



Awel y Môr Offshore Wind Farm

Category 6: Environmental Statement

Volume 4, Annex 2.5: Seafloor and Shallow Geological Results (Offshore ECC) (Part 4)

Date: April 2022

Revision: A

Application Reference: 6.4.2.5.4

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

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Swindon Limited

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Whitehill Way
Swindon
Wiltshire SN5 6PB
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
 100 Route East A Kilometre Post
 100 Route East B Kilometre Post
 — Export Corridor Centre Line
 □ Export Cable Route Survey Extent
 □ Windfarm Extent
 □ Array Survey Extent
 □ Chart Extent
 ■ Land
 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

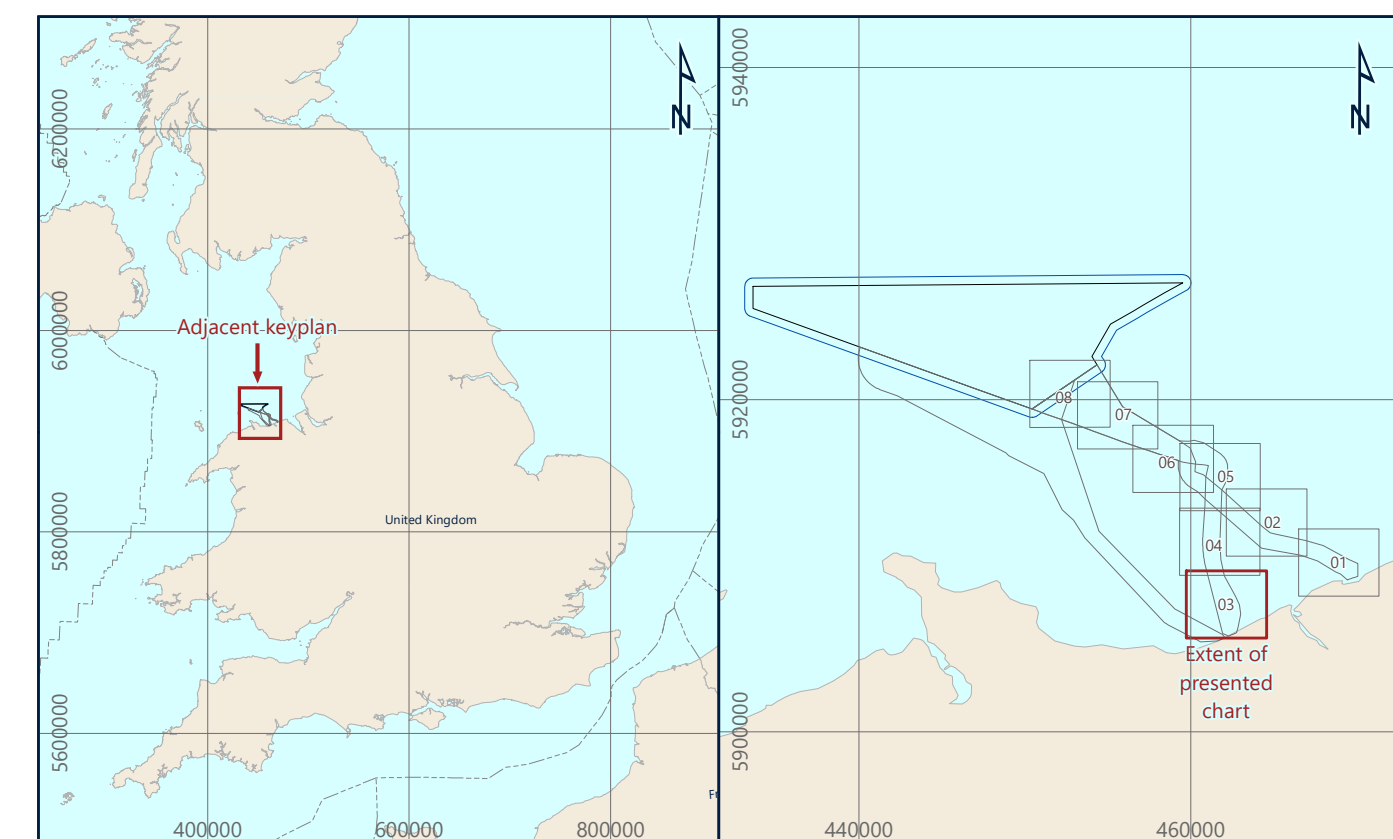
Notes

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

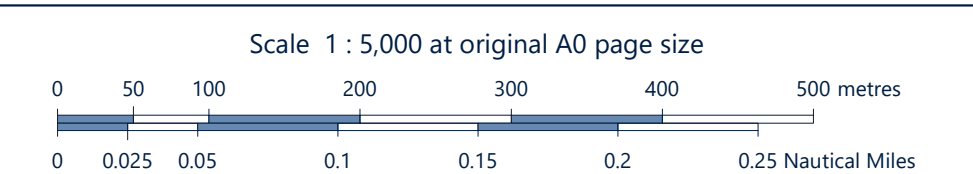
Geoidetic datum	World Geoidetic System 1984
Ellipsoid	WGS84
Semi-Major Axis	6,378,137.00 m
Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG 32630)
Central Meridian (CM)	0°00'00" W
Latitude of Origin	0°00'00" N
False Easting	500,000 m
False Northing	0 mN
Scale factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Trigonos Bldg, Windmill Hill Business Park, Whitehill Way, Swindon, SN5 6PB, United Kingdom

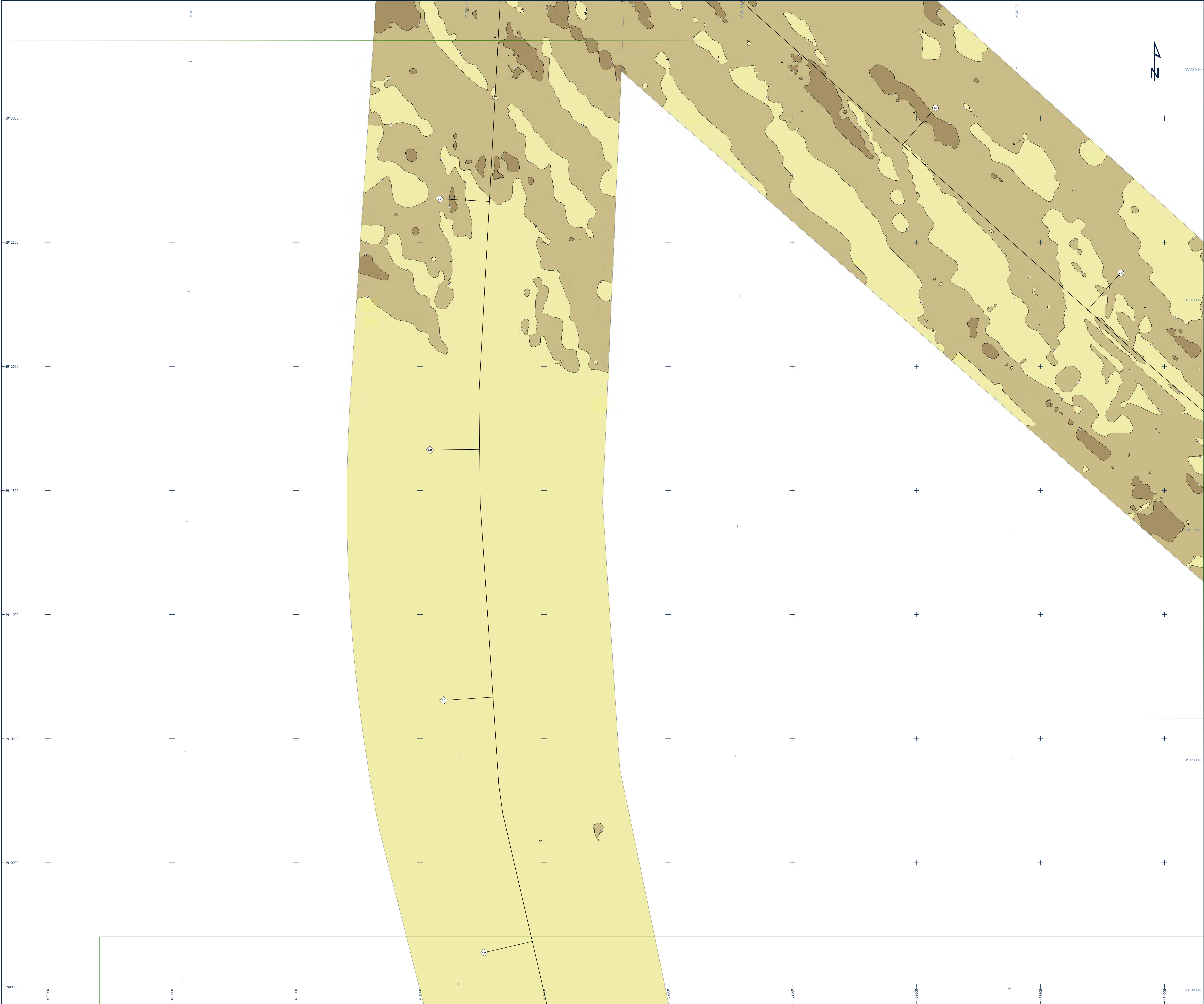
Fugro
Victory House, Trafalgar Wharf (Unit 16), Hamilton Road, Portsmouth PO6 4PX
Tel: +44 23 9220 5500

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



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	25 November 2020	Draft Issue - Revision 1	ODT	DS	SB	BPT
02	18 January 2021	Final Issue - Revision 2	ODT	DS	SB	BPT
03	19 February 2021	Final Reissue - Revision 3	ODT	JL	DS	BPT

Fugro Project No. 200655	Vessel(s) Fugro Mercator Fugro Seeker Fugro Valleyline	Survey Date 10 June to 11 August 2020 17 July to 11 August 2020 16 July to 30 September 2020
File Name 200655_EastAB_R01_Holocene_Upper_Sediments.schore 03	Chart No. 03 of 08	



Legend

- UTM Grid
 - Geographical Grid
 - Route East A Kilometre Post
 - Route East B Kilometre Post
 - Export Corridor Centre Line
 - Export Cable Route Survey Extent
 - Windfarm Extent
 - Array Survey Extent
 - Chart Extent
 - Land
- 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

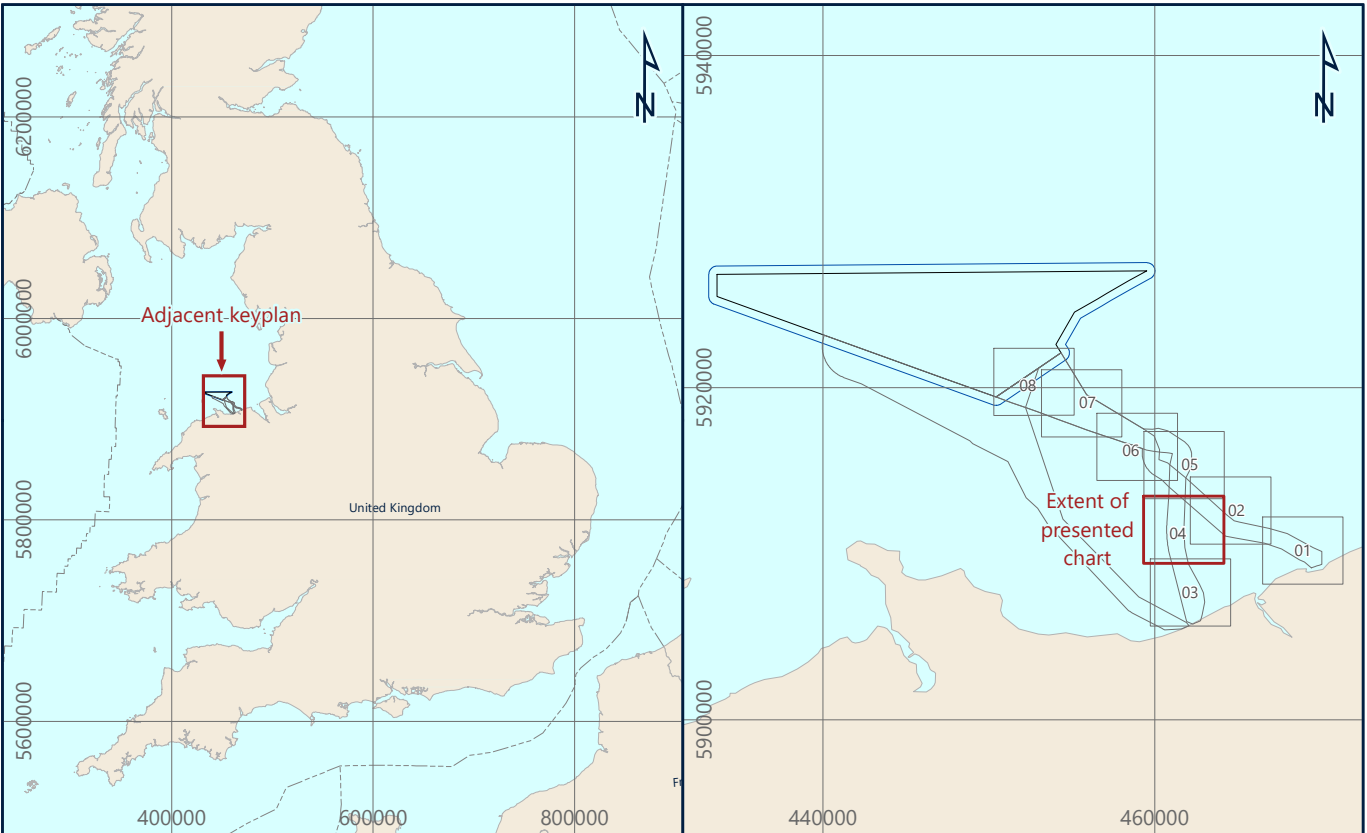
Notes

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- 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	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

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FUGRO

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	25 November 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	18 January 2021	Final Issue - Revision 2	OOT	DS	SB	BPT
03	19 February 2021	Final Reissue - Revision 3	OOT	JL	DS	BPT
-	-	-	-	-	-	-

Fugro Project No. 200655 Vessel(s) Fugro Mercator Fugro Gekko Fugro Valiente Survey Date 10 June to 11 August 2020 17 July to 11 August 2020 16 July to 30 September 2020

File Name 200655_EstAB_R01_Holocene_Upper_SedimentsIsochore_04 Chart No. 04 of 08



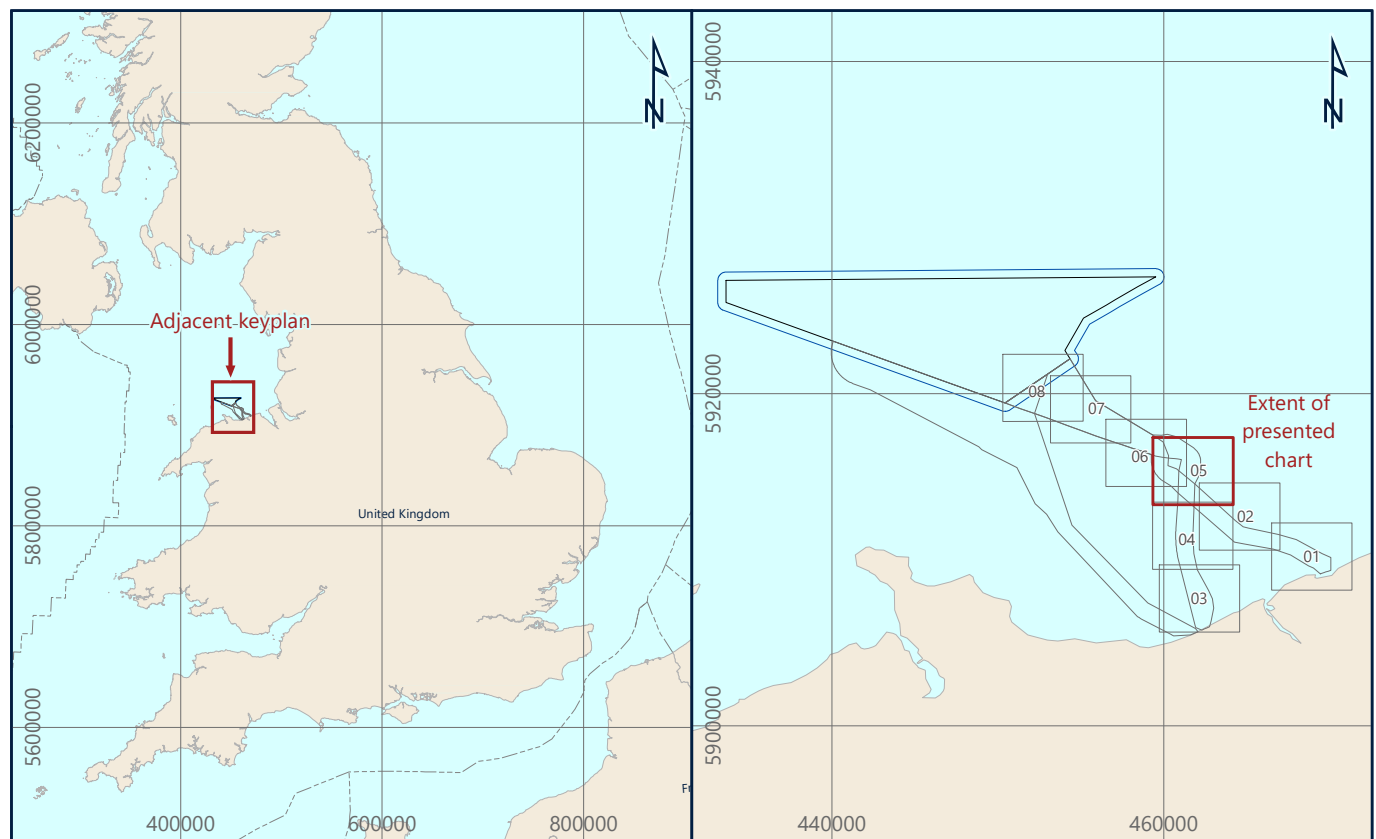
Notes

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Geodetic Parameters

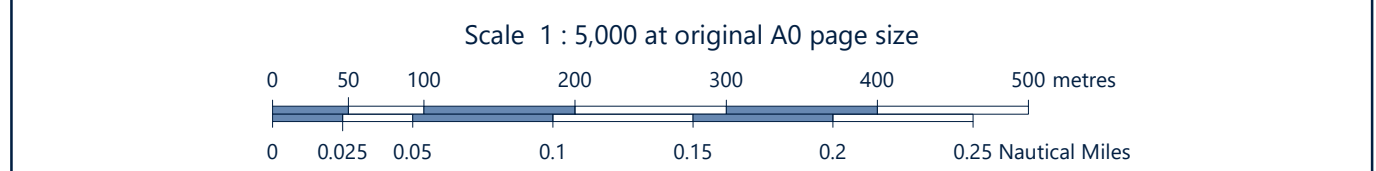
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Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG 32630)
Central Meridian (CM)	017°00'00" N
Latitude of Origin	0°00'00" N
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False 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
Trigonos Bldg, Windmill Hill Business Park, Whitehill Way, Swindon, SN5 6PB, United Kingdom

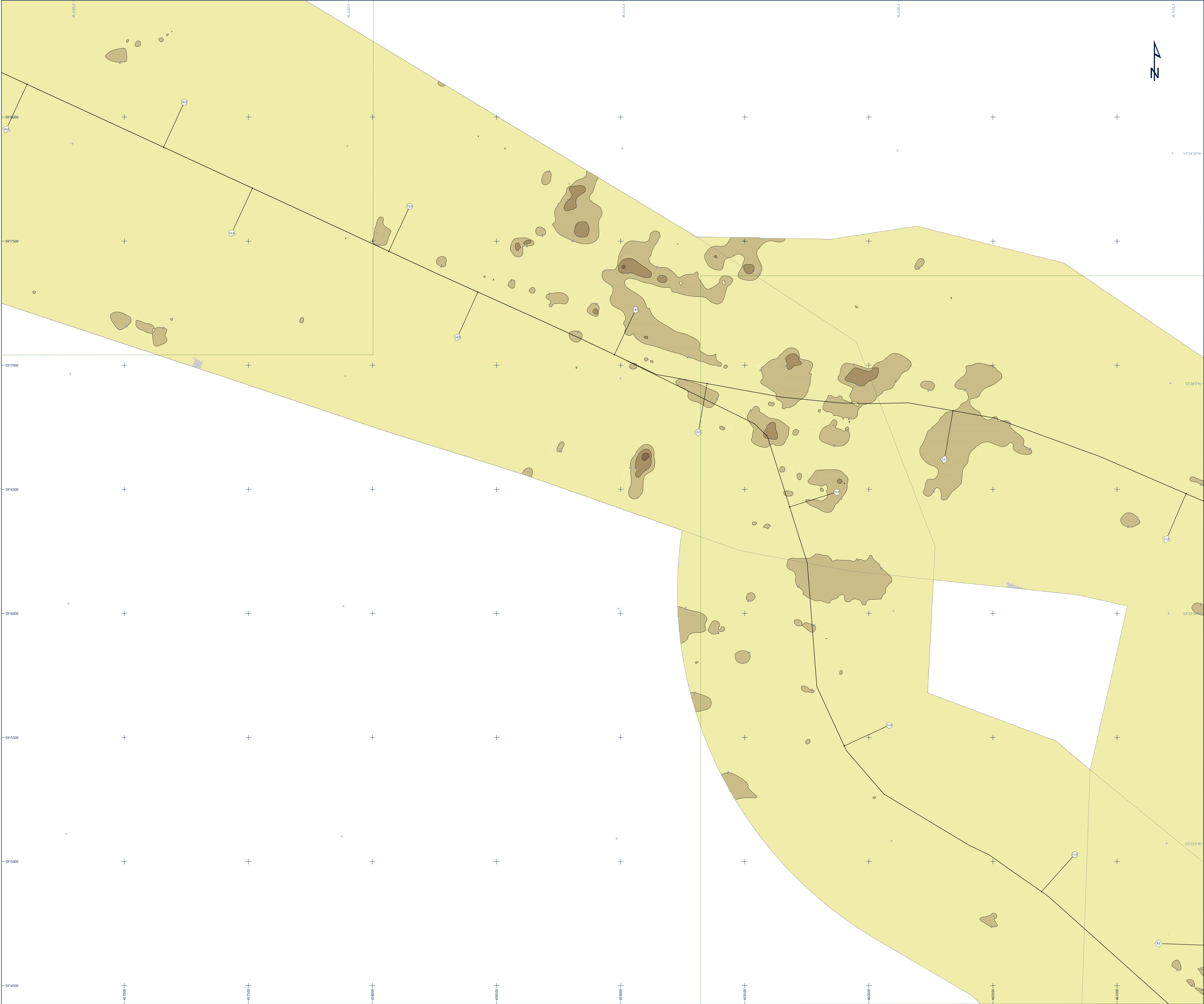
Fugro
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R01 HOLOCENE UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	25 November 2020	Draft Issue - Revision 1	ODT	DS	S8	BPT
02	18 January 2021	Final Issue - Revision 2	ODT	DS	S8	BPT
03	19 February 2021	Final Reissue - Revision 3	ODT	JL	DS	BPT

Fugro Project No. 200655	Vessel(s) Fugro Mercator Fugro Seeker Fugro Valleyline	Survey Date 10 June to 11 August 2020 17 July to 11 August 2020 16 July to 30 September 2020
File Name 200655_EastAB_R01_Holocene_Upper_SedimentsIschore_05	Chart No. 05 of 08	



Legend

- UTM Grid
 - Geographical Grid
 - Route East A Kilometre Post
 - Route East B Kilometre Post
 - Export Corridor Centre Line
 - Export Cable Route Survey Extent
 - Windfarm Extent
 - Array Survey Extent
 - Chart Extent
 - Land
- 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

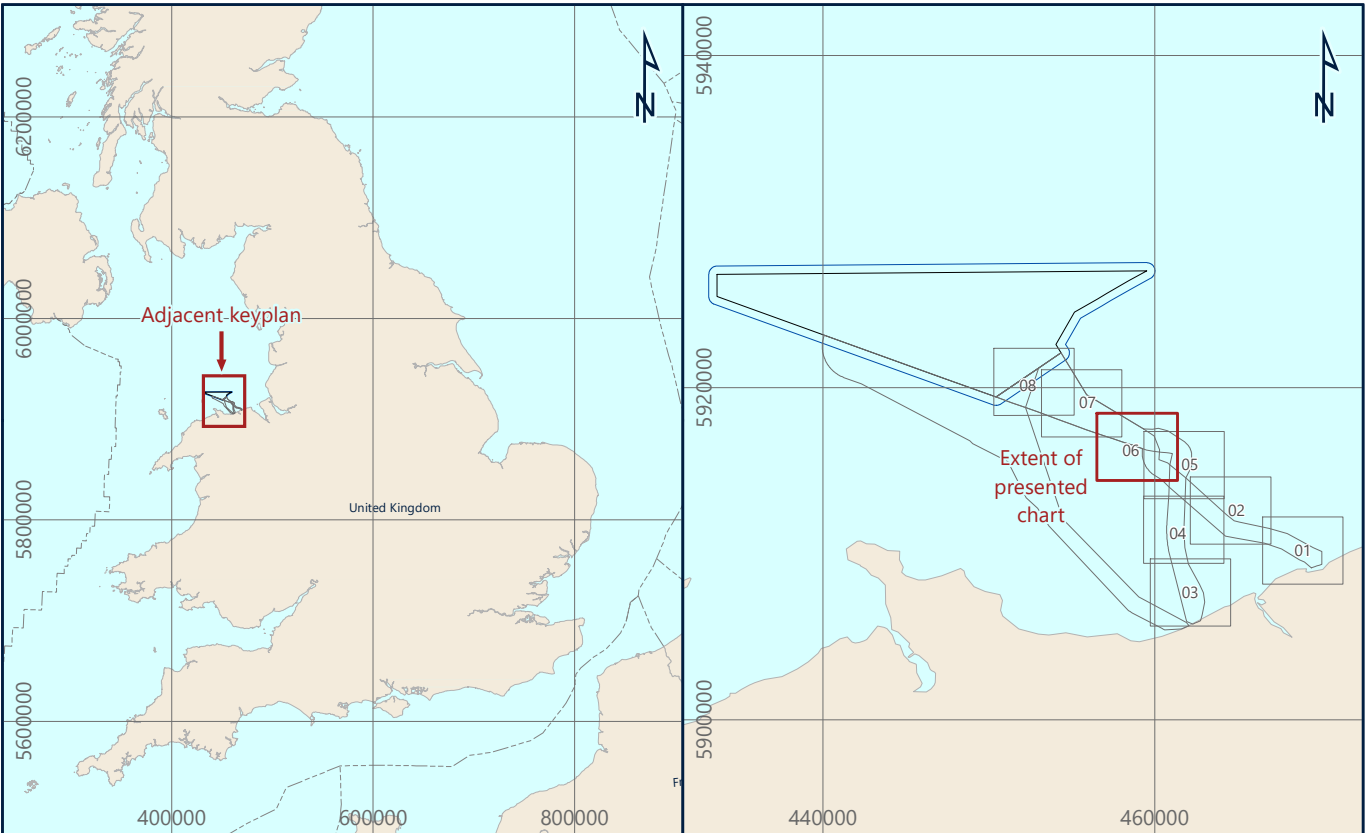
Notes

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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	09°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

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

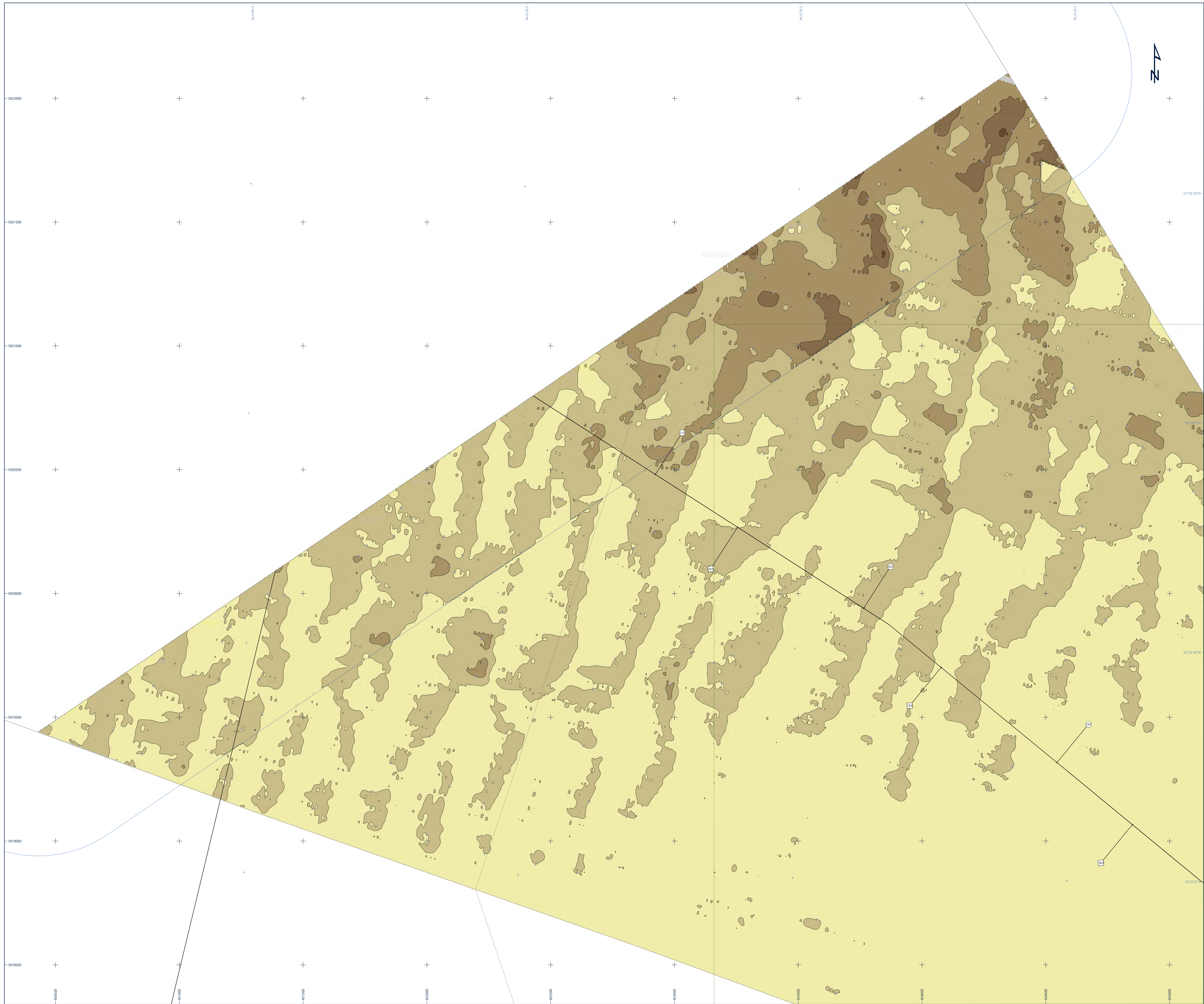
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0 50 100 200 300 400 500 metres

