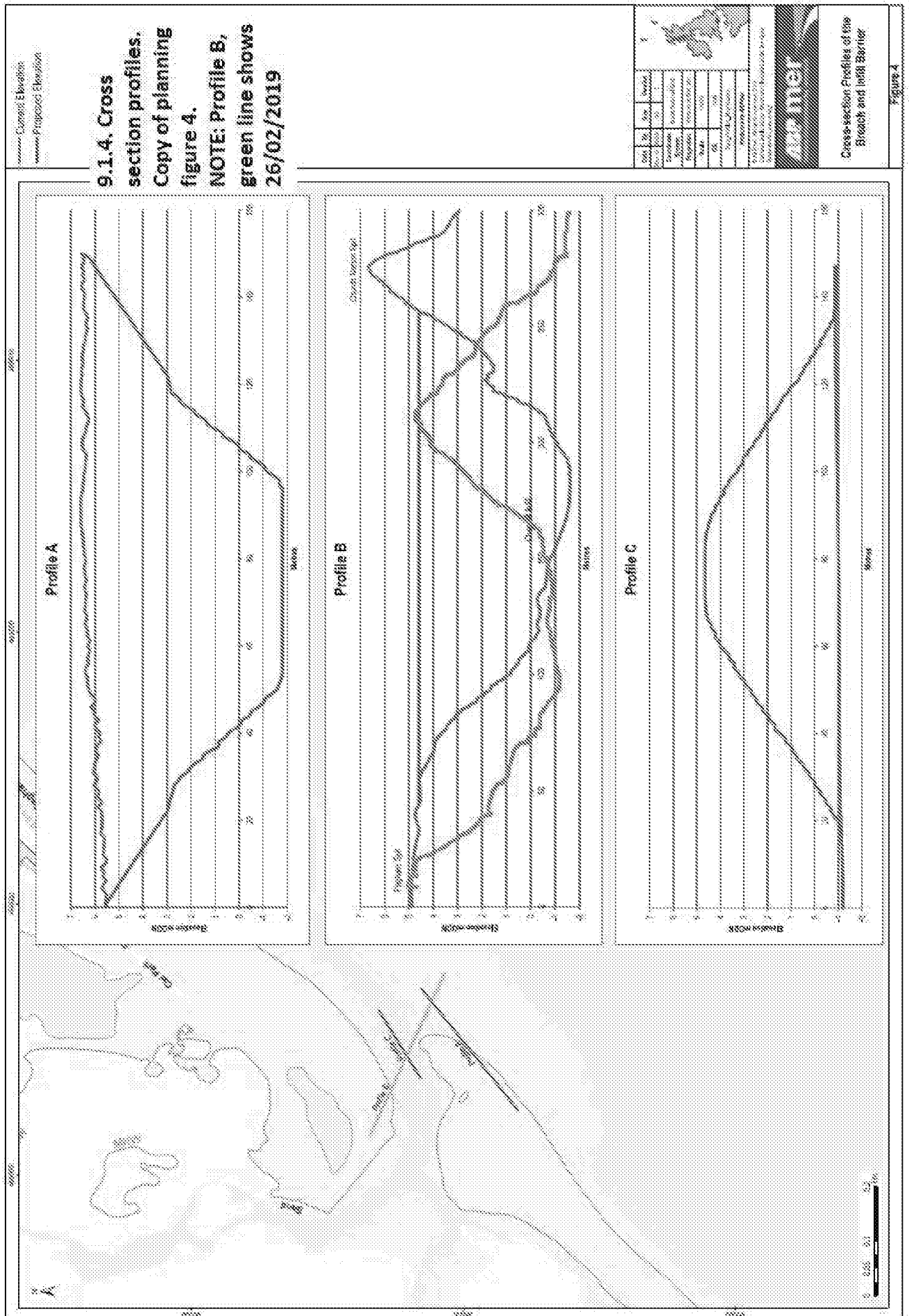


9. Appendix

9.1. Figures from Planning Application

- 9.1.1. Location plan. Copy of planning figure 1.
- 9.1.2. Block Plan. Copy of planning figure 2.
- 9.1.3. Block Plan – Tern Island. Copy of planning figure 3.
Note: Excavation to form an island is not required.
- 9.1.4. Cross Section Profiles. Copy of planning figure 4.
Note: Profile B, green line shows 26/02/2019.
- 9.1.5. Cross Section of Tern Island. Copy of planning figure 5.
Note: Excavation to form an island is not required.





