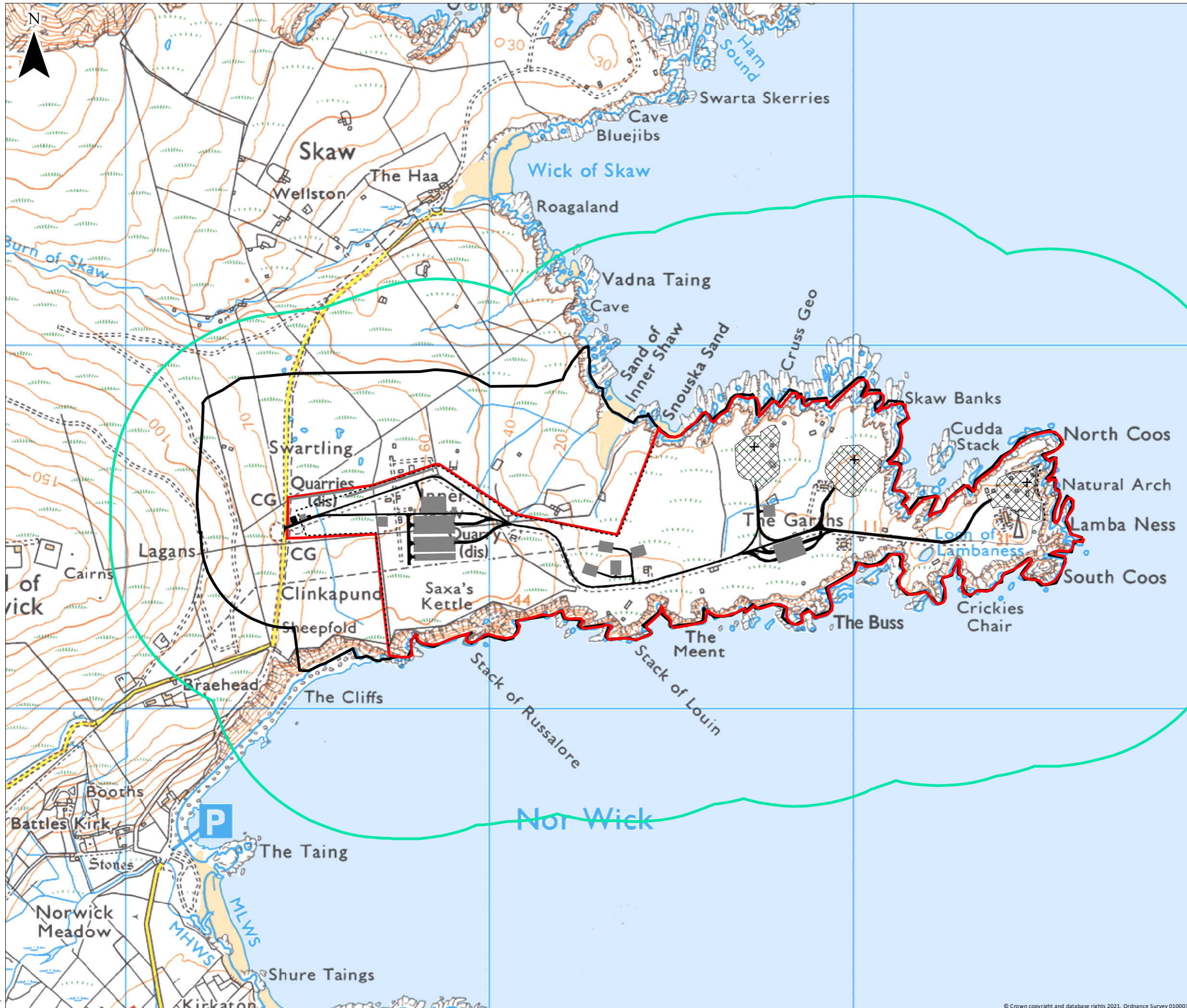
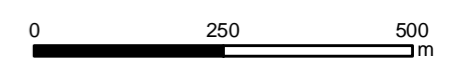


Chapter 6 Drawing 6.1 Proposed Project Study Area



- KEY**
- + Launch Pad
 - Fence
 - ▨ Fenced Launch Pad Area
 - Building/Infrastructure
 - Road
 - ▭ Proposed Project Site Boundary
 - ▭ Habitat Study Area, 250m buffer
 - ▭ Otter Study Area, 500m buffer