0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
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03	19 February 2021	Final Issue - Revision 3	OOT	JL	DS	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator Fugro Seaker Fugro Valkyrie	10 June to 11 August 2020 17 July to 11 August 2020 16 July to 30 September 2020
File Name	Chart No.	
200655_EstAB_R01_Holocene_Upper_SedimentsIsochore_06	06 of 08	



Legend

- UTM Grid
- Geographical Grid
- Route East A Kilometre Post
- Route East B Kilometre Post
- Export Corridor Centre Line
- Export Cable Route Survey Extent
- Windfarm Extent
- Array Survey Extent
- Chart Extent
- Land

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

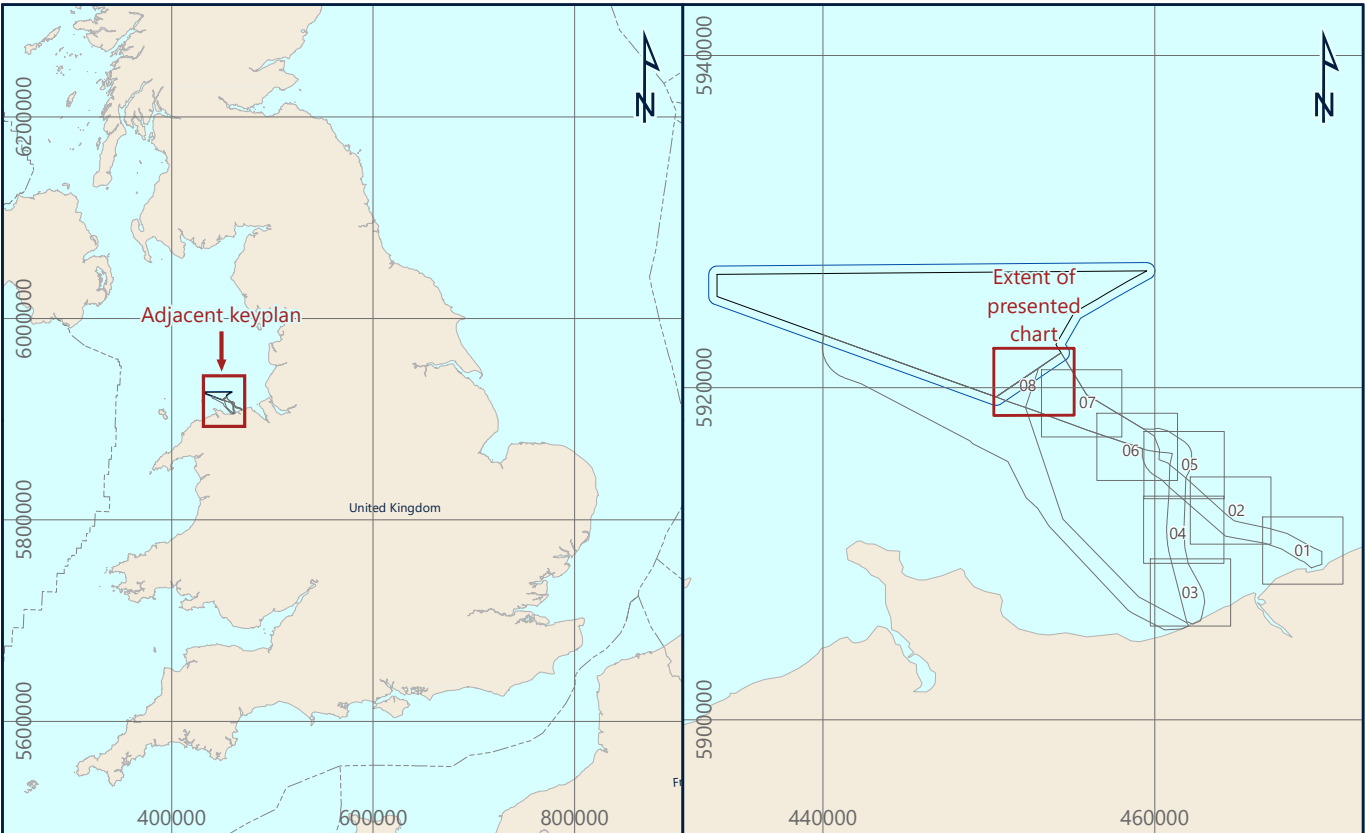
Notes

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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
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, Wernand Hill Business Park, Wernand Way, Swansea, SW5 9PE, United Kingdom

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Tel: +44 23 9220 5500

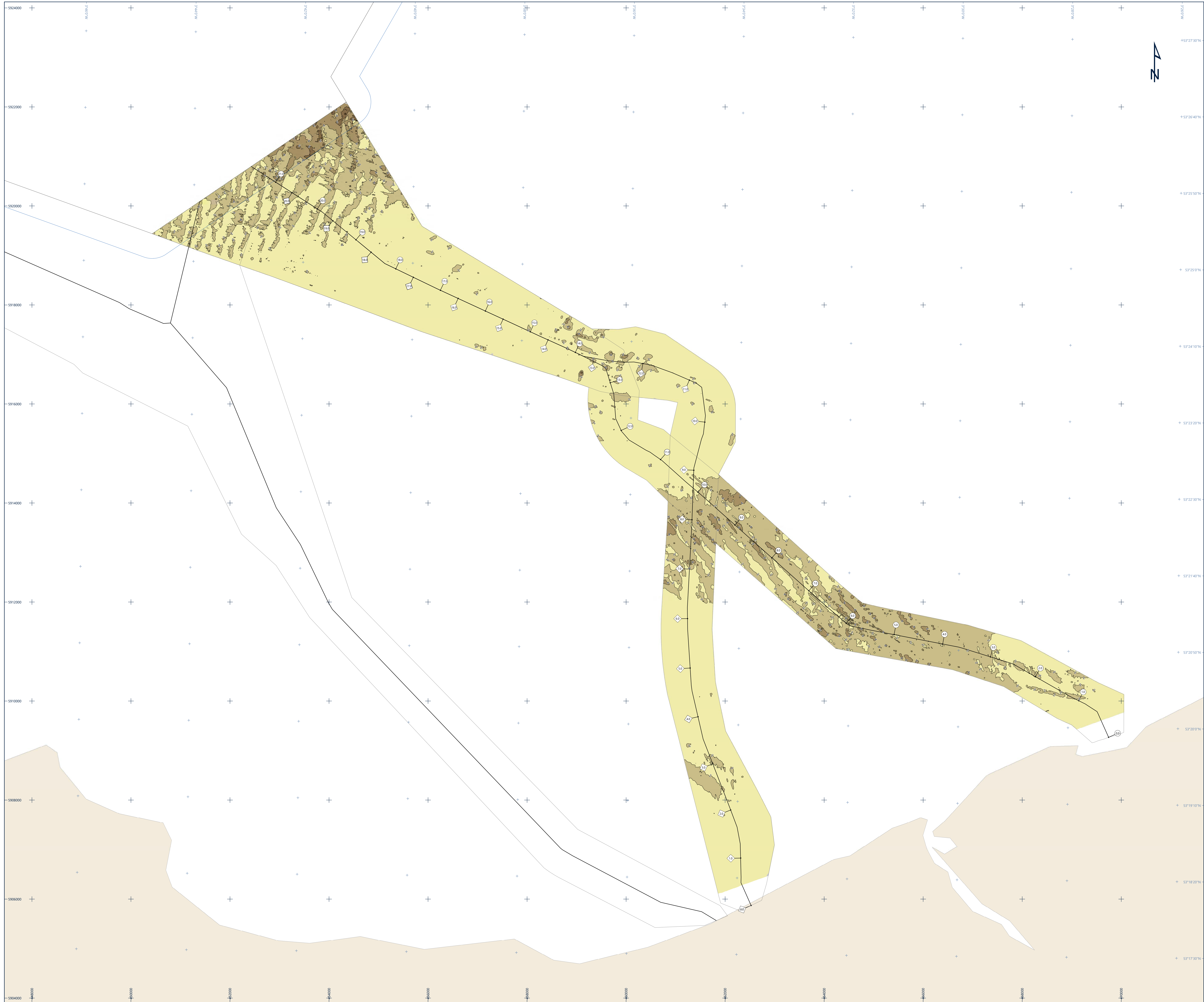
FUGRO

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

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Fugro Project No. 200655 Vessel(s) Fugro Mercator Fugro Seaker Fugro Valkyrie Survey Date 10 June to 11 August 2020 17 July to 11 August 2020 16 July to 30 September 2020
File Name 200655_EstAB_R01_Holocene_Upper_SedimentsIsochore_08 Chart No. 08 of 08



Legend

- UTM Grid
- Geographical Grid
- Route East A Kilometre Post
- Route East B Kilometre Post
- Export Corridor Centre Line
- Export Cable Route Survey Extent
- Windfarm Extent
- Array Survey Extent
- Land

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

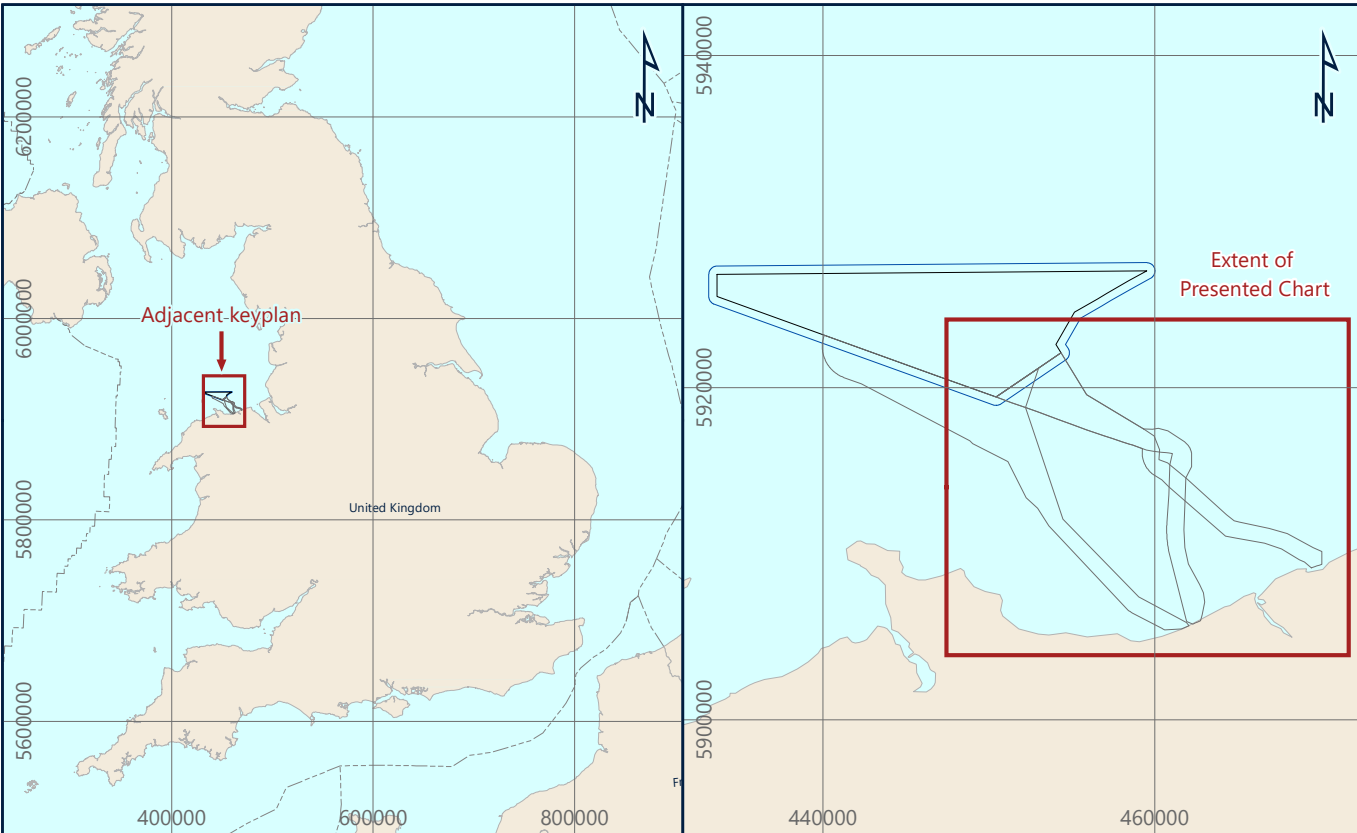
Latitude of Origin: 00°00'00" N

Fake Easting: 500,000 mE

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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Tregorwg Way, Wernand Hill Business Park, Wernand Way, Swansea, SA5 8PE, United Kingdom

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Tel: +44 23 9220 5500

FUGRO

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

Scale 1 : 25,000 at original A0 page size

0 250 500 1000 1500 2000 2500 metres

0 0.1 0.2 0.4 0.6 0.8 1 Nautical Miles

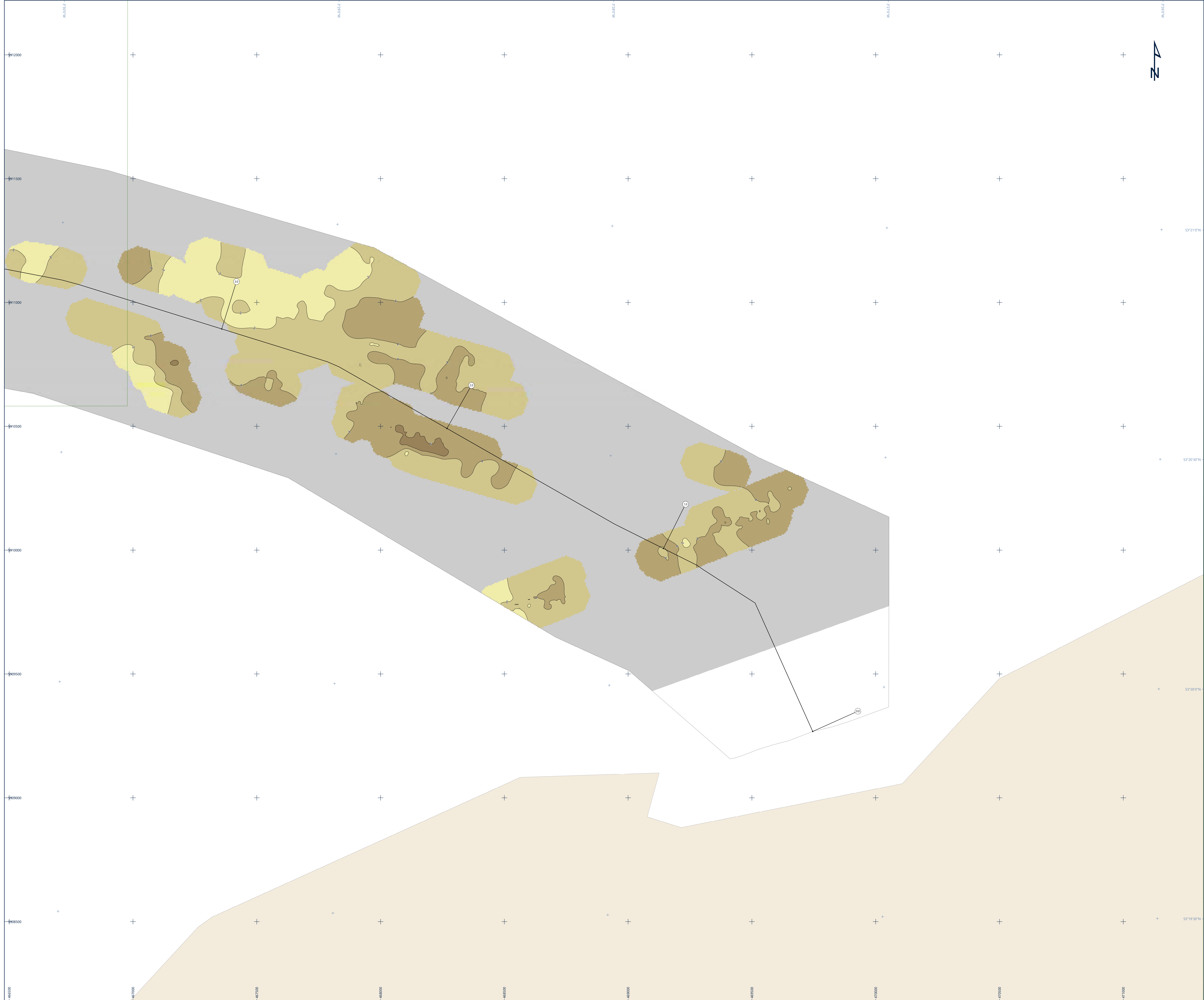
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-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator Fugro Seaker Fugro Valkyrie	10 June to 11 August 2020 17 July to 11 August 2020 16 July to 30 September 2020
File Name	Chart No.	
200655_EastAB_R01_Holocene_Upper_SedimentsIsochore_Overview	01 of 01	

Appendix H

Charts – R03 WIS Upper

Sediment Isochores



Legend

- UTM Grid
- Geographical Grid
- Route East A Kilometre Post
- Route East B Kilometre Post
- Export Corridor Centre Line
- Export Cable Route Survey Extent
- Windfarm Extent
- Array Survey Extent
- Chart Extent
- Land

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

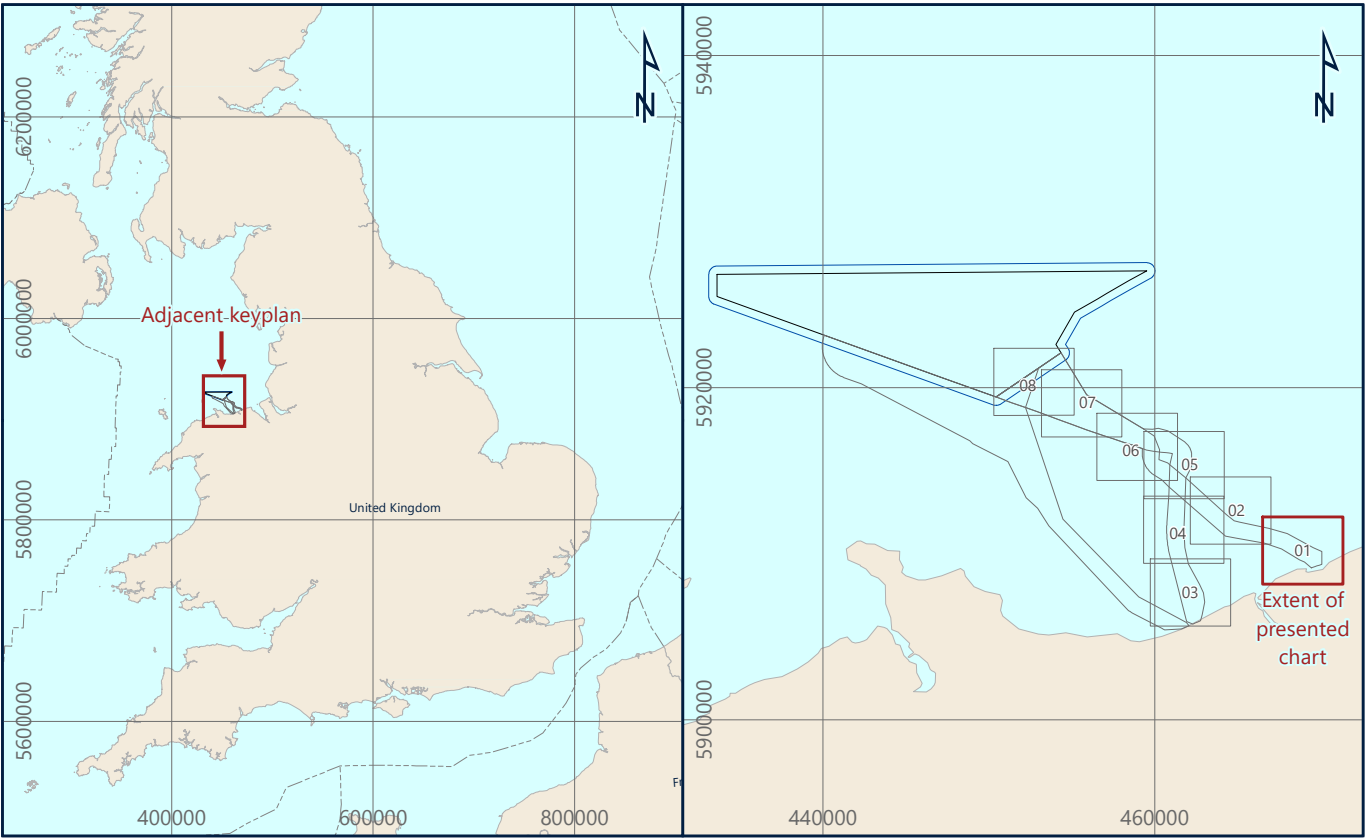
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False Northing	0 mN
Scale factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregaron Way, Wrenford Hill Business Park, Wrenford Way, Seaton, SWS 9PE, United Kingdom

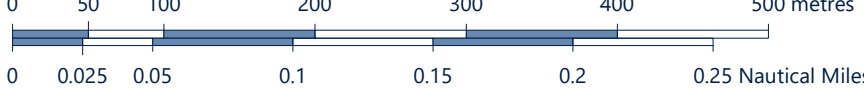
AWEL Y MÔR

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

FUGRO

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

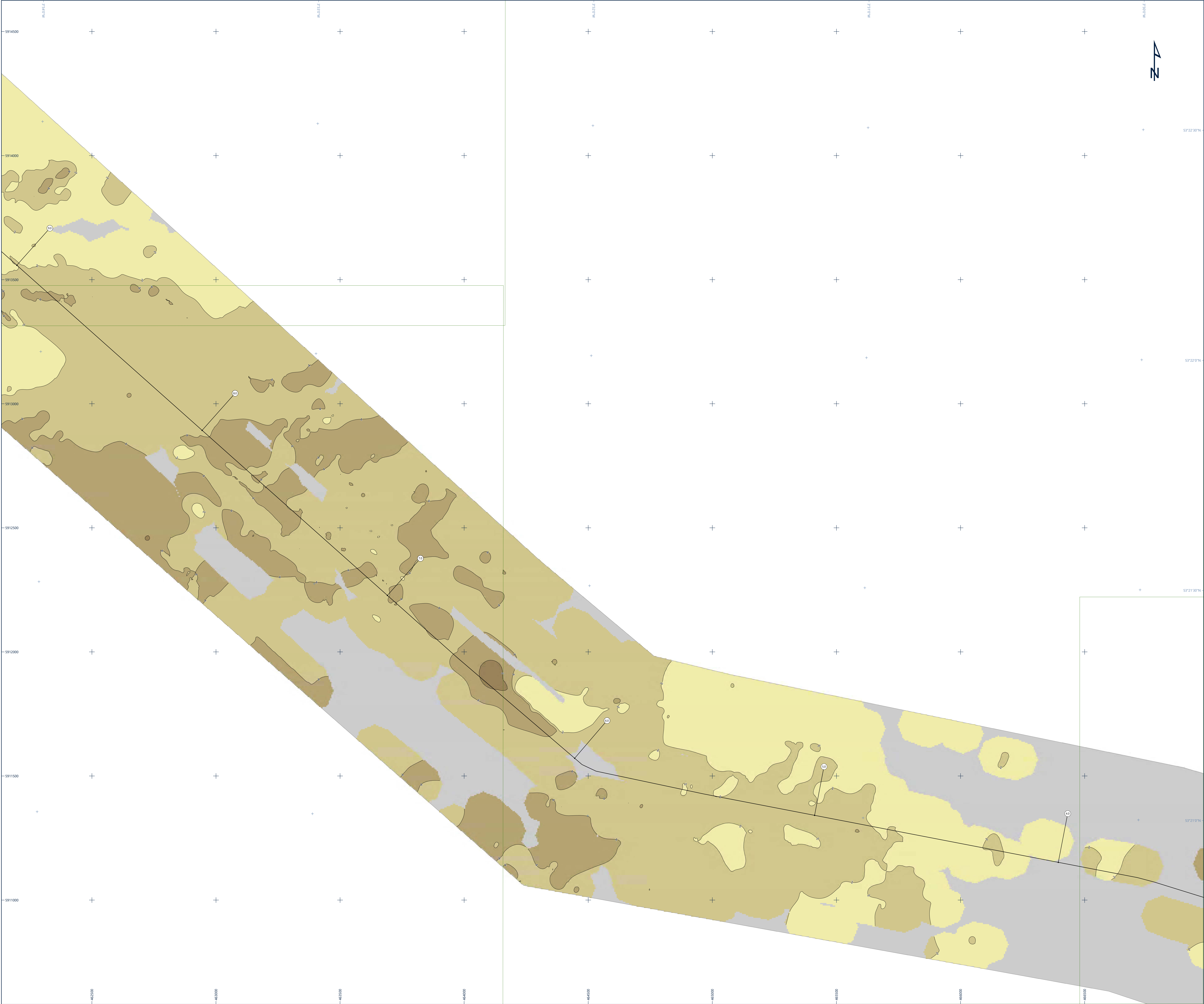
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-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator Fugro Seaker Fugro Valkyrie	10 June to 11 August 2020 17 July to 11 August 2020 16 July to 30 September 2020

File Name	Chart No.
200655_EstAB_R03_WIS_Upper.SedimentIsochore_01	01 of 08



Legend

- UTM Grid
 - Geographical Grid
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 - Route East B Kilometre Post
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- R03 Western Irish Sea Upper Sediment Isochore Thickness (m)
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 - > 10.0
- Sediment Isochore at 2 m Interval
- Area of No Interpretation

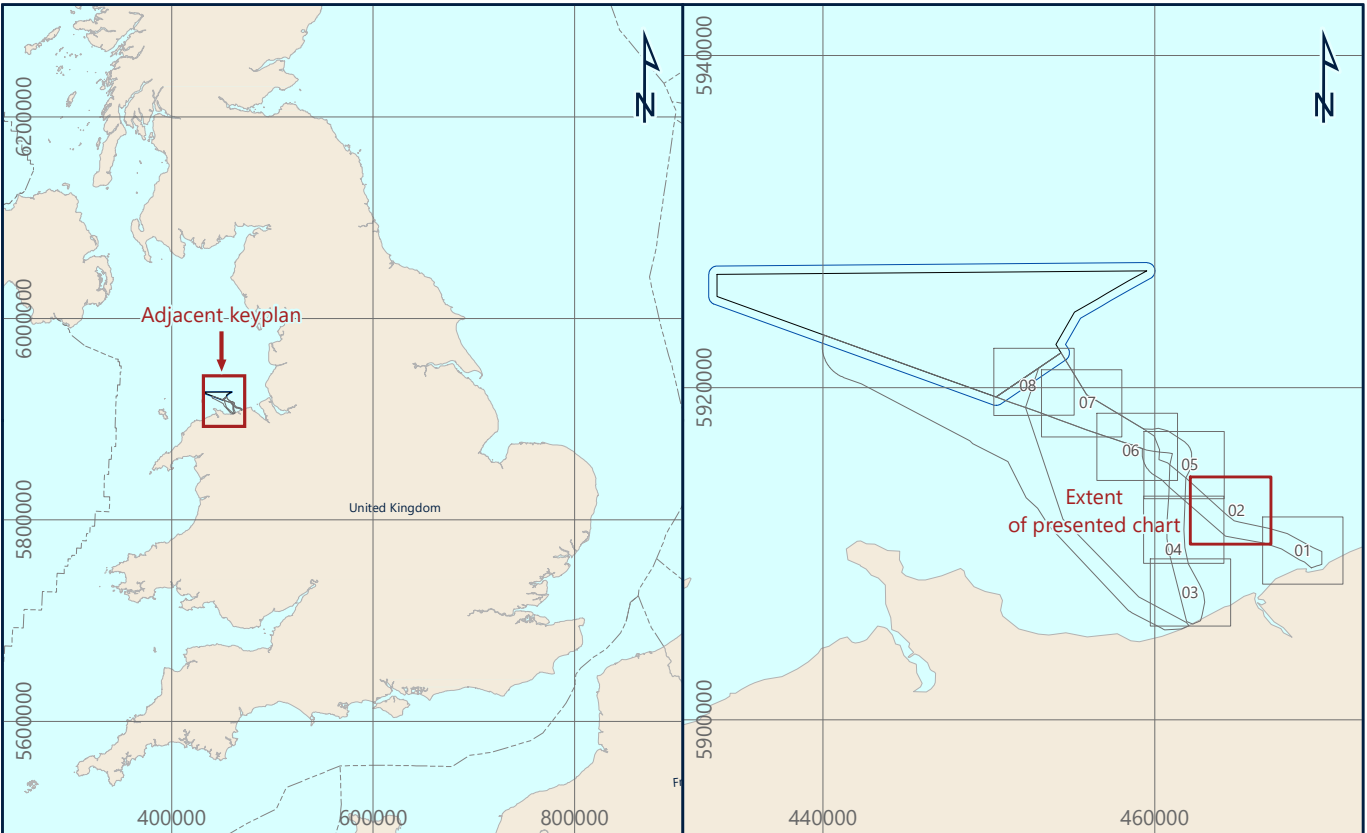
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Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	00°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical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



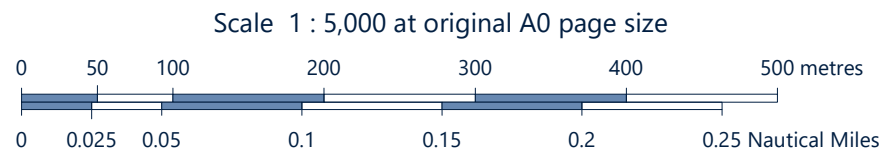
Awel Y Môr Offshore Wind Farm Ltd
Tregaron Bldg, Wernand Hill Business Park, Wernand Way, Sarnol, SWS 9PL, United Kingdom