9.2. Report 20th May 2019 by Mr. Uwe Dornbusch, Environment Agency. (See slides below)

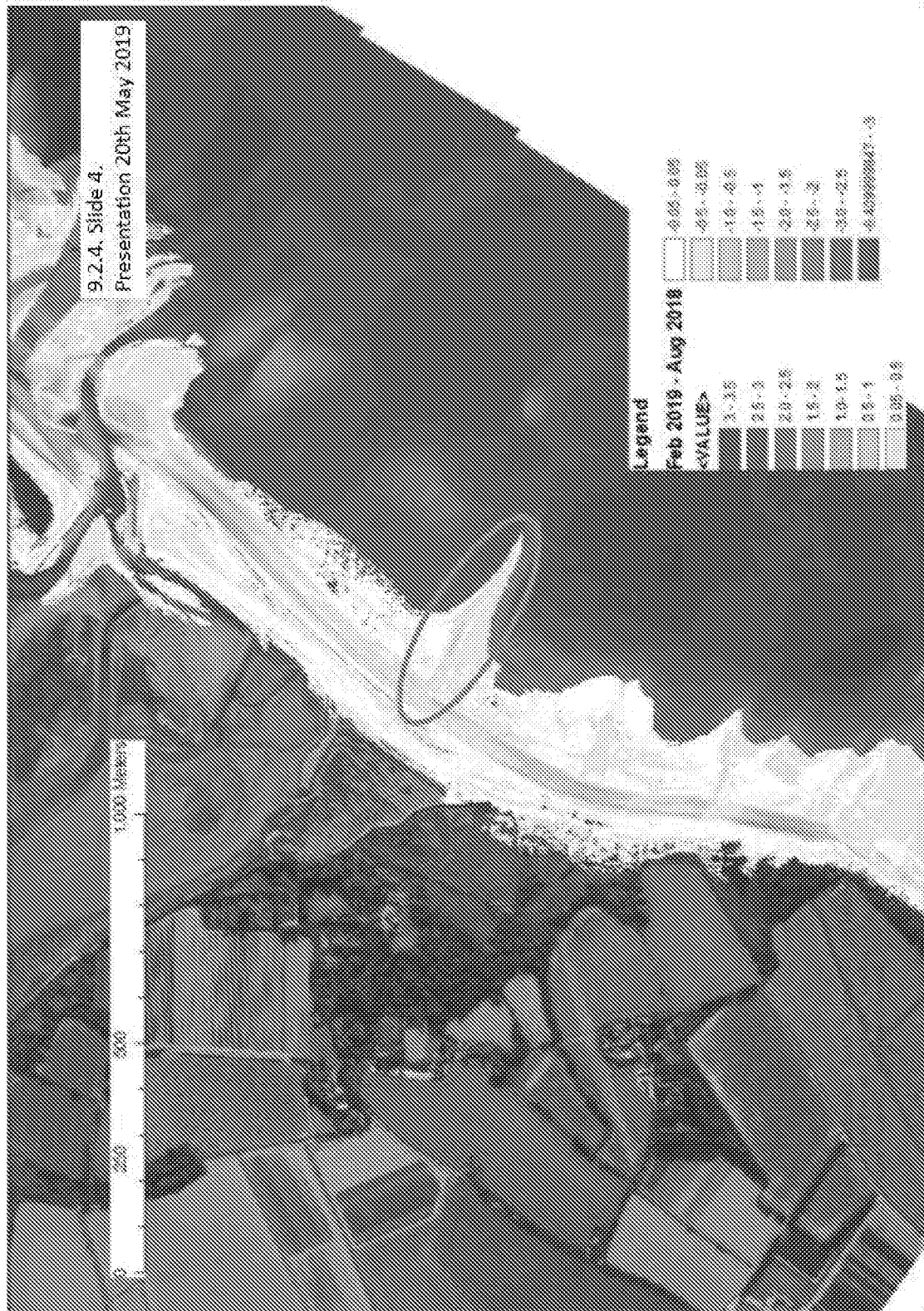
- 9.2.1. In August 2018 the Church Norton Spit was at its shortest and by December had already grown again (red GPS trace) to block the southern of two channels. There was a bank with two 'humps' close to the water line (green oval) and at the root of the shoal limiting the northern channel was connected through a salient to the beach.
- 9.2.2. By February 2019 the CNS appears have remained largely unchanged from the December 2018 position. The 'two-humped' shoal has advanced landwards by up to 75 meter's and the beach in front of the lagoon has been over-washed and retreated further into the lagoon. The salient at the connection between shoal north of the channel and the beach has disappeared and the beach landwards of the channel has retreated by about 5 to 6 metres. Interestingly, the northern bend of the channel has moved some 60 metres south (arrow).
- 9.2.3. The changed described in the previous slide can be seen in the elevation difference. In addition erosion of about 5 metres has taken place in front of the old CNS leading to a more 'straight' alignment. Likewise, the roll back in front of the lagoon was accompanied by an increase in beach with north up to the sailing club.
- 9.2.4. The beach orthogonal 'Finger' (green oval) has in trusted fashion shifted northwards along the beach and the beach north of the penultimate Chichester groyne has widened, suggesting that there is still sediment available to feed CNS. Curiously, the beach south of the penultimate Chichester groyne shows erosion within that bay
- 9.2.5. Along East Front Road there is less beach in Feb 2019 then in August 2018. Further east loss and gains are more associated with different parts of the beach profile suggesting draw-down rather than change. The February 2019 survey features beach cusps which account for the small-scale changes alongshore
- 9.2.6. In the detailed view the impact of beach cusps on the difference can be seen past East Front Road. The gain on the upper beach for the first N200 m of East Front Road relates to the recycling ongoing during the February survey.
- 9.2.7. Cross section of the spit. Showing the changes 17/4/19 to 01/05/19
- 9.2.8. The latest tracks (9th/10th May superimposed on map. Showing close co-ordination.
- 9.2.9. Further tracks superimposed on the map.
- 9.2.10. Photo showing the erosion near the little lagoon in just a few weeks.
- 9.2.11. Tide gauge readings showing the harbor emptying to the levels before the spit growth.
- 9.2.12. Summary of the changes February to May.
- 9.2.13. Erosion near the little lagoon between 26/02/2019 and 17/04/2019.



