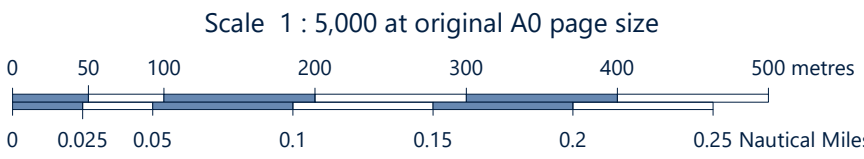
AWEL Y MÔR

Fugro

Victory House, Trefgar Wharf Unit 161, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 5500

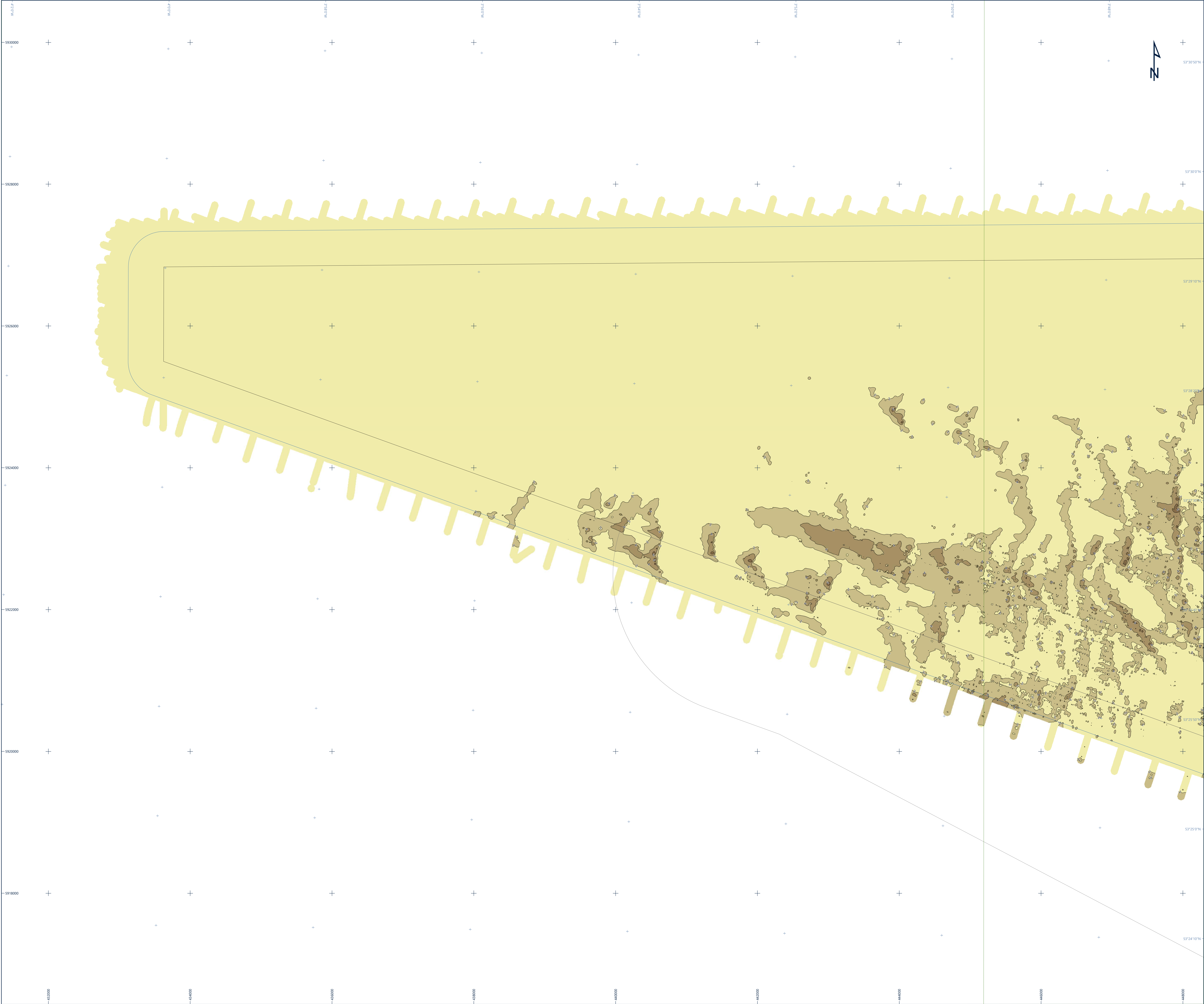


R01 HOLOCENE UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
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03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name	Chart No.	
200655.Array_R01_Holocene_Upper_SedimentIsochore.11	11 of 11	



Legend

- UTM Grid
 - Geographical Grid
 - Chart Extent
 - Windfarm Extent
 - Array Survey Extent
 - Export Cable Route Survey Extent
 - MetMast C Borehole
- R01 Holocene Upper Sediment Isochore Thickness [m]**
- ≤ 2.0
 - 2.1 - 4.0
 - 4.1 - 6.0
 - 6.1 - 8.0
 - > 8.0
- Sediment Isochore at 2 m Interval
- Area of No Interpretation

Notes

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Geodetic Parameters

Geodetic datum: World Geodetic System 1984

Ellipsoid: WGS84

Semi-Major Axis: 6,378,137.000 m

Inverse Flattening: 298.257223563

Projection: WGS84 / UTM Zone 30N (EPSG: 32630)

Central Meridian (CM): 03°00'00" W

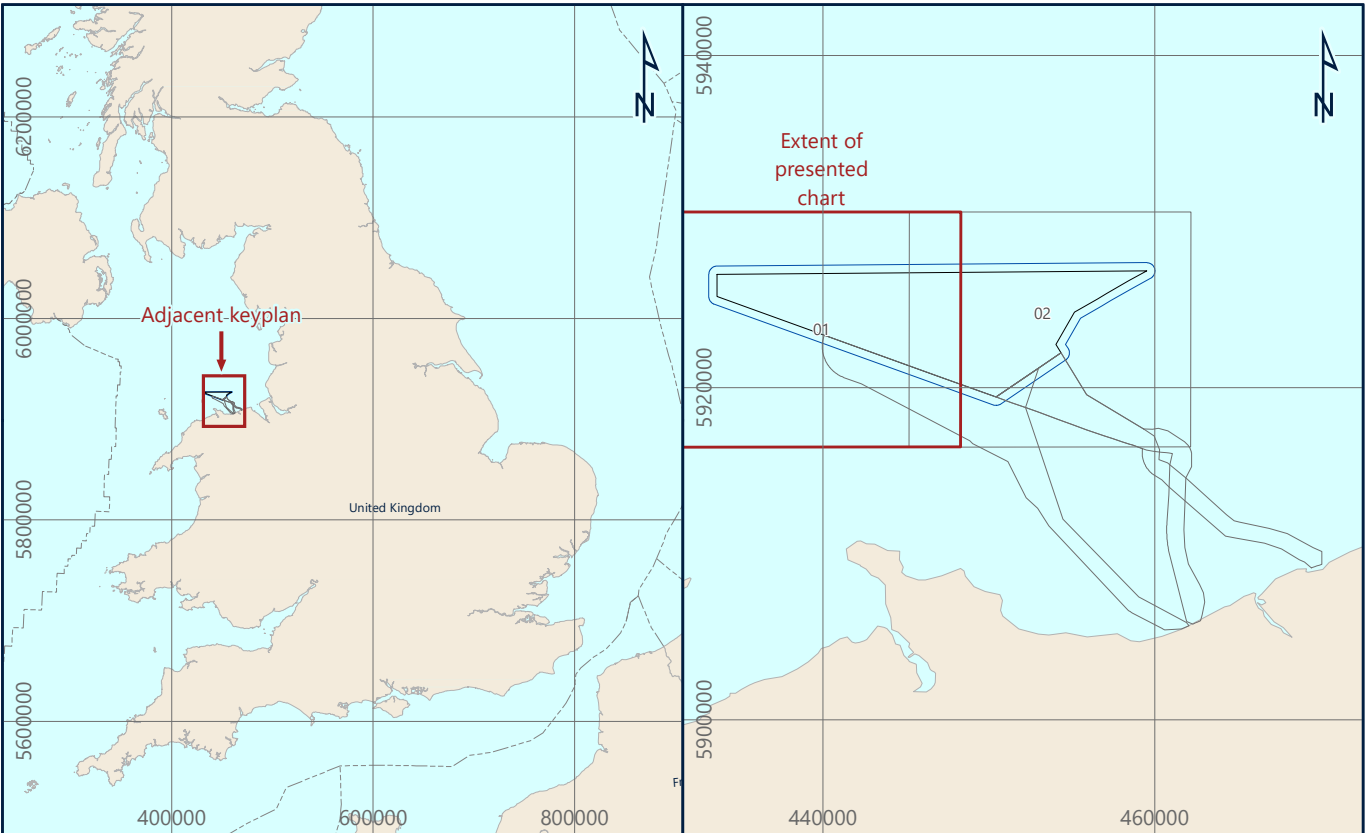
Latitude of Origin: 00°00'00" N

Fake Easting: 500,000 mE

False Northing: 0 mN

Scale Factor at CM: 0.9996

Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregaron Bldg, Wernand Hill Business Park, Wernand Way, Swansea, SW5 9PE, United Kingdom

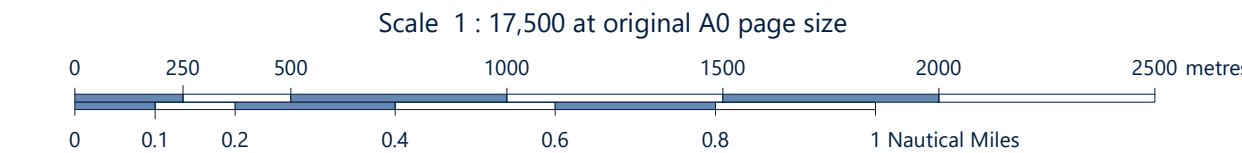
AWEL Y MÔR

Fugro

Victory House, Treglar Wharf Unit 161, Hamilton Road, Porthcester PO6 4PX
Tel: +44 23 9220 3500



R01 HOLOCENE UPPER SEDIMENT ISOCHORE OVERVIEW
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



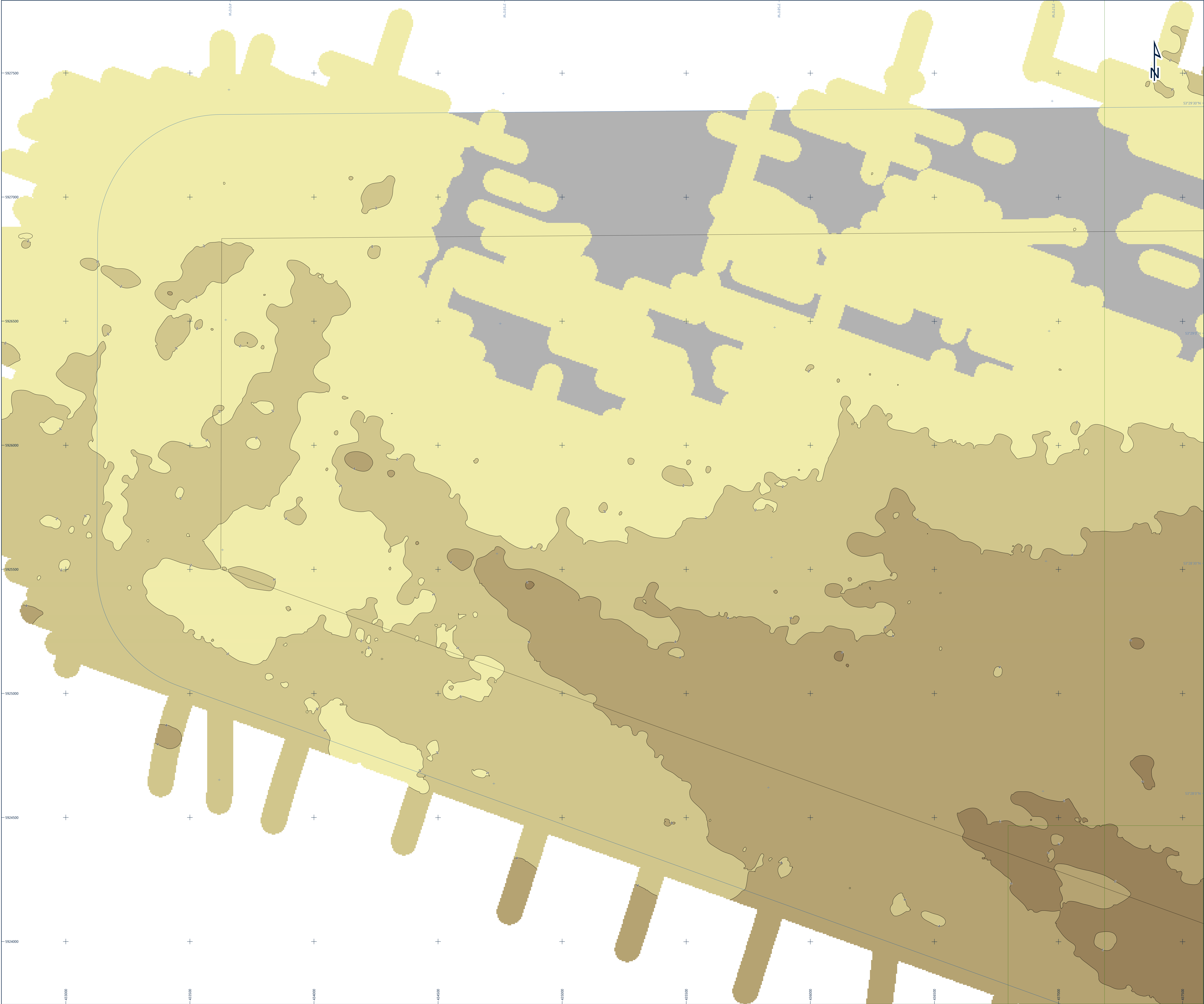
Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	01 December 2020	Final Issue - Revision 1	OOT	DS	SB	BPT
02	04 February 2021	Final Relissue - Revision 2	OOT	DS	SB	BPT
-	-	-	-	-	-	-
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name	Chart No.	
200655_Array_R01_Holocene_Upper_SedimentIsochore_Overview_01	01 of 02	

Appendix H

Charts – R03 Western Irish Sea

Upper Sediment Isochore



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R03 Western Irish Sea Upper Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- > 10.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

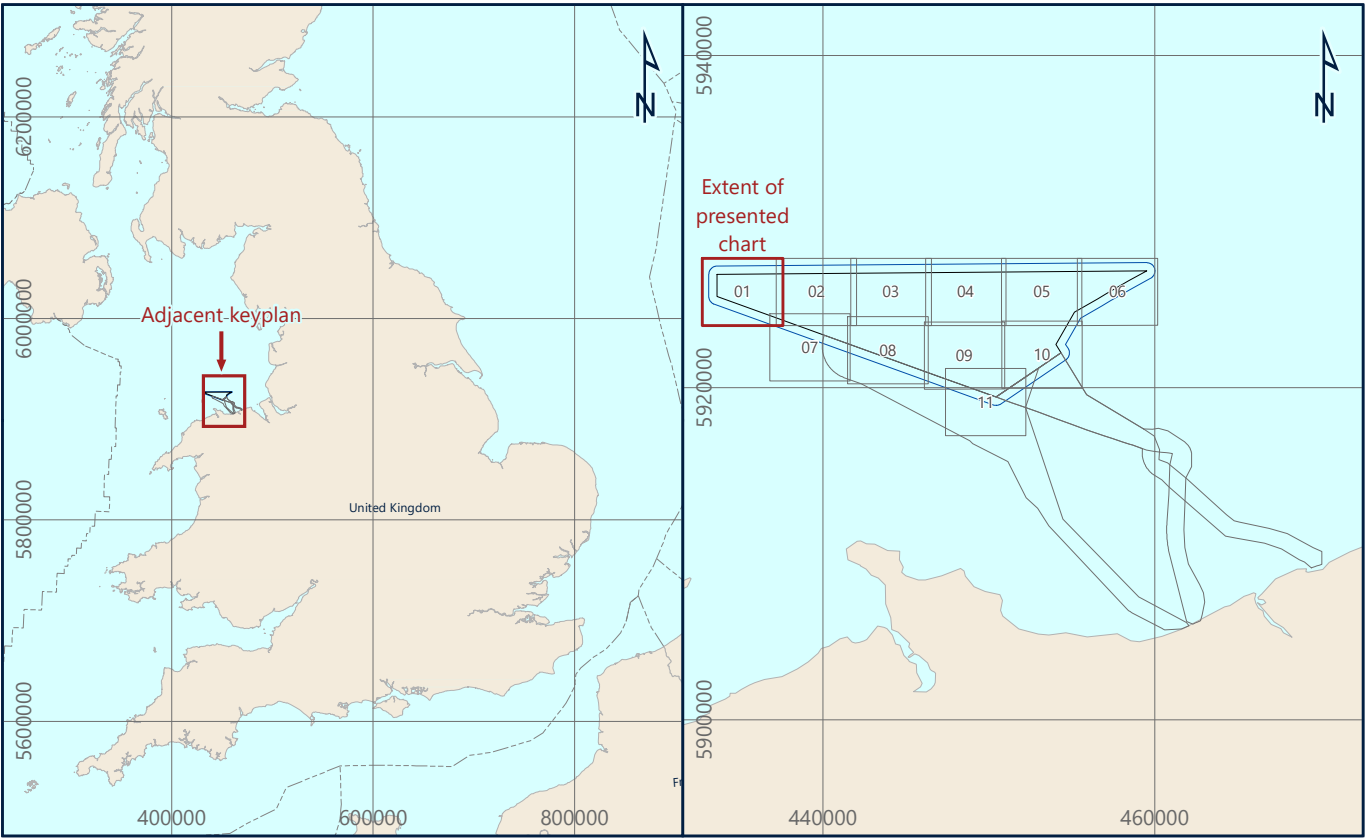
Notes

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Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	00°00'00" N
False Easting	500,000 mE
False Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



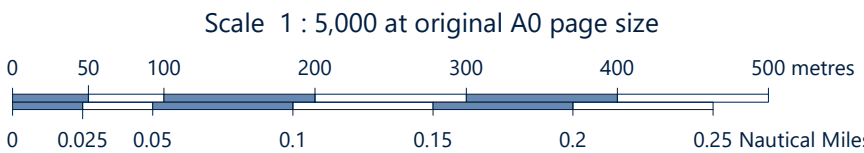
Awel Y Môr Offshore Wind Farm Ltd
Trigvoris Bldg, Wernidell Hill Business Park, Wernidell Way, Swanton, SWS 6PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Trellicker Wharf Unit 161, Hamilton Road, Portsmouth PO6 4PX
Tel: +44 23 9220 3500