Scale 1:10,000 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects

Drawing 6.1

Study Area

Date: 16/11/2021 Drawn by: KM Checked by: RF Version: Draft/V1

Project Number: 3148







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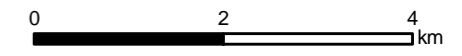
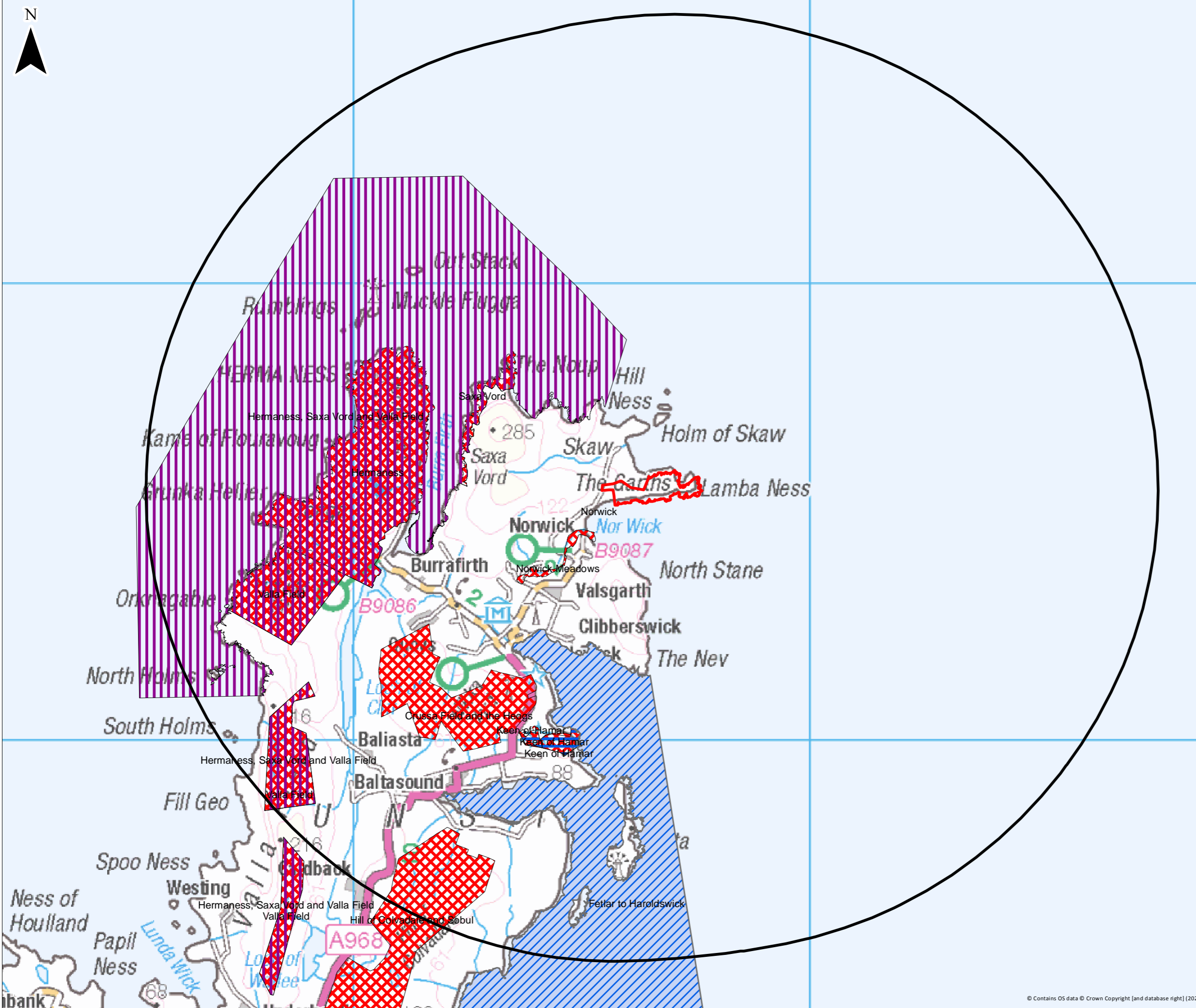
Chapter 6 Drawing 6.2 Designated Sites

N



KEY

-  Proposed Project Boundary
-  10km buffer
-  Marine Protected Area
-  Special Areas of Conservation
-  Special Protection Areas
-  Sites of Special Scientific Interest