AWEL Y MÔR

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



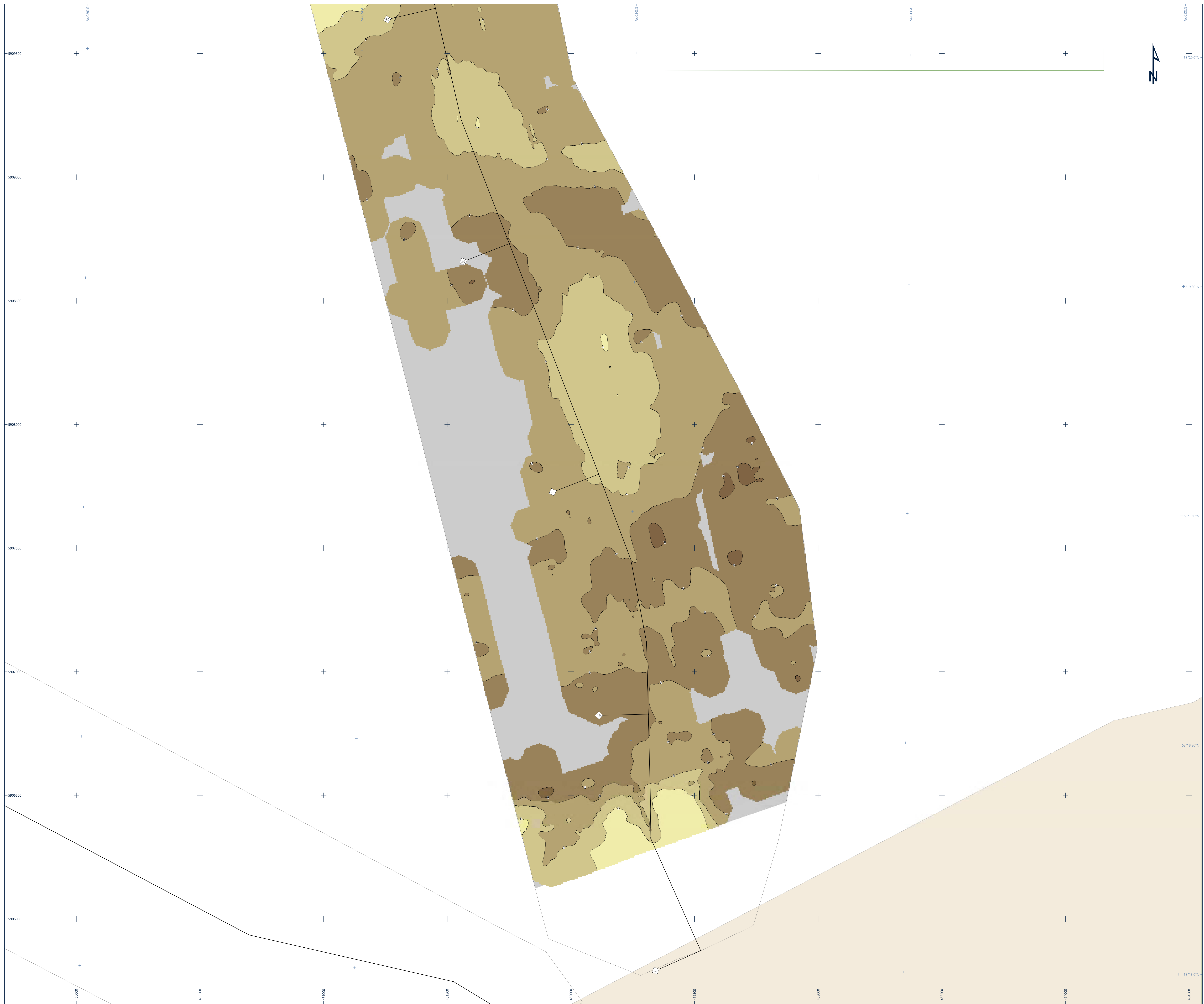
R03 WESTERN IRISH SEA UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA













Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	25 November 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	18 January 2021	Final Issue - Revision 2	OOT	DS	SB	BPT
03	19 February 2021	Final Reissue - Revision 3	OOT	JL	DS	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator Fugro Gekko Fugro Valkyrie	10 June to 11 August 2020 17 July to 11 August 2020 16 July to 30 September 2020

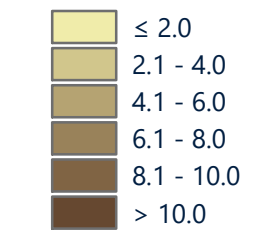
File Name	Chart No.
200655_EstAB_R03_WIS_Upper.SedimentIsochore_02	02 of 08



Legend

-  UTM Grid
 Geographical Grid
 Route East A Kilometre Post
 Route East B Kilometre Post
 Export Corridor Centre Line
 Export Cable Route Survey Extent
 Windfarm Extent
 Array Survey Extent
 Chart Extent
 Land

R03 Western Irish Sea Upper Sediment Isochore Thickness (m)



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

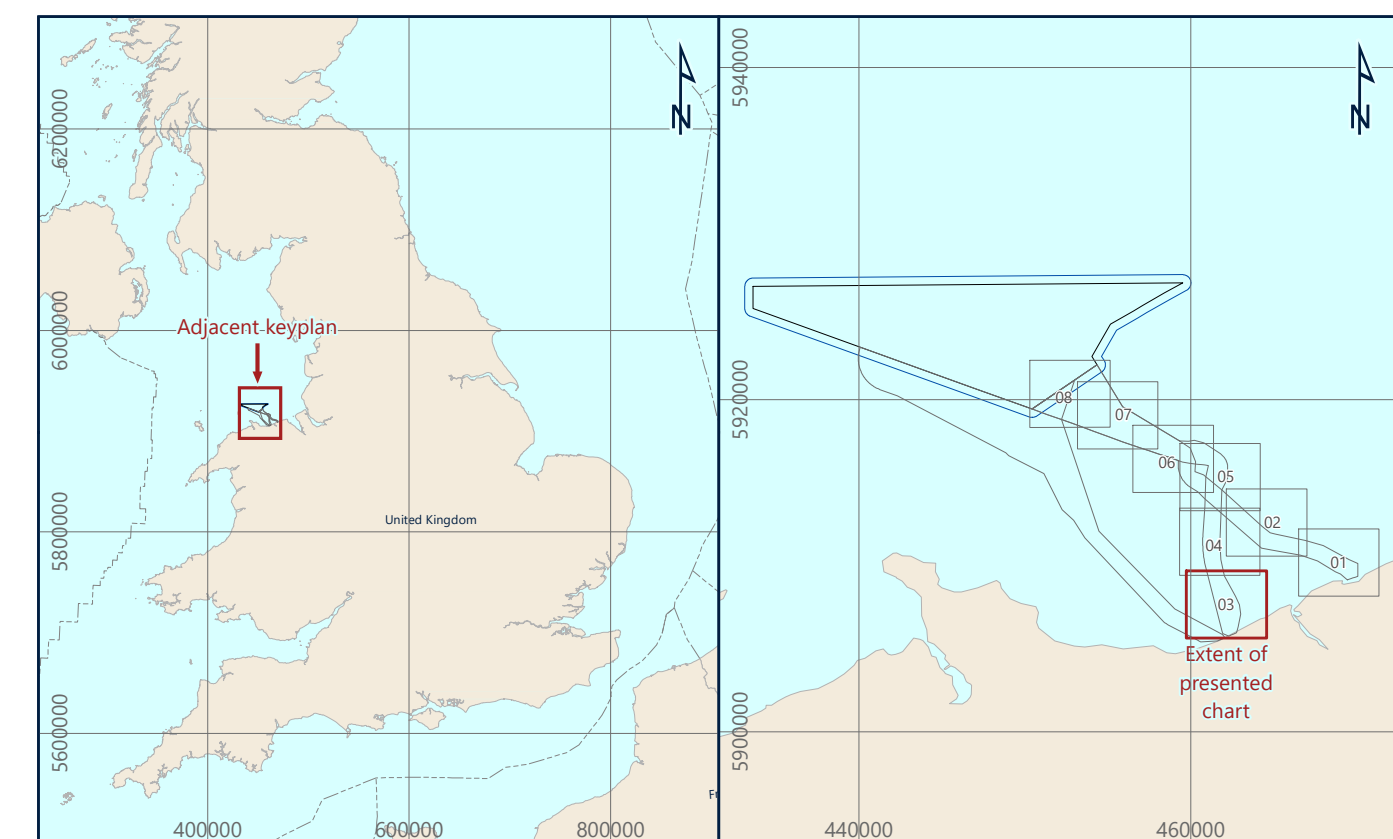
Notes

- 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)	09°00'00" N
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
Trigonos Bldg, Windmill Hill Business Park, Whitehill Way, Swindon, SN5 6PB, United Kingdom

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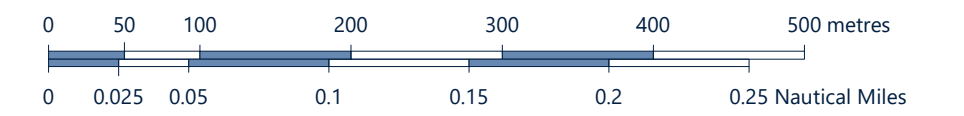
Fugro

Victory House, Trafalgar Wharf (Unit 16), Hamilton Road, Portchester PO6 4PX
Tel: +44 23 9220 5500



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

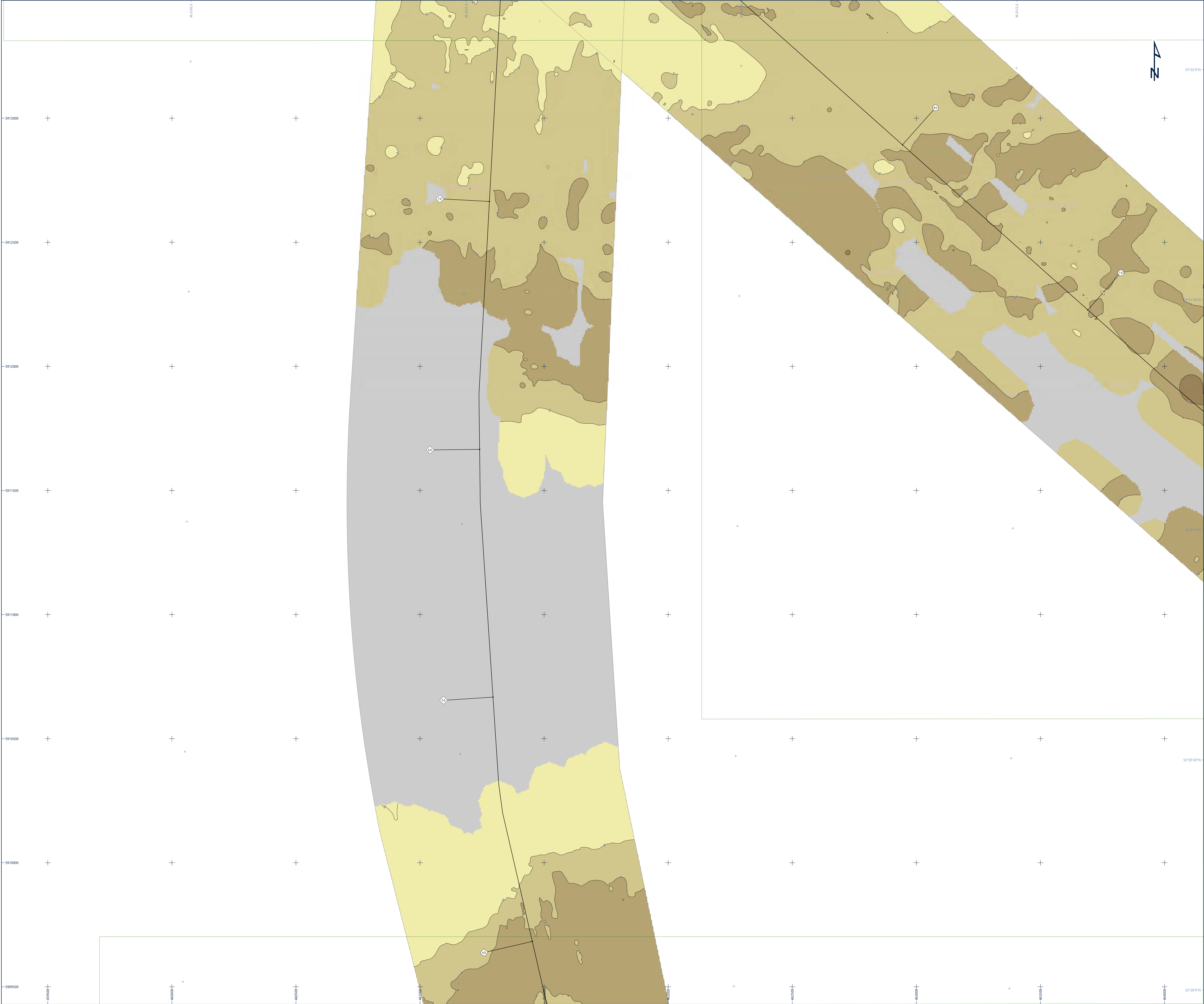
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Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	25 November 2020	Draft Issue - Revision 1	ODT	DS	SB	BPT
02	18 January 2021	Final Issue - Revision 2	ODT	DS	SB	BPT
03	19 February 2021	Final Reissue - Revision 3	ODT	JL	DS	BPT

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator Fugro Swanker Fugro Valkyrie	10 June to 11 August 2020 17 July to 11 August 2020 16 July to 30 September 2020

File Name	Chart No.
200655_EastAB_R03_WIS_Upper_SedimentIsochore_03	03 of 08



Legend

- UTM Grid
- Geographical Grid
- Route East A Kilometre Post
- Route East B Kilometre Post
- Export Corridor Centre Line
- Export Cable Route Survey Extent
- Windfarm Extent
- Array Survey Extent
- Chart Extent
- Land

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

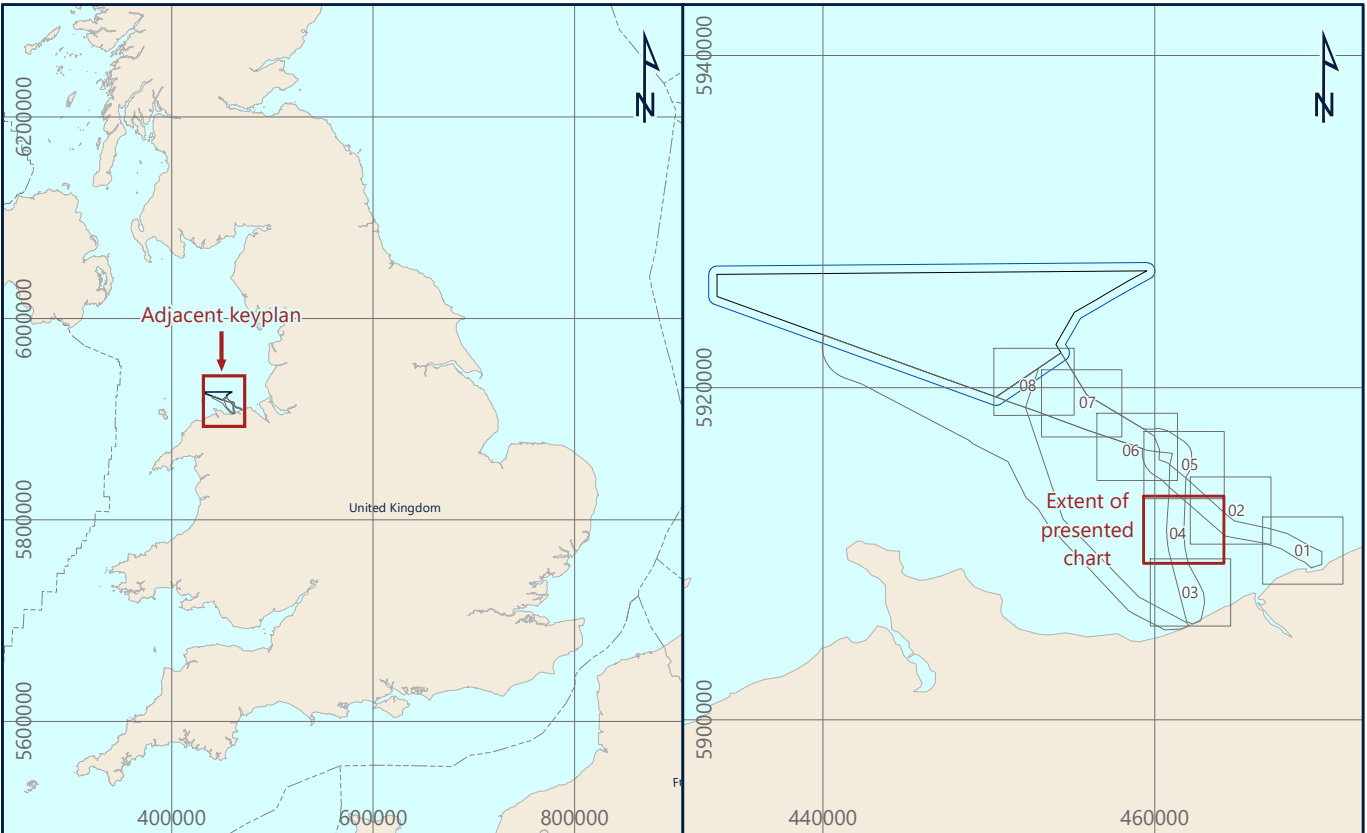
Notes

- 1) Sub-bottom profiler interpretation was conducted using Innova 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	298.257222563
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)



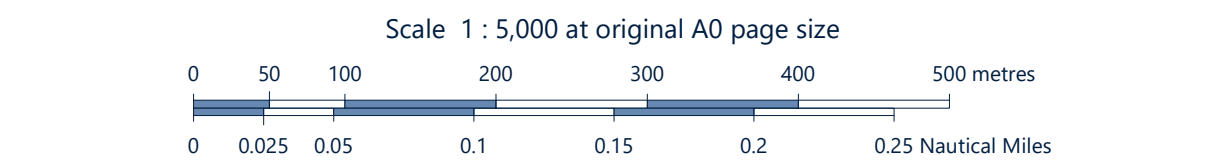
Awel Y Môr Offshore Wind Farm Ltd
Tregaron Bldg, Wernand Hill Business Park, Wernand Way, Swanton, SWS 6PL, United Kingdom

AWEL Y MÔR

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

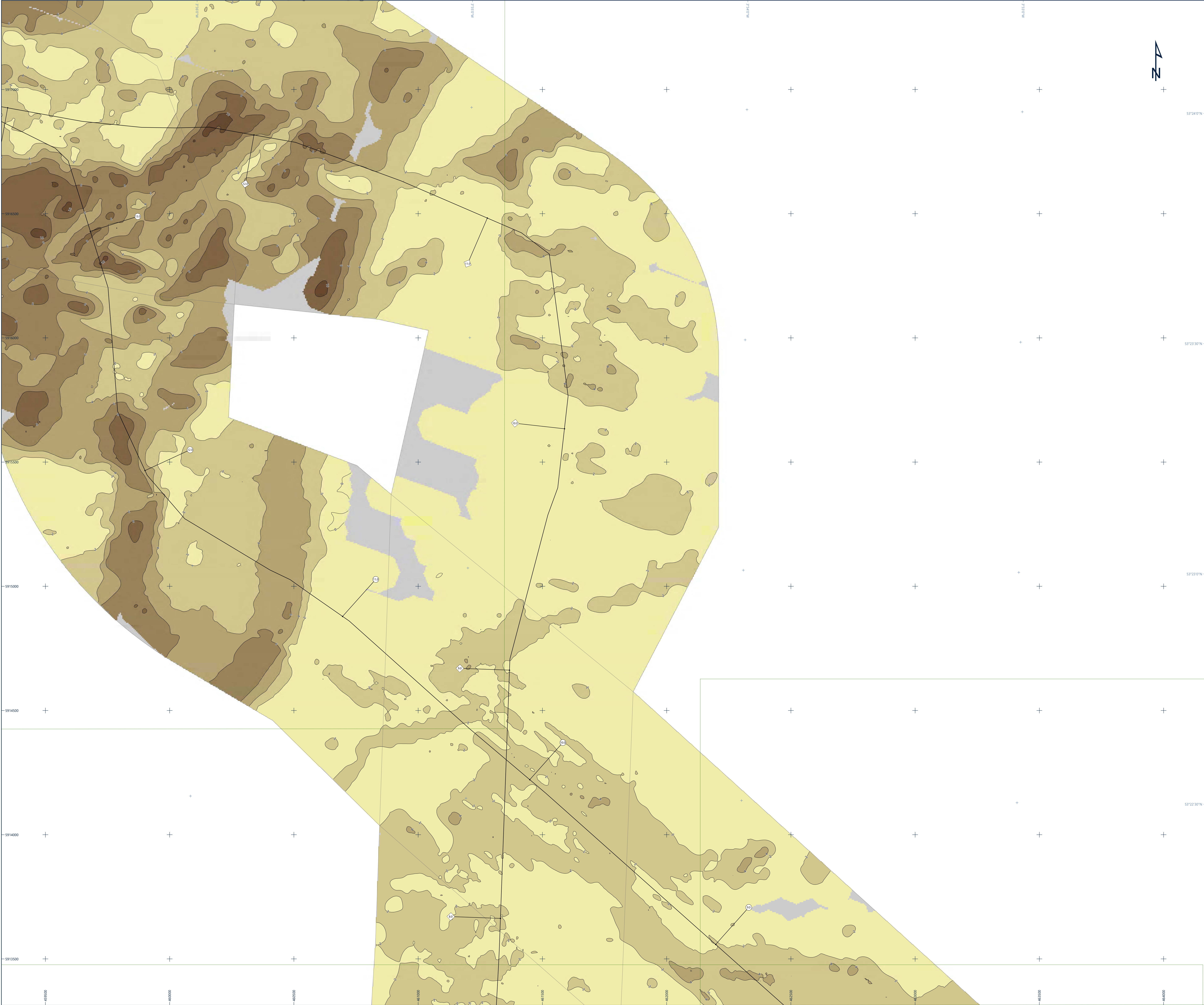
FUGRO

R03 WESTERN 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	25 November 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	18 January 2021	Final Issue - Revision 2	OOT	DS	SB	BPT
03	19 February 2021	Final Issue - Revision 3	OOT	JL	DS	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Fugro Mercator	Survey Date	10 June to 11 August 2020
200655	Fugro Gekko	Fugro Gekko	17 July to 11 August 2020	17 July to 11 August 2020
File Name	200655_EstAB_R03_WIS_Upper.SedimentIsochore_04	Chart No.	04 of 08	



Legend

- UTM Grid
- Geographical Grid
- Route East A Kilometre Post
- Route East B Kilometre Post
- Export Corridor Centre Line
- Export Cable Route Survey Extent
- Windfarm Extent
- Array Survey Extent
- Chart Extent
- Land

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

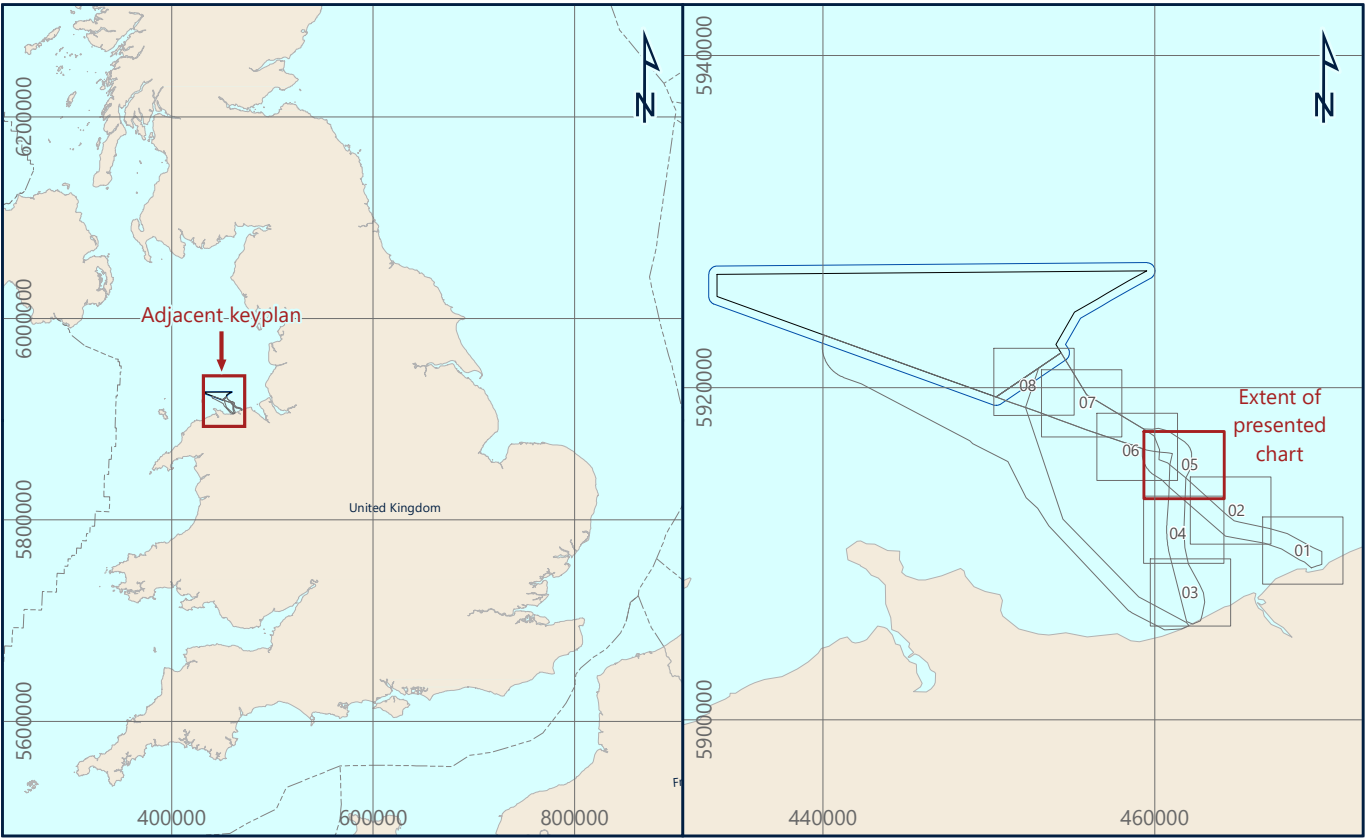
Notes

- 1) Sub-bottom profiler interpretation was conducted using Innmar 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: 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, Wernidol Hill Business Park, Wernidol Way, Swansea, SA5 8PE, United Kingdom

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Tel: +44 23 9220 5500

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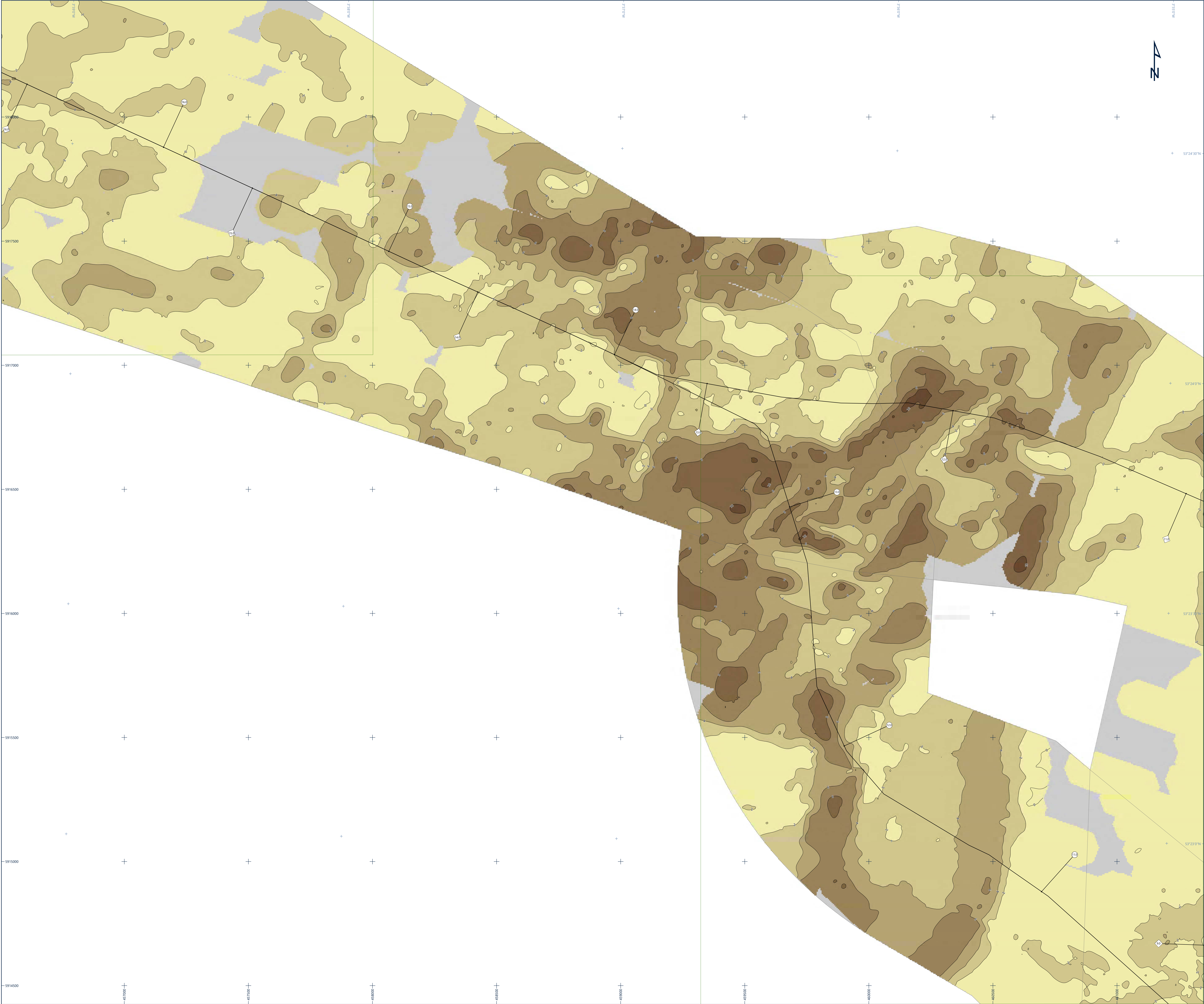
R03 WESTERN IRISH SEA UPPER SEDIMENT ISOCHORE AWEL Y MÔR OFFSHORE WIND FARM GEOPHYSICAL SURVEY 2020 UK IRISH SEA