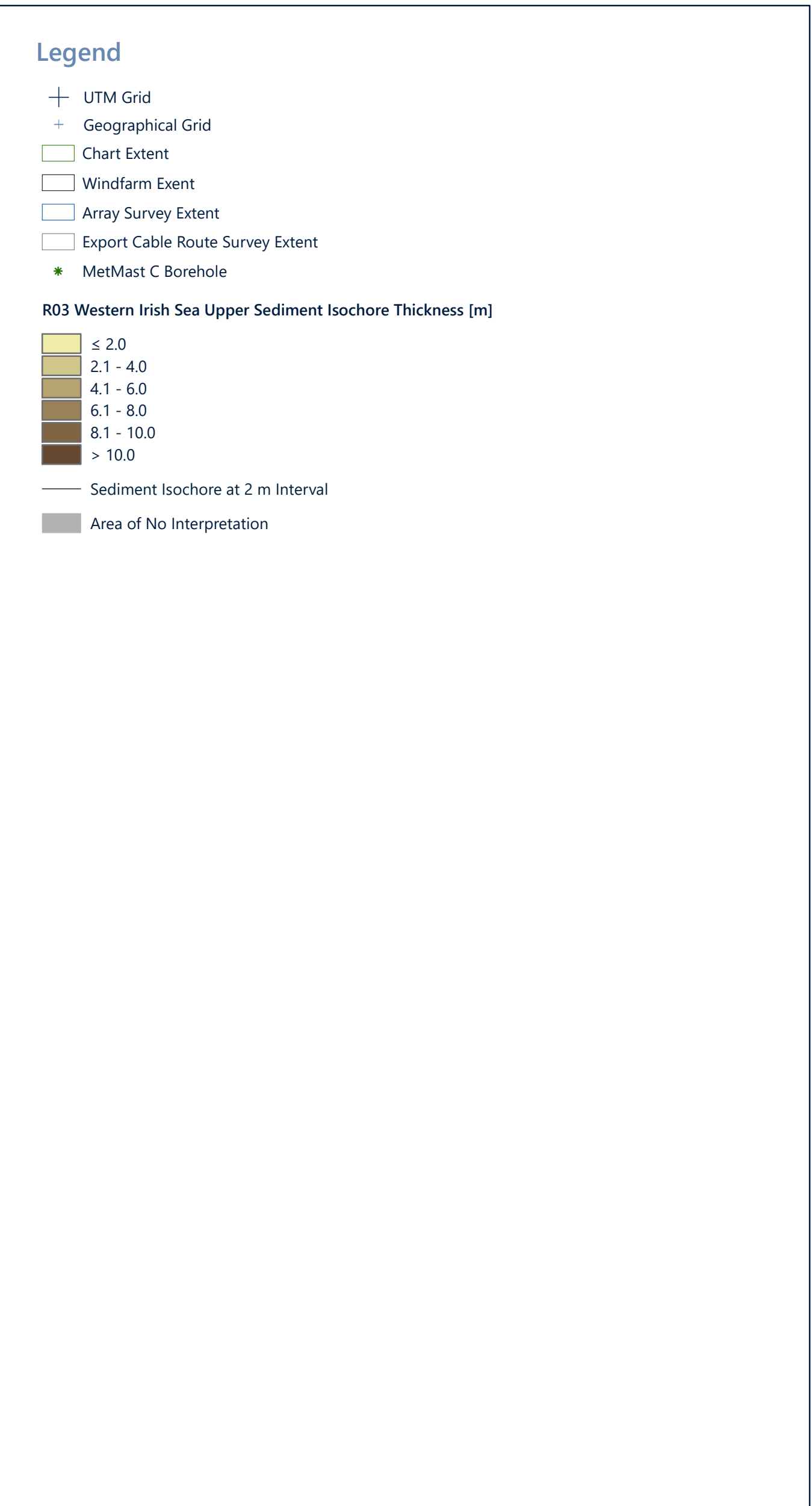
FUGRO

R03 WEST IRISH SEA UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

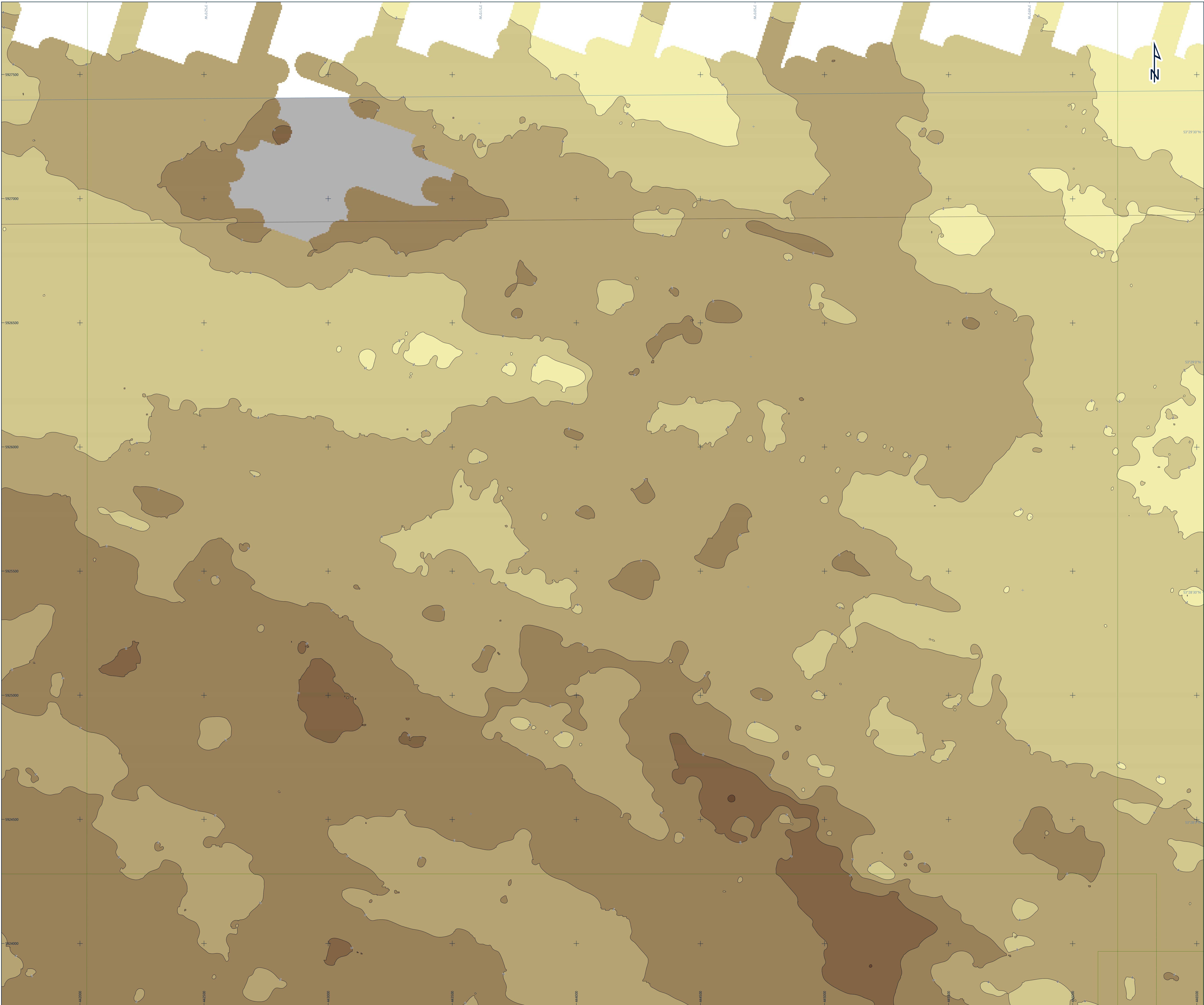
Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name	Chart No.	
200655.Array_R03_WIS_Upper_SedimentIsochore.01	01 of 11	



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Geodetic datum	World Geodetic System 1984
Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.25722363
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" N
Latitude of Origin	00°00'00" N
False Easting	500,000 mE
False Northing	0 mE
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference frame (VORF)





Legend

- UTM Grid
 - Geographical Grid
 - Chart Extent
 - Windfarm Extent
 - Array Survey Extent
 - Export Cable Route Survey Extent
 - MetMast C Borehole
- R03 Western Irish Sea Upper Sediment Isochore Thickness (m)**
- ≤ 2.0
 - 2.1 - 4.0
 - 4.1 - 6.0
 - 6.1 - 8.0
 - 8.1 - 10.0
 - > 10.0
- Sediment Isochore at 2 m Interval
- Area of No Interpretation

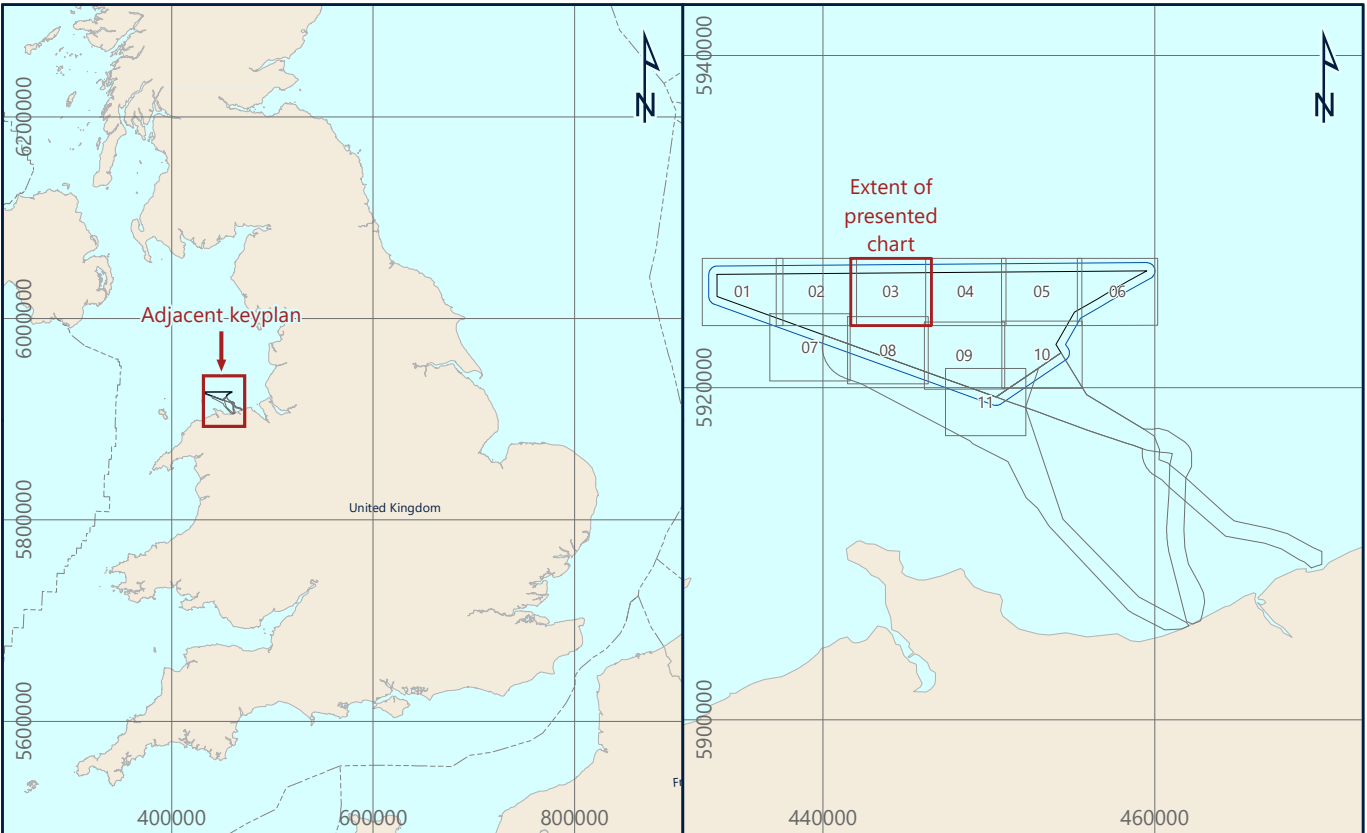
Notes

- 1) Sub-bottom profiler interpretation was conducted using Innomar Medium SES-2000 parametric sub-bottom profiler data.
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Geodetic Parameters

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Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	00°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



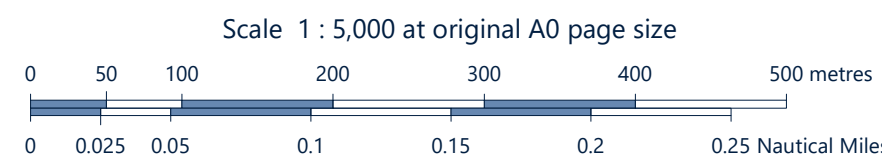
Awel Y Môr Offshore Wind Farm Ltd
Tregaron Bldg, Windmill Hill Business Park, Wrexham WIP, Wrexham, Shropshire, UK

AWEL Y MÔR

Fugro
Victory House, Tregear Wharf Unit 10, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 3500

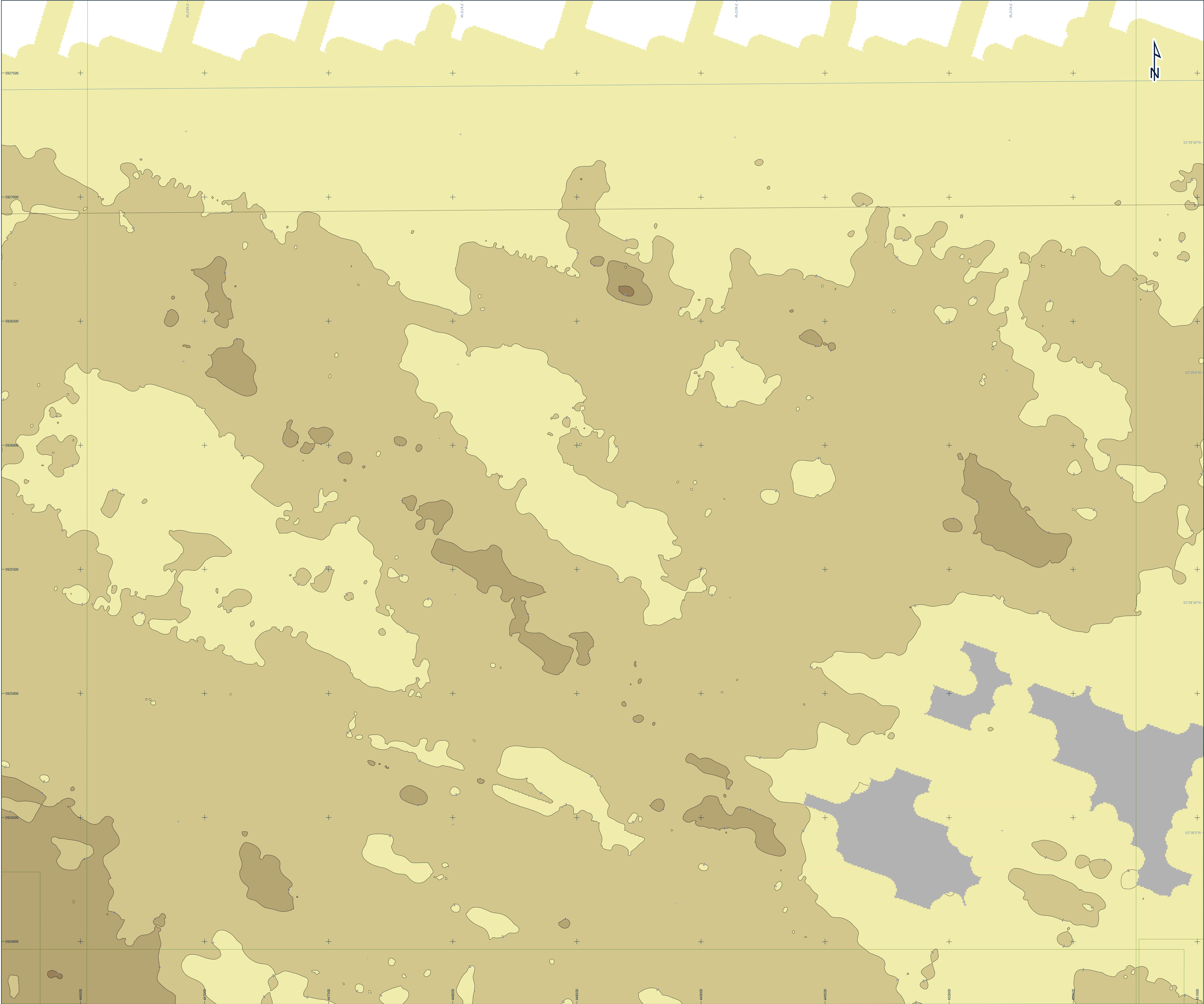
FUGRO

R03 WEST IRISH SEA UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
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Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655.Array_R03_WIS_Upper_SedimentIsochore.03		03 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R03 Western Irish Sea Upper Sediment Isochore Thickness [m]

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- > 10.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

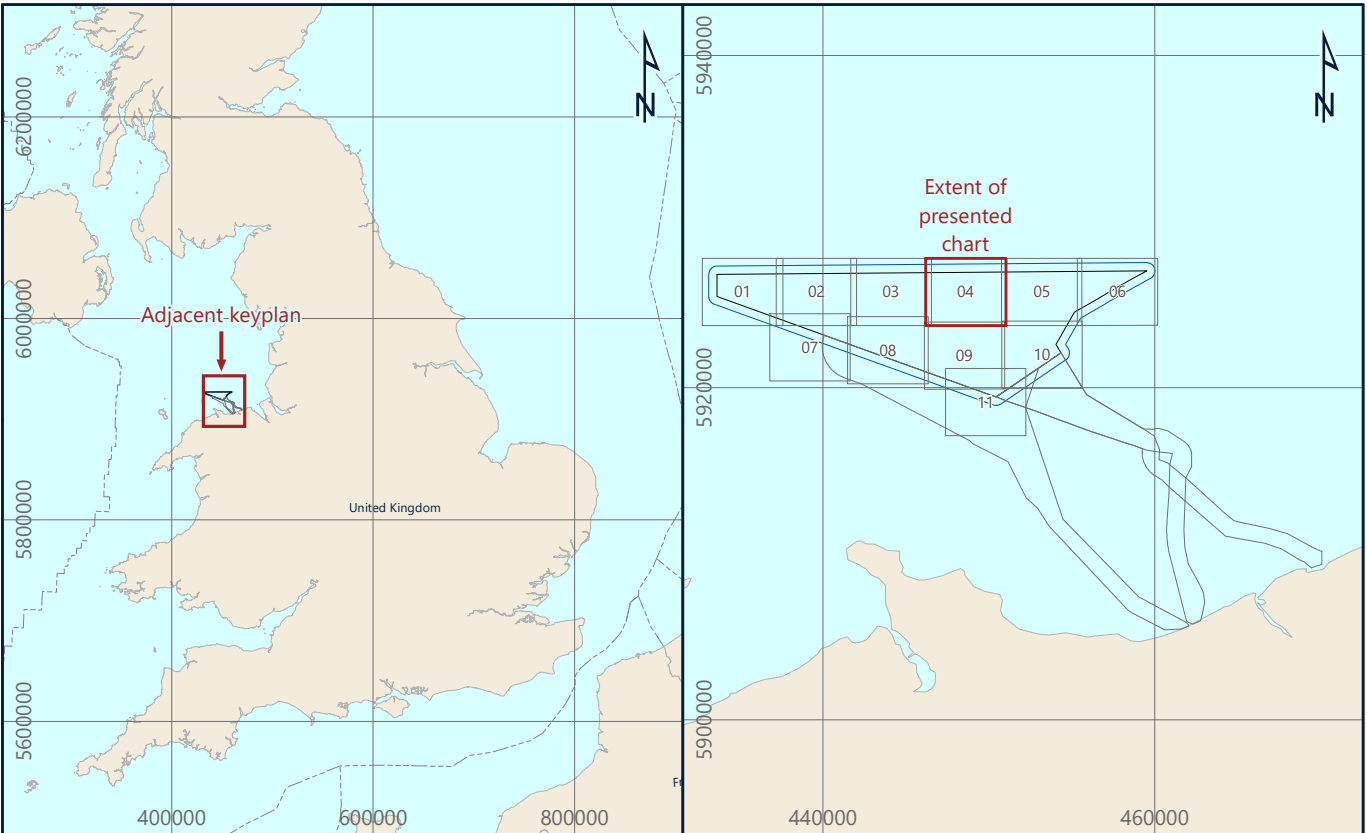
Notes

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Geodetic Parameters

Geodetic datum	World Geodetic System 1984
Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	00°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