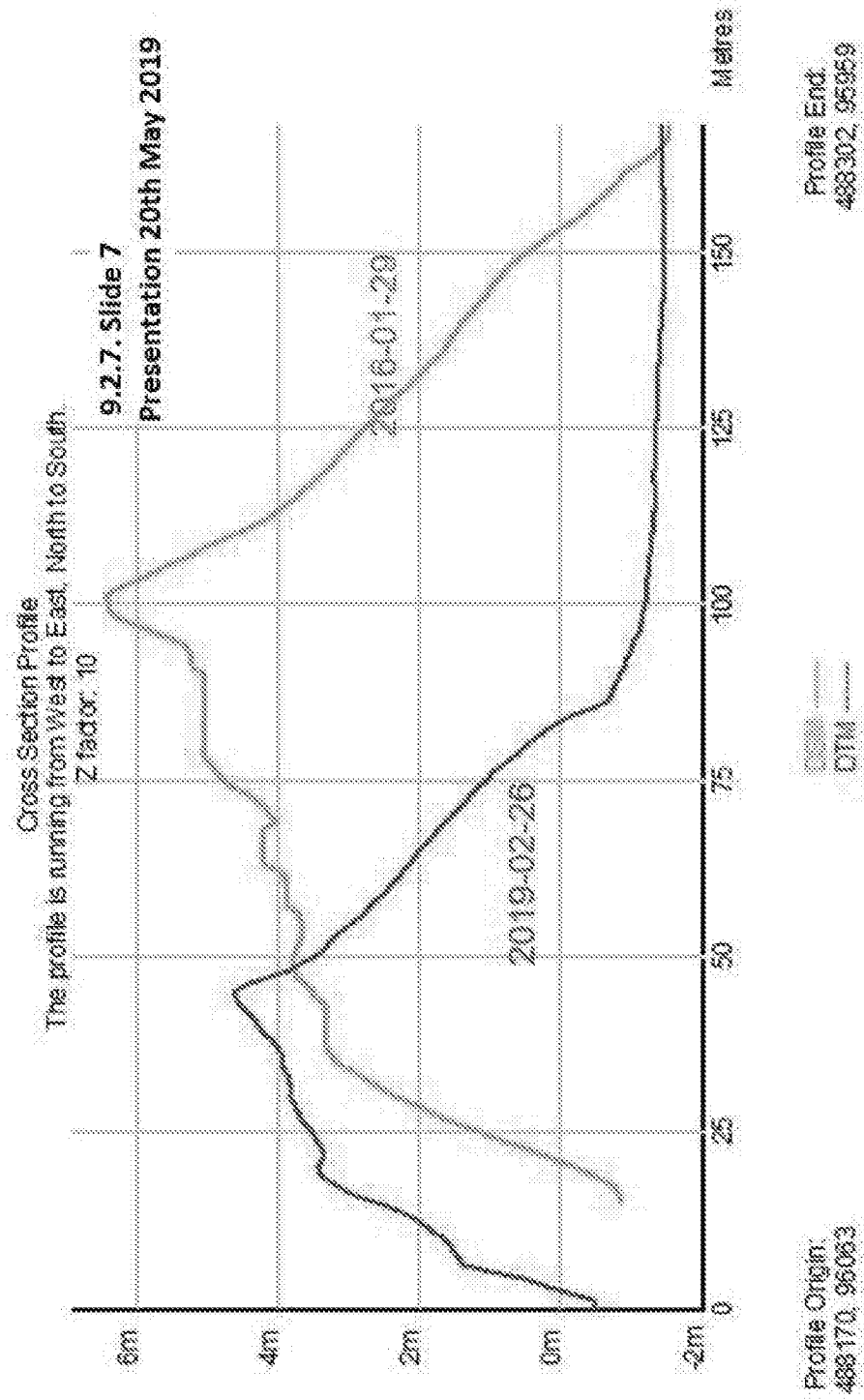


9.2.3. Slide 3
Presentation 20th May 2019

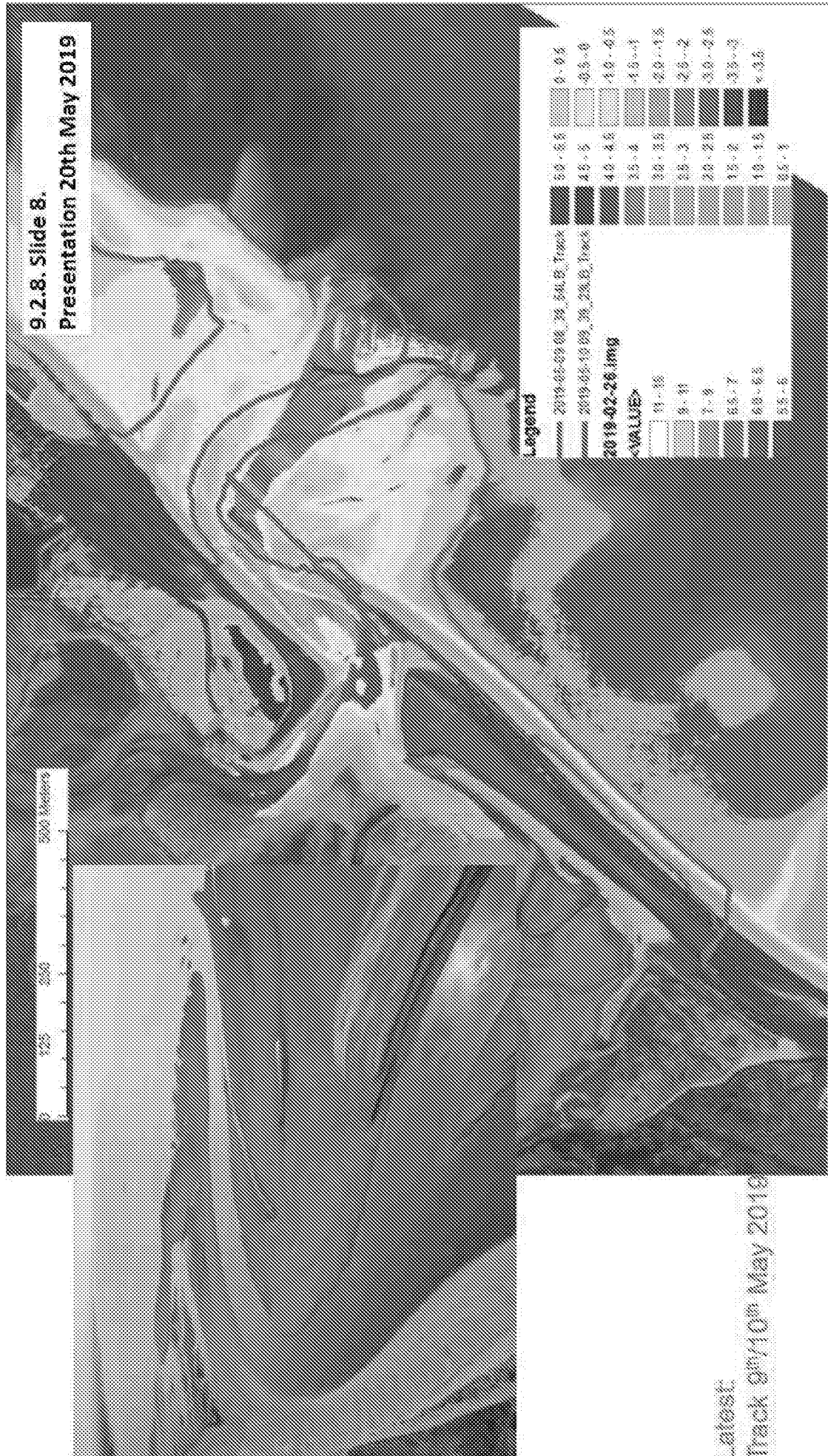




Profile of Church Norton Spit along a line in extension of the eastern training wall