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	25 November 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	18 January 2021	Final Issue - Revision 2	OOT	DS	SB	BPT
03	19 February 2021	Final Reissue - Revision 3	OOT	JL	DS	BPT
-	-	-	-	-	-	-

Fugro Project No. 200655 Vessel(s) Fugro Mercator, Fugro Gekko, Fugro Valkyrie Survey Date 10 June to 11 August 2020, 17 July to 11 August 2020, 16 July to 30 September 2020

File Name 200655_EstAB_R03_WIS_Upper_SedimentIsochore_05 Chart No. 05 of 08



Legend

- UTM Grid
 - Geographical Grid
 - Route East A Kilometre Post
 - Route East B Kilometre Post
 - Export Corridor Centre Line
 - Export Cable Route Survey Extent
 - Windfarm Extent
 - Array Survey Extent
 - Chart Extent
 - Land
- 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 Innmar 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

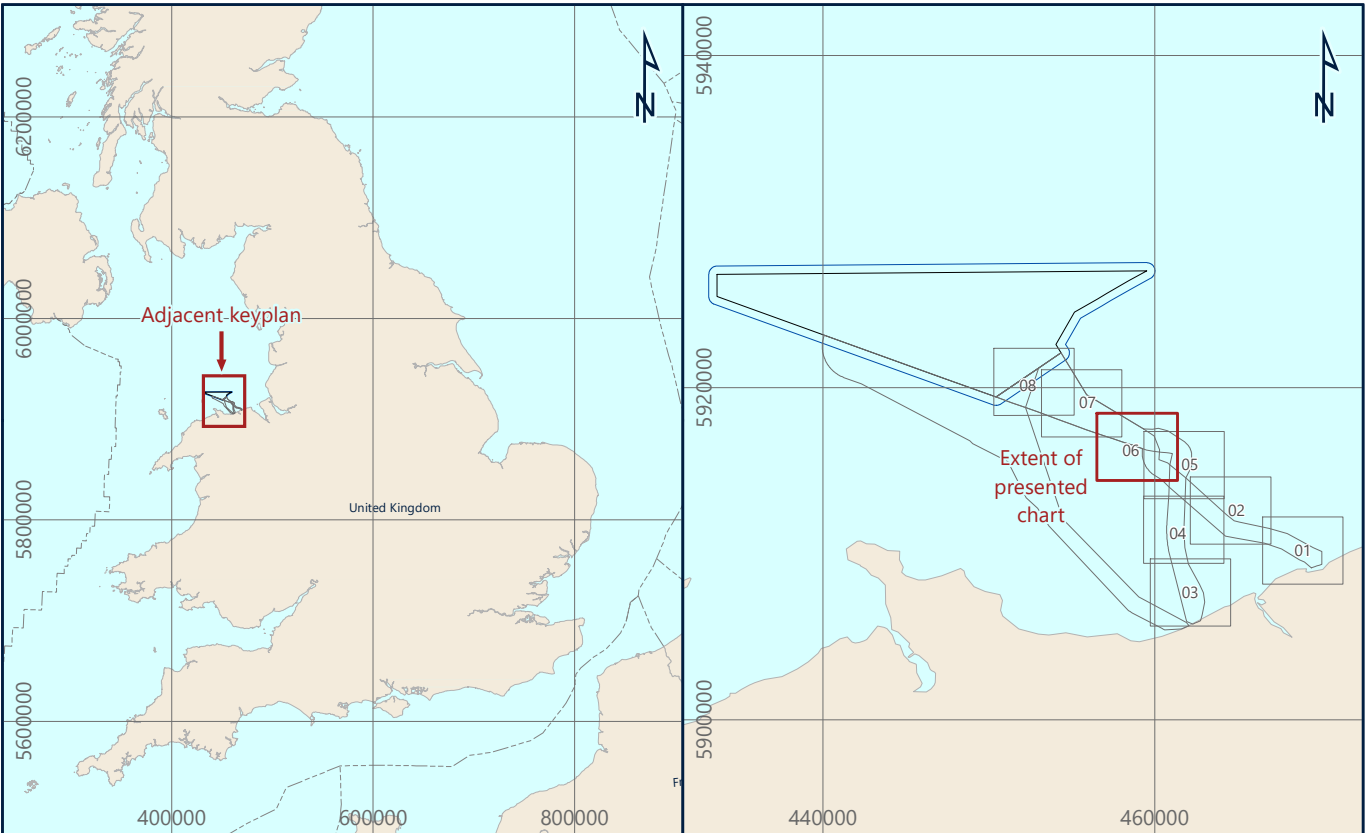
Latitude of Origin: 07°00'00" N

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, Swansea, SW5 9PE, United Kingdom

AWEL Y MÔR

Fugro

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



R03 WESTERN 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

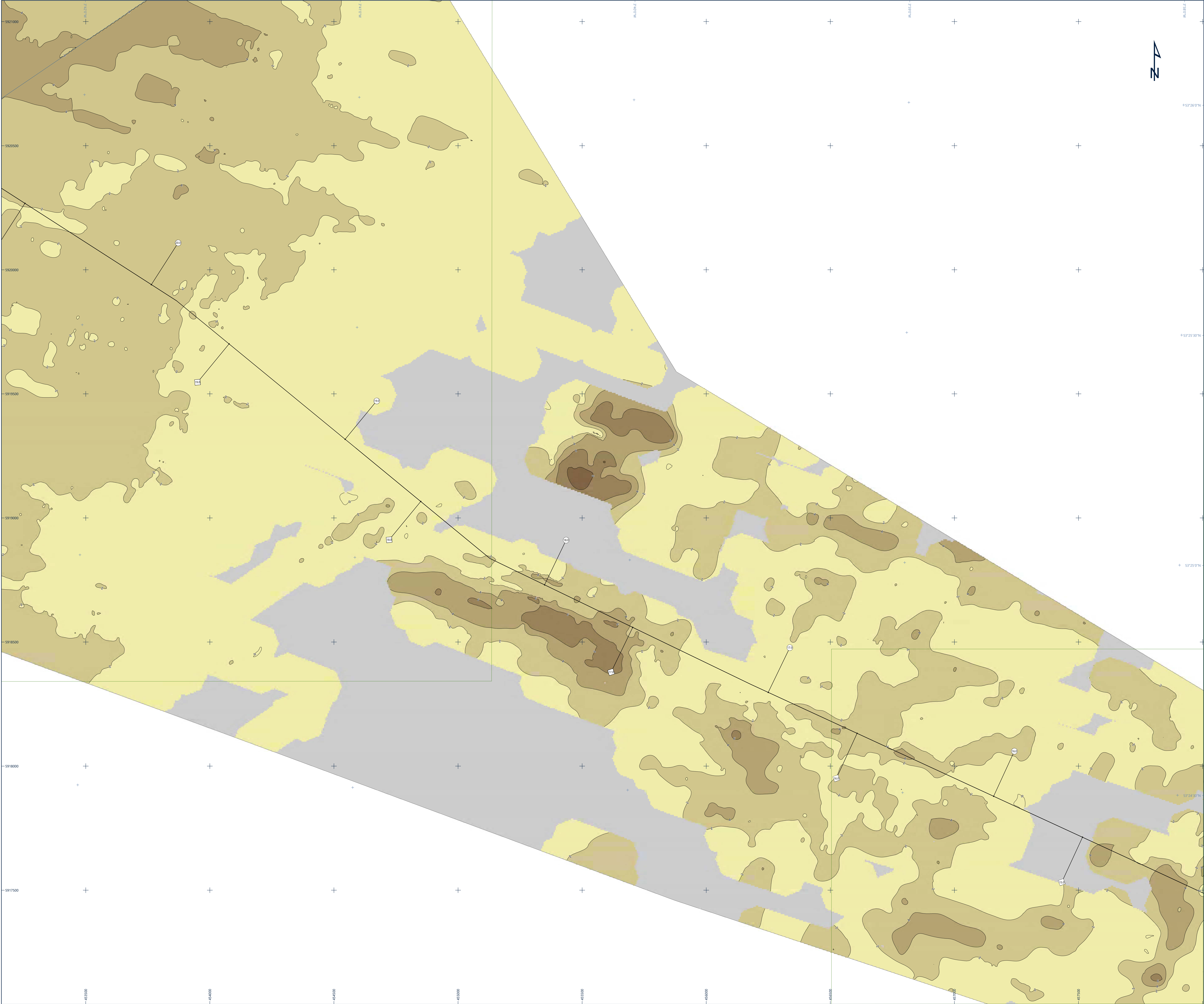
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0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	25 November 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	18 January 2021	Final Issue - Revision 2	OOT	DS	SB	BPT
03	19 February 2021	Final Reissue - Revision 3	OOT	JL	DS	BPT
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Fugro Project No. 200655 Vessel(s) Fugro Mercator, Fugro Gekko, Fugro Valkyrie Survey Date: 10 June to 11 August 2020, 17 July to 11 August 2020, 16 July to 30 September 2020

File Name: 200655_EstAB_R03_WIS_Upper_SedimentIsochore_06 Chart No. 06 of 08



Legend

- UTM Grid
- Geographical Grid
- Route East A Kilometre Post
- Route East B Kilometre Post
- Export Corridor Centre Line
- Export Cable Route Survey Extent
- Windfarm Extent
- Array Survey Extent
- Chart Extent
- Land

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

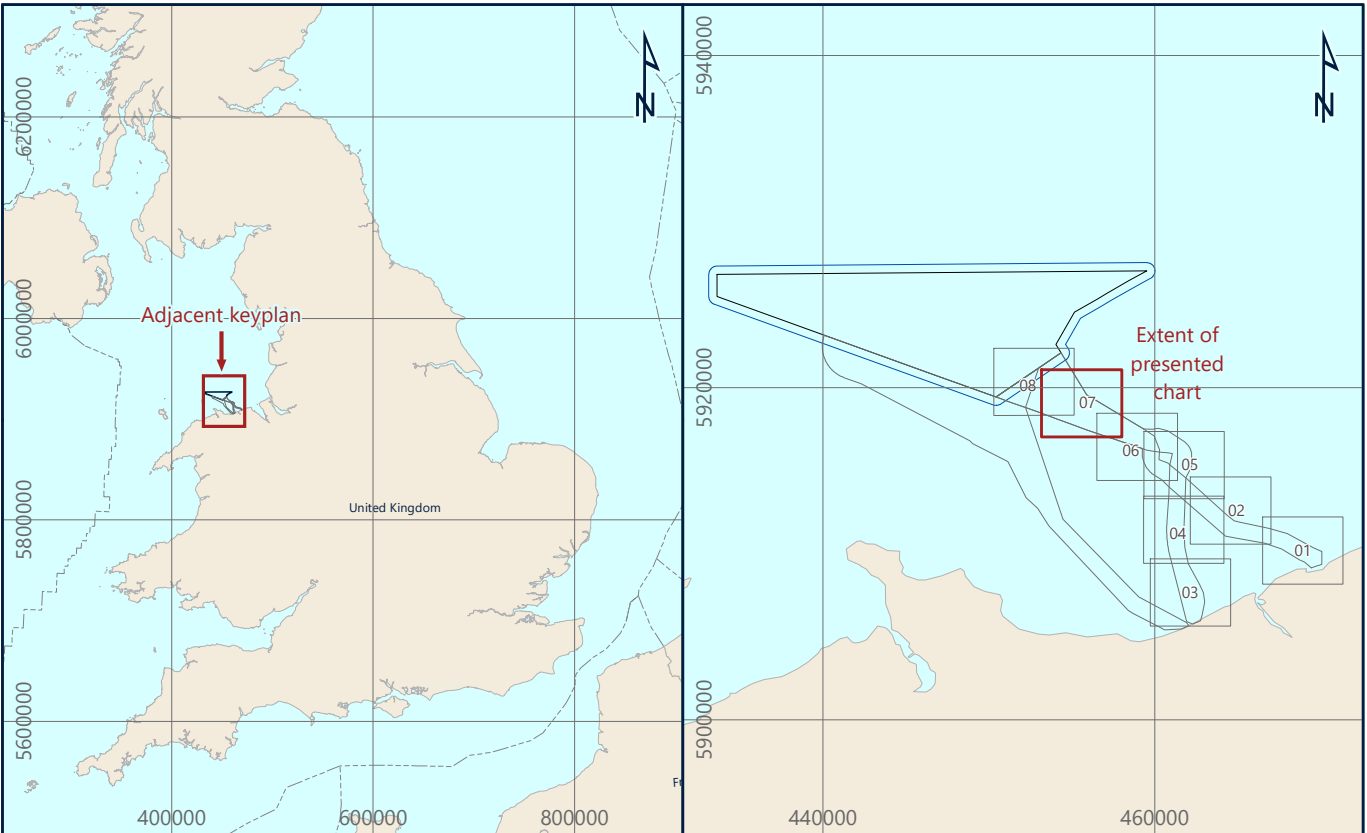
Notes

- 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
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, Porchester PO6 4PX
Tel: +44 23 9220 3500

FUGRO

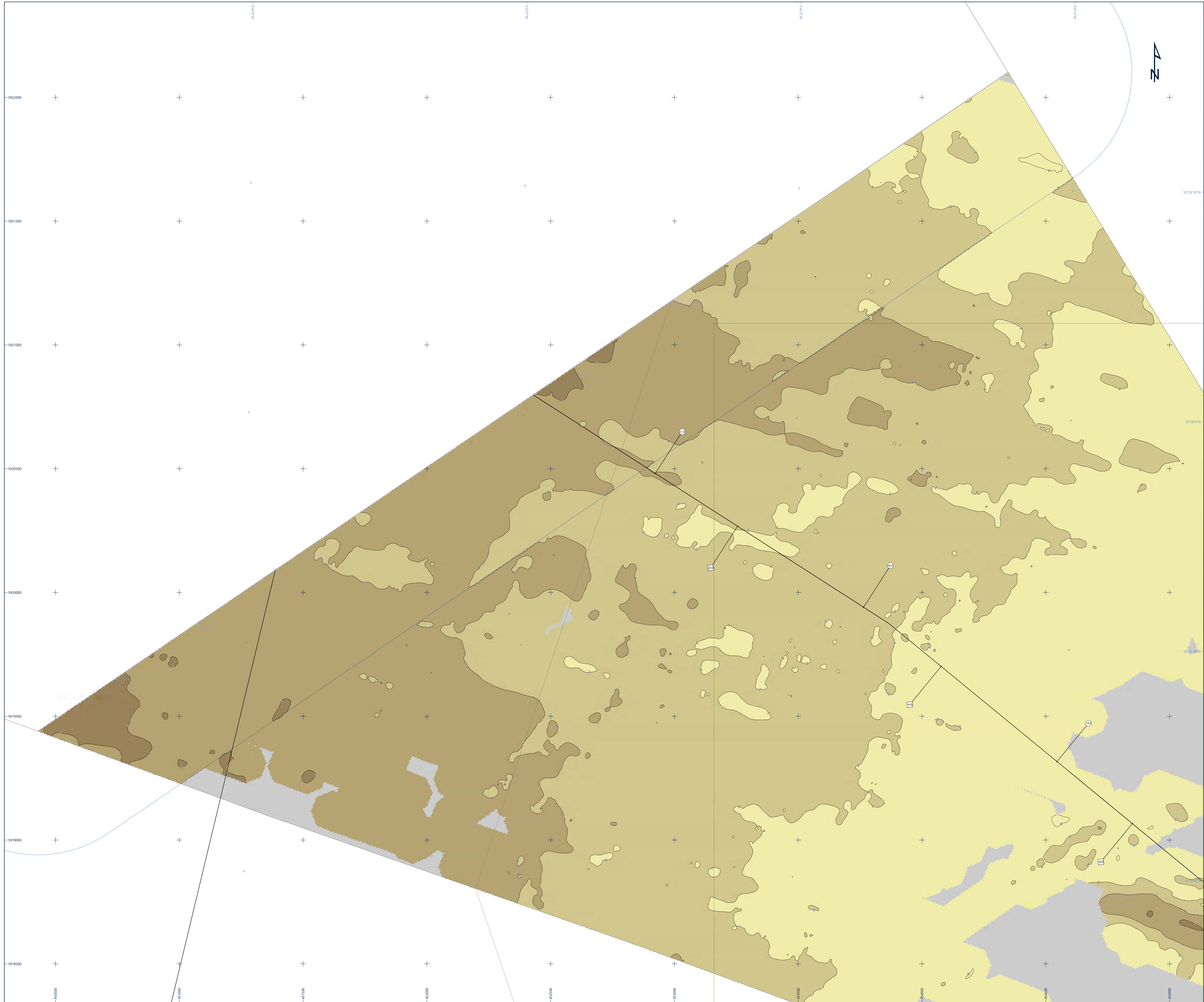
R03 WESTERN IRISH SEA UPPER SEDIMENT ISOCHORE AWEL Y MÔR OFFSHORE WIND FARM GEOPHYSICAL SURVEY 2020 UK IRISH SEA

Scale 1 : 5,000 at original A0 page size
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Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	25 November 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	18 January 2021	Final Issue - Revision 2	OOT	DS	SB	BPT
03	19 February 2021	Final Reissue - Revision 3	OOT	JL	DS	BPT
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Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator Fugro Gekko Fugro Valkyrie	10 June to 11 August 2020 17 July to 11 August 2020 16 July to 30 September 2020

File Name: 200655_EstAB_R03_WIS_Upper.SedimentIsochore_07
Chart No.: 07 of 08



Legend

- UTM Grid
- Geographical Grid
- Route East A Kilometre Post
- Route East B Kilometre Post
- Export Corridor Centre Line
- Export Cable Route Survey Extent
- Windfarm Extent
- Array Survey Extent
- Chart Extent
- Land

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

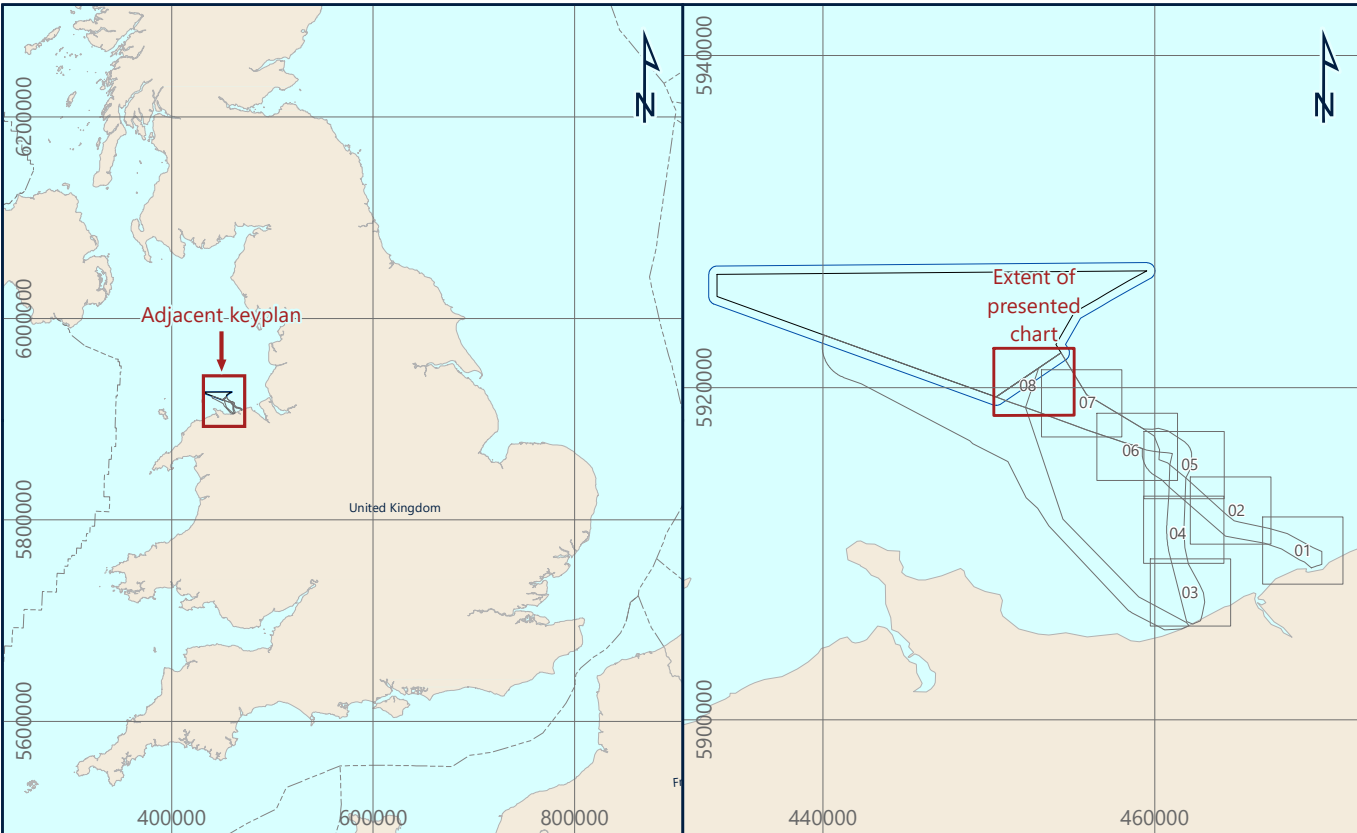
Notes

- 1) Sub-bottom profiler interpretation was conducted using Innmar 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	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
Tregaron Bldg, Wernall Hill Business Park, Wernall Way, Swansea, SW5 9PE, United Kingdom

AWEL Y MÔR

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

FUGRO

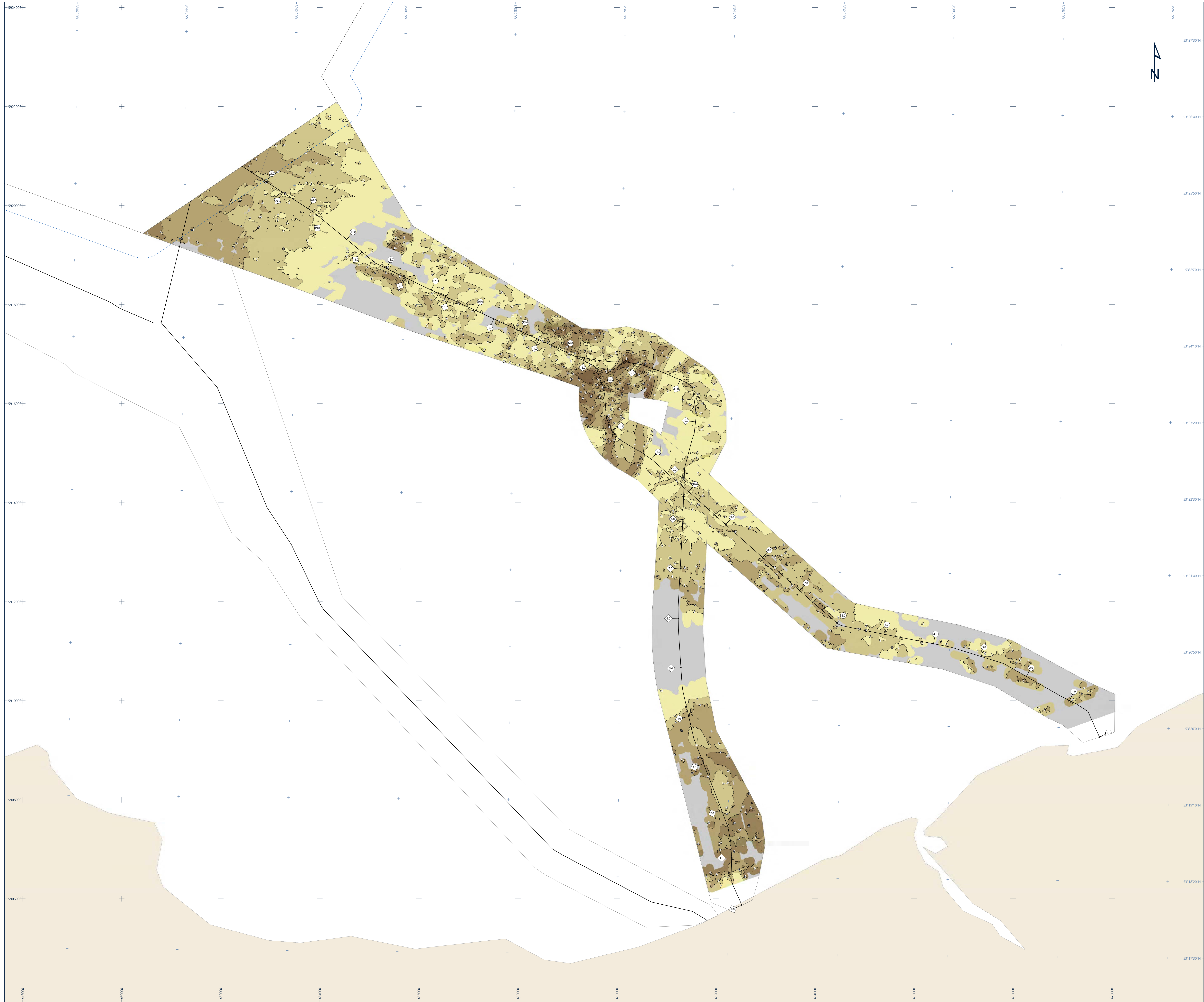
R03 WESTERN IRISH SEA UPPER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

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	25 November 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	18 January 2021	Final Issue - Revision 2	OOT	DS	SB	BPT
03	19 February 2021	Final Reissue - Revision 3	OOT	JL	DS	BPT
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Fugro Project No.	Vessel(s)	Fugro Mercator	Survey Date	10 June to 11 August 2020
200655	Fugro Gekko	Fugro Gekko	17 July to 11 August 2020	
	Fugro Valkyrie	Fugro Valkyrie	16 July to 30 September 2020	

File Name	Chart No.
200655_EstAB_R03_WIS_Upper.SedimentIsochore_08	08 of 08



Legend

- UTM Grid
- Geographical Grid
- Route East A Kilometre Post
- Route East B Kilometre Post
- Export Corridor Centre Line
- Export Cable Route Survey Extent
- Windfarm Extent
- Array Survey Extent
- Land

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

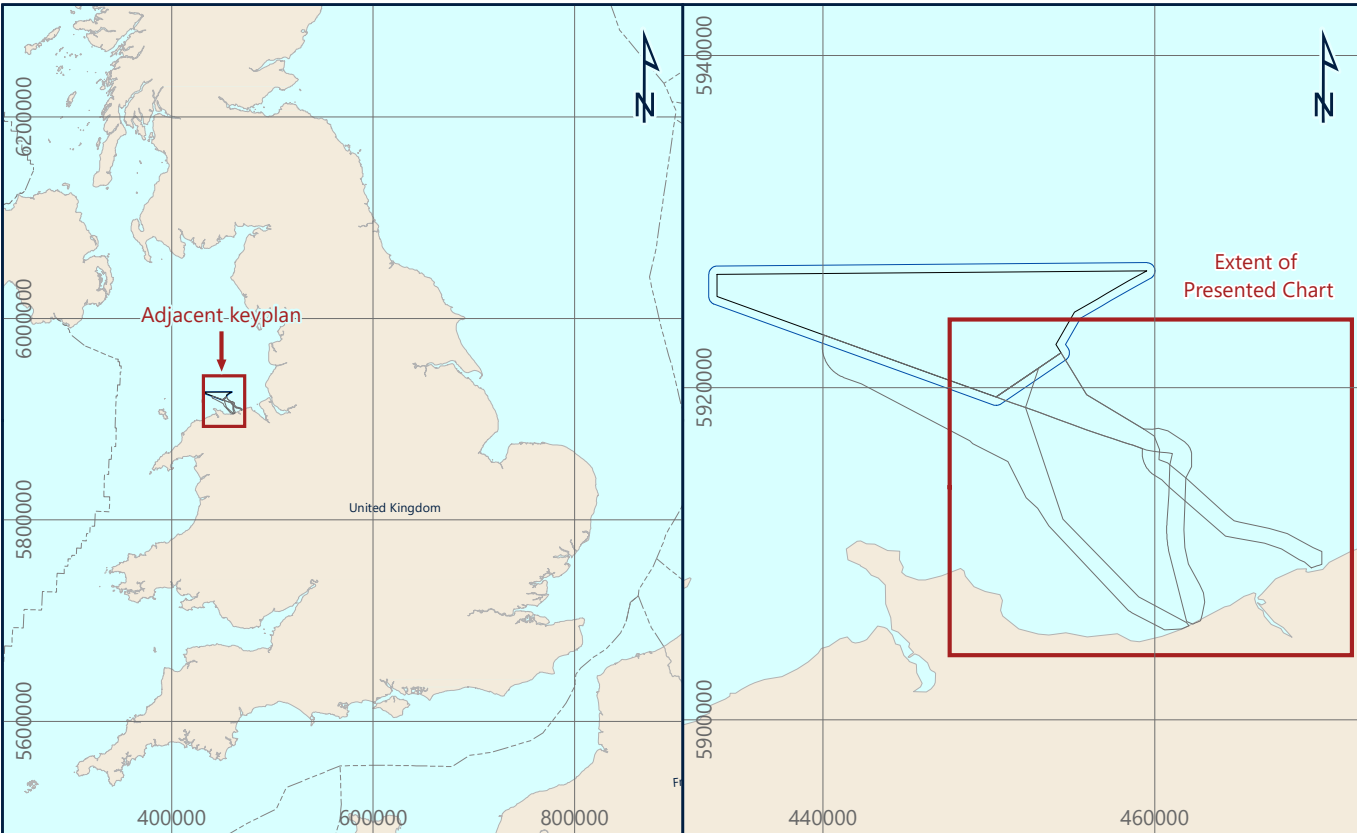
Notes

- 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 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	298.257222563
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)



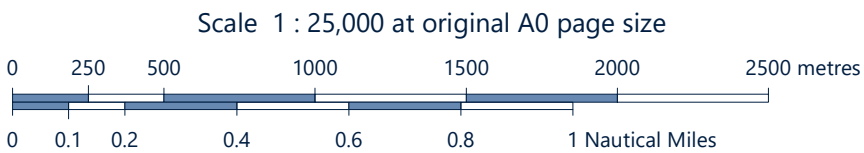
Awel Y Môr Offshore Wind Farm Ltd
Tregaron Way, Wrenford Hill Business Park, Wrenford Way, Seaton, SWS 4PE, United Kingdom