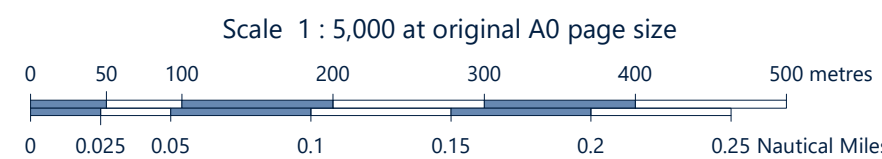
Awel Y Môr Offshore Wind Farm Ltd
Tigorous Bay, Warrand Hill Business Park, Warrand Hill, Swansea, SA5 8PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Trelgar Wharf Unit 10, Hamilton Road, Porchester PO6 4PX
Tel: +44 23 9220 5500

FUGRO

R03 WEST IRISH SEA UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655.Array_R03_WIS_Upper_SedimentIsochore.04		04 of 11



Legend

- UTM Grid
 - Geographical Grid
 - Chart Extent
 - Windfarm Extent
 - Array Survey Extent
 - Export Cable Route Survey Extent
 - MetMast C Borehole
- R03 Western Irish Sea Upper Sediment Isochore Thickness (m)**
- ≤ 2.0
 - 2.1 - 4.0
 - 4.1 - 6.0
 - 6.1 - 8.0
 - 8.1 - 10.0
 - > 10.0
- Sediment Isochore at 2 m Interval
- Area of No Interpretation

Notes

- 1) Sub-bottom profiler interpretation was conducted using Innomar Medium SES-2000 parametric sub-bottom profiler data.
- 2) Grids have been derived from SBP data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019).
- 3) Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochores have been gridded with a 5 m cell size.

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Geodetic Parameters

Geodetic datum: World Geodetic System 1984

Ellipsoid: WGS84

Semi-Major Axis: 6,378,137.000 m

Inverse Flattening: 298.257223563

Projection: WGS84 / UTM Zone 30N (EPSG: 32630)

Central Meridian (CM): 03°00'00" W

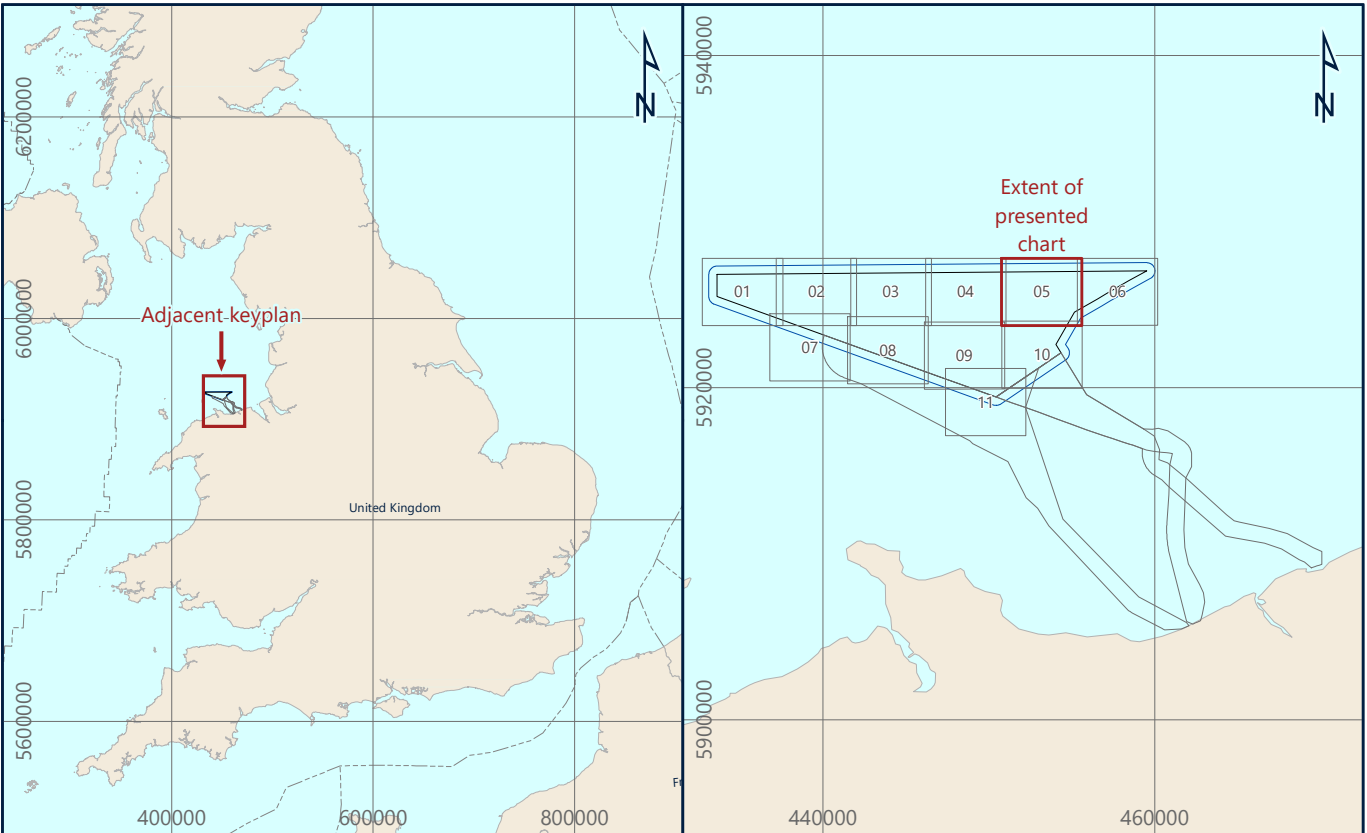
Latitude of Origin: 07°00'00" N

Fake Easting: 500,000 mE

Fake Northing: 0 mN

Scale Factor at CM: 0.9996

Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregaron Way, Wrenford Hill Business Park, Wrenford Way, Swanton, SWS 6PE, United Kingdom

AWEL Y MÔR

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Tel: +44 23 9220 5500

FUGRO

R03 WEST IRISH SEA UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

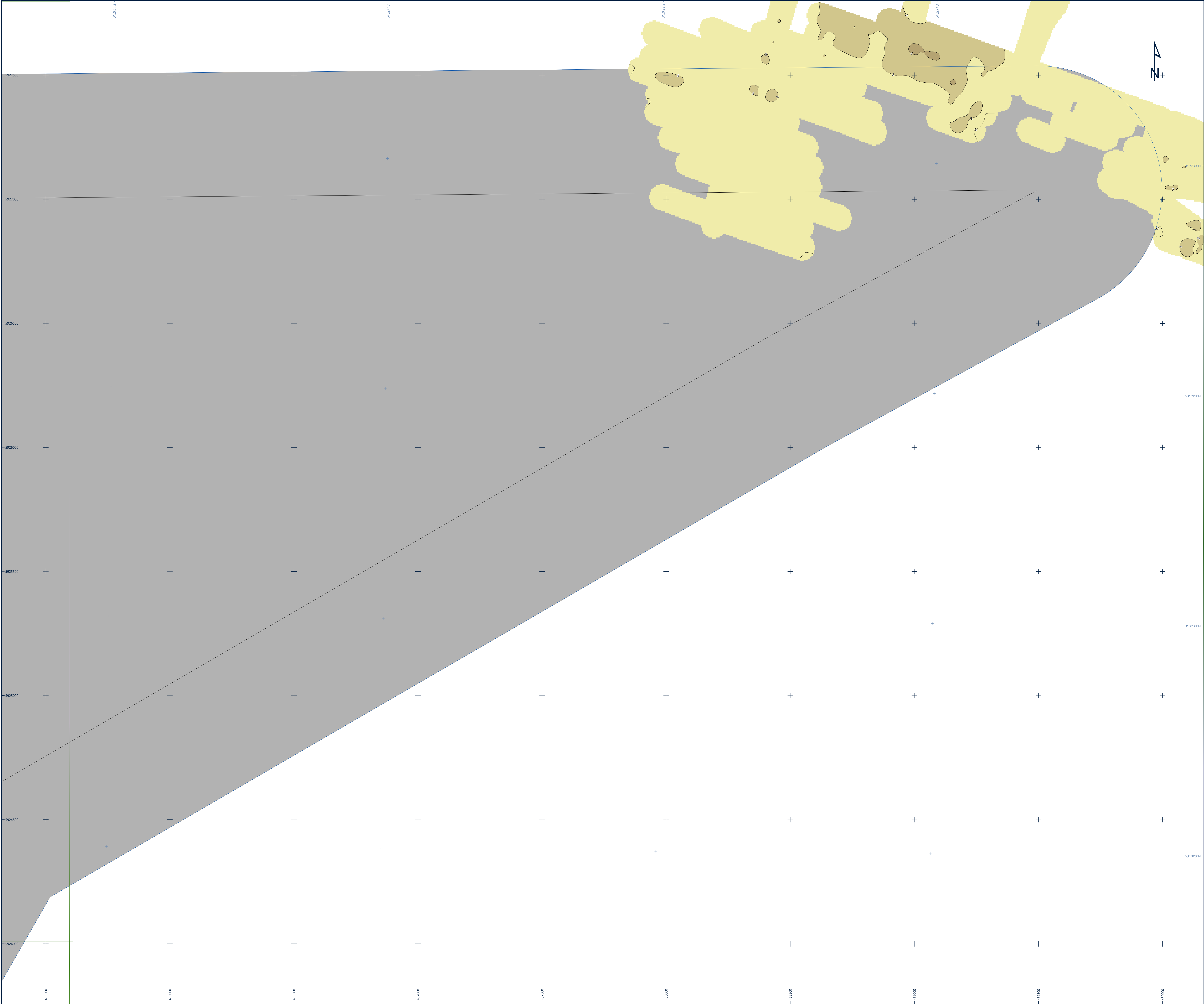
Scale 1 : 5,000 at original A0 page size

0 50 100 200 300 400 500 metres

0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name	Chart No.	
200655.Array_R03_WIS_Upper_SedimentIsochore_05	05 of 11	



Legend

- UTM Grid
 - Geographical Grid
 - Chart Extent
 - Windfarm Exent
 - Array Survey Extent
 - Export Cable Route Survey Extent
 - MetMast C Borehole
- R03 Western Irish Sea Upper Sediment Isochore Thickness [m]**
- ≤ 2.0
 - 2.1 - 4.0
 - 4.1 - 6.0
 - 6.1 - 8.0
 - 8.1 - 10.0
 - > 10.0
- Sediment Isochore at 2 m Interval
- Area of No Interpretation

Notes

- 1) Sub-bottom profiler interpretation was conducted using Innomar Medium SES-2000 parametric sub-bottom profiler data.
- 2) Grids have been derived from SBP data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019).
- 3) Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochores have been gridded with a 5 m cell size.

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Geodetic Parameters

Geodetic datum: World Geodetic System 1984

Ellipsoid: WGS84

Semi-Major Axis: 6,378,137.000 m

Inverse Flattening: 298.257222563

Projection: WGS84 / UTM Zone 30N (EPSG: 32630)

Central Meridian (CM): 03°00'00" W

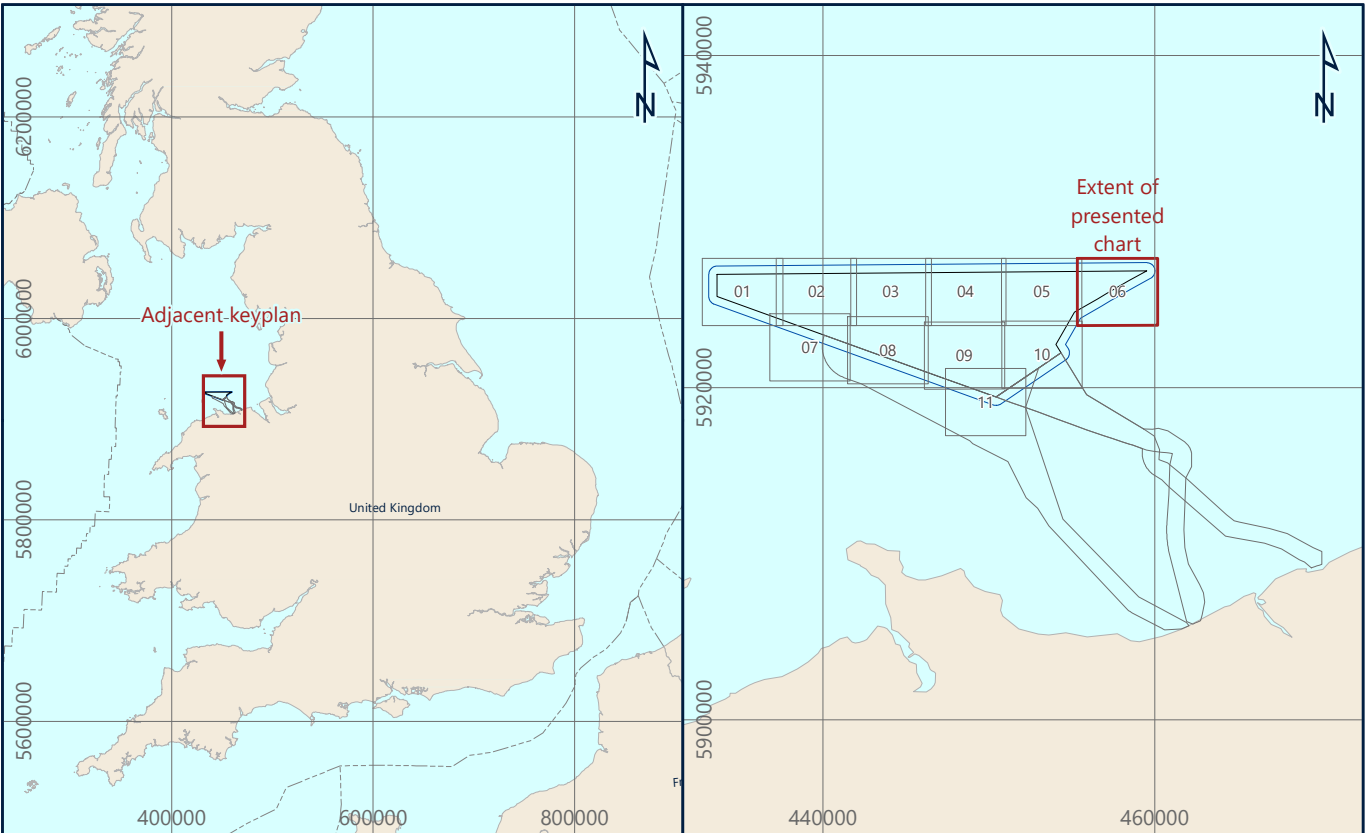
Latitude of Origin: 07°00'00" N

Fake Easting: 500,000 mE

Fake Northing: 0 mN

Scale Factor at CM: 0.9996

Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tingriffs Way, Warrand Hill Business Park, Warrand Hill, Swansea, SA5 8PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Trefgarra Wharf Unit 161, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 5500



R03 WEST IRISH SEA UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

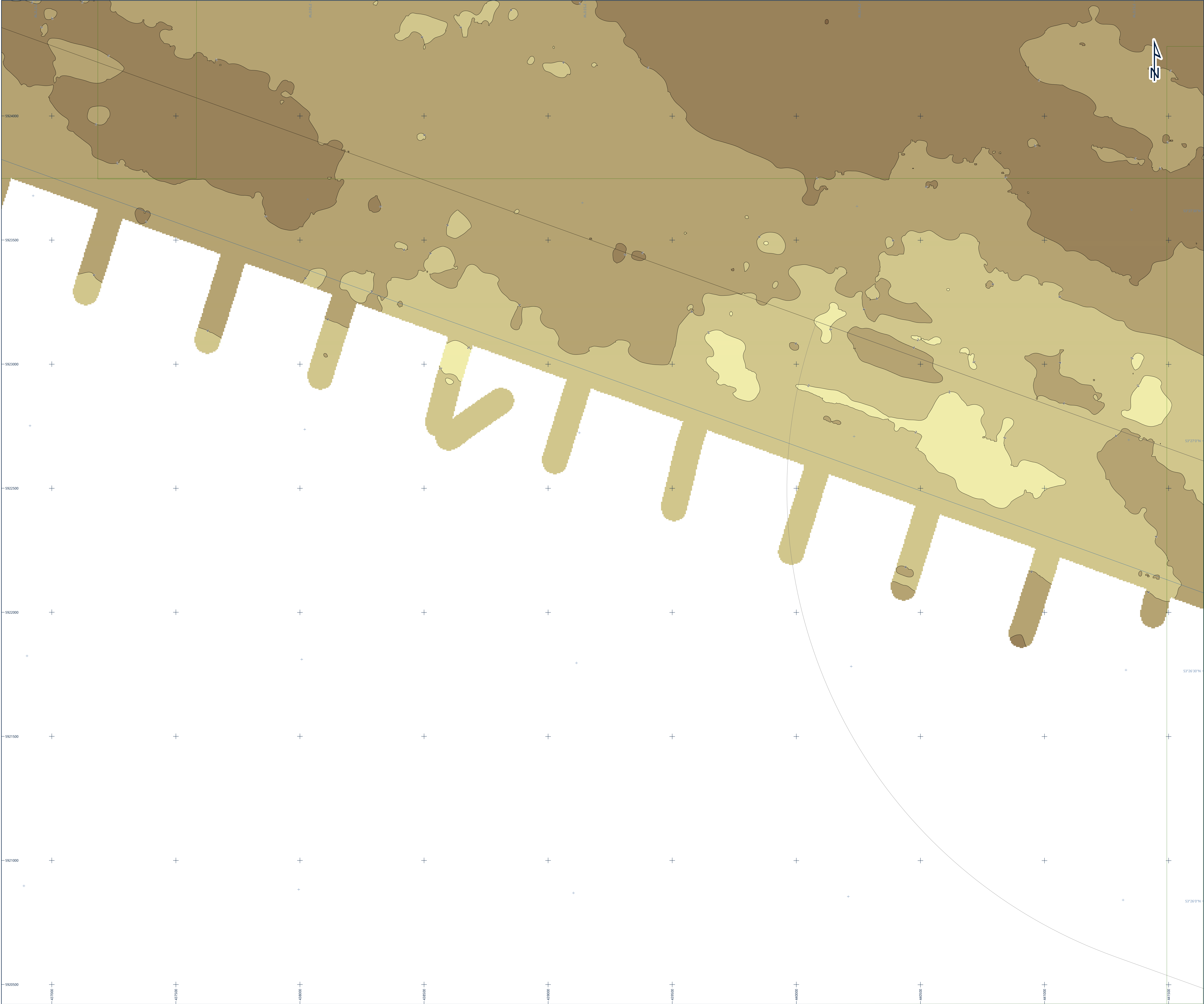
Scale 1 : 5,000 at original A0 page size

0 50 100 200 300 400 500 metres

0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name	Chart No.	
200655_Array_R03_WIS_Upper_SedimentIsochore_06	06 of 11	



Legend

- UTM Grid
 - Geographical Grid
 - Chart Extent
 - Windfarm Extent
 - Array Survey Extent
 - Export Cable Route Survey Extent
 - MetMast C Borehole
- R03 Western Irish Sea Upper Sediment Isochore Thickness (m)**
- ≤ 2.0
 - 2.1 - 4.0
 - 4.1 - 6.0
 - 6.1 - 8.0
 - 8.1 - 10.0
 - > 10.0
- Sediment Isochore at 2 m Interval
- Area of No Interpretation

Notes

- 1) Sub-bottom profiler interpretation was conducted using Innomar Medium SES-2000 parametric sub-bottom profiler data.
- 2) Grids have been derived from SBP data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019)
- 3) Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochores have been gridded with a 5 m cell size.