9.2.8. Slide 8.
Presentation 20th May 2019

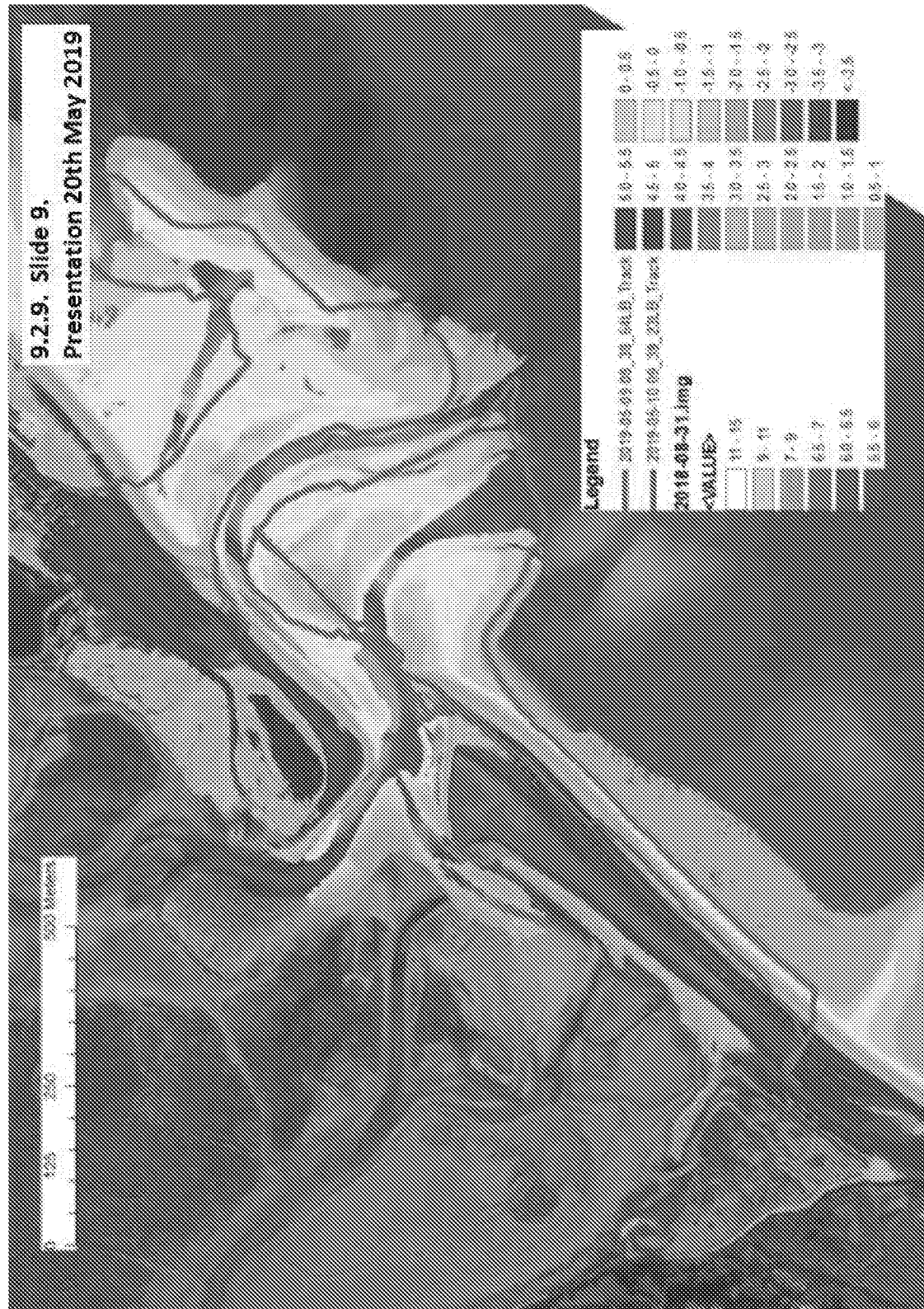


Latest:
Track 9th10th May 2019

Latest

However

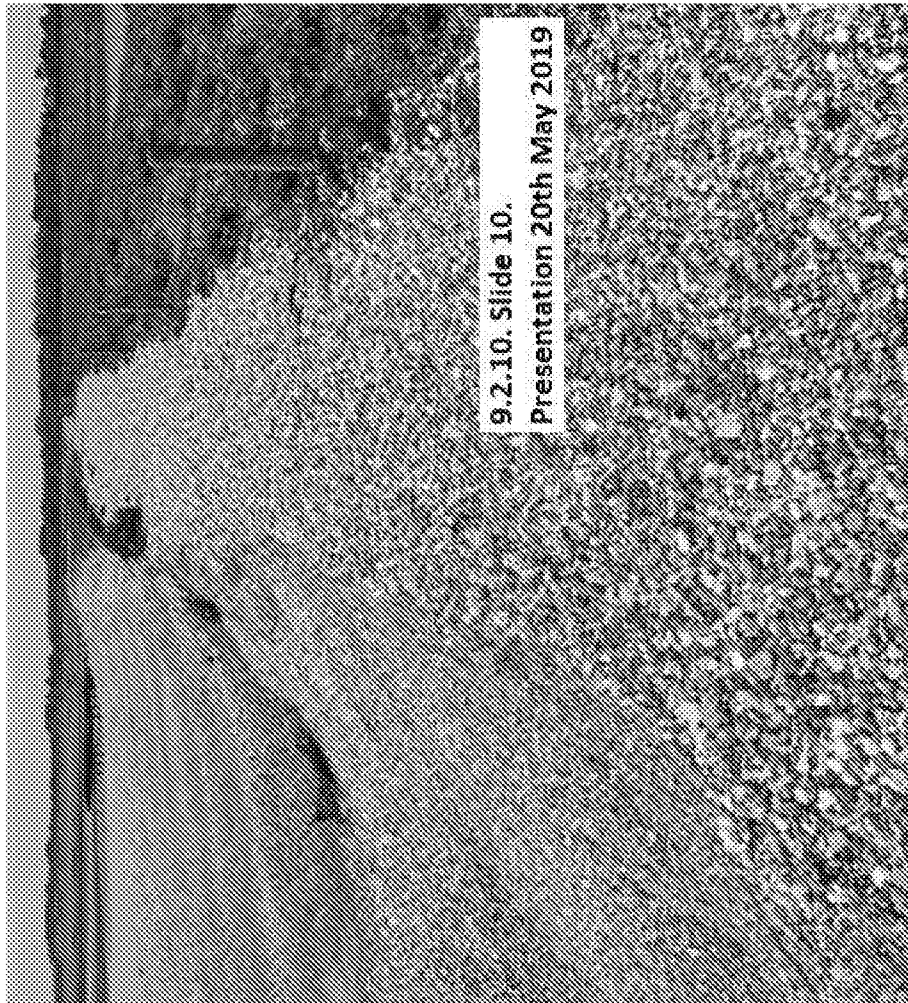
Latest:
Track 9th/10th May 2019





17-04-2019