AWEL Y MÔR

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

FUGRO

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

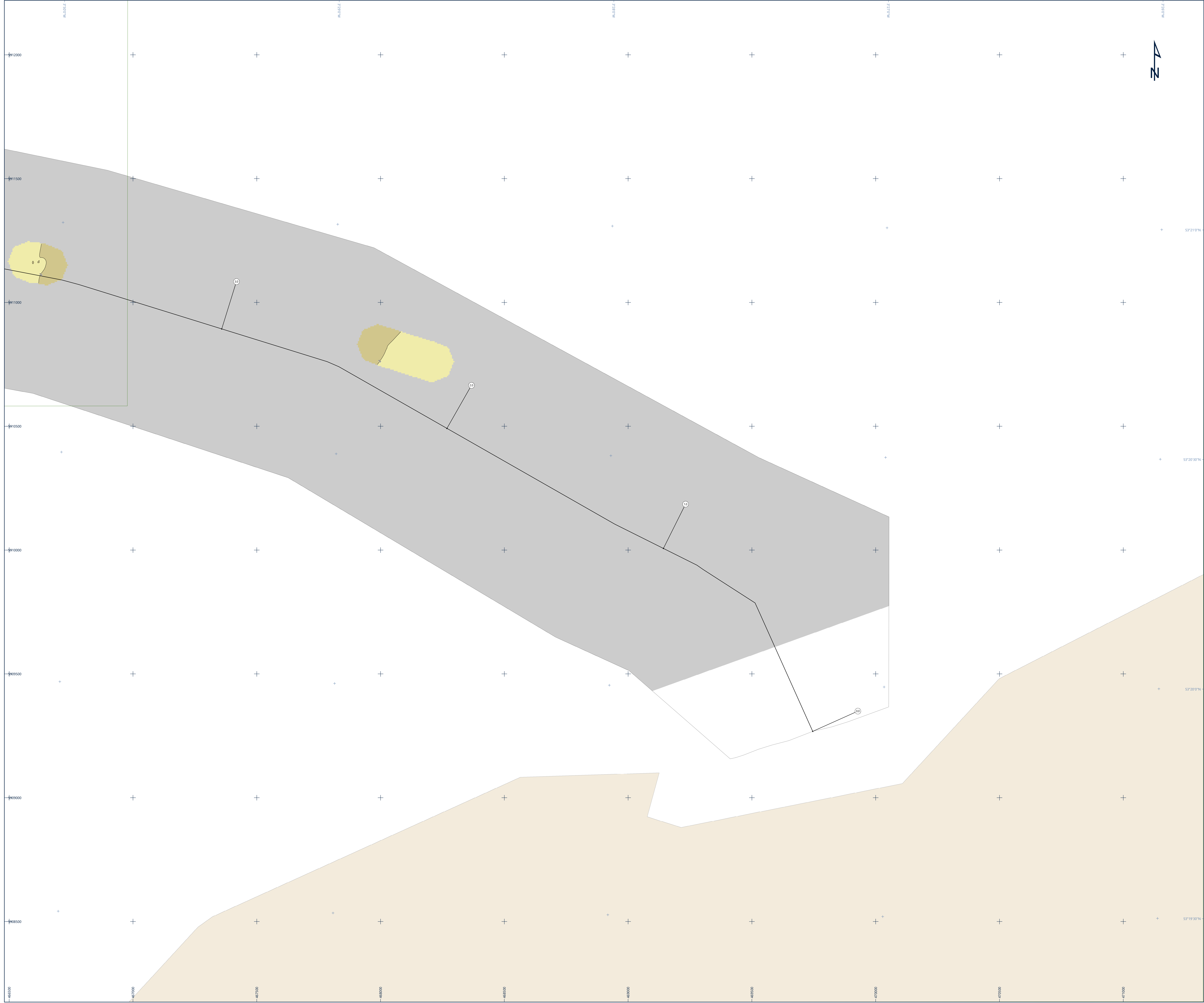


Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	25 November 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
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03	19 February 2021	Final Reissue - Revision 3	OOT	JL	DS	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator Fugro Gekko Fugro Valkyrie	10 June to 11 August 2020 17 July to 11 August 2020 16 July to 30 September 2020
File Name		Chart No.
200655_EstAB_R03_WIS_Upper_SedimentIsochore_Overview		01 of 01

Appendix I

Charts – R04 WIS Lower
Sediment Isochores



Legend

- UTM Grid
 - Geographical Grid
 - Route East A Kilometre Post
 - Route East B Kilometre Post
 - Export Corridor Centre Line
 - Export Cable Route Survey Extent
 - Windfarm Extent
 - Array Survey Extent
 - Chart Extent
 - Land
- 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

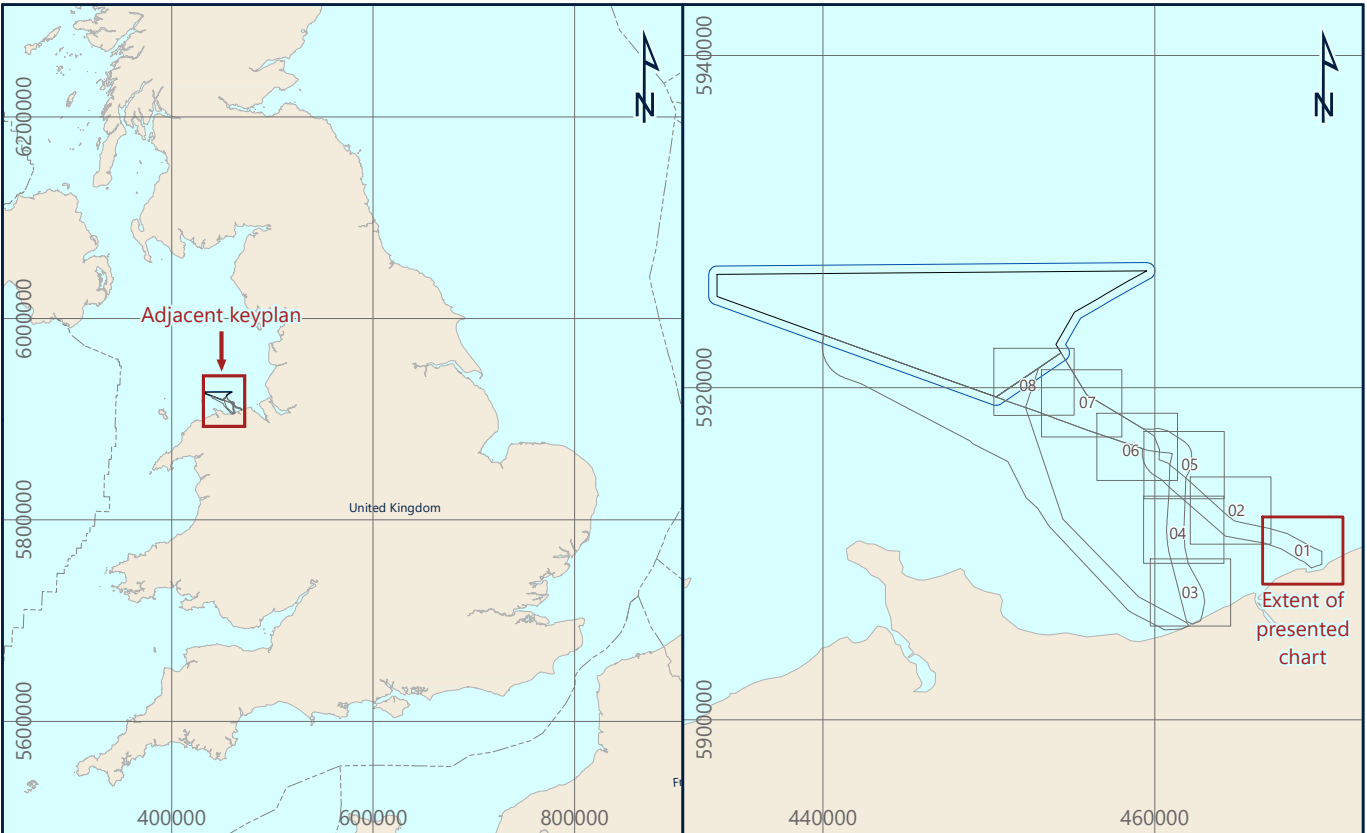
Notes

- 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 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	298.257222563
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
Tregaron Bldg, Wernand Hill Business Park, Wernand Way, Swansea, SW5 9PE, United Kingdom

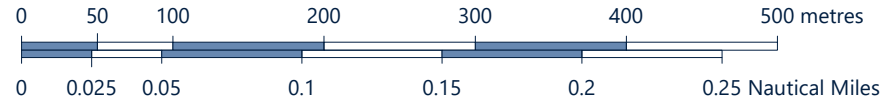
AWEL Y MÔR

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

FUGRO

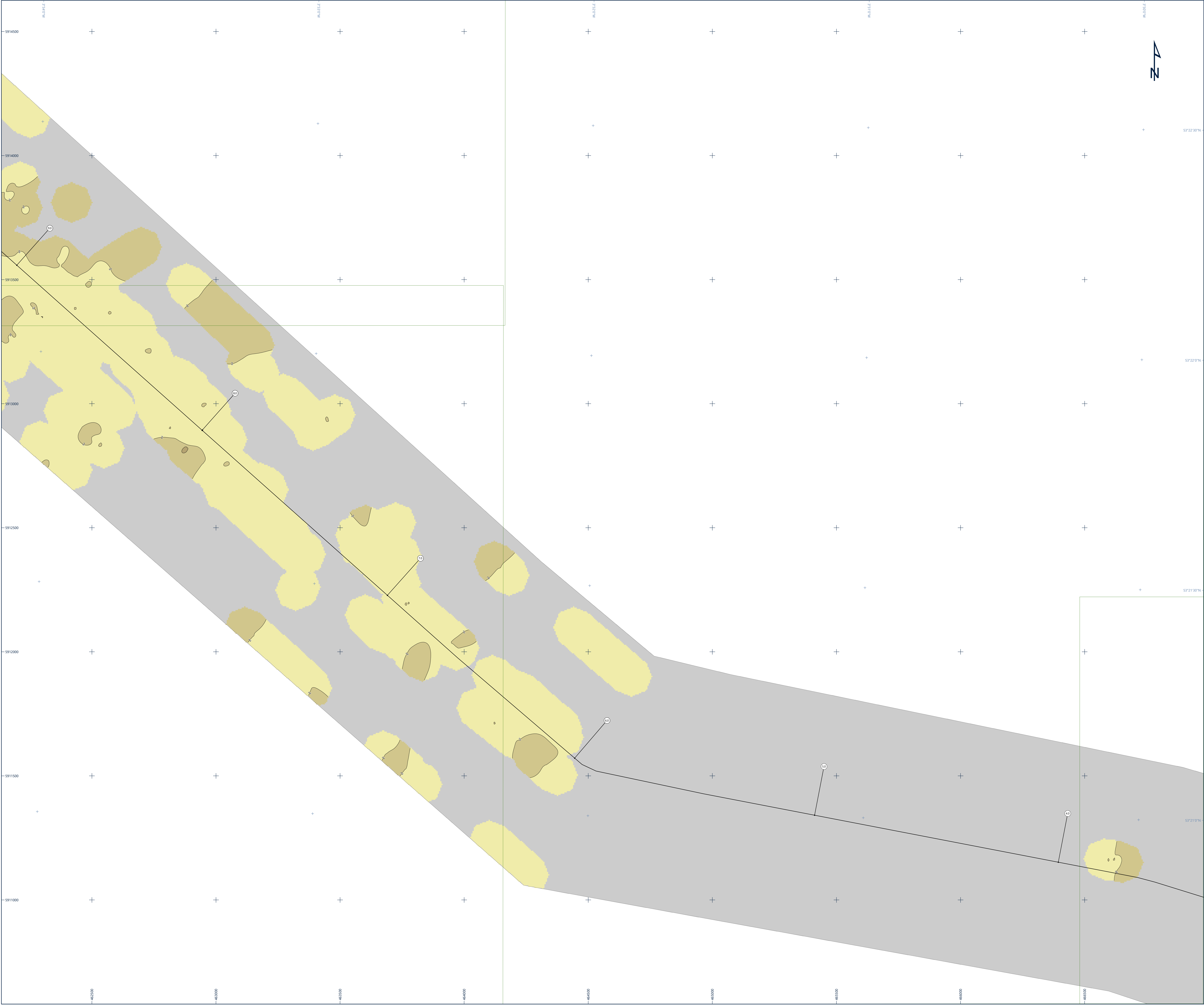
R04 WESTERN IRISH SEA LOWER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

Scale 1 : 5,000 at original A0 page size



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	25 November 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	18 January 2021	Final Issue - Revision 2	OOT	DS	SB	BPT
03	19 February 2021	Final Reissue - Revision 3	OOT	JL	DS	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Fugro Mesuror	Survey Date	10 June to 11 August 2020
200655	Fugro Center	Fugro Valkyrie		17 July to 11 August 2020
File Name			Chart No.	01 of 08
200655_EstAB_R04_WIS_Lower_SedimentIsochore_01				



Legend

- UTM Grid
- Geographical Grid
- Route East A Kilometre Post
- Route East B Kilometre Post
- Export Corridor Centre Line
- Export Cable Route Survey Extent
- Windfarm Extent
- Array Survey Extent
- Chart Extent
- Land

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

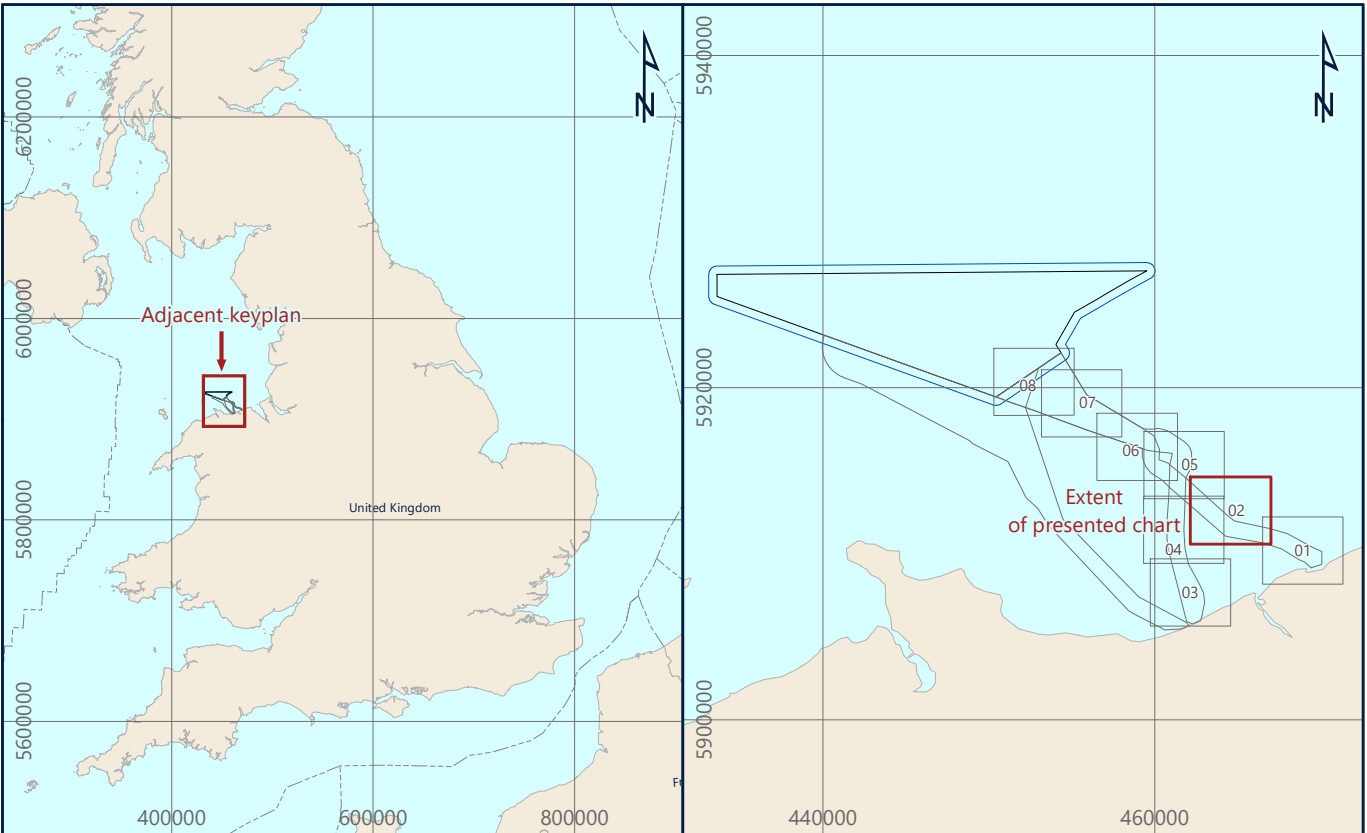
Notes

- 1) Sub-bottom profiler interpretation was conducted using Innomax 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	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, Wernand Hill Business Park, Wernand Way, Swansea, SW5 9PE, United Kingdom

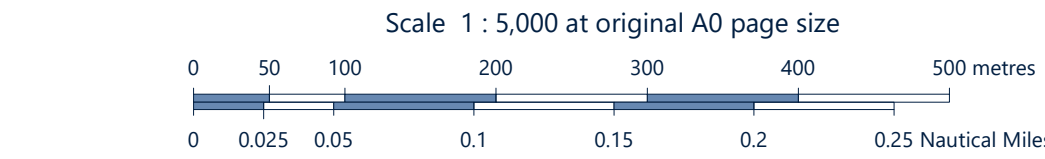
AWEL Y MÔR

Fugro

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

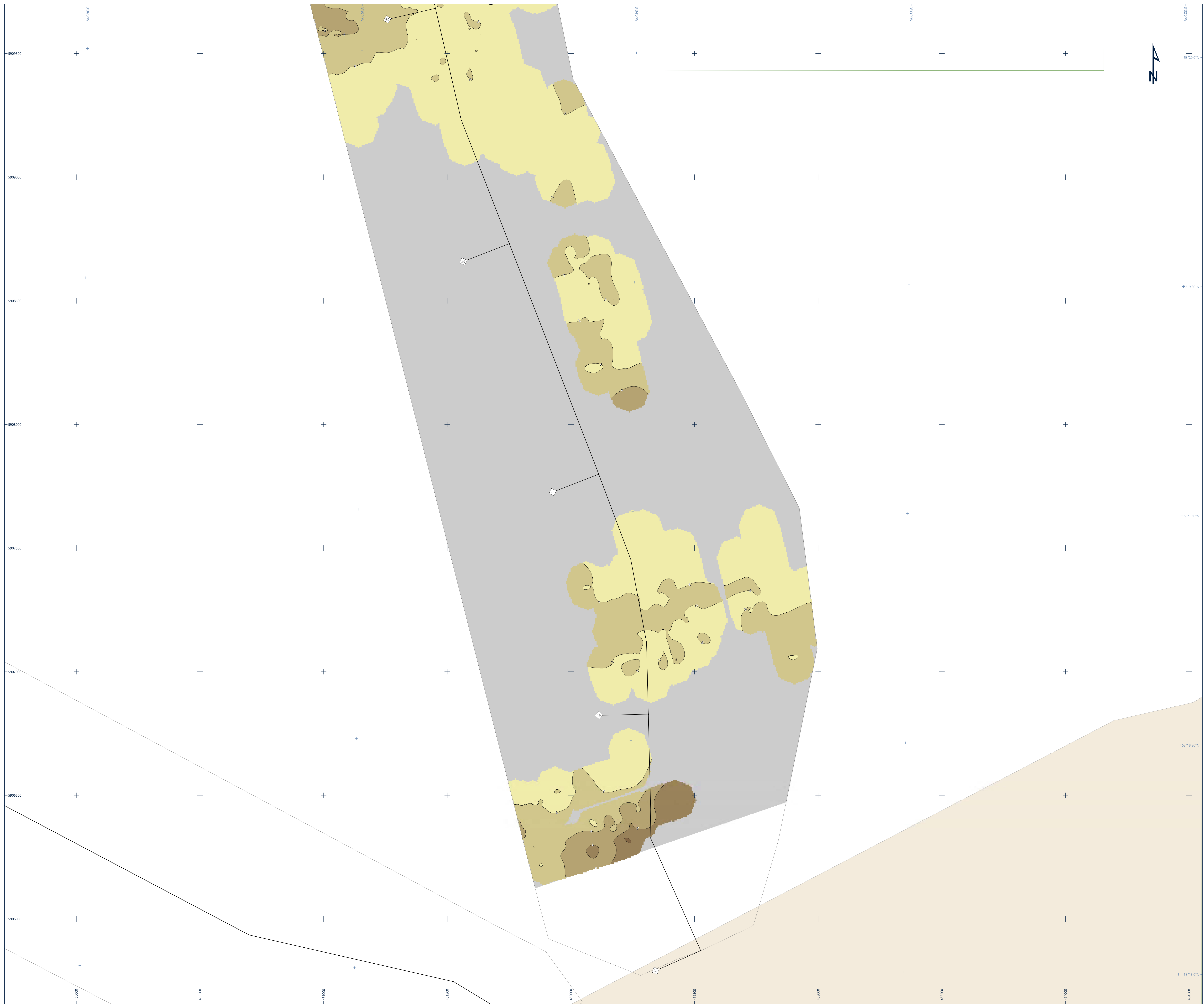
FUGRO

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



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	25 November 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	18 January 2021	Final Issue - Revision 2	OOT	DS	SB	BPT
03	19 February 2021	Final Reissue - Revision 3	OOT	JL	DS	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mesuror Fugro Center Fugro Valkyrie	10 June to 11 August 2020 17 July to 11 August 2020 16 July to 30 September 2020
File Name		Chart No.
200655_EstAB_R04_WIS_Lower.SedimentIsochore_02		02 of 08



Legend

-
- + UTM Grid
 + Geographical Grid
 50 Route East A Kilometre Post
 10 Route East B Kilometre Post
 — Export Corridor Centre Line
 — Export Cable Route Survey Extent
 — Windfarm Extent
 — Array Survey Extent
 — Chart Extent
 — Land
 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

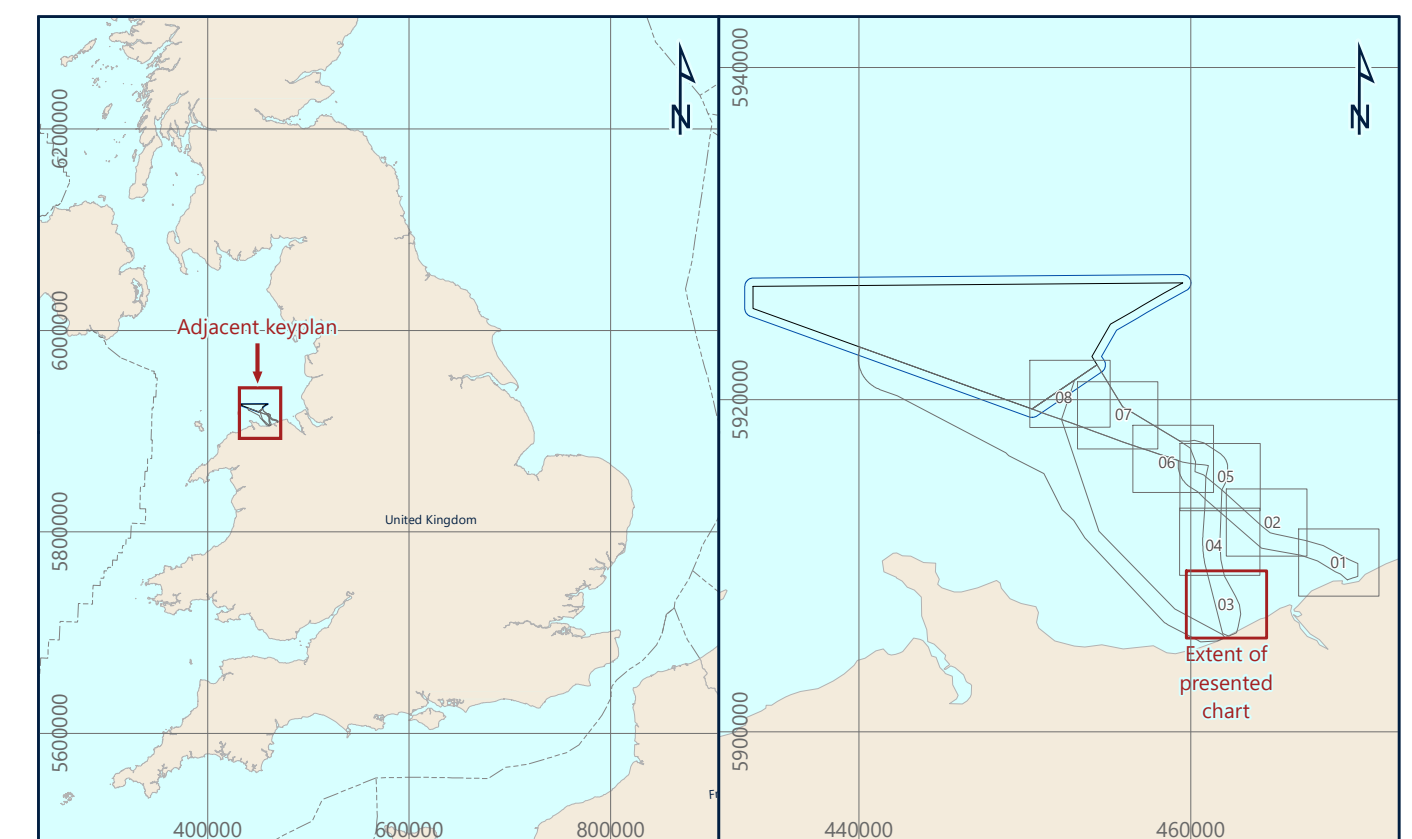
Notes

- 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)	09°00'00" N
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)



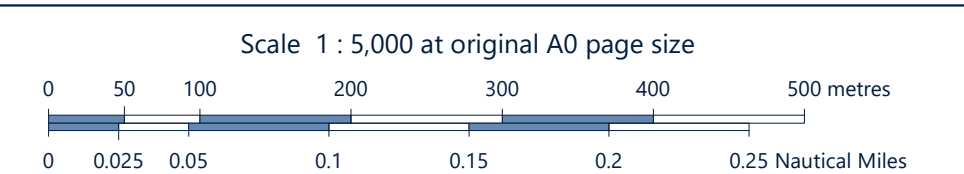
Awel Y Môr Offshore Wind Farm Ltd
Trigonos Bldg, Windmill Hill Business Park, Whitehill Way, Swindon, SN5 6PB, United Kingdom

WEL Y MÔR

Fugro
Victory House, Bridgler Wharf (Unit 16), Hamilton Road, Portchester PO6 4PX
Tel: +44 (0) 203 9320 5500

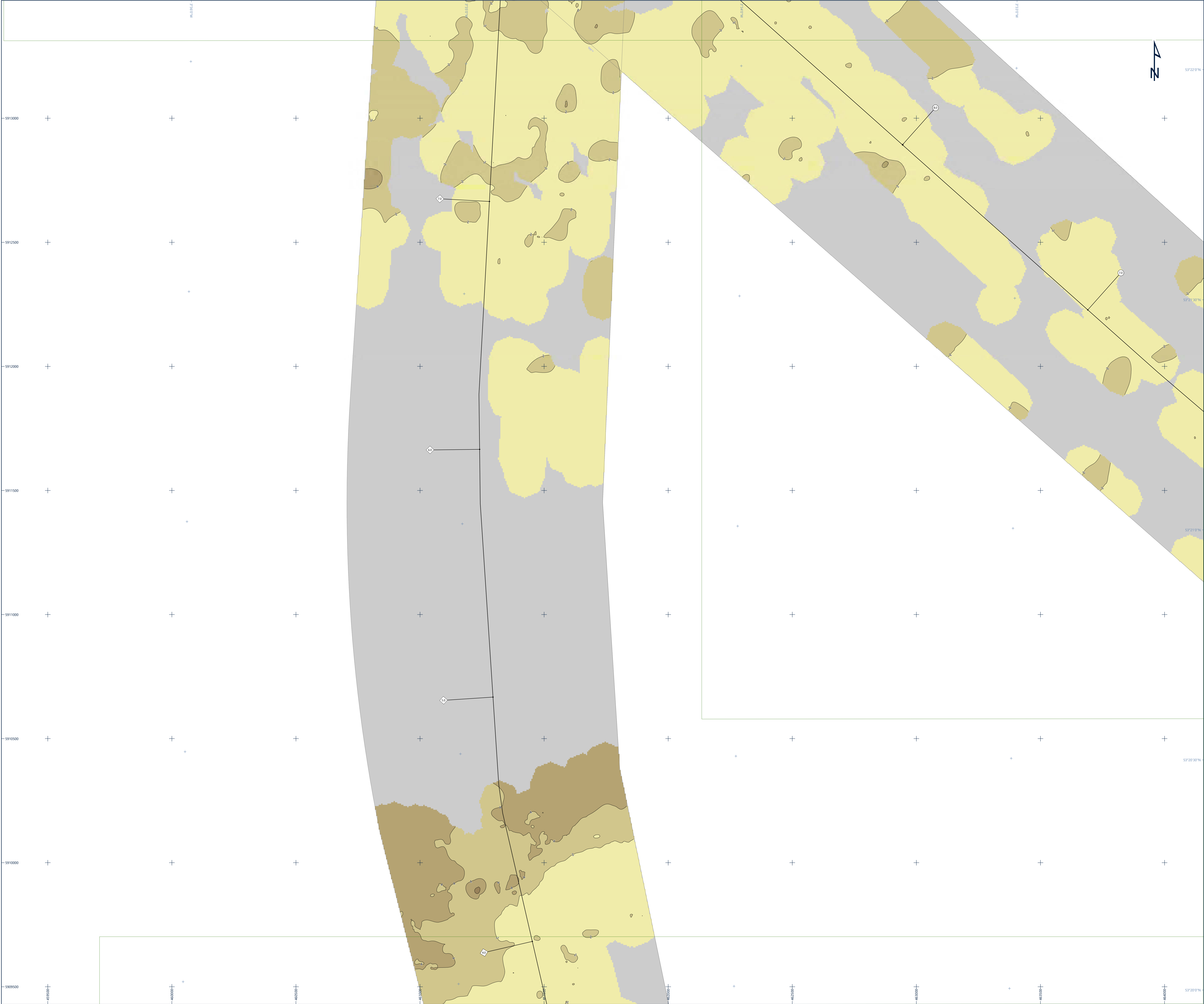
FUGRO

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

UGRO

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	25 November 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	18 January 2021	Final Issue - Revision 2	OOT	DS	SB	BPT
03	19 February 2021	Final Reissue - Revision 3	OOT	JL	DS	BPT