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Geodetic Parameters

Geodetic datum: World Geodetic System 1984

Ellipsoid: WGS84

Semi-Major Axis: 6,378,137.000 m

Inverse Flattening: 298.257222563

Projection: WGS84 / UTM Zone 30N (EPSG: 32630)

Central Meridian (CM): 07°00'00" W

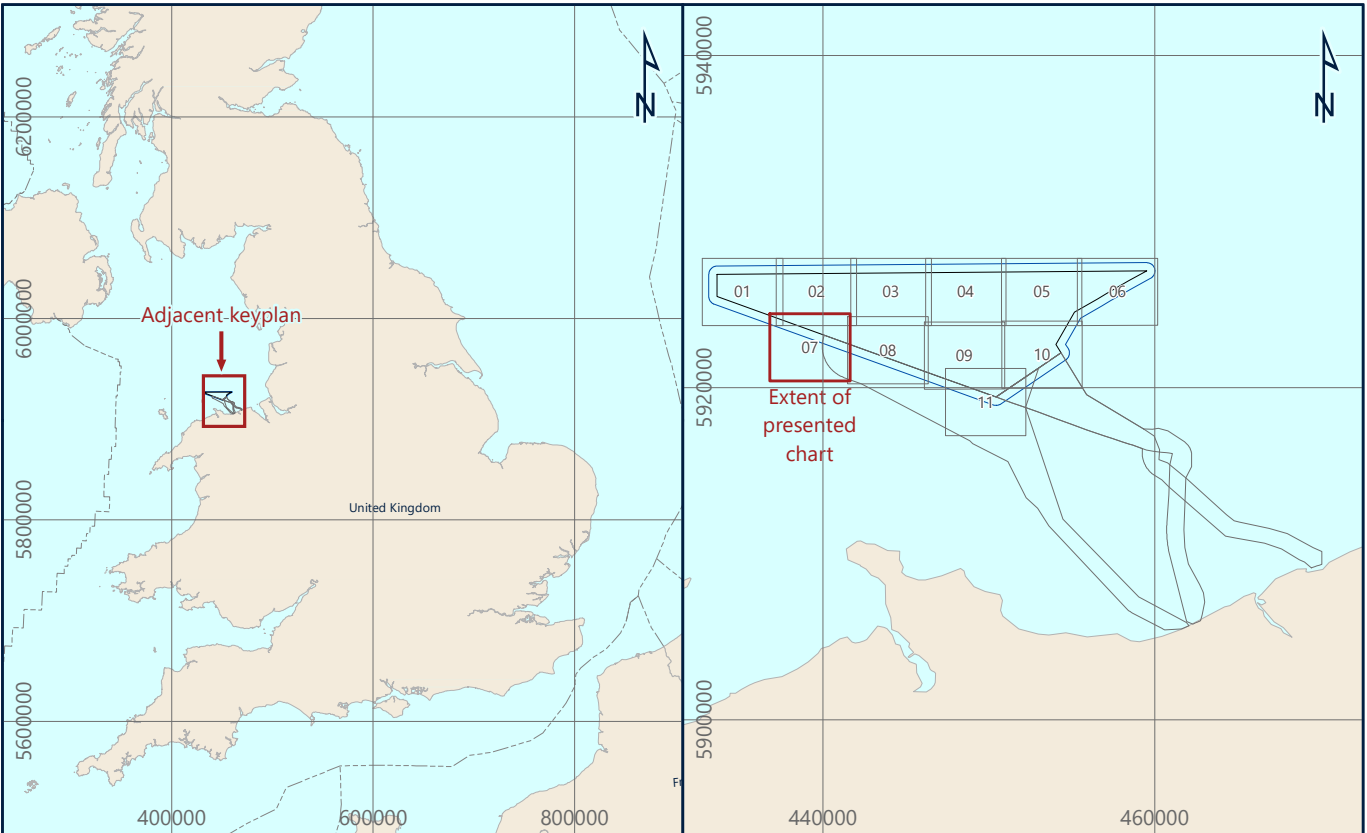
Latitude of Origin: 07°00'00" N

Fake Easting: 500,000 mE

Fake Northing: 0 mN

Scale factor at CM: 0.9996

Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tighefnis Blyg, Wernall Hill Business Park, Wernall Way, Swanton, SWS 6PE, United Kingdom

AWEL Y MÔR

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Tel: +44 23 9220 3500

FUGRO

R03 WEST IRISH SEA UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

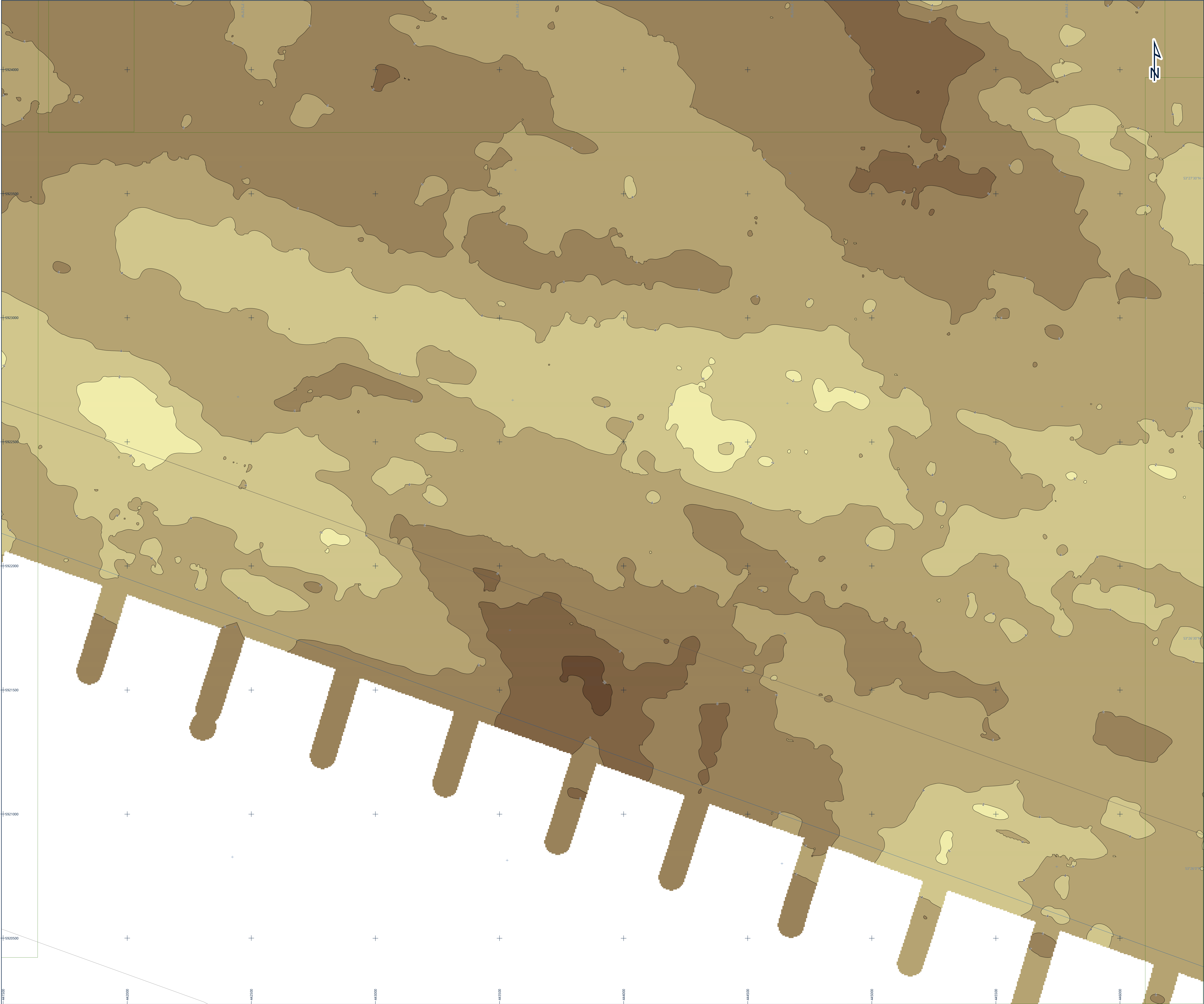
Scale 1 : 5,000 at original A0 page size

0 50 100 200 300 400 500 metres

0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name	Chart No.	
200655_Array_R03_WIS_Upper_SedimentIsochore.07	07 of 11	



Legend

- UTM Grid
 - Geographical Grid
 - Chart Extent
 - Windfarm Extent
 - Array Survey Extent
 - Export Cable Route Survey Extent
 - MetMast C Borehole
- R03 Western Irish Sea Upper Sediment Isochore Thickness (m)**
- ≤ 2.0
 - 2.1 - 4.0
 - 4.1 - 6.0
 - 6.1 - 8.0
 - 8.1 - 10.0
 - > 10.0
- Sediment Isochore at 2 m Interval
- Area of No Interpretation

Notes

- 1) Sub-bottom profiler interpretation was conducted using Innonar Medium SES-2000 parametric sub-bottom profiler data.
- 2) Grids have been derived from SBP data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019)
- 3) Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochores have been gridded with a 5 m cell size.

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Geodetic Parameters

Geodetic datum: World Geodetic System 1984

Ellipsoid: WGS84

Semi-Major Axis: 6,378,137.000 m

Inverse Flattening: 298.257223563

Projection: WGS84 / UTM Zone 30N (EPSG: 32630)

Central Meridian (CM): 07°00'00" W

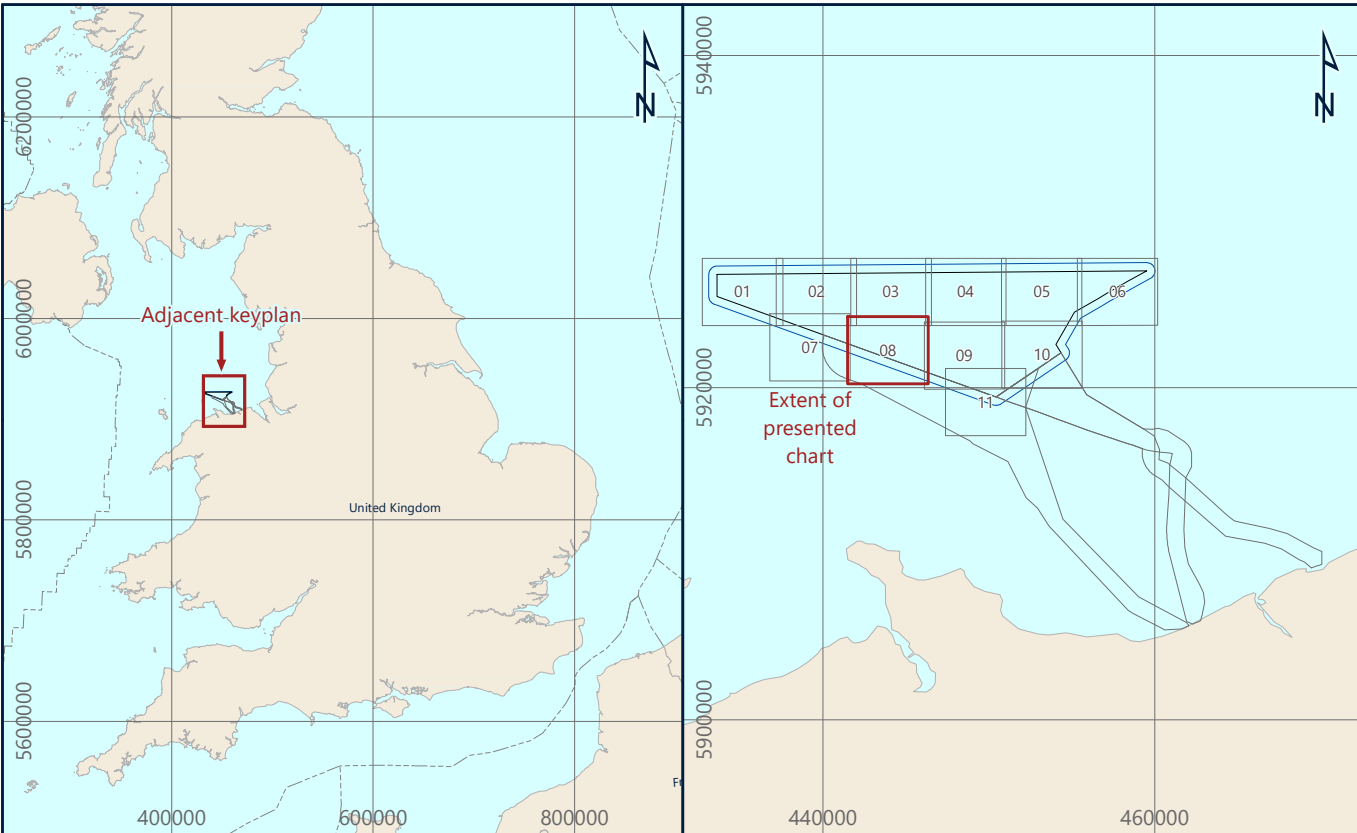
Latitude of Origin: 07°00'00" N

Fake Easting: 500,000 mE

Fake Northing: 0 mN

Scale factor at CM: 0.9996

Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



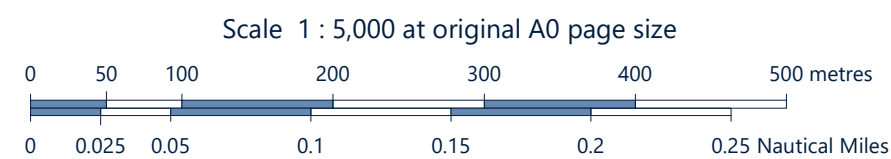
Awel Y Môr Offshore Wind Farm Ltd
Tregorwg Bldg, Wernafel Hill Business Park, Wernafel Way, Swanton, SWS 0PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Tregorwg Wharf Unit 161, Hamilton Road, Porchester PO6 4PX
Tel: +44 23 9220 3500

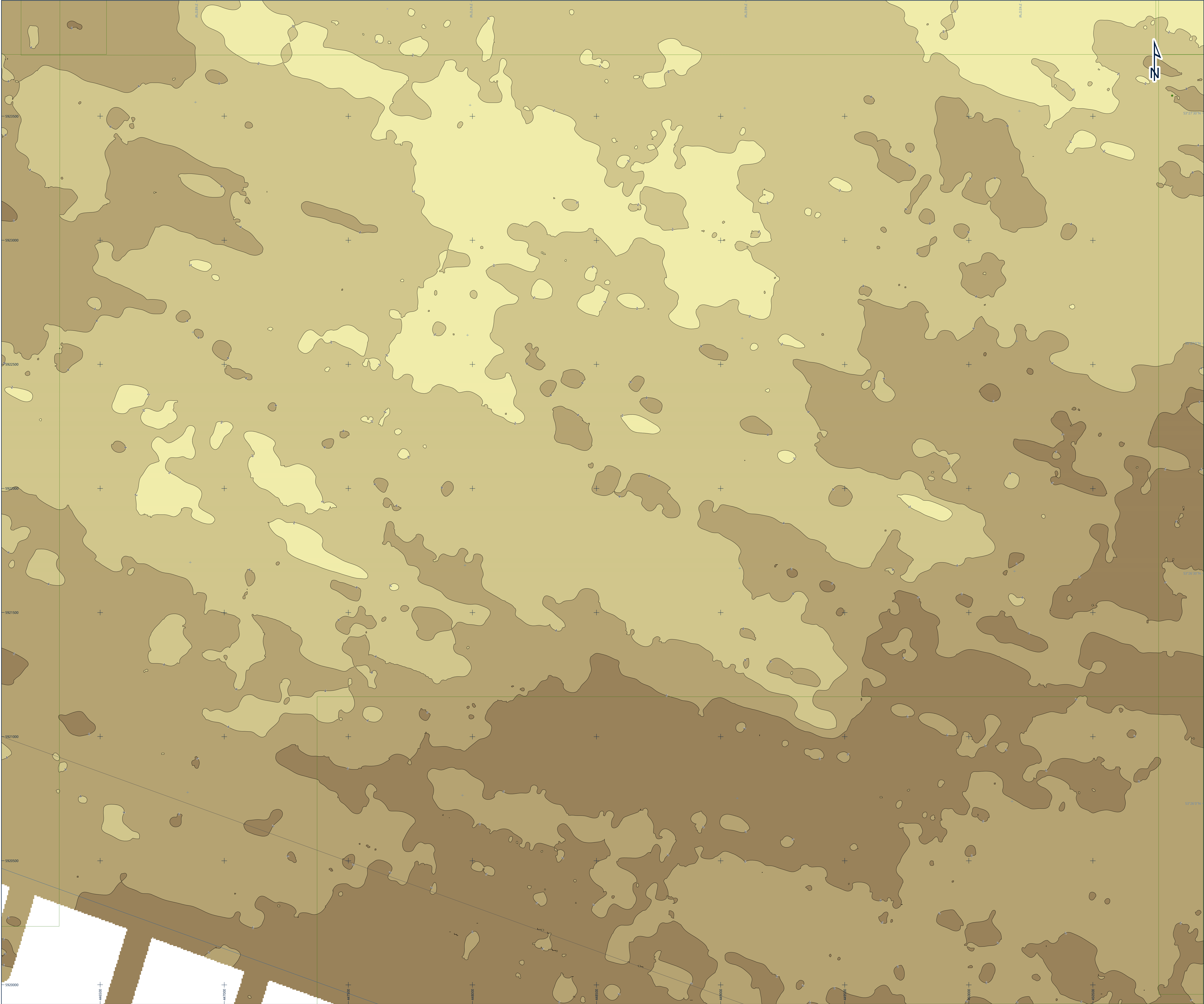


R03 WEST IRISH SEA UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No. 200655	Vessel(s) Fugro Mercator	Survey Date 10 June to 11 August 2020
File Name 200655.Array_R03_WIS_Upper_SedimentIsochore.08		Chart No. 08 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R03 Western Irish Sea Upper Sediment Isochore Thickness [m]