Arun DC



9.2.10. Slide 10.
Presentation 20th May 2019

01-05-2019

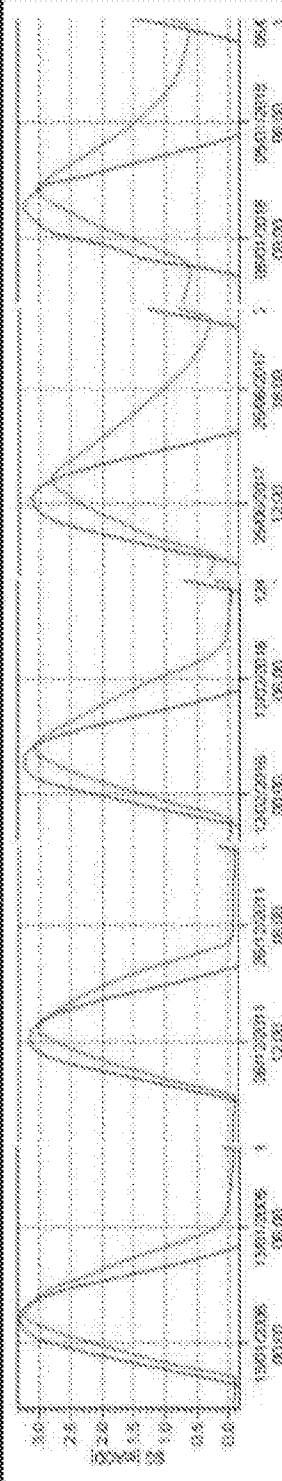
Impact on water level

Spit growth

Crest lowering

Post breach reorganisation

Getting back to 'normal'