Fugro Project No.	Vessel(s)	Fugro Mercator Fugro Seeker Fugro Valkyrie	Survey Date	10 June to 11 August 2020 17 July to 11 August 2020 16 July to 30 September 2020
200655				
File Name			Chart No.	
200655_EastAB_R04_WIS_Lower_SedimentsIscohere_03			03 of 08	



Legend

- UTM Grid
- Geographical Grid
- Route East A Kilometre Post
- Route East B Kilometre Post
- Export Corridor Centre Line
- Export Cable Route Survey Extent
- Windfarm Extent
- Array Survey Extent
- Chart Extent
- Land

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

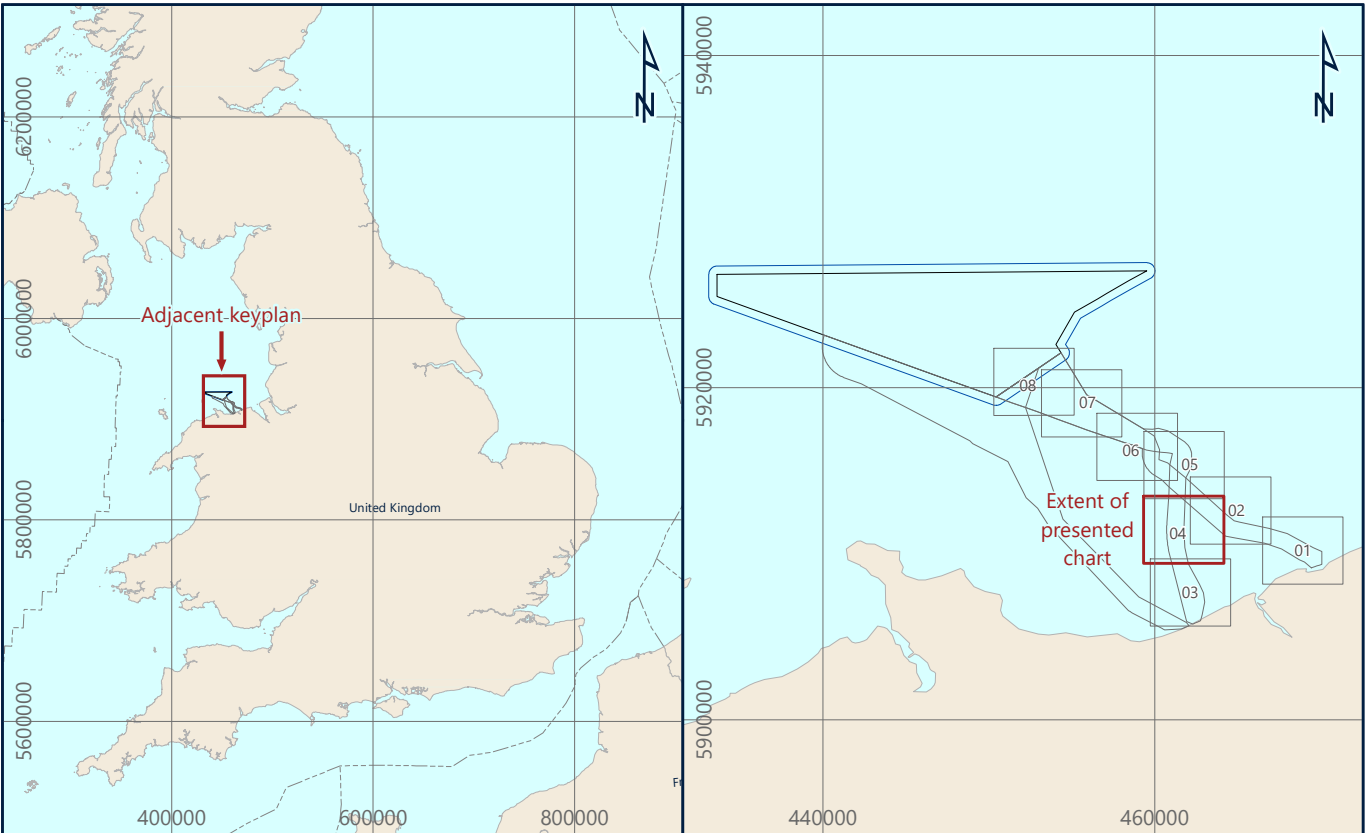
Notes

- 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	09°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
Tighefnau Blyg, Windaed Hill Business Park, Windaed Way, Swansea, SA5 8PE, United Kingdom

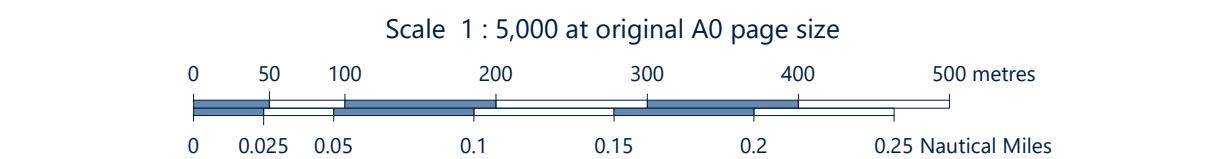
AWEL Y MÔR

Fugro

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

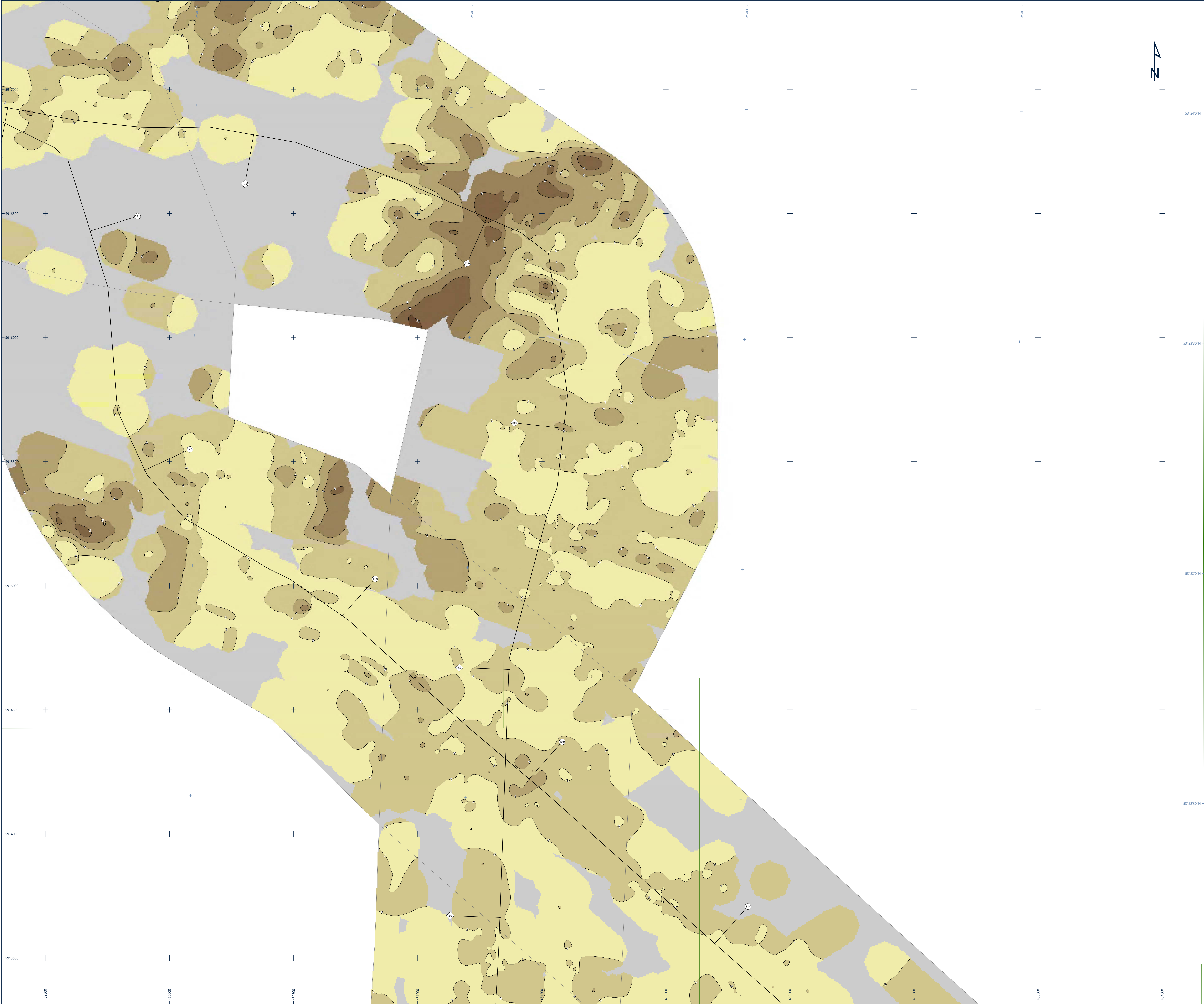
FUGRO

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



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	25 November 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	18 January 2021	Final Issue - Revision 2	OOT	DS	SB	BPT
03	19 February 2021	Final Reissue - Revision 3	OOT	JL	DS	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator Fugro Celtic Fugro Valkyrie	10 June to 11 August 2020 17 July to 30 September 2020
File Name	Chart No.	
200655_EstAB_R04_WIS_Lower.SedimentIsochore_04	04 of 08	



Legend

- UTM Grid
 - Geographical Grid
 - Route East A Kilometre Post
 - Route East B Kilometre Post
 - Export Corridor Centre Line
 - Export Cable Route Survey Extent
 - Windfarm Extent
 - Array Survey Extent
 - Chart Extent
 - Land
- 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

- 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

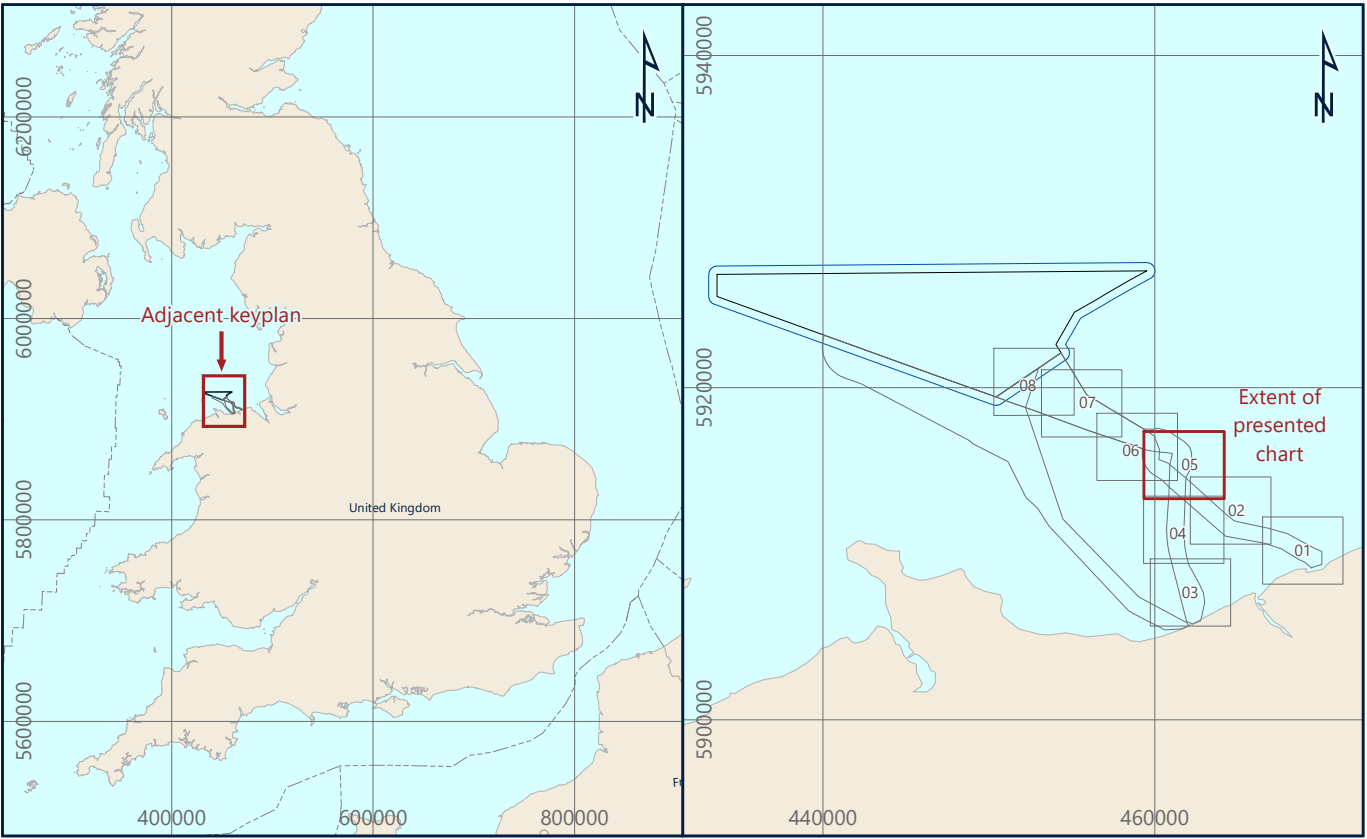
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Fake Easting: 500,000 mE

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 Bly, Wernall Hill Business Park, Wernall Way, Swansea, SA5 8PE, United Kingdom

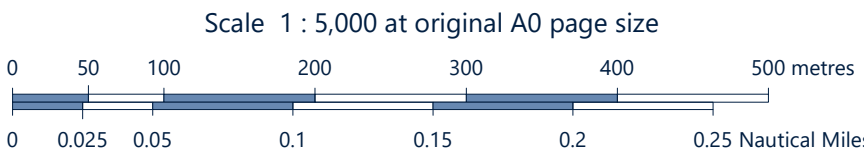
AWEL Y MÔR

Fugro

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

FUGRO

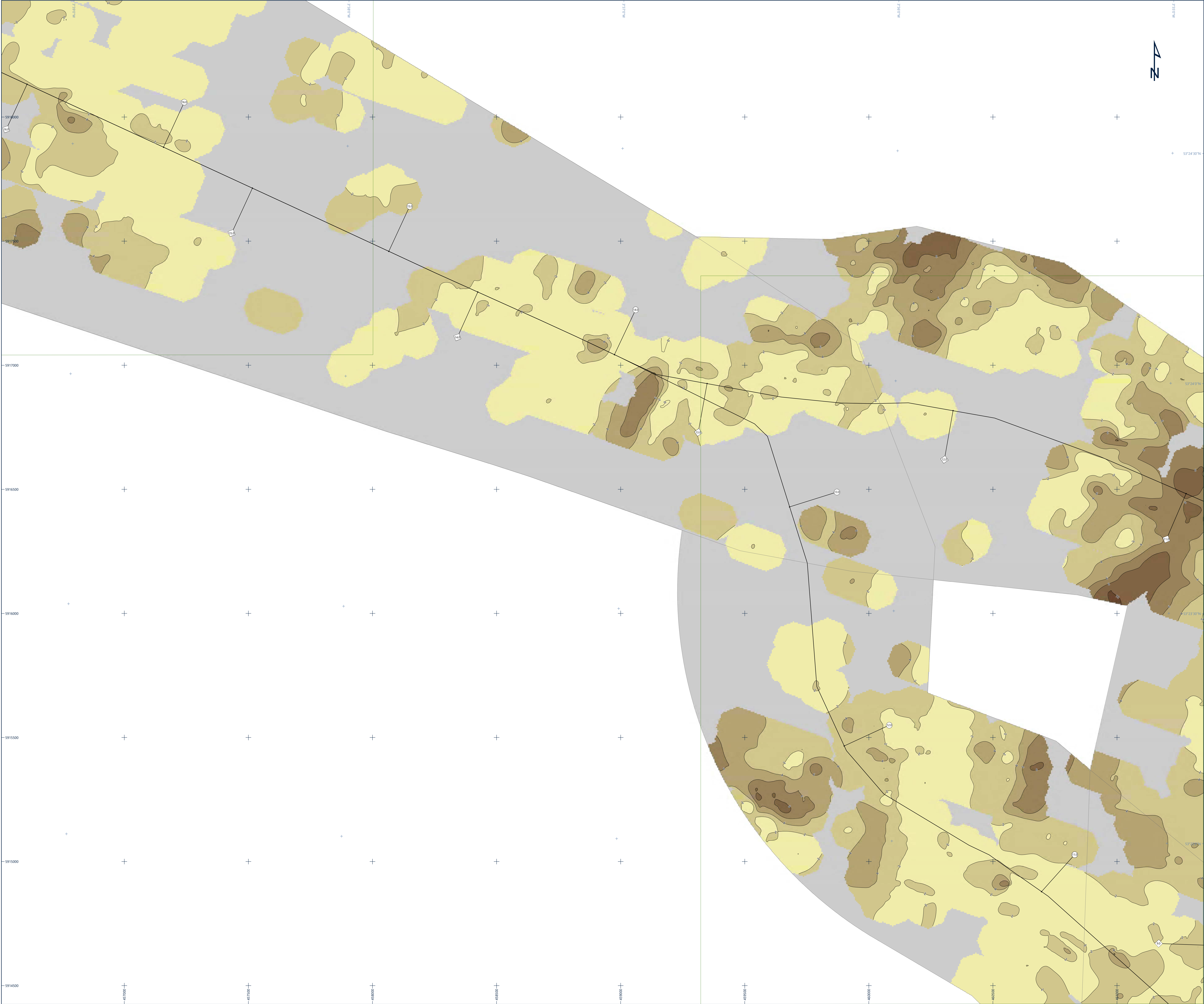
R04 WESTERN IRISH SEA LOWER SEDIMENT ISOCHORE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
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02	18 January 2021	Final Issue - Revision 2	OOT	DS	SB	BPT
03	19 February 2021	Final Reissue - Revision 3	OOT	JL	DS	BPT

Fugro Project No. 200655 Vessel(s) Fugro Mercator, Fugro Center, Fugro Valkyrie Survey Date 10 June to 11 August 2020, 17 July to 11 August 2020, 16 July to 30 September 2020

File Name 200655_EstAB_R04_WIS_Lower.SedimentIsochore_05 Chart No. 05 of 08



Legend

- UTM Grid
 - Geographical Grid
 - Route East A Kilometre Post
 - Route East B Kilometre Post
 - Export Corridor Centre Line
 - Export Cable Route Survey Extent
 - Windfarm Extent
 - Array Survey Extent
 - Chart Extent
 - Land
- 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

- 1) Sub-bottom profiler interpretation was conducted using Innmar 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

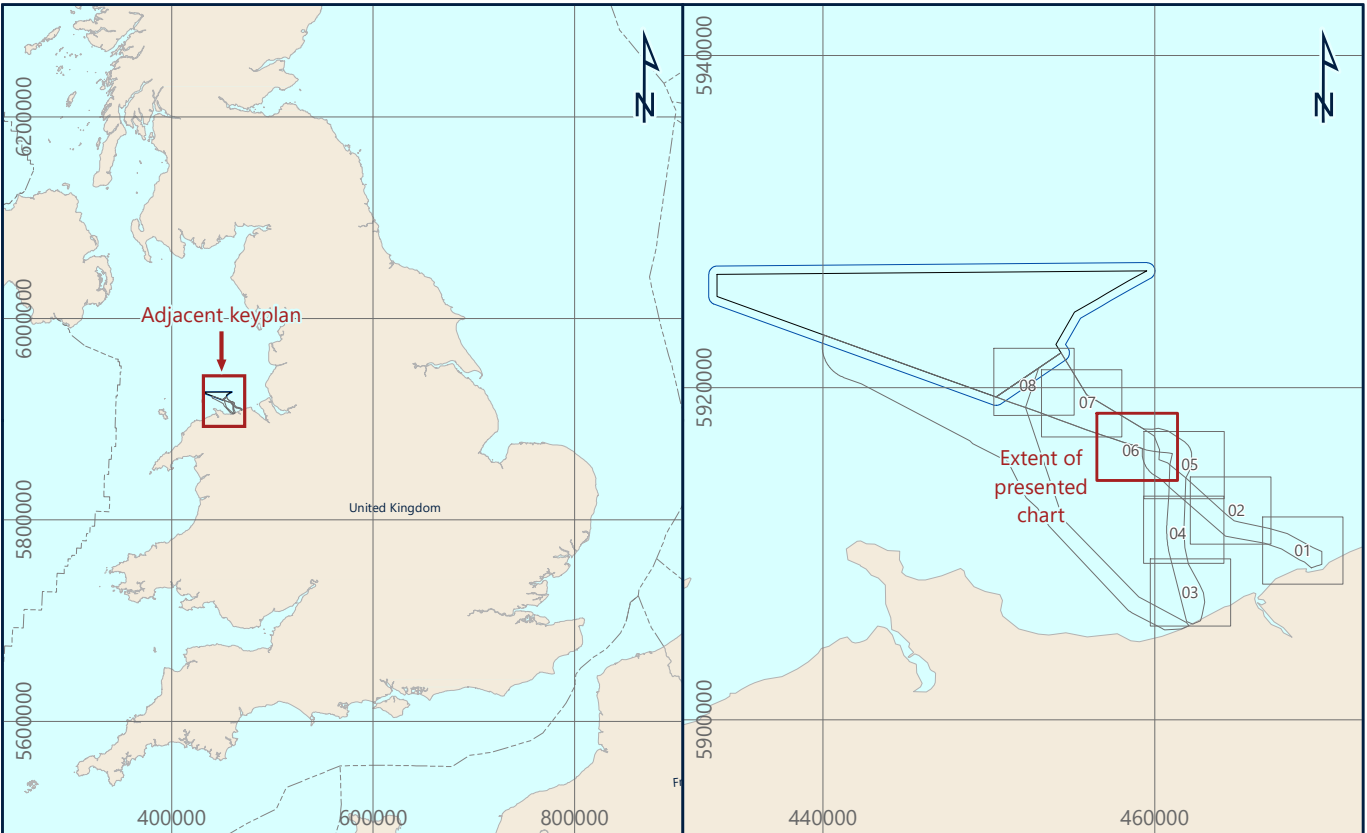
Latitude of Origin: 07°00'00" N

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, Mermaid Hill Business Park, Whitehill Way, Swansea, SW5 9PE, United Kingdom

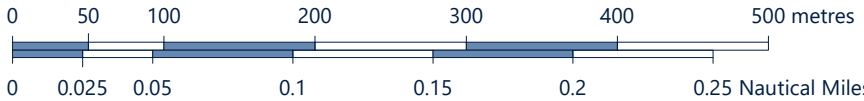
AWEL Y MÔR

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

FUGRO

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

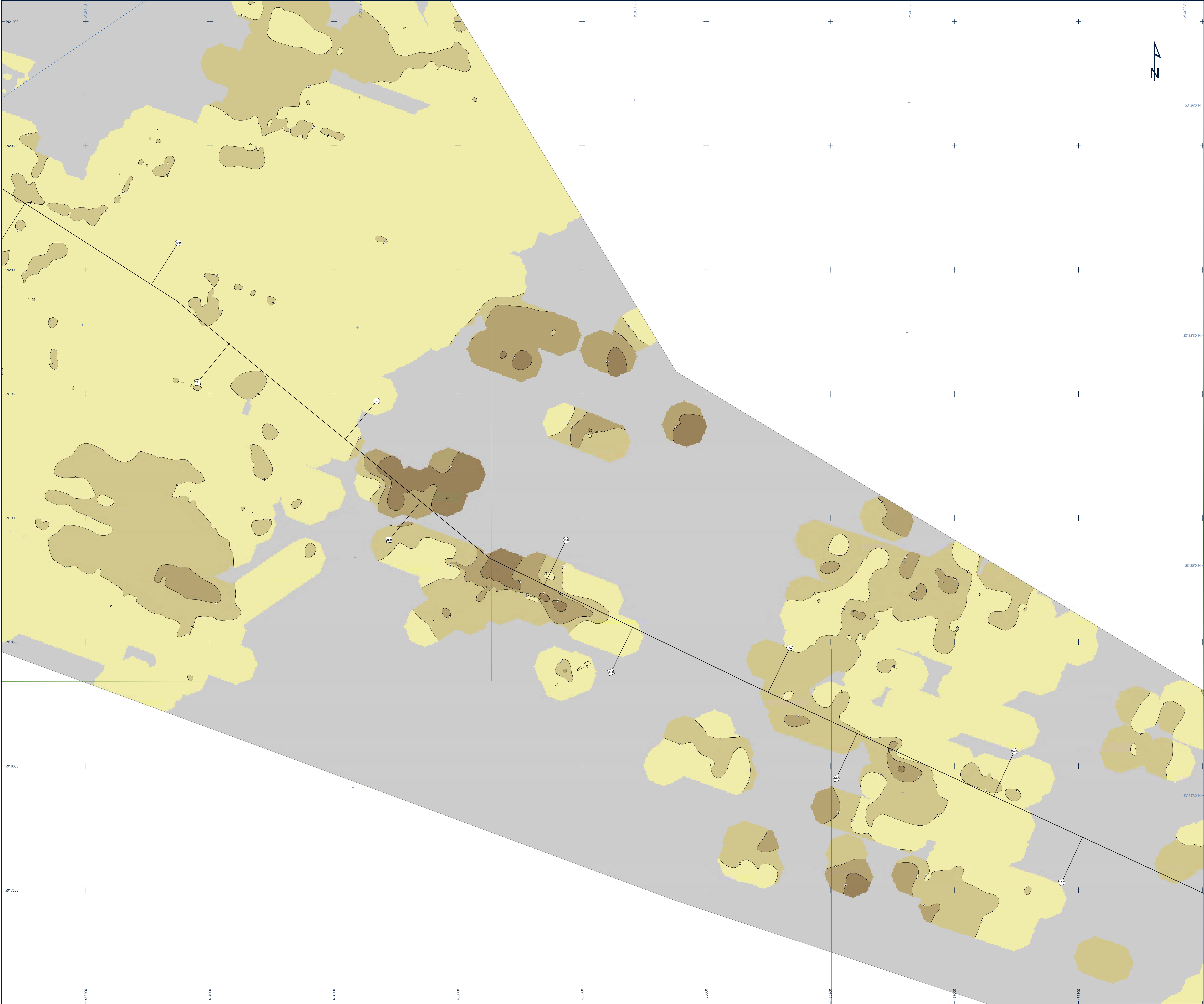
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Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	25 November 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	18 January 2021	Final Issue - Revision 2	OOT	DS	SB	BPT
03	19 February 2021	Final Reissue - Revision 3	OOT	JL	DS	BPT
-	-	-	-	-	-	-

Fugro Project No. 200655 Vessel(s) Fugro Mercator, Fugro Gemini, Fugro Valkyrie Survey Date 10 June to 11 August 2020, 17 July to 11 August 2020, 16 July to 30 September 2020

File Name 200655_EstAB_R04_WIS_Lower_SedimentsIsochore_06 Chart No. 06 of 08



Legend

- UTM Grid
 - Geographical Grid
 - Route East A Kilometre Post
 - Route East B Kilometre Post
 - Export Corridor Centre Line
 - Export Cable Route Survey Extent
 - Windfarm Extent
 - Array Survey Extent
 - Chart Extent
 - Land
- 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

- 1) Sub-bottom profiler interpretation was conducted using Innonar 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 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

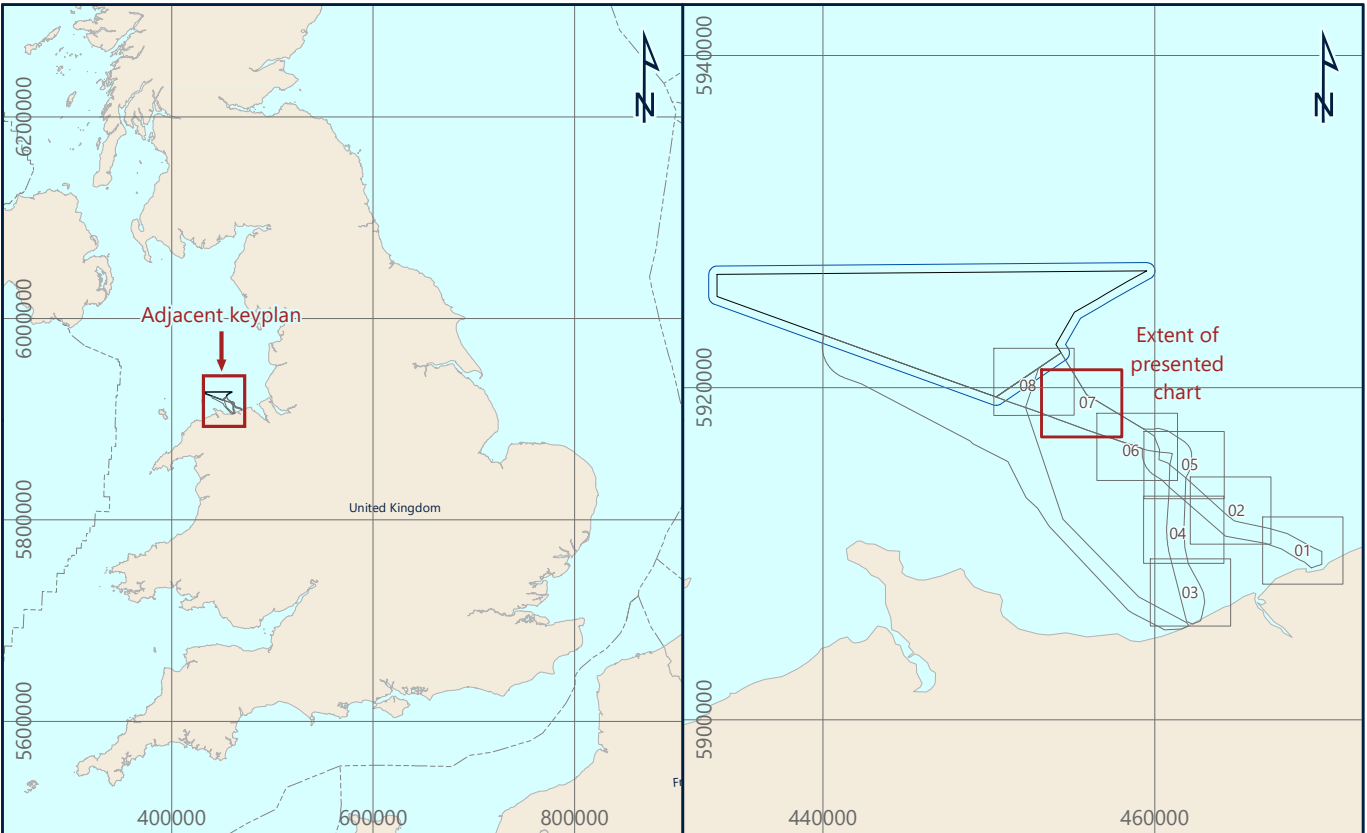
Latitude of Origin: 07°00'00" N

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 Bldg, Wernand Hill Business Park, Wernand Way, Seaford, BN15 9PE, United Kingdom