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- > 10.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

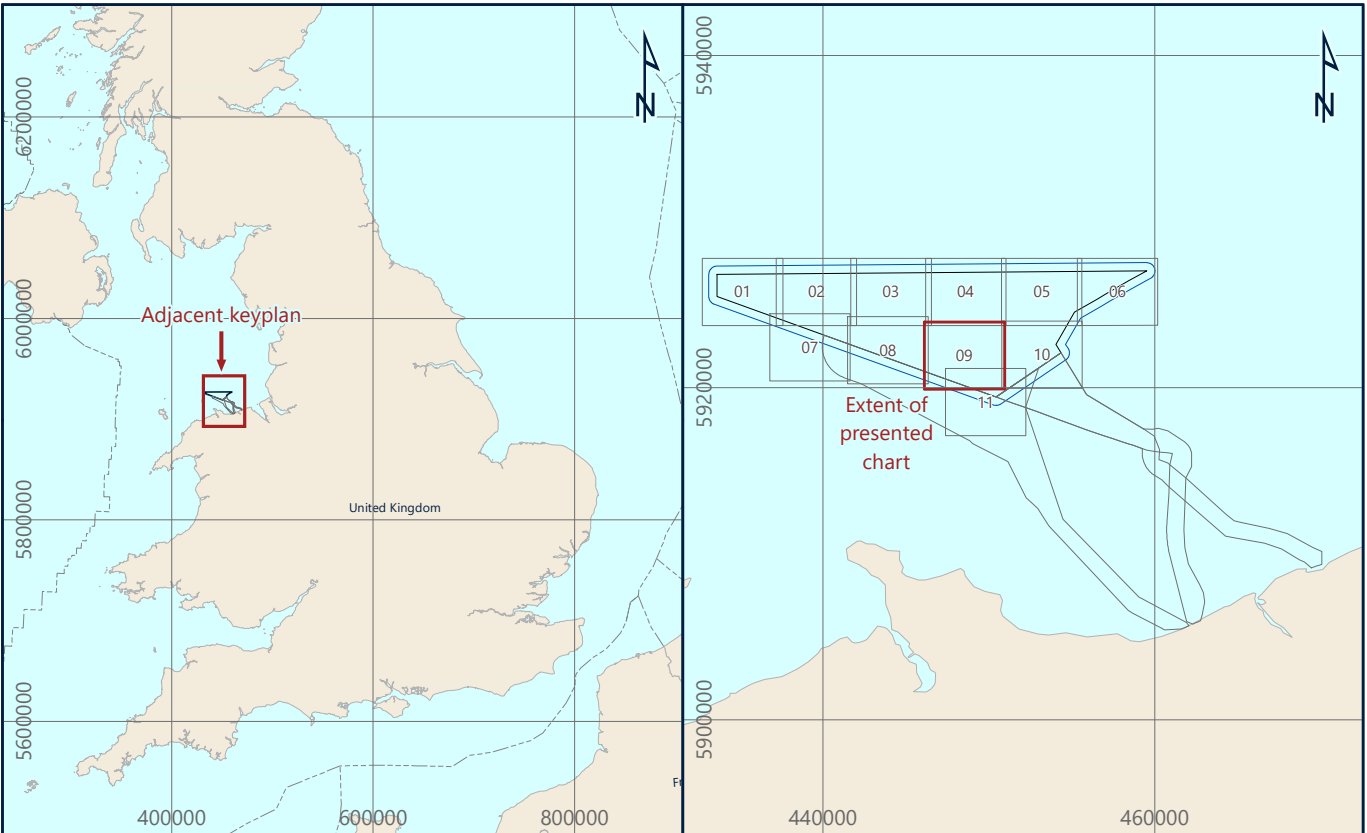
Notes

- 1) Sub-bottom profiler interpretation was conducted using Innonar Medium SES-2000 parametric sub-bottom profiler data.
- 2) Grids have been derived from SBP data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019)
- 3) Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochore have been gridded with a 5 m cell size.

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Geodetic Parameters

Geodetic datum	World Geodetic System 1984
Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



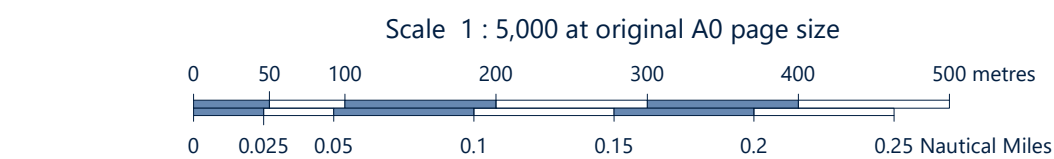
Awel Y Môr Offshore Wind Farm Ltd
Tregorris Bldg, Wernand Hill Business Park, Wernand Way, Swanton, SIC GPE, Llanelli, Gwent, NP23 5YD, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Tregear Wharf Unit 16, Hamilton Road, Porchester PO6 4PX
Tel: +44 23 9220 3500

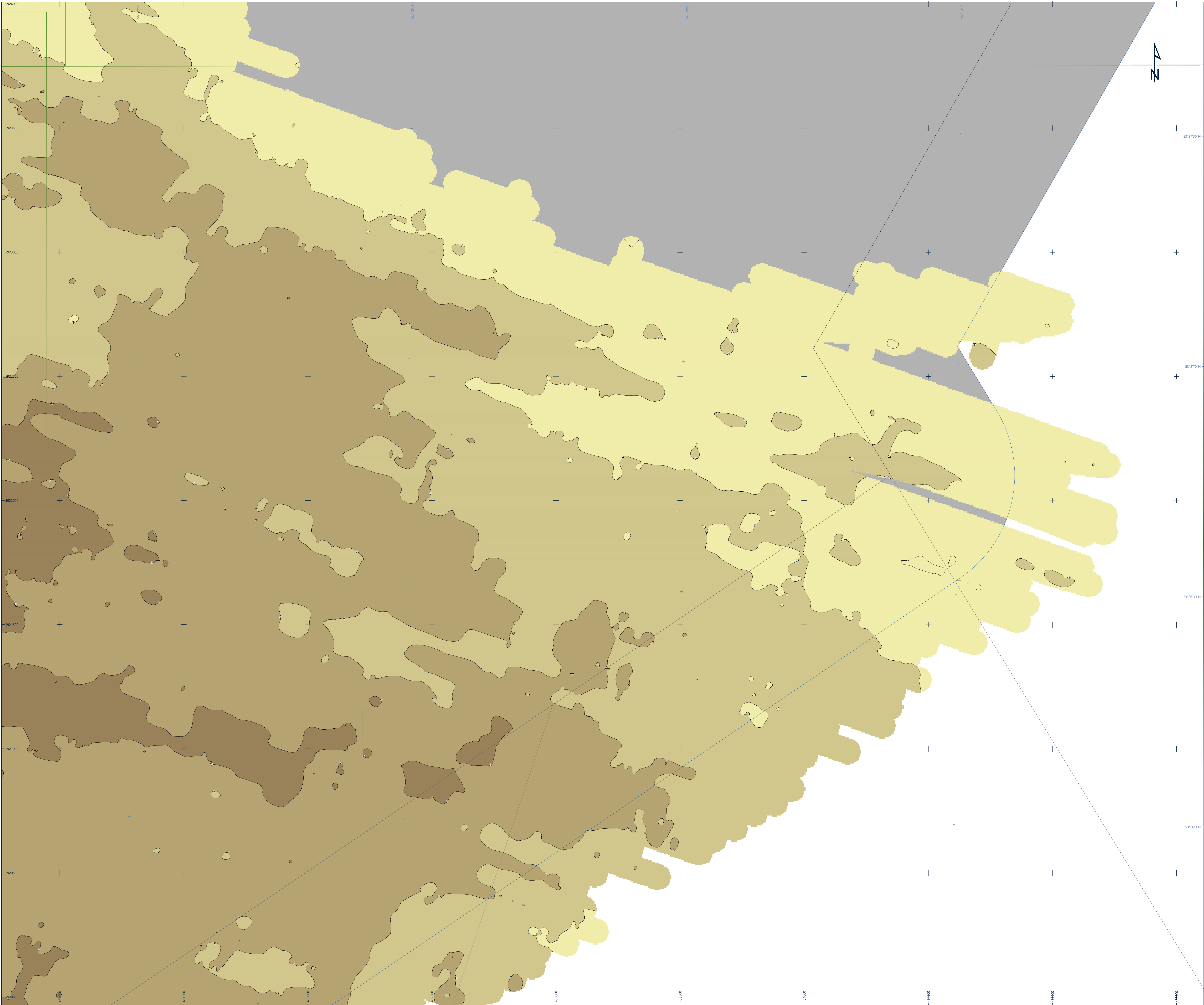


R03 WEST IRISH SEA UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R03_WIS_Upper_SedimentIsochore_09		09 of 11



Legend

- UTM Grid
 - Geographical Grid
 - Chart Extent
 - Windfarm Exent
 - Array Survey Extent
 - Export Cable Route Survey Extent
 - MetMast C Borehole
- R03 Western Irish Sea Upper Sediment Isochore Thickness [m]
- ≤ 2.0
 - 2.1 - 4.0
 - 4.1 - 6.0
 - 6.1 - 8.0
 - 8.1 - 10.0
 - > 10.0
- Sediment Isochore at 2 m Interval
- Area of No Interpretation

Notes

- 1) Sub-bottom profiler interpretation was conducted using Inmar Medium SES-2000 parametric sub-bottom profiler data.
- 2) Grids have been derived from SBP data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019)
- 3) Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochore have been gridded with a 5 m cell size.

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Geodetic Parameters

Geodetic datum: World Geodetic System 1984

Ellipsoid: WGS84

Semi-Major Axis: 6,378,137.000 m

Inverse Flattening: 298.257223563

Projection: WGS84 / UTM Zone 30N (EPSG: 32630)

Central Meridian (CM): 03°00'00" W

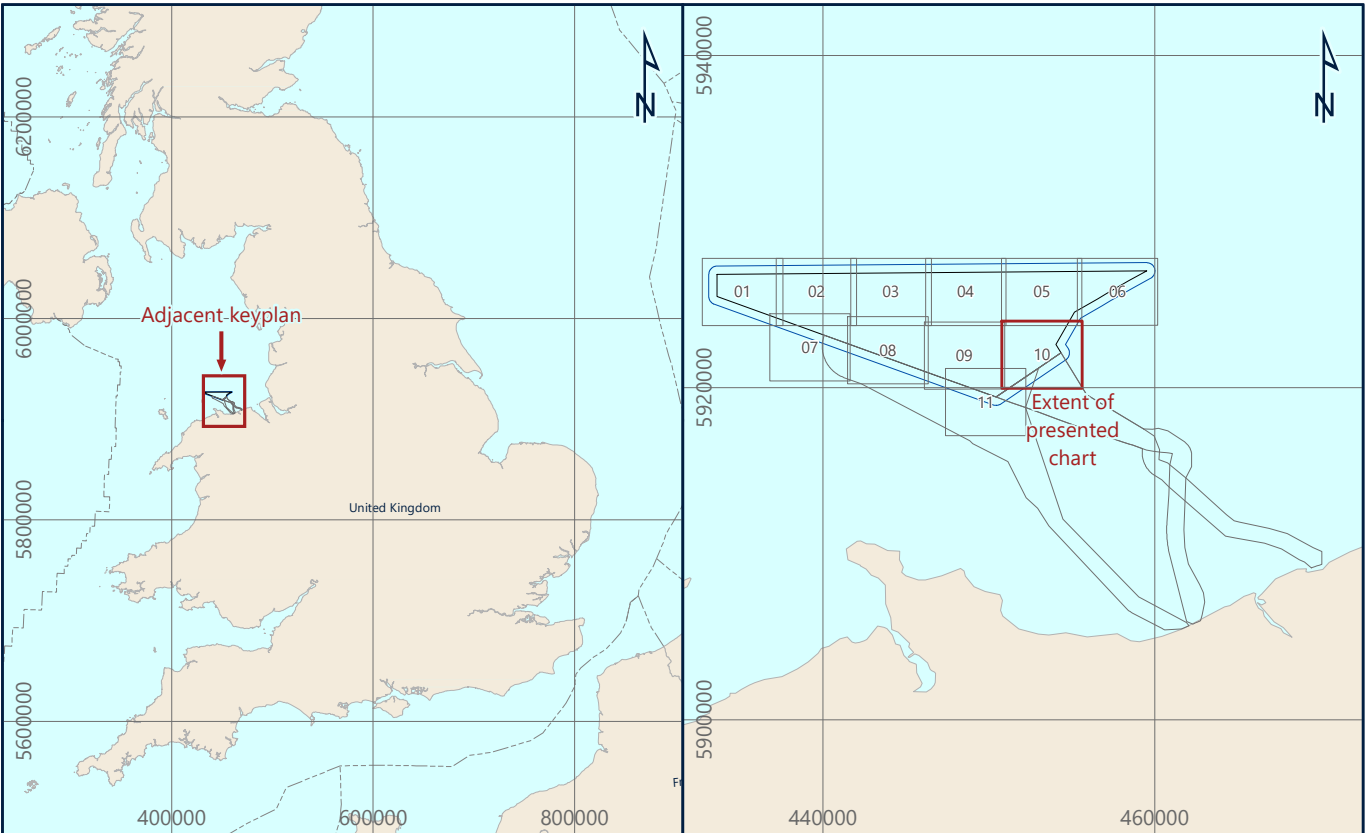
Latitude of Origin: 07°00'00" N

Fake Easting: 500,000 mE

Fake Northing: 0 mN

Scale Factor at CM: 0.9996

Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregaron Bldg, Wernand Hill Business Park, Wernand Way, Swanton, SWS GPE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Tregear Wharf Unit 161, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 5500

FUGRO

R03 WEST IRISH SEA UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

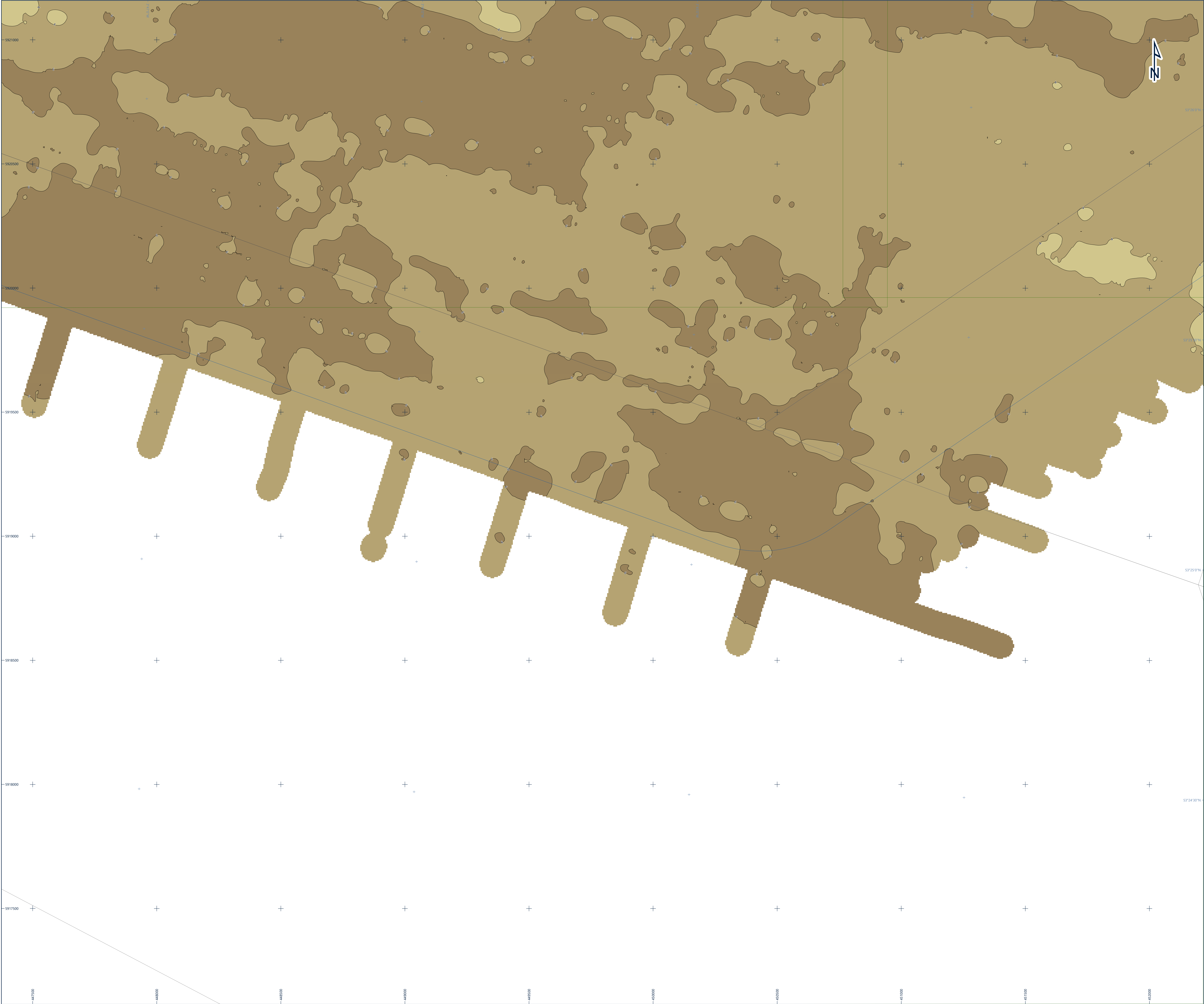
Scale 1 : 5,000 at original A0 page size