2005

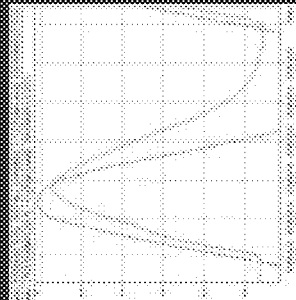
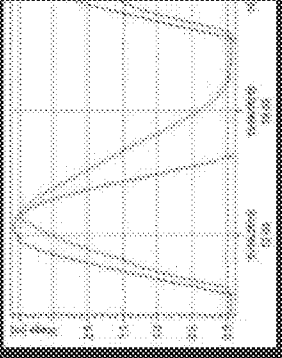
2011

02/2016

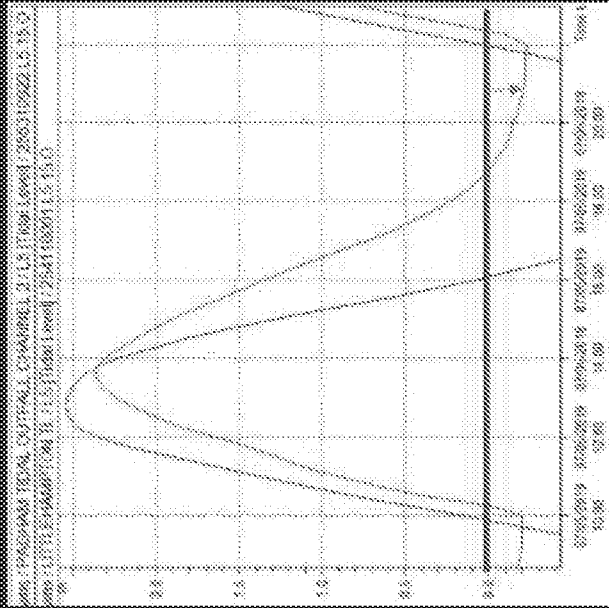
06/2017

01/2018

06/2018



07/05/2019



9.1.11. Slide 11

Presentation 20th May 2019

Comparison May to February



9.2.12. Slide 12
Presentation 20th May 2019

Gets bigger

9.2.13. Slide 13.

Presentation 20th May 2019.