AWEL Y MÔR

Fugro

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

FUGRO

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

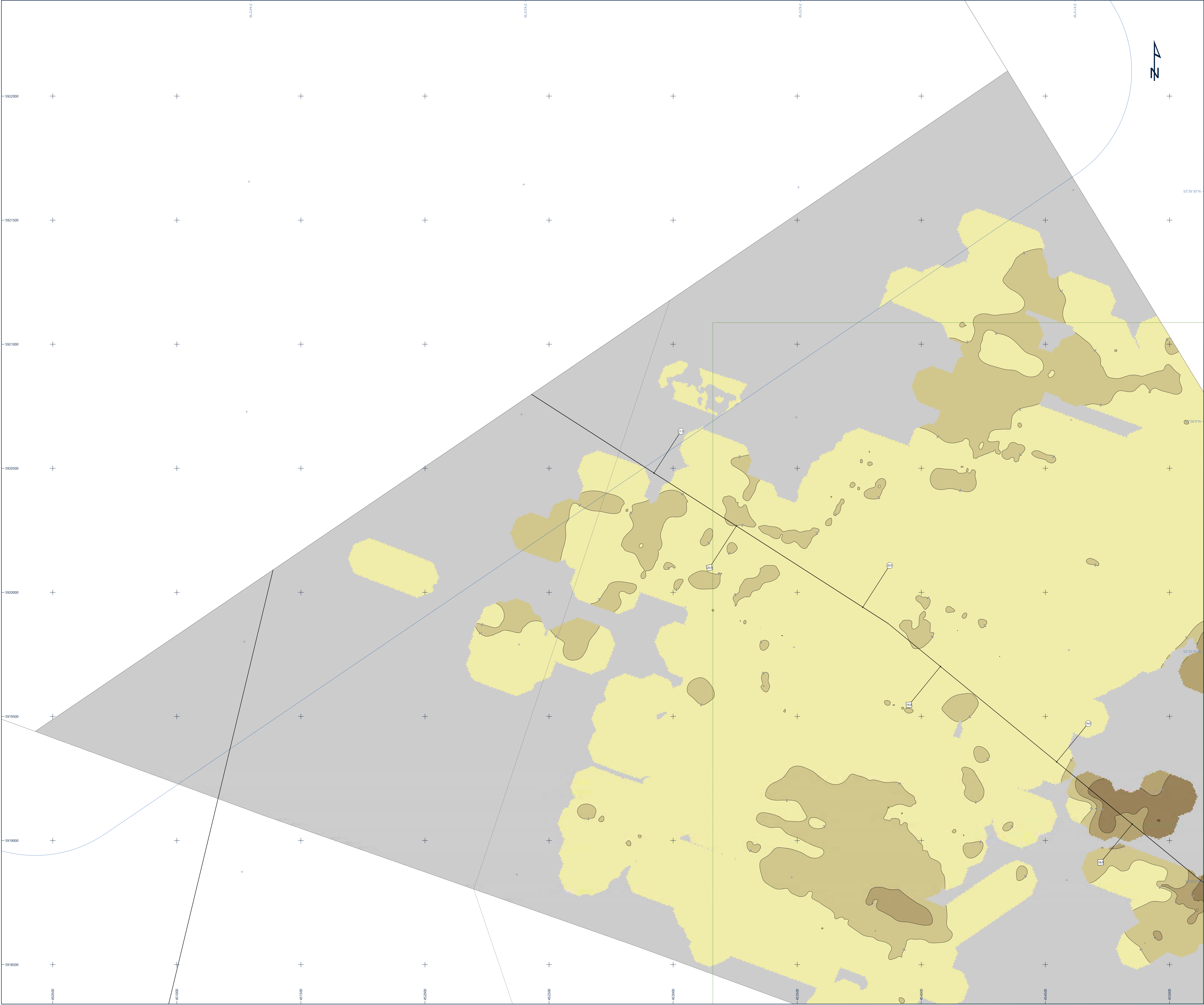
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0 50 100 200 300 400 500 metres

0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
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02	18 January 2021	Final Issue - Revision 2	OOT	DS	SB	BPT
03	19 February 2021	Final Reissue - Revision 3	OOT	JL	DS	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mesuror Fugro Geosler Fugro Valkyrie	10 June to 11 August 2020 17 July to 11 August 2020 16 July to 30 September 2020
File Name		Chart No.
200655_EstAB_R04_WIS_Lower.SedimentIsochore_07		07 of 08



Legend

- UTM Grid
- Geographical Grid
- Route East A Kilometre Post
- Route East B Kilometre Post
- Export Corridor Centre Line
- Export Cable Route Survey Extent
- Windfarm Extent
- Array Survey Extent
- Chart Extent
- Land

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

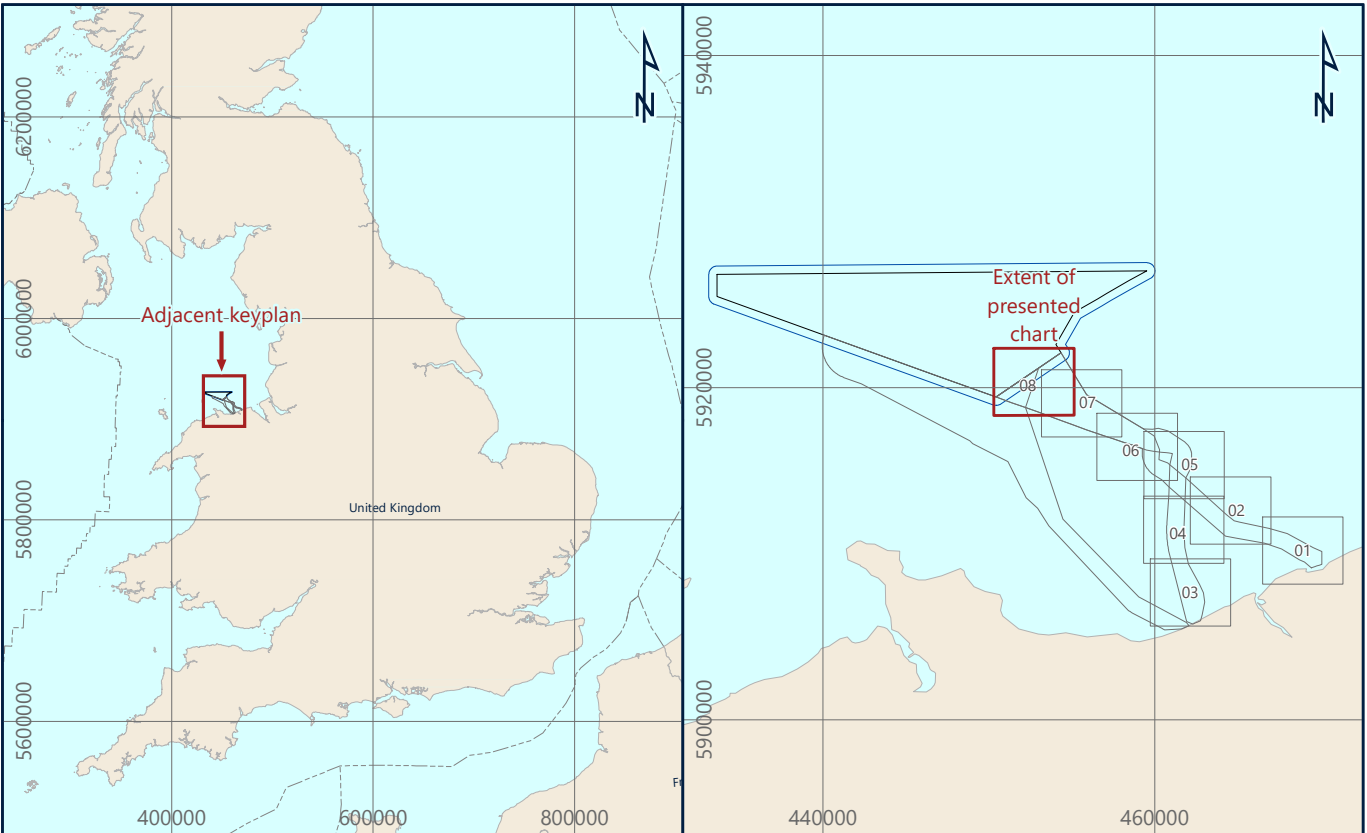
Notes

- 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)	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
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AWEL Y MÔR

Fugro

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Tel: +44 23 9220 5500

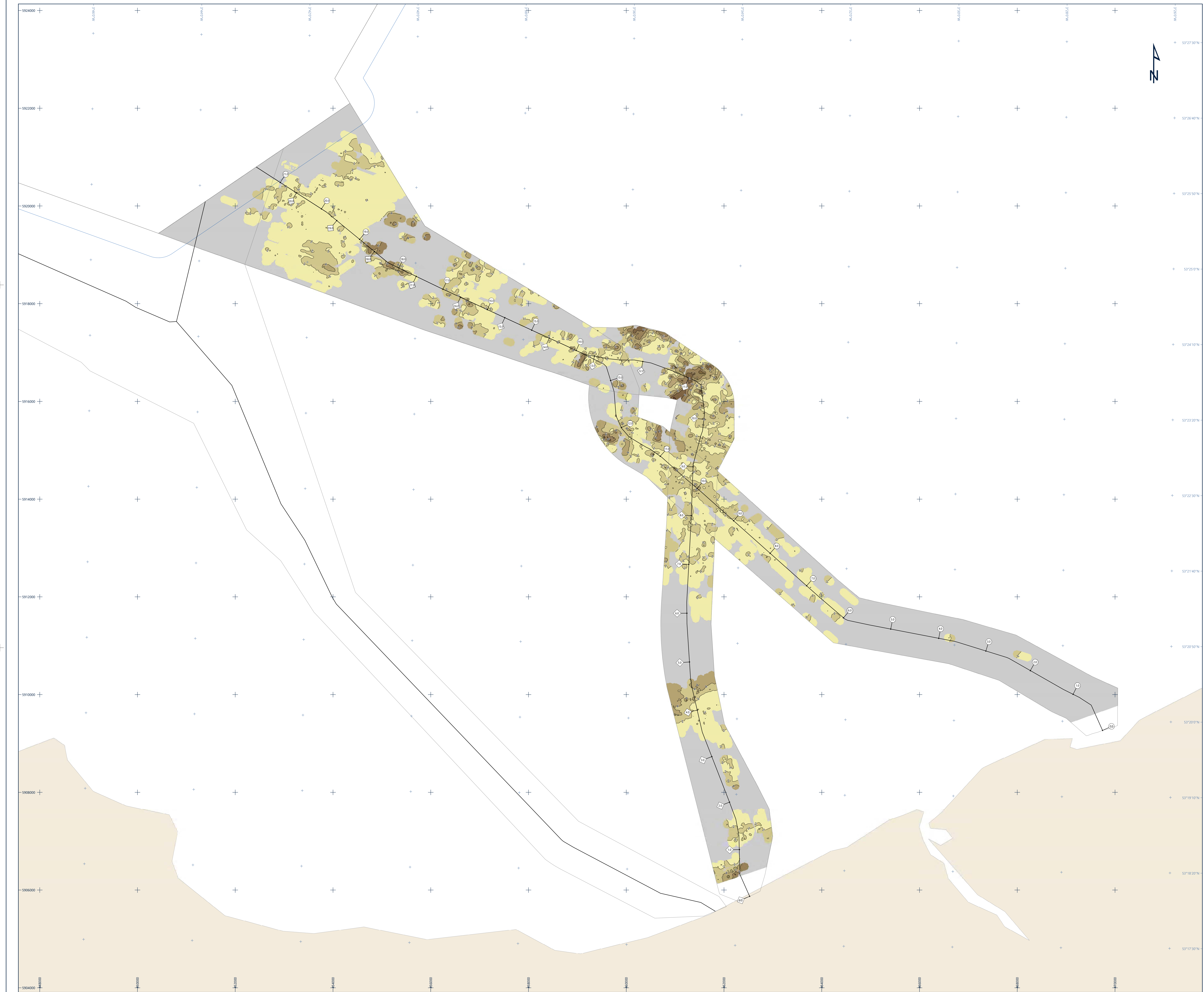
FUGRO

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

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Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	25 November 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	18 January 2021	Final Issue - Revision 2	OOT	DS	SB	BPT
03	19 February 2021	Final Reissue - Revision 3	OOT	JL	DS	BPT
-	-	-	-	-	-	-

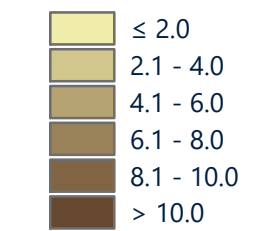
Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mesuror Fugro Center Fugro Valkyrie	10 June to 11 August 2020 17 July to 11 August 2020 16 July to 30 September 2020
File Name	Chart No.	
200655_EstAB_R04_WIS_Lower.SedimentIsochore_08	08 of 08	



Legend

- ✚ UTM Grid
- ✚ Geographical Grid
- 12.0 Route East A Kilometre Post
- 12.0 Route East B Kilometre Post
- Export Corridor Centre Line
- Export Cable Route Survey Extent
- Windfarm Exent
- Array Survey Extent

R04 Western Irish Sea Lower Sediment Isochore Thickness [m]



— Sediment Isochore at 2 m Interval
 ■ Area of No Interpretation

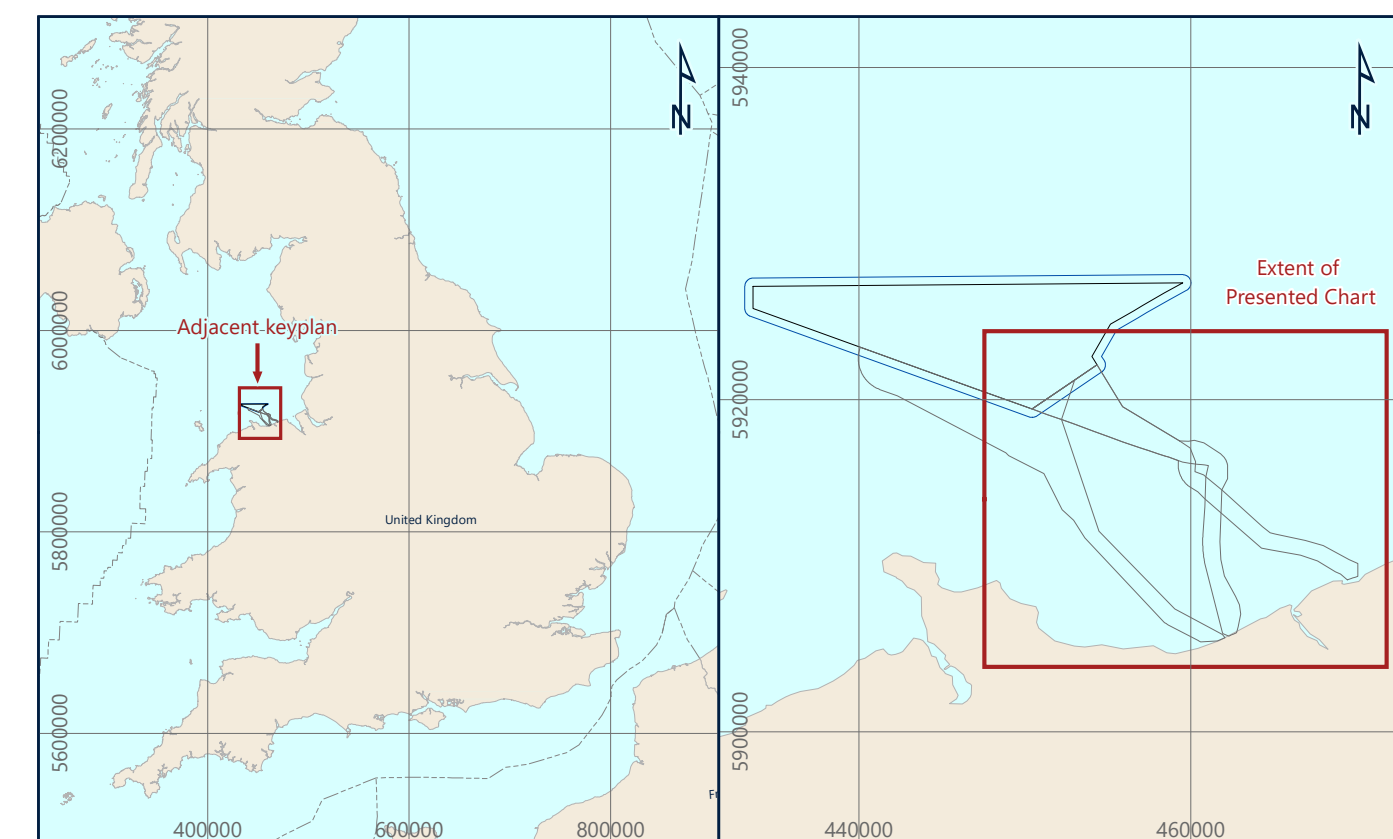
Notes

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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)	13°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)



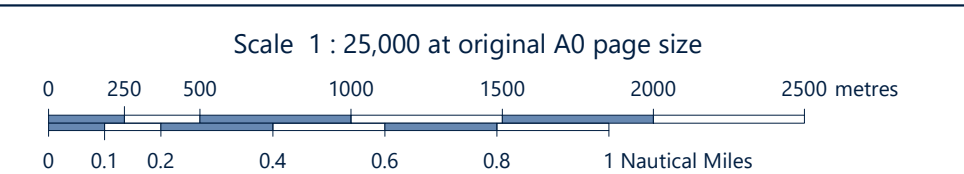
Awel Y Môr Offshore Wind Farm Ltd
Trigonos Bldg, Windmill Hill Business Park, Whitehill Way, Swindon, SN5 6PB, United Kingdom

WEL Y MÔR

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UGRO

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

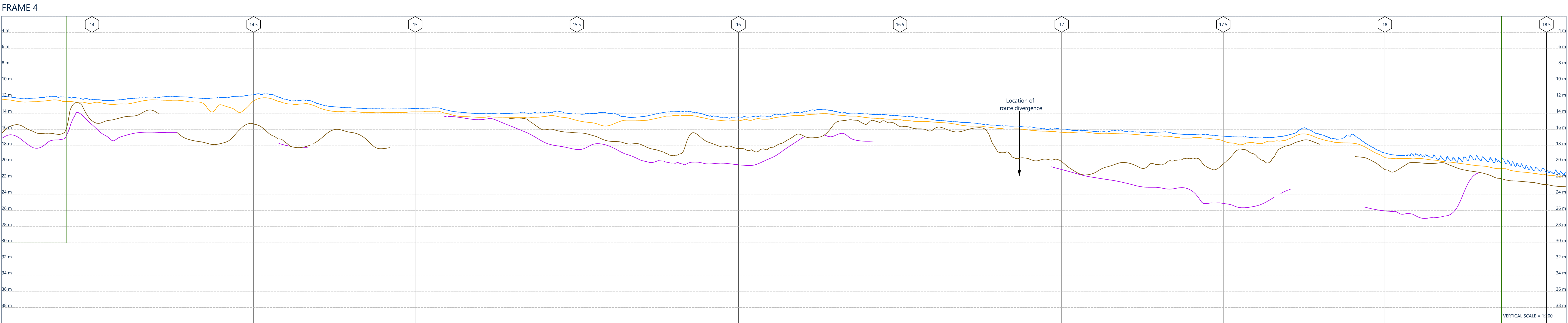
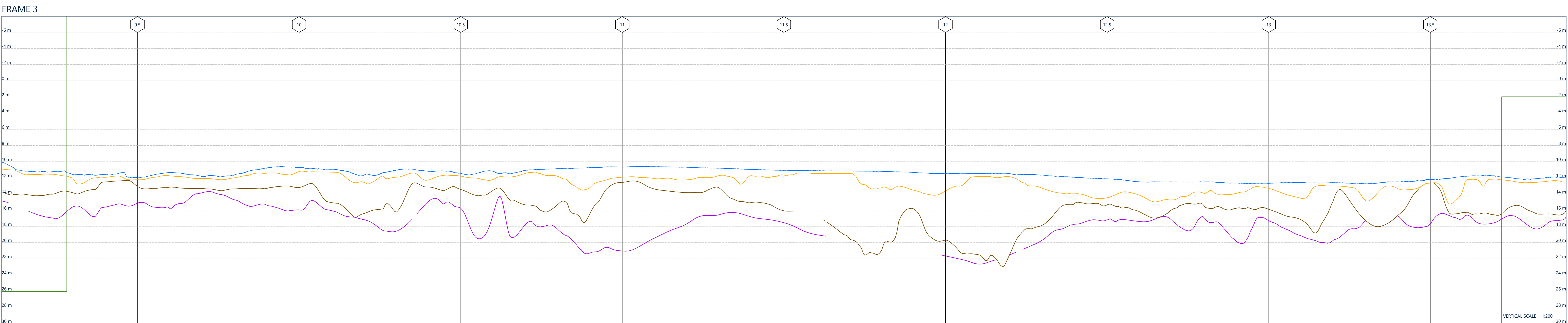
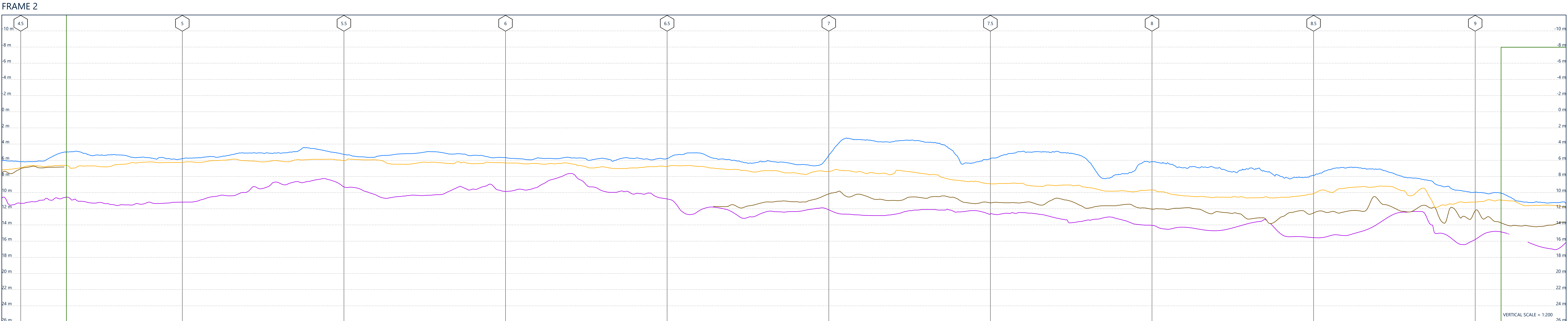
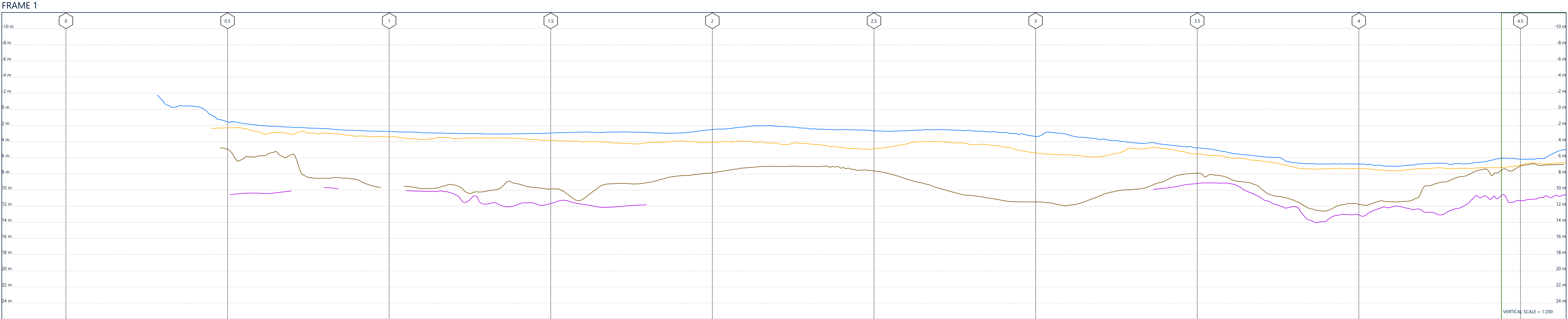


Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	25 November 2020	Draft Issue - Revision 1	ODT	DS	S8	BPT
02	18 January 2021	Final Issue - Revision 2	ODT	DS	S8	BPT
03	19 February 2021	Final Reissue - Revision 3	ODT	JL	DS	BPT

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mentor Fugro Seeker Fugro Valkyrie	10 June to 11 August 2020 17 July to 11 August 2020 16 July to 30 September 2020
File Name	Chart No.	
200655_EastAB_R04_WIS_Lower_SedimentsIsochore_Overview	01 of 01	

Appendix J

Charts – Cross Sectional Profiles



- Legend
- Frame Overlap
- Profiles
- Seabed
 - Horizon R01 - Holocene Upper Sediment
 - Horizon R03 - Western Irish Sea Upper Sediment
 - Horizon R04 - Western Irish Sea Lower Sediment

- Notes
- 1) Fugro Mercator bathymetry from Teledyne RESON SeaBat T50 400 kHz dual-head multibeam echosounder, processed with 0.25 m bin size (charted at 1 m bin size).
 - 2) Fugro Seeker and Fugro Valkyrie bathymetry from Teledyne RESON SeaBat 7125 400 kHz dual-head multibeam echosounder, processed with 0.25 m bin size (charted at 1 m bin size).
 - 3) Sub-bottom profiler interpretation was conducted using Innomar Medium SES-2000 parametric sub-bottom profiler data.
 - 4) SBP profiles interpreted from 5 m resolution grids derived from SBP data in conjunction with BG5 sediment charts and client supplied geological background documentation (Innogy, 2019).