0 50 100 200 300 400 500 metres

0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name	Chart No.	
200655_Array_R03_WIS_Upper_SedimentIsochore_10	10 of 11	



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R03 Western Irish Sea Upper Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- > 10.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

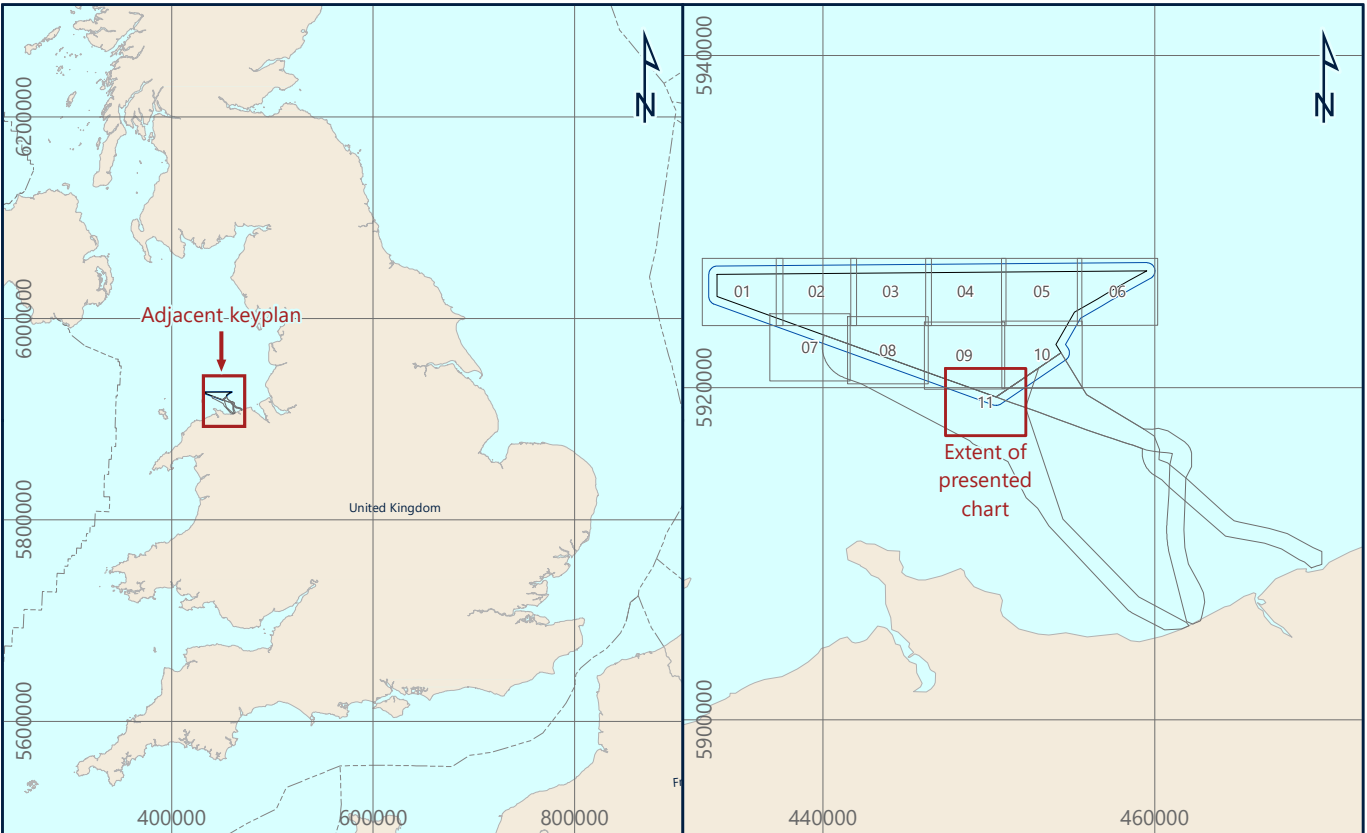
Notes

- 1) Sub-bottom profiler interpretation was conducted using Innomar Medium SES-2000 parametric sub-bottom profiler data.
- 2) Grids have been derived from SBP data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019).
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Geodetic Parameters

Geodetic datum	World Geodetic System 1984
Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	00°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



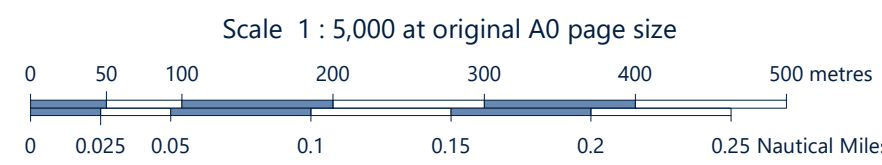
Awel Y Môr Offshore Wind Farm Ltd
Tigwrys Bly, Wernall Hill Business Park, Wernall Way, Swanton, SWS GPE, Llanelli, Llanelli, Llanelli

AWEL Y MÔR

Fugro
Victory House, Trellicker Wharf Unit 16, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 3500

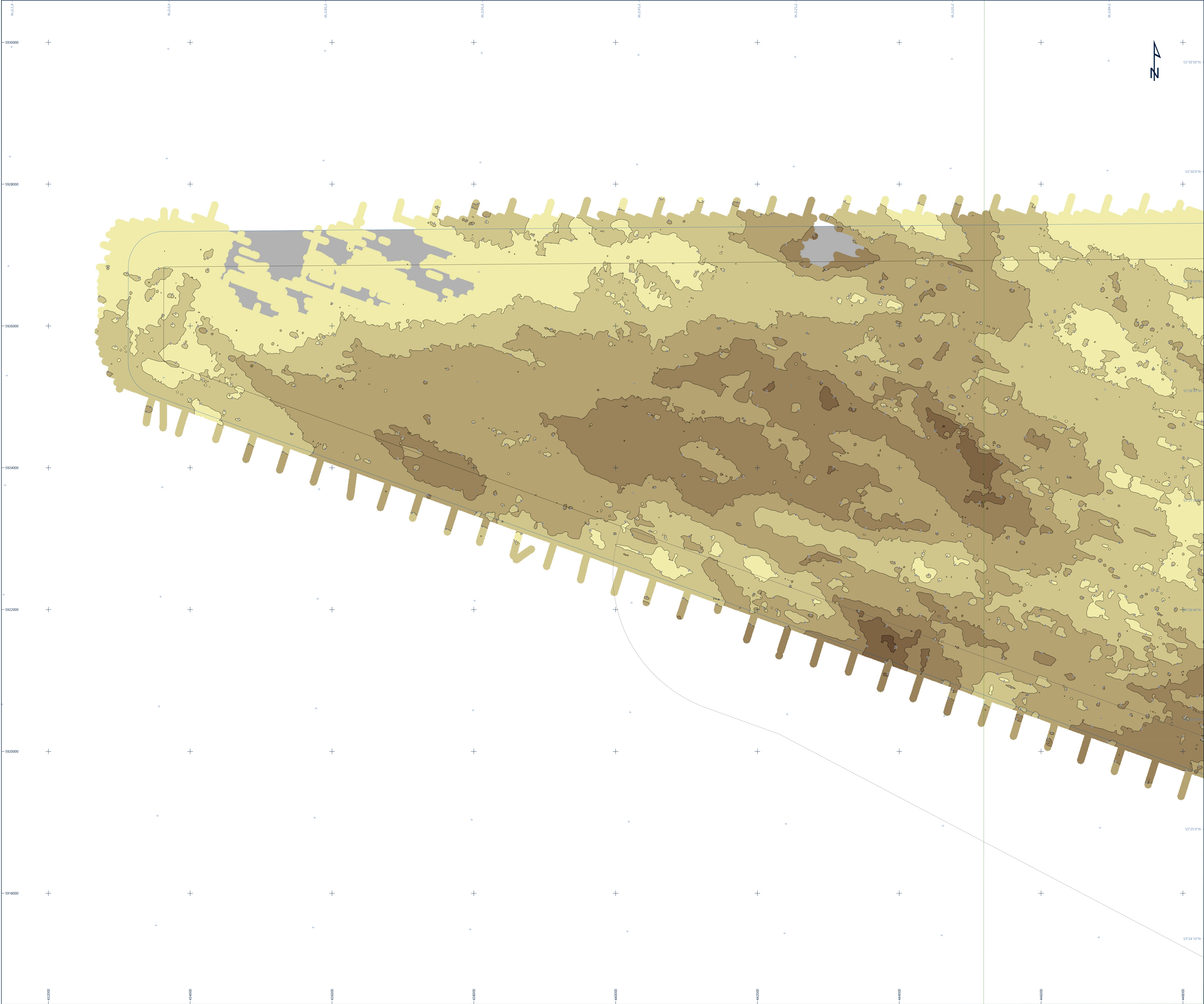


R03 WEST IRISH SEA UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
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03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655.Array_R03_WIS_Upper_SedimentIsochore.11		11 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R03 Western Irish Sea Upper Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- > 10.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

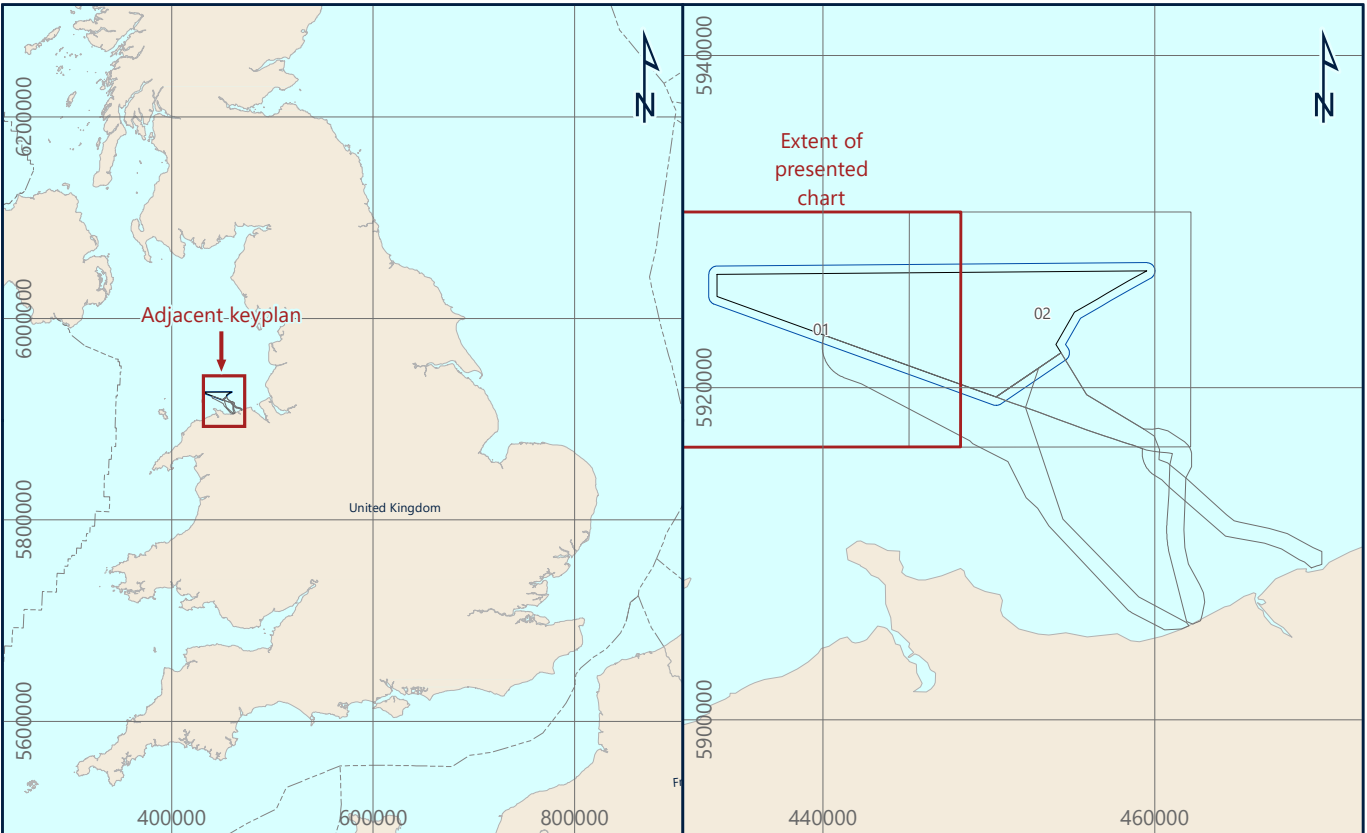
Notes

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- 2) Grids have been derived from SBP data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019).
- 3) Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochores have been gridded with a 5 m cell size.

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Geodetic Parameters

Geodetic datum: World Geodetic System 1984
Ellipsoid: WGS84
Semi-Major Axis: 6,378,137.000 m
Inverse Flattening: 298.257222563
Projection: WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM): 0°00'00" W
Latitude of Origin: 0°00'00" N
False Easting: 500,000 mE
False Northing: 0 mN
Scale factor at CM: 0.9996
Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



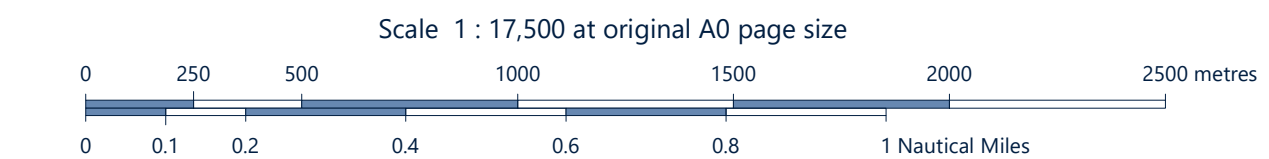
Awel Y Môr Offshore Wind Farm Ltd
Tighefnos Blyg, Werneddi Hill Business Park, Werneddi Blyg, Swanton, SWS GPE, Llanelli, Llanelli, Llanelli

AWEL Y MÔR

Fugro
Victory House, Trelleborg Wharf Unit 161, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 5500

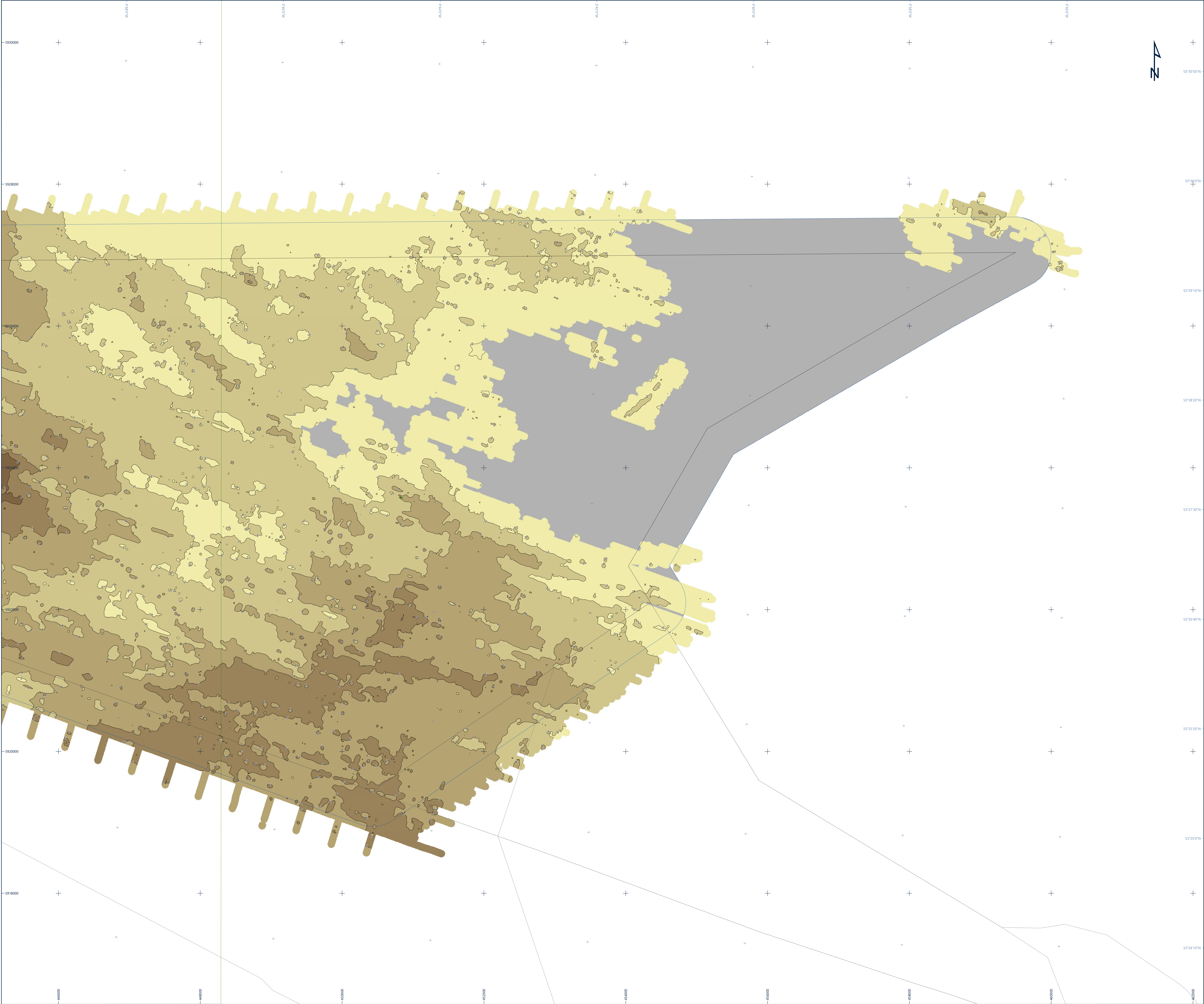


R03 WEST IRISH SEA UPPER SEDIMENT ISOCHORE OVERVIEW AWEL Y MÔR OFFSHORE WIND FARM GEOPHYSICAL SURVEY 2020 UK IRISH SEA



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	01 December 2020	Final Issue - Revision 1	OOT	DS	SB	BPT
02	04 February 2021	Final Relissue - Revision 2	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655.Array_R03_WIS_Upper_SedimentIsochore_Overview_01		01 of 02



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R03 Western Irish Sea Upper Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- > 10.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