Legend

• 2019-05-20_Pagham_Uwe_cliff

2019-05-20 minus 2019-02-26

<VALUE>

3.0000000001 - 3.5

1.5000000001 - 3

1.2000000001 - 1.5

0.9 - 1.2

0.6 - 0.9

0.3 - 0.6

0.1 - 0.3

-0.1 - 0.1

-0.3 - -0.1

-0.6 - -0.3

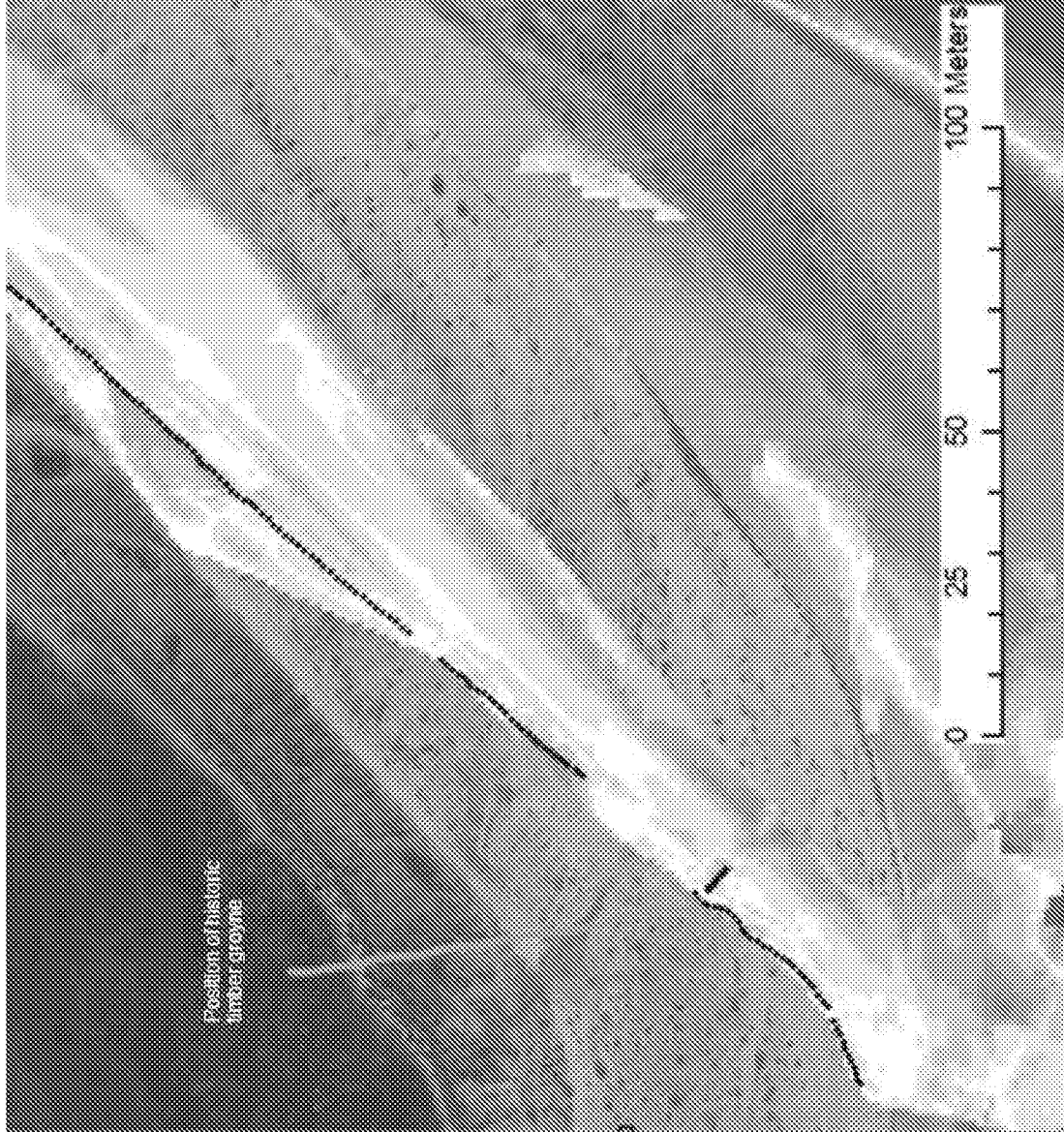
-0.9 - -0.6

-1.199999999 - -0.9

-1.499999999 - -1.2

-2.999999999 - -1.5

-6.409999847 - -3



9.3. Traffic Light System

9.3.1. This system is to be used to monitor the Managed breach of Pagham Spit

9.3.2. Green: The breach remains open and/or the morphology of the coastline is allowing sufficient drainage of the harbour on neap and spring tides.

Action: No active intervention is required but on-going monitoring and oversight continues.

9.3.3. Amber warning: The depth of the breach is raised to, or just above mean sea level (at which point the extent of the harbour intertidal area will start to become marginally reduced) for a period of up to 4 weeks (i.e. 2 full spring neap cycles), leading to a distinct/measurable restriction in tide drainage over this period. Additional considerations would be that there is no sign of a deepening central channel emerging at the channel base to indicate that the high water overtopping is beginning to reverse this trend and re-establish a deeper cutting or there is no immediate prospect of storms occurring that would presage a distinct morphological shift.

Action: A judgement must be made about the extent to which this is a response to the broader trends in the evolution of the spit and the breach (based on available monitoring) and contractors must be alerted as they may well be required to intervene within a few days/weeks.

9.3.4. Red: The depth of the breach is raised closer towards Mean High Water Neap levels (at which time the intertidal area within the harbour will be significantly reduced) for a period of more than 4 weeks leading to a distinct/measurable restriction on spring tide drainage over this period. There is still no sign of a central channel to indicate that the high water overtopping is beginning to reverse this trend and re-establish a deeper cutting and no immediate prospect of storms occurring in the near future that would presage a distinct morphological shift.

Action: The breach must be re-excavated in a manner that is appropriate to the morphological conditions on site.

TORNADO®

2-PIECE OTTER FENCE RL19/180/5 C14 & RL6/50/5 C5

Overview

RL19/180/5 C14 combined with RL6/50/5 C5 is designed as a two-piece otter fence for installation in areas of restricted accessibility. This enables the RL6/50/5 (ground skirt) to be installed before the intermediate posts and RL19/180/5 (top net) are installed. The two nets are connected with netting clips. The nets have pre-stripped ends for ease of joining. It features solid vertical wires and the unobtrusive high pressure bonded Torus knot which does not have any sharp edges. Tornado Torus Otter Fence is manufactured with high tensile wire which strains tighter than mild steel and so requires fewer intermediate posts, making it quicker to erect. It does not stretch with weathering so does not need to be retightened annually.

Compliance with British and European Standards

BSEN 10218 - Steel Wire and Wire Products part 2 - General Wire Dimensions and Tolerances.
BSEN 10223 - Steel Wire and Wire Products for Fencing and Netting part 5 - Steel Wire Woven Hinged Joint and Knotted Mesh Fencing.
BSEN 10244 - Steel Wire and Wire Products Non-ferrous Metallic Coatings on Steel Wire part 2 - Zinc or Zinc Alloy Coatings (all Tornado products galvanised to class A).

Sustainability

All Tornado products are 100% recyclable.

Traceability

This fence is batch marked and can be traced back to point of manufacture.

Installation Guidelines

A straining post is required at every major change in direction or any termination and should be supported by a strut or box assembly. Netting should be tied off on the straining posts by hand or with suitable joiners. Cranked brackets at the top of fencing face outwards and are an ideal way to protect enclosures from animals that might otherwise climb over fencing. When tensioning the fence the 'climb' in the net should be reduced by approx. 50%. Avoid driving staples tight against the wire as this will damage the galvanised coating.

Health and Safety

It is recommended that safety gloves, boots and glasses are worn at all times when handling the product.