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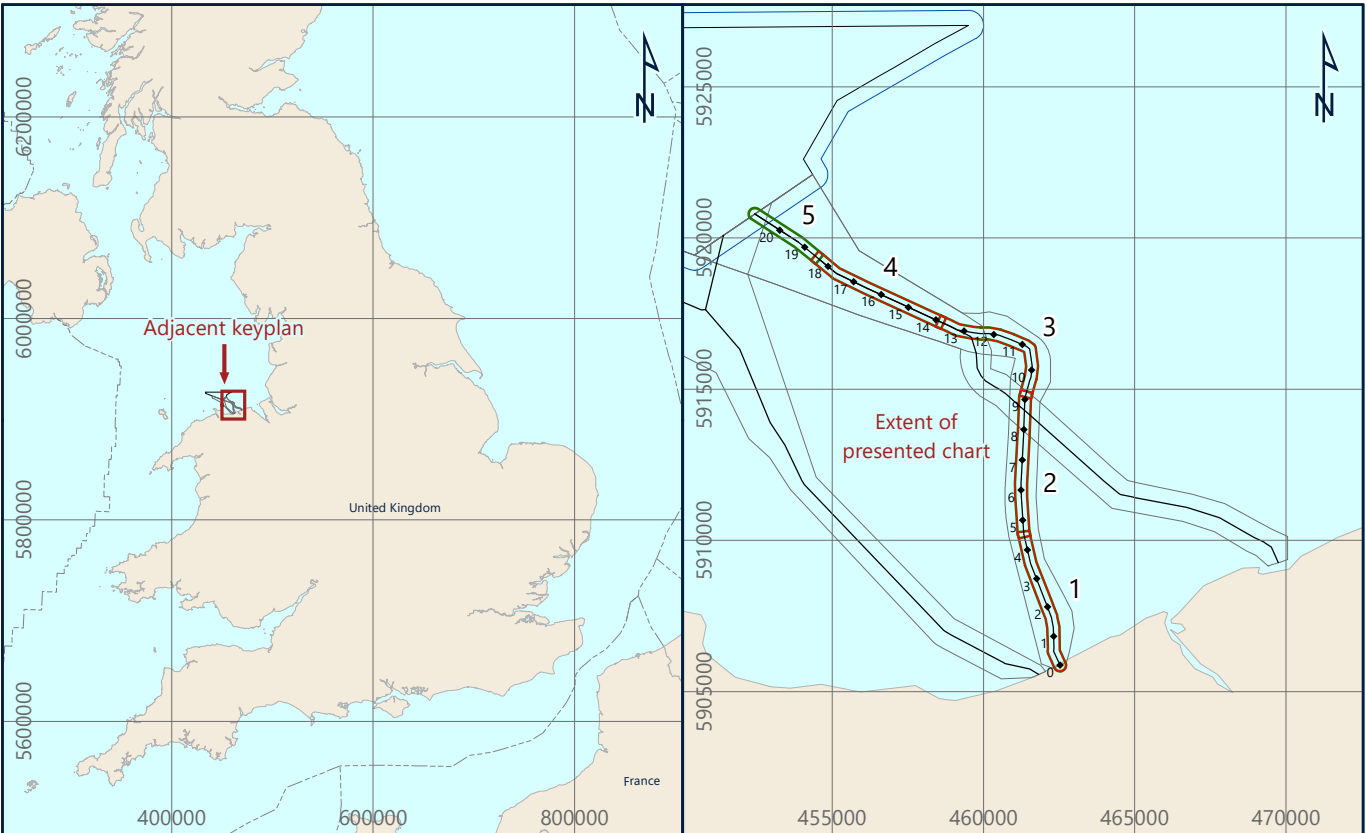
Geodetic Parameters

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): 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)



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Tel: +44 23 9220 5500



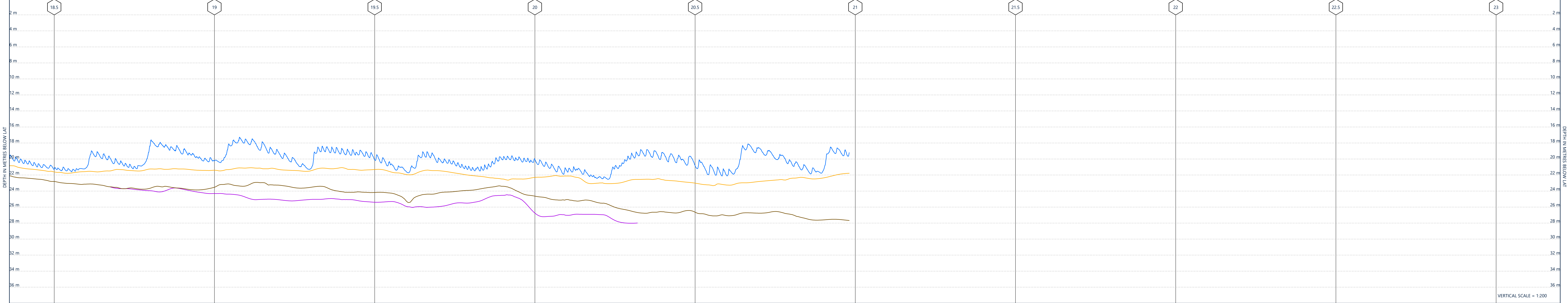
CROSS SECTIONAL PROFILE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

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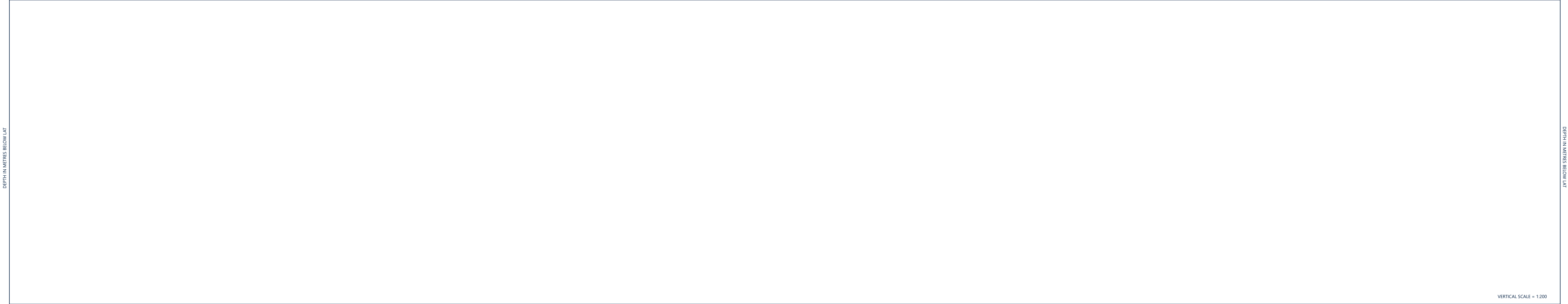
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01	25 November 2020	Draft Issue - Revision 1	BT	JL	DS	JS
02	18 January 2021	Final Issue - Revision 2	BT	JL	DS	JS
03	19 February 2021	Final Reissue - Revision 3	BT	JL	DS	JS
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Fugro Project No. 200655
Vessel(s) Fugro Mercator
Fugro Seeker
Fugro Valkyrie
Survey Date 10 June to 11 August 2020
17 July to 11 August 2020
16 July to 30 September 2020
File Name 200655_EastA_Profile
Chart No. 1 of 2

FRAME 5



FRAME 6



FRAME 7



FRAME 8



Legend

Frame Overlap

Profiles

Seabed

Horizon R01 - Holocene Upper Sediment

Horizon R03 - Western Irish Sea Upper Sediment

Horizon R04 - Western Irish Sea Lower Sediment

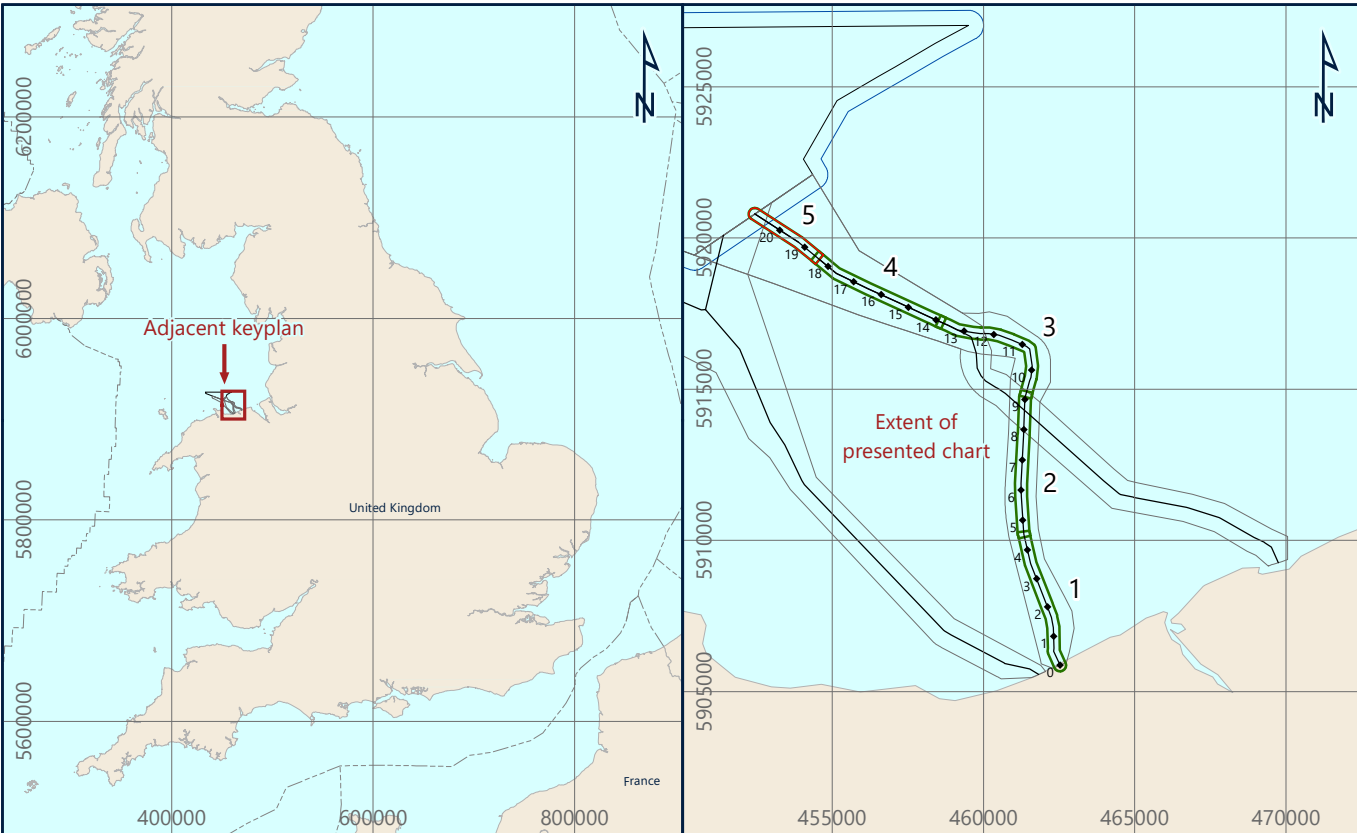
Notes

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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	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
Trigona Bldg, Windmill Hill Business Park, Whitelk Way, Swindon, SN1 6PS, United Kingdom

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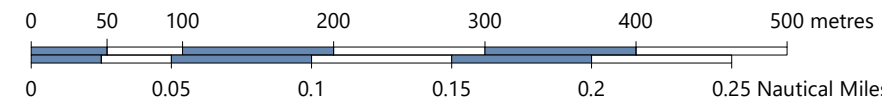
Fugro

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



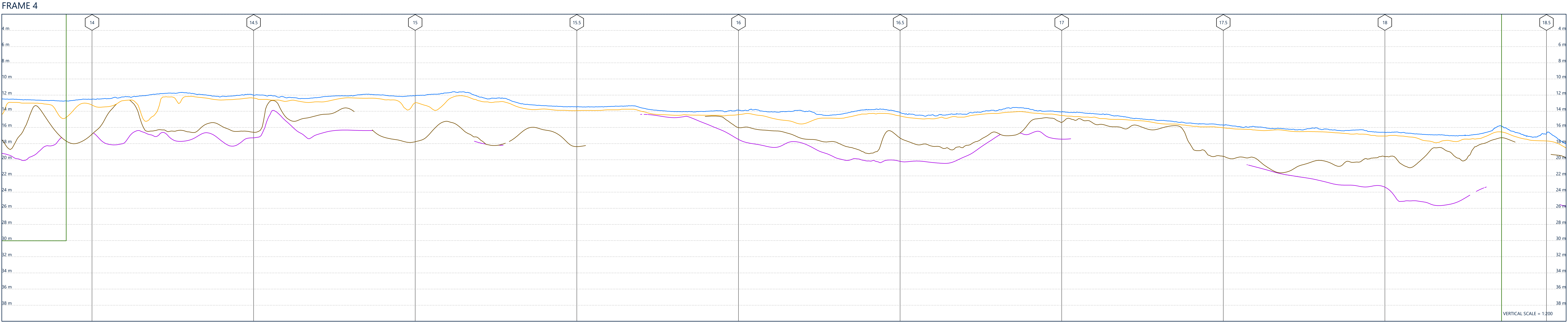
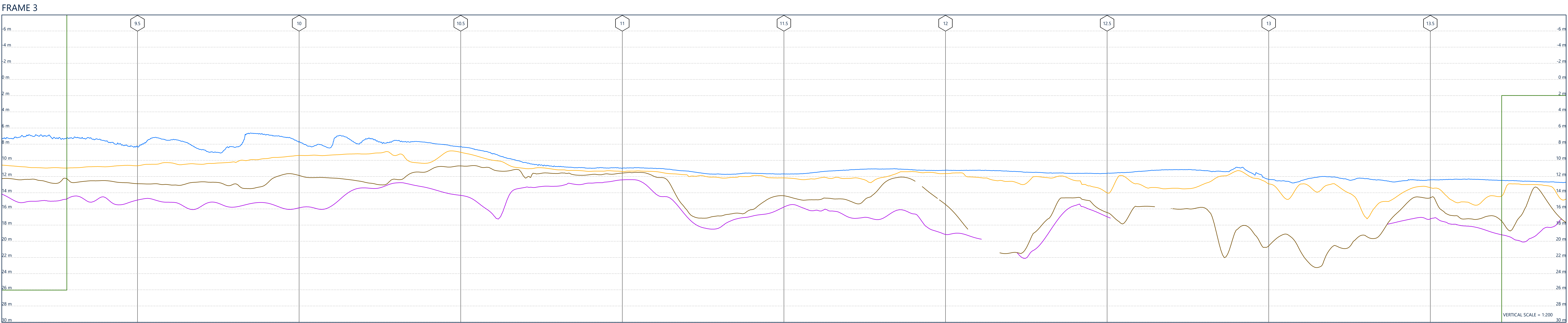
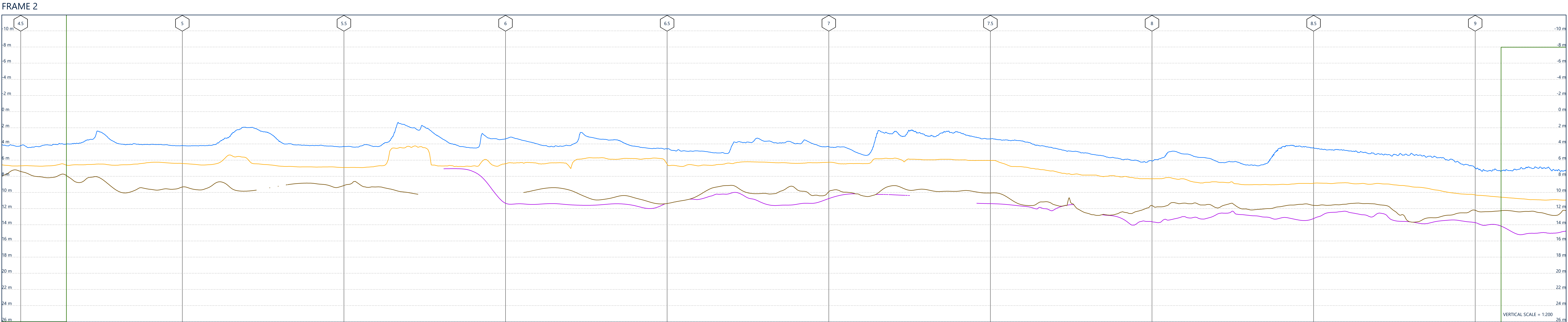
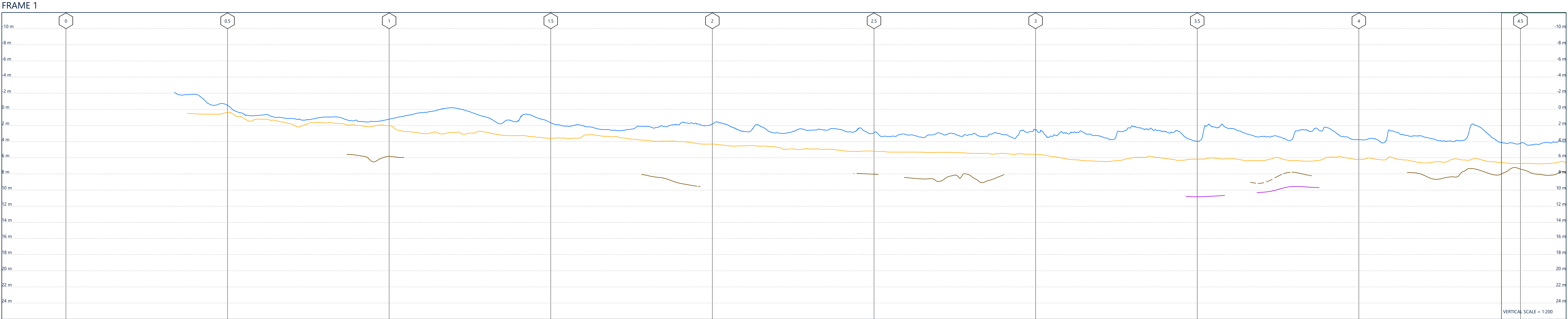
CROSS SECTIONAL PROFILE AWEL Y MÔR OFFSHORE WIND FARM GEOPHYSICAL SURVEY 2020 UK IRISH SEA

Scale 1 : 5,000 at original A0 page size (Vertical scale 1:200)



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	25 November 2020	Draft Issue - Revision 1	BT	JL	DS	JS
02	18 January 2021	Final Issue - Revision 2	BT	JL	DS	JS
03	19 February 2021	Final Reissue - Revision 3	BT	JL	DS	JS
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Fugro Mercator	Survey Date	10 June to 11 August 2020
200655	Fugro Seeker	Fugro Valkyrie		17 July to 11 August 2020
File Name			Chart No.	
200655_LastA_Profile2				2 of 2



Legend

Frame Overlap

Profiles

- Seabed
- Horizon R01 - Holocene Upper Sediment
- Horizon R02 - Western Irish Sea Upper Sediment
- Horizon R03 - Western Irish Sea Upper Sediment
- Horizon R04 - Western Irish Sea Lower Sediment

Notes

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Geodetic Parameters

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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

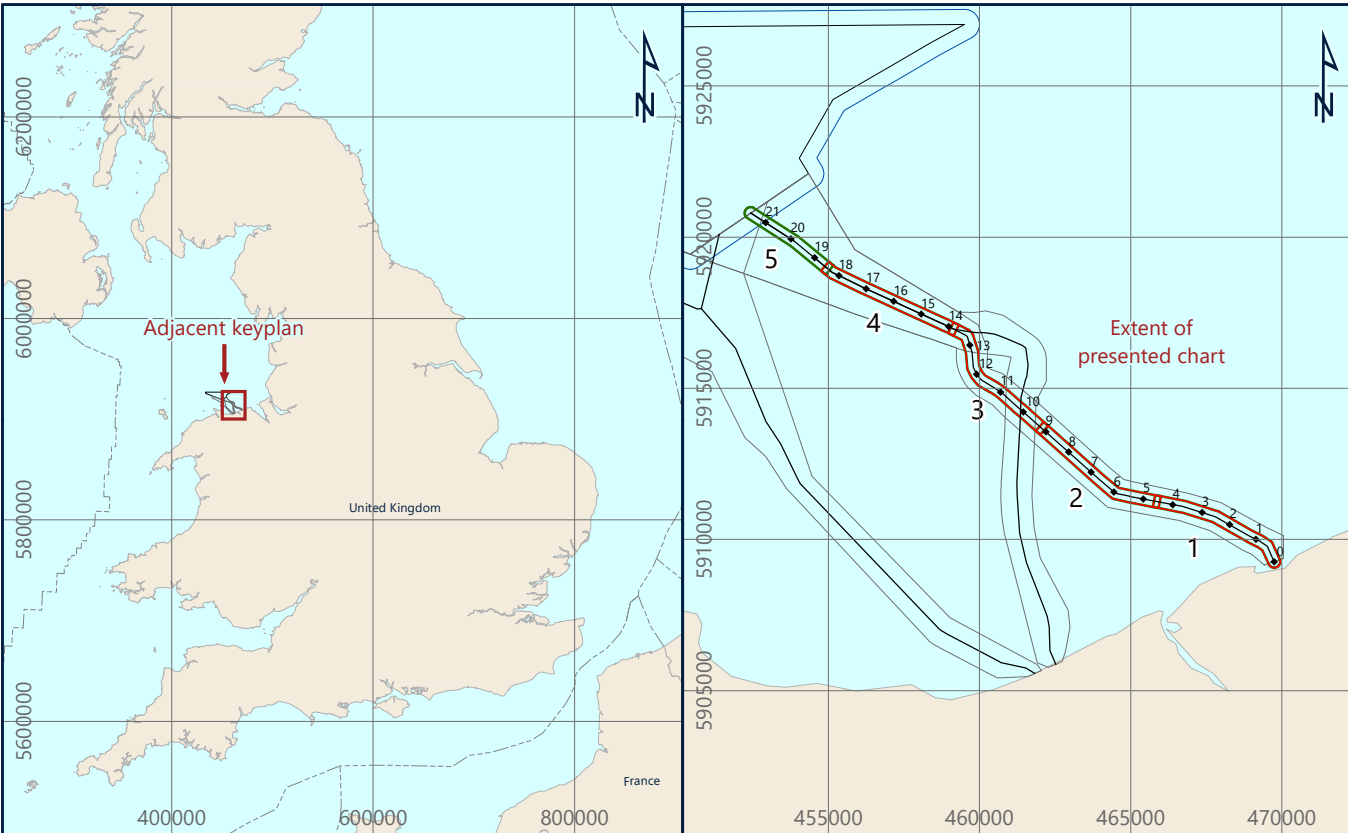
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Fake Easting: 500,000 mE

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

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Tel: +44 23 9220 3500

FUGRO

CROSS SECTIONAL PROFILE

AWEL Y MÔR OFFSHORE WIND FARM

GEOPHYSICAL SURVEY 2020

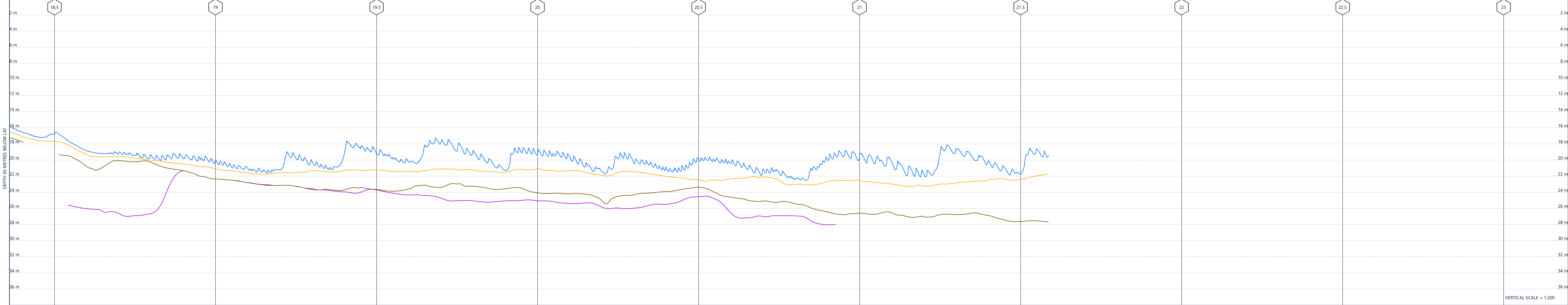
UK IRISH SEA

Scale 1 : 5,000 at original A0 page size (Vertical scale 1:200)

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	25 November 2020	Draft Issue - Revision 1	BT	JL	DS	JS
02	18 January 2021	Final Issue - Revision 2	BT	JL	DS	JS
03	19 February 2021	Final Reissue - Revision 3	BT	JL	DS	JS
-	-	-	-	-	-	-

Fugro Project No. 200655	Vessel(s) Fugro Mercator Fugro Seeker Fugro Valkyrie	Survey Date 10 June to 11 August 2020 17 July to 11 August 2020 16 July to 30 September 2020
File Name 200655_EastB_Profile		Chart No. 1 of 2

FRAME 5



Legend

Frame Overlap

Profiles

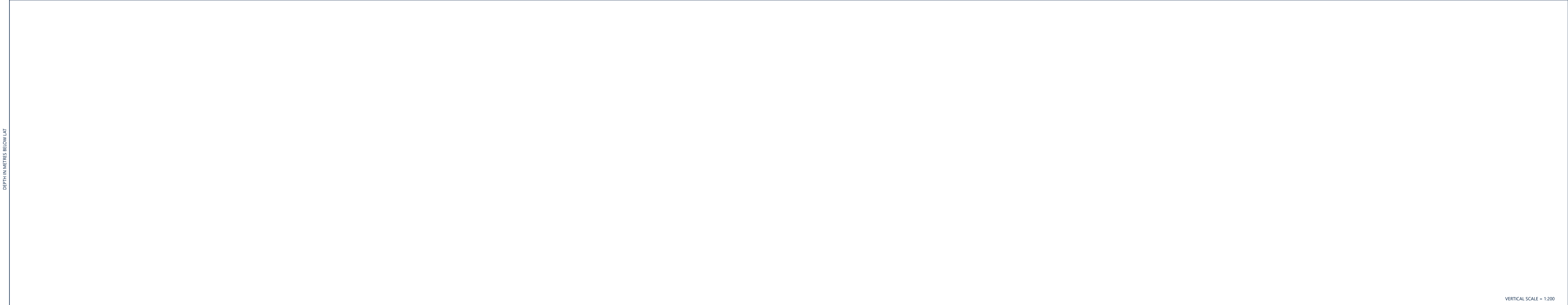
Seabed

Horizon R01 - Holocene Upper Sediment

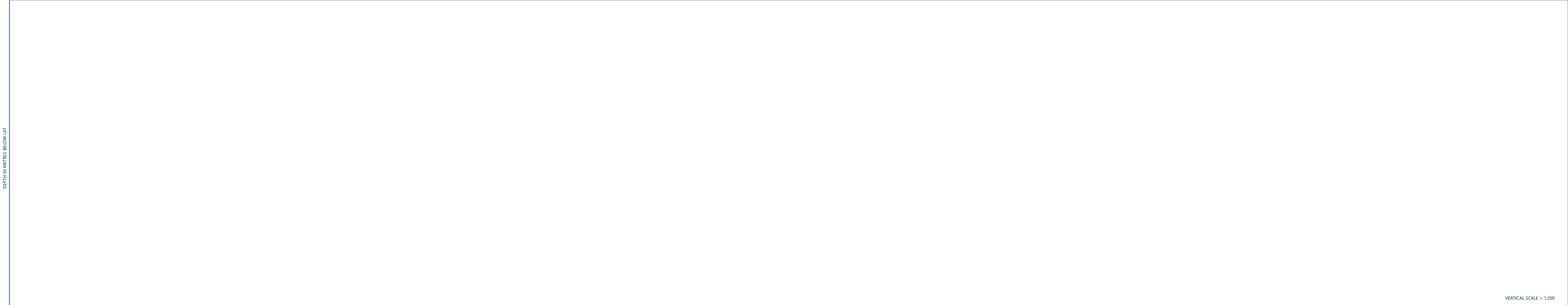
Horizon R03 - Western Irish Sea Upper Sediment

Horizon R04 - Western Irish Sea Lower Sediment

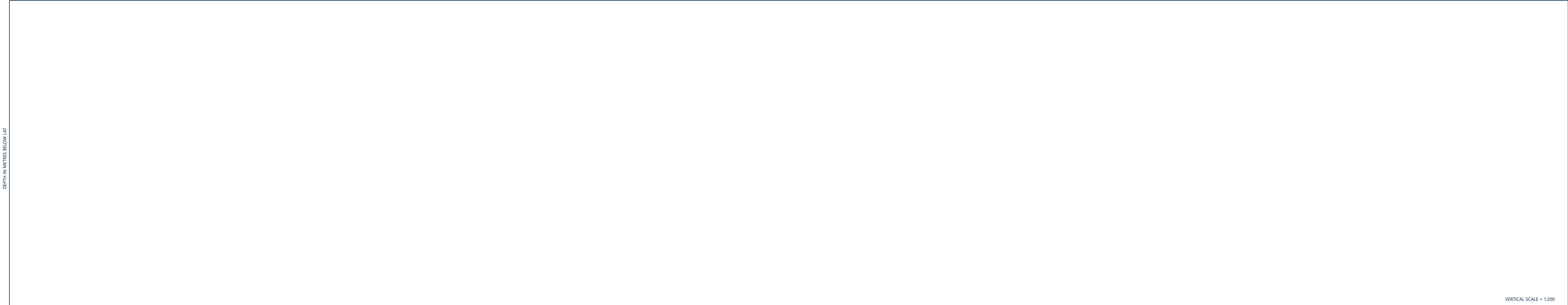
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FRAME 7



FRAME 8



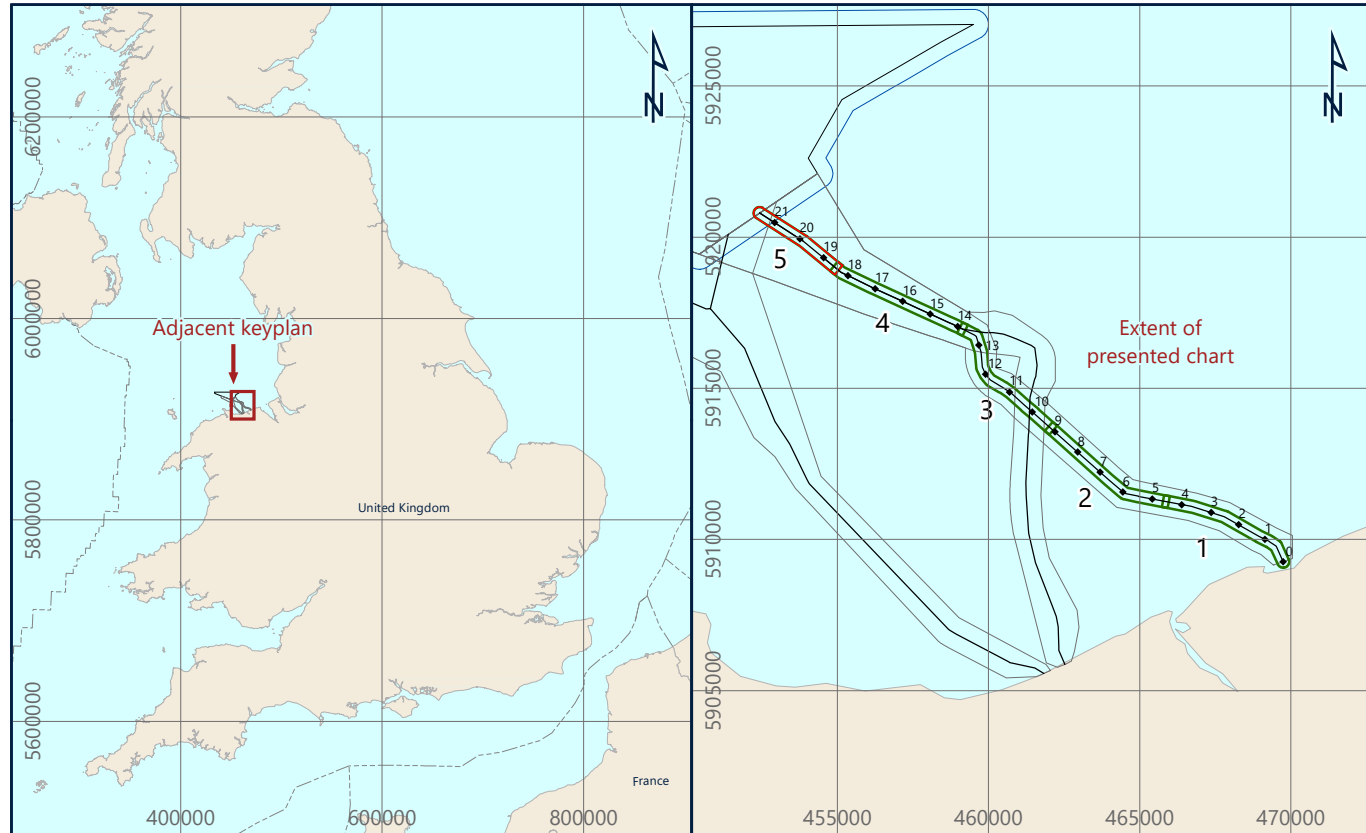
Notes

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Awel Y Môr Offshore Wind Farm Ltd
Trigona Bldg, Windmill Hill Business Park, Whitehill Way, Swindon, SN1 6PS, United Kingdom

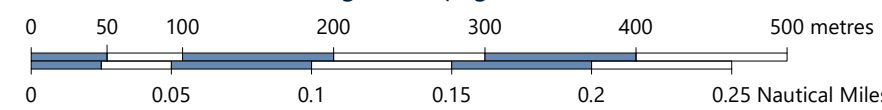
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Victory House, Treflegar Wharf Unit 161, Hamilton Road, Portsmouth PO6 4PX
Tel: +44 23 9220 5500



CROSS SECTIONAL PROFILE
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

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Issue	Date	Status	Interpreted	Prepared	Checked	Approved
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03	19 February 2021	Final Reissue - Revision 3	BT	JL	DS	JS
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Fugro Project No.	Vessel(s)	Fugro Mercator	Survey Date	10 June to 11 August 2020
200655	Fugro Seeker	Fugro Valkyrie		17 July to 11 August 2020
File Name			Chart No.	
200655_EastB_Profile2				2 of 2



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Wiltshire SN5 6PB
T +44 (0)8456 720 090
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Registered office:
RWE Renewables UK
Swindon Limited
Windmill Hill Business Park
Whitehill Way
Swindon