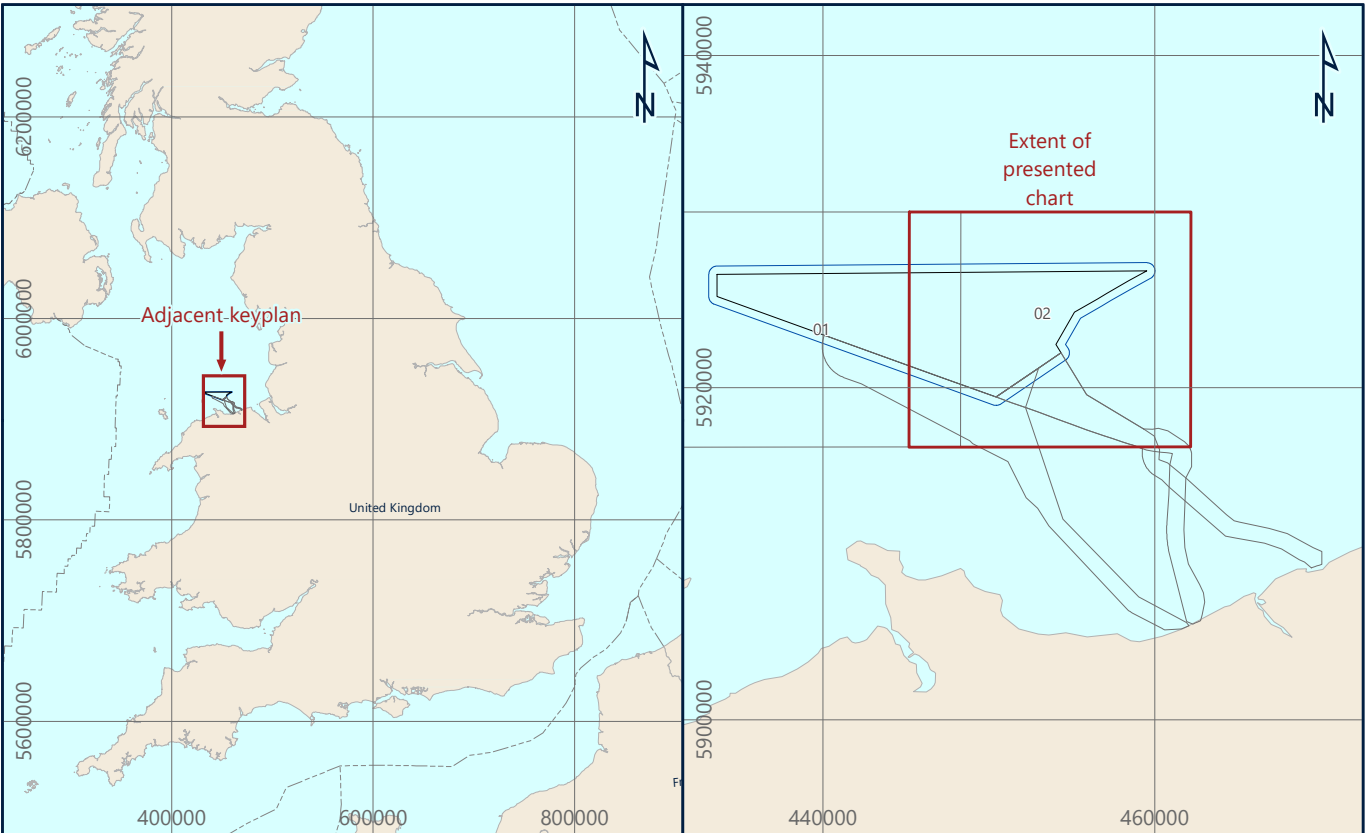
Notes

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Geodetic Parameters

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Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	00°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tighefnis Blyg, Wernall Hill Business Park, Wernall Way, Swanton, SWS GPE, Llanelli, Gwent, NP23 5SD

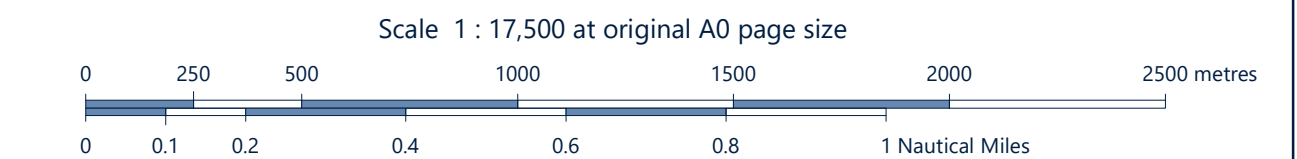
AWEL Y MÔR

Fugro

Victory House, Trelleborg Wharf Unit 161, Hamilton Road, Portsmouth PO6 4PX
Tel: +44 23 9220 5500



**R03 WEST IRISH SEA UPPER
SEDIMENT ISOCHORE OVERVIEW**
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



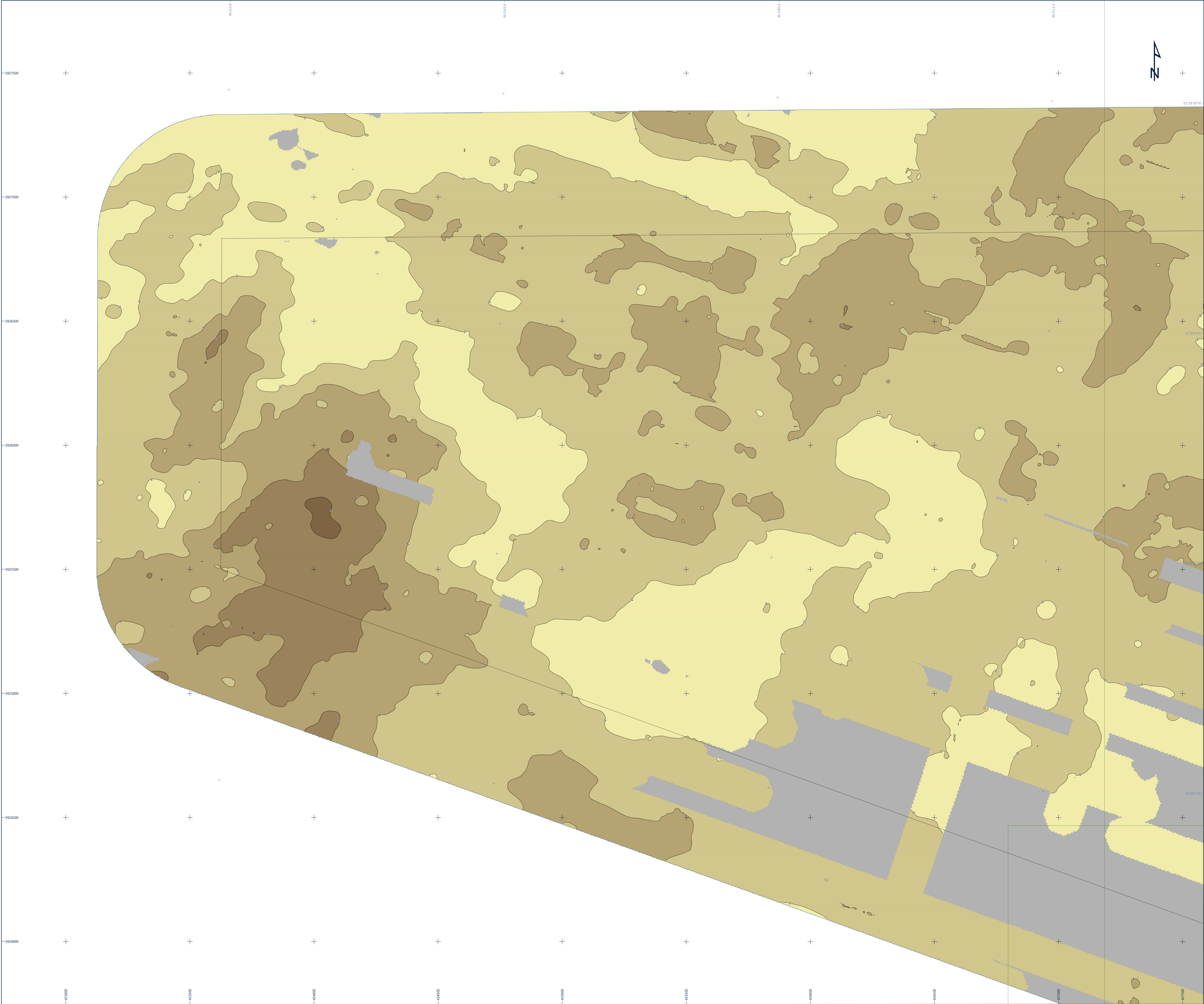
Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	01 December 2020	Final Issue - Revision 1	OOT	DS	SB	BPT
02	04 February 2021	Final Relissue - Revision 2	OOT	DS	SB	BPT
-	-	-	-	-	-	-
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R03_WIS_Upper_SedimentIsochore_Overview_02		02 of 02

Appendix I

Charts – R04 Western Irish Sea

Lower Sediment Isochore (SBP)



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- > 10.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

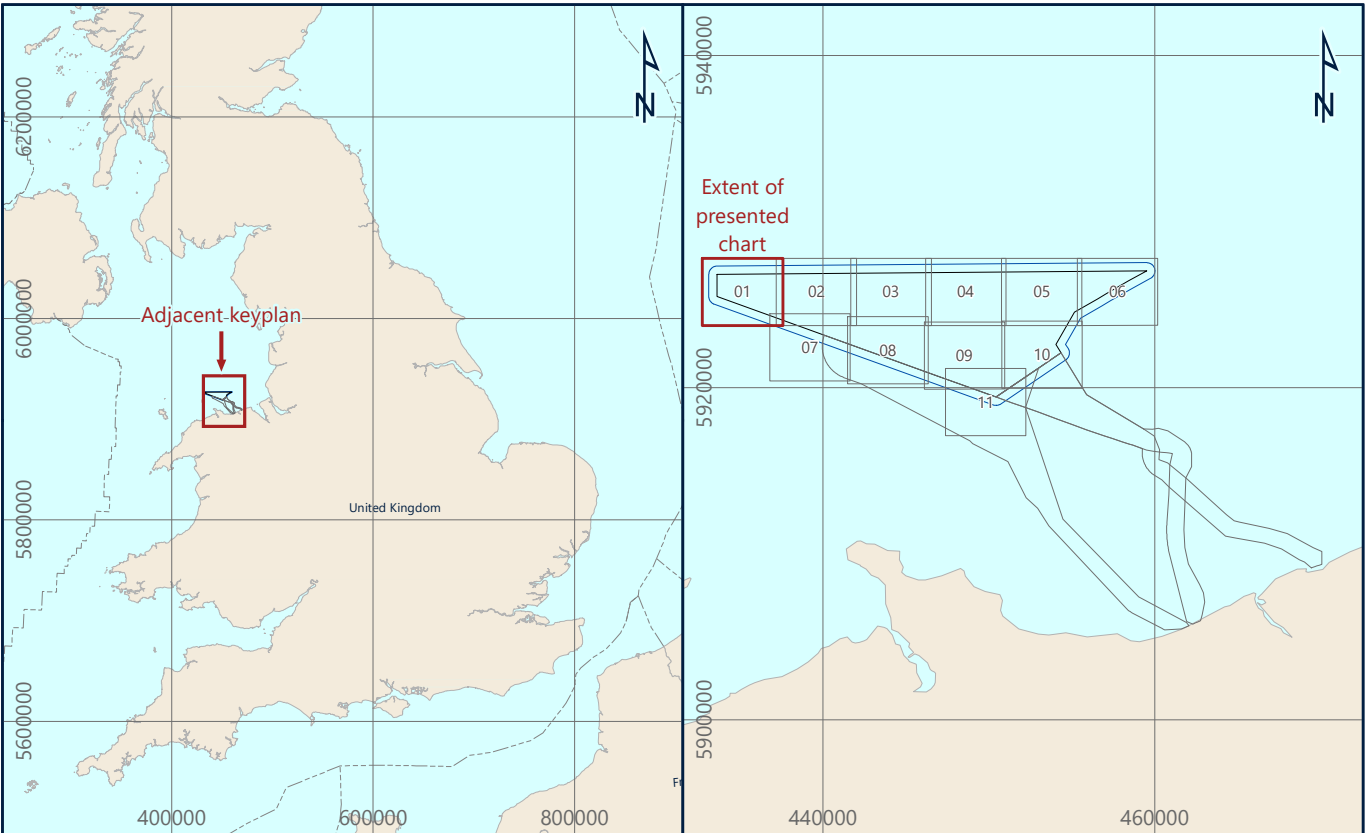
Notes

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Inverse Flattening: 298.257223563
Projection: WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM): 03°00'00" W
Latitude of Origin: 00°00'00" N
False Easting: 500,000 mE
False Northing: 0 mN
Scale Factor at CM: 0.9996
Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregorwg Way, Wernand Hill Business Park, Wernand Way, Swansea, SA5 8PE, United Kingdom

AWEL Y MÔR

Fugro

Victory House, Tregorwg Wharf Unit 161, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 5500

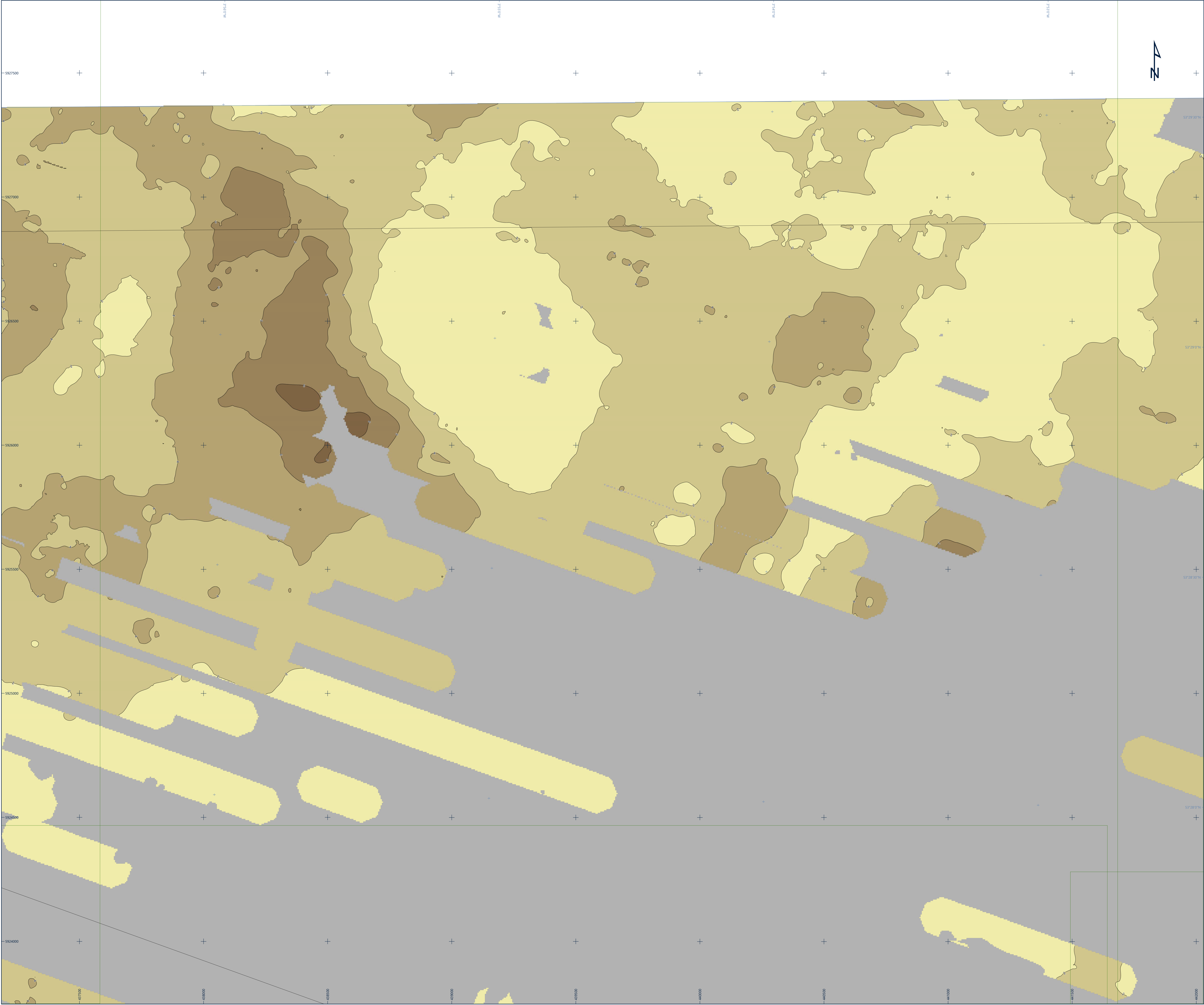


R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE SBP
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

Scale 1 : 5,000 at original A0 page size
0 50 100 200 300 400 500 metres
0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name	Chart No.	
200655_Array_R04_WIS_Lower_SedimentIsochore_SBP.01	01 of 11	



Legend

- UTM Grid
 - Geographical Grid
 - Chart Extent
 - Windfarm Extent
 - Array Survey Extent
 - Export Cable Route Survey Extent
 - MetMast C Borehole
- R04 Western Irish Sea Lower Sediment Isochore Thickness (m)**
- ≤ 2.0
 - 2.1 - 4.0
 - 4.1 - 6.0
 - 6.1 - 8.0
 - 8.1 - 10.0
 - > 10.0
- Sediment Isochore at 2 m Interval
- Area of No Interpretation

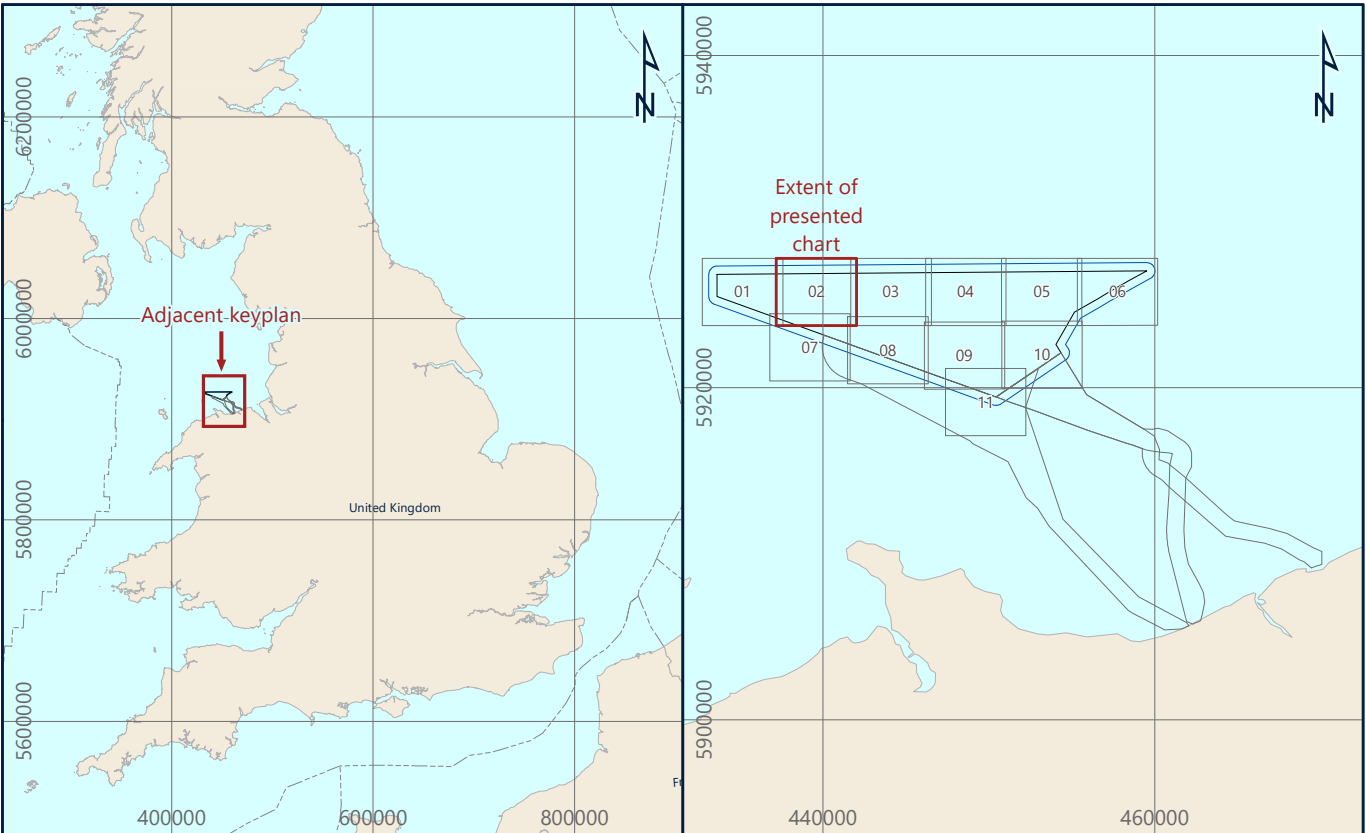
Notes

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Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregaron Bldg, Wernidol Hill Business Park, Wernidol Way, Swanton, SWS 6PE, United Kingdom