Suitable for

- Otter Exclusion
- Fisheries

Specification

	Top Net: RL19/180/5 C14	Ground Skirt Net: RL6/50/5 C5
No. of Line Wires	19	6
Overall Height (cm)	180	50
Distance between stay wires (cm)	5	5
Top & bottom line wire specification	2mm dia - 1100-1250 N/mm ²	2mm dia - 1100-1250 N/mm ²
Intermediate line wire specification	2mm dia - 1100-1250 N/mm ²	2mm dia - 1100-1250 N/mm ²
Vertical stay wire specification	2mm dia - 695-850 N/mm ²	2mm dia - 695-850 N/mm ²
Average Weight per 100 Metre Roll (kg)	163.76	48.94
Material Composition	Heavily galvanised steel wire	Heavily galvanised steel wire

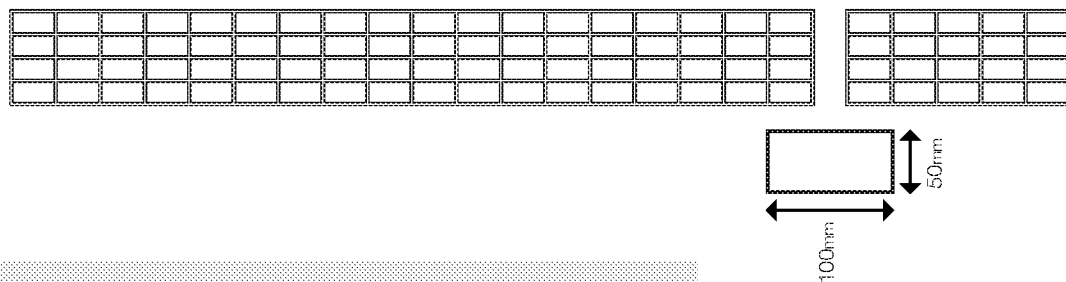
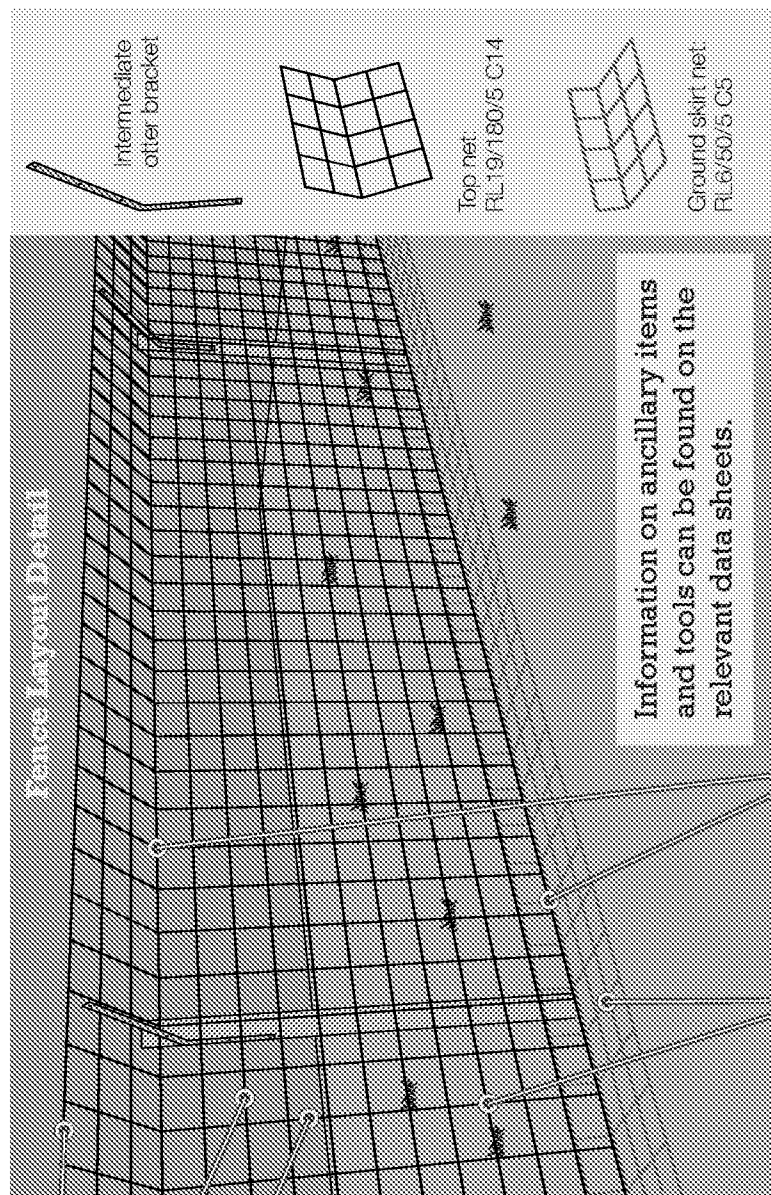
Product Codes

100 metre roll	RZLH191809	RZLH065003
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All measurements are approximate. It is the user's responsibility to check the product is suitable for the application. We reserve the right to change specifications without notification.

2-PIECE OTTER FENCE
RL19/180/5 C14 & RL6/50/5 C5

Line Wire Detail

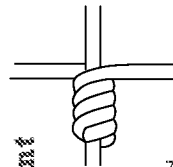


Related Products

- Plain wire
- Staples
- Cranked brackets
- Stock-ade staple gun
- Range of fence installation tools

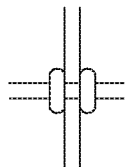
King Joint

Enables the netting to be turned out or cranked for use in special applications.



1032 stx01

Manufactured with a high pressure bonded, smooth knot and a continuous vertical stay wire. The Tornado Torus offers optimal strength even in the most extreme environments.



Top net and ground skirt net are clipped together every 600mm (approx.)

Consistent vertical and horizontal wire spacing in both nets