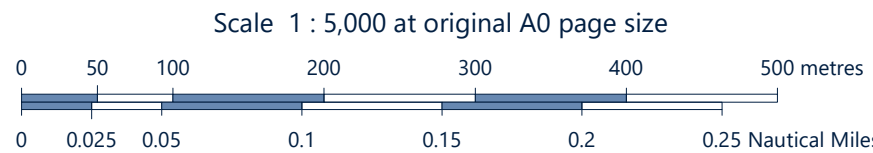
AWEL Y MÔR

Fugro

Victory House, Tregilgar Wharf Unit 161, Hamilton Road, Porchester PO6 4PX
Tel: +44 23 9220 3300

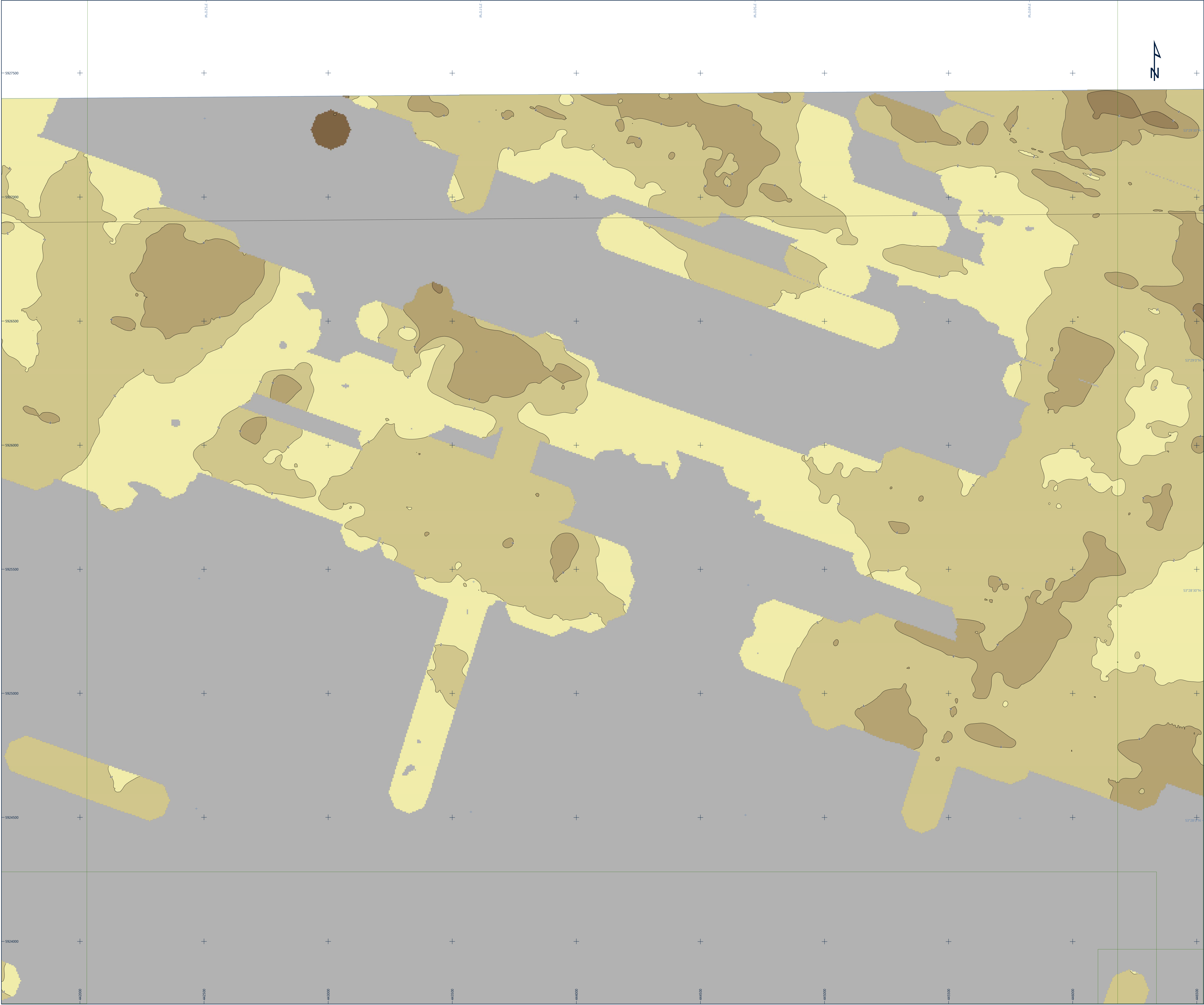


R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE SBP
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_SBP_02		02 of 11



Legend

- UTM Grid
 - Geographical Grid
 - Chart Extent
 - Windfarm Extent
 - Array Survey Extent
 - Export Cable Route Survey Extent
 - MetMast C Borehole
- R04 Western Irish Sea Lower Sediment Isochore Thickness (m)**
- ≤ 2.0
 - 2.1 - 4.0
 - 4.1 - 6.0
 - 6.1 - 8.0
 - 8.1 - 10.0
 - > 10.0
- Sediment Isochore at 2 m Interval
- Area of No Interpretation

Notes

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Geodetic Parameters

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Semi-Major Axis: 6,378,137.000 m

Inverse Flattening: 298.257223563

Projection: WGS84 / UTM Zone 30N (EPSG: 32630)

Central Meridian (CM): 03°00'00" W

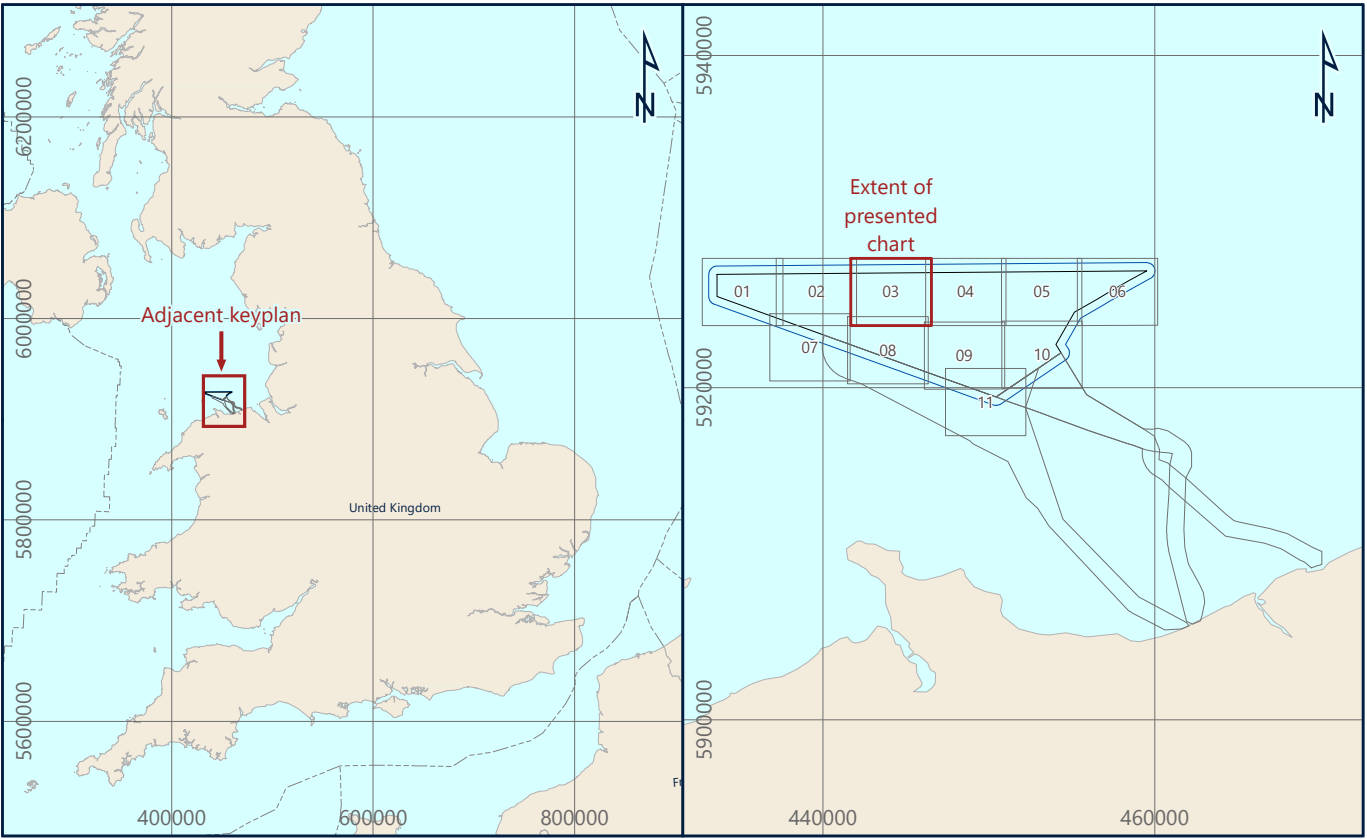
Latitude of Origin: 07°00'00" N

Fake Easting: 500,000 mE

Fake Northing: 0 mN

Scale Factor at CM: 0.9996

Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tigwriol Blyg, Wernall Hill Business Park, Wernall Way, Swanton, SWS 6PE, United Kingdom

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Tel: +44 23 9220 5500



R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE SBP
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

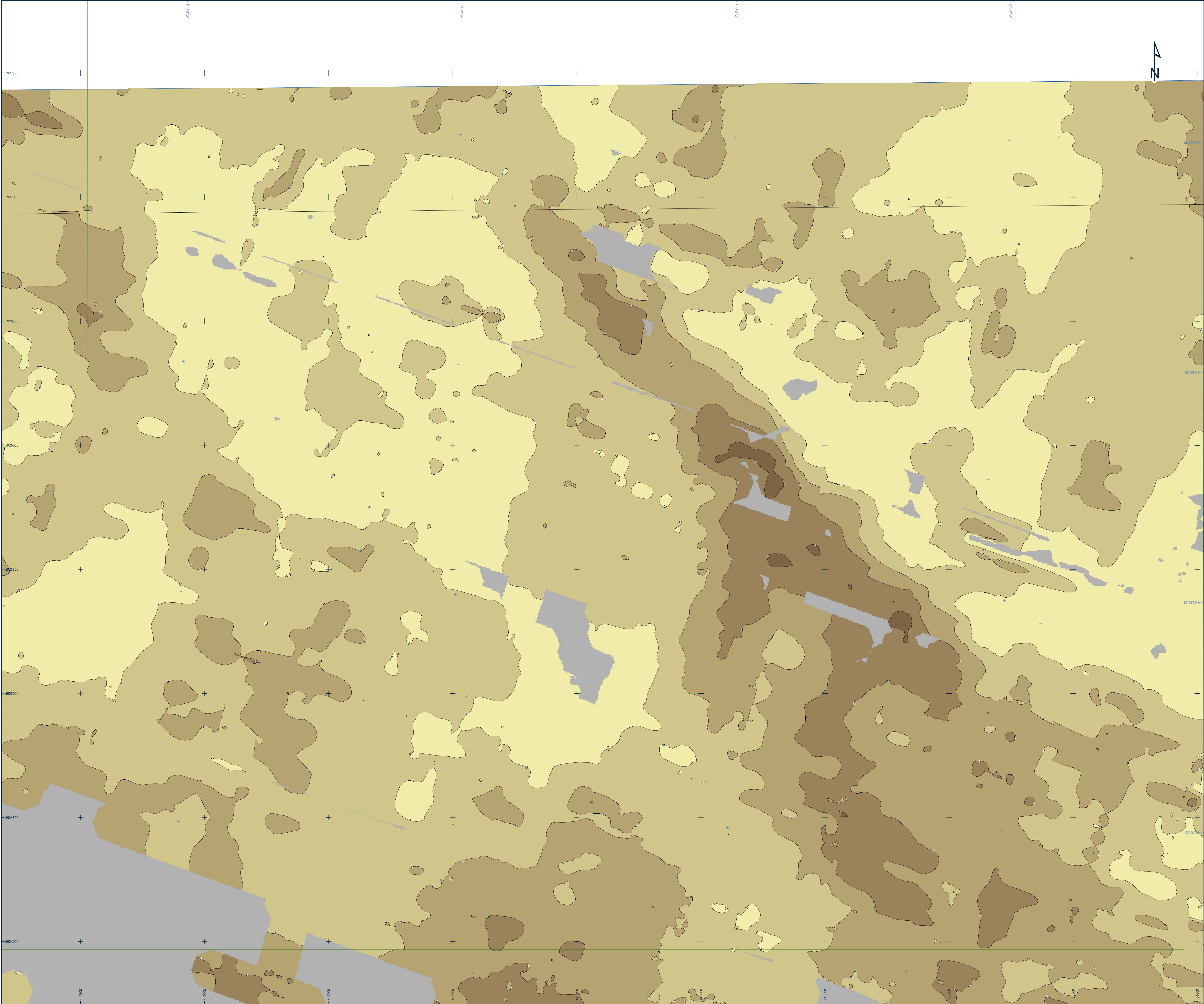
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0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_SBP_03		03 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- > 10.0

- Sediment Isochore at 2 m interval
- Area of No Interpretation

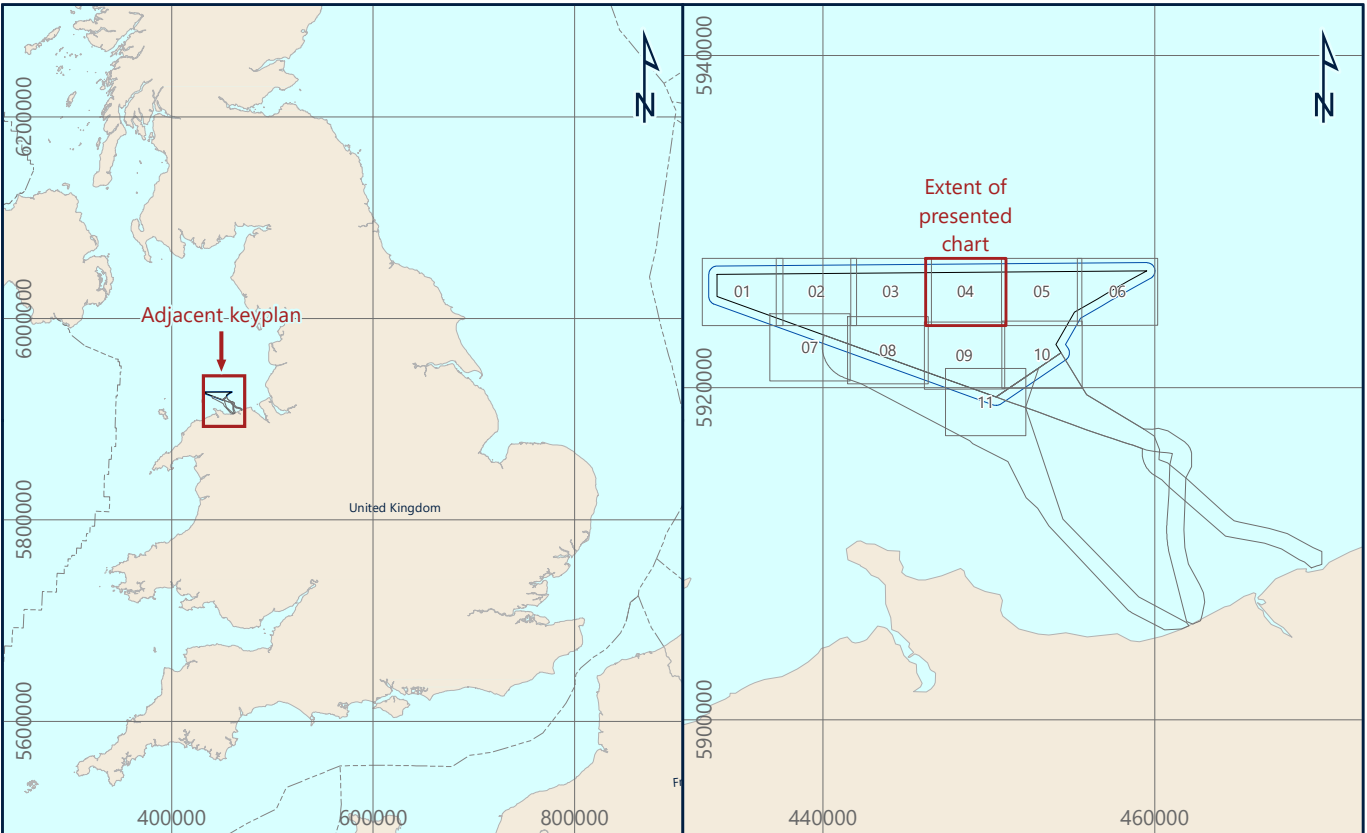
Notes

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Inverse Flattening: 298.257223563
Projection: WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM): 03°00'00" W
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False Northing: 0 mN
Scale Factor at CM: 0.9996
Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregorwg Way, Wernidol Hill Business Park, Wernidol Way, Swansea, SA5 8PE, United Kingdom

AWEL Y MÔR

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Tel: +44 23 9220 3500



R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE SBP
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

Scale 1 : 5,000 at original A0 page size
0 50 100 200 300 400 500 metres
0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_SBP_04		04 of 11



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Whitehill Way
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