Scale 1:80,000 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects

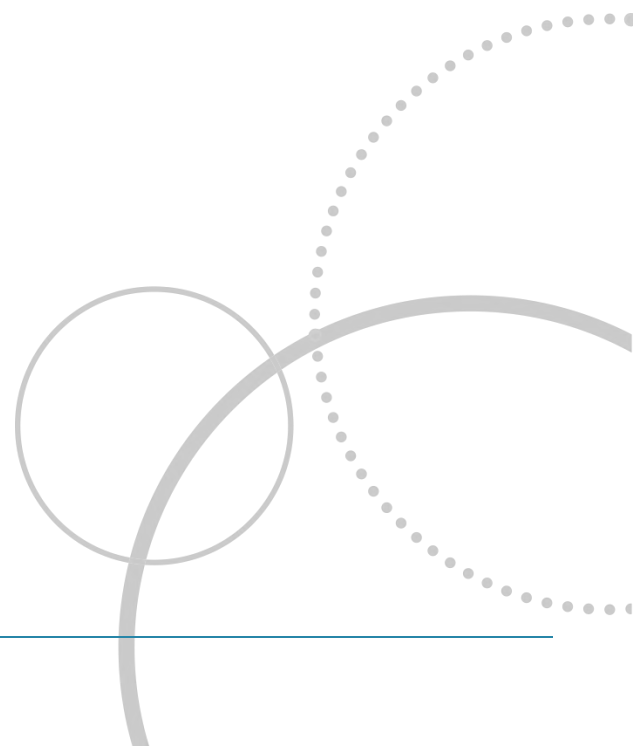
Drawing 6.2

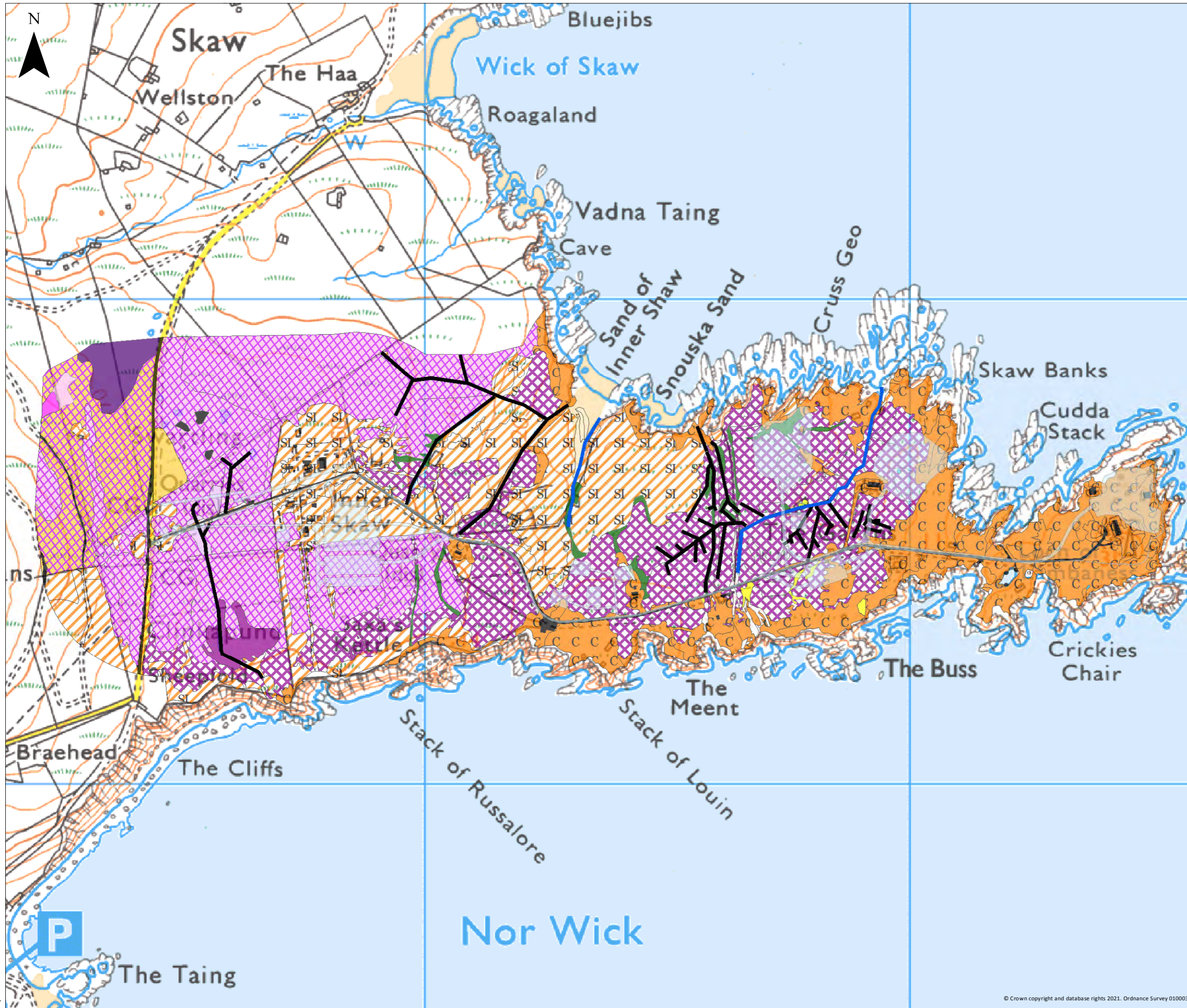
Designated Sites

Project Number: 3148

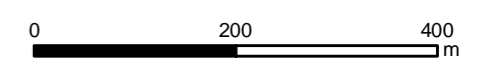


Chapter 6 Drawing 6.3 Phase 1 Habitat Study Area





-  Infrastructure
-  Drain
-  Watercourse
-  Unimproved acid grassland
-  Semi-improved acid grassland
-  Neutral grassland
-  Blanket bog
-  Wet modified bog
-  Wet modified bog/wet heath
-  Blanket bog/bare peat
-  Wet modified bog/wet heath/bare peat
-  Wet modified bog/wet heath/acid flush
-  Dry dwarf shrub heath
-  Fen
-  Acid flush
-  Wet modified bog/wet heath/dry heath
-  Bare peat
-  Marginal vegetation
-  Standing water
-  Saltmarsh
-  Sand dunes
-  Coastal grassland
-  Buildings and roads
-  Bare ground



Scale 1:7,500 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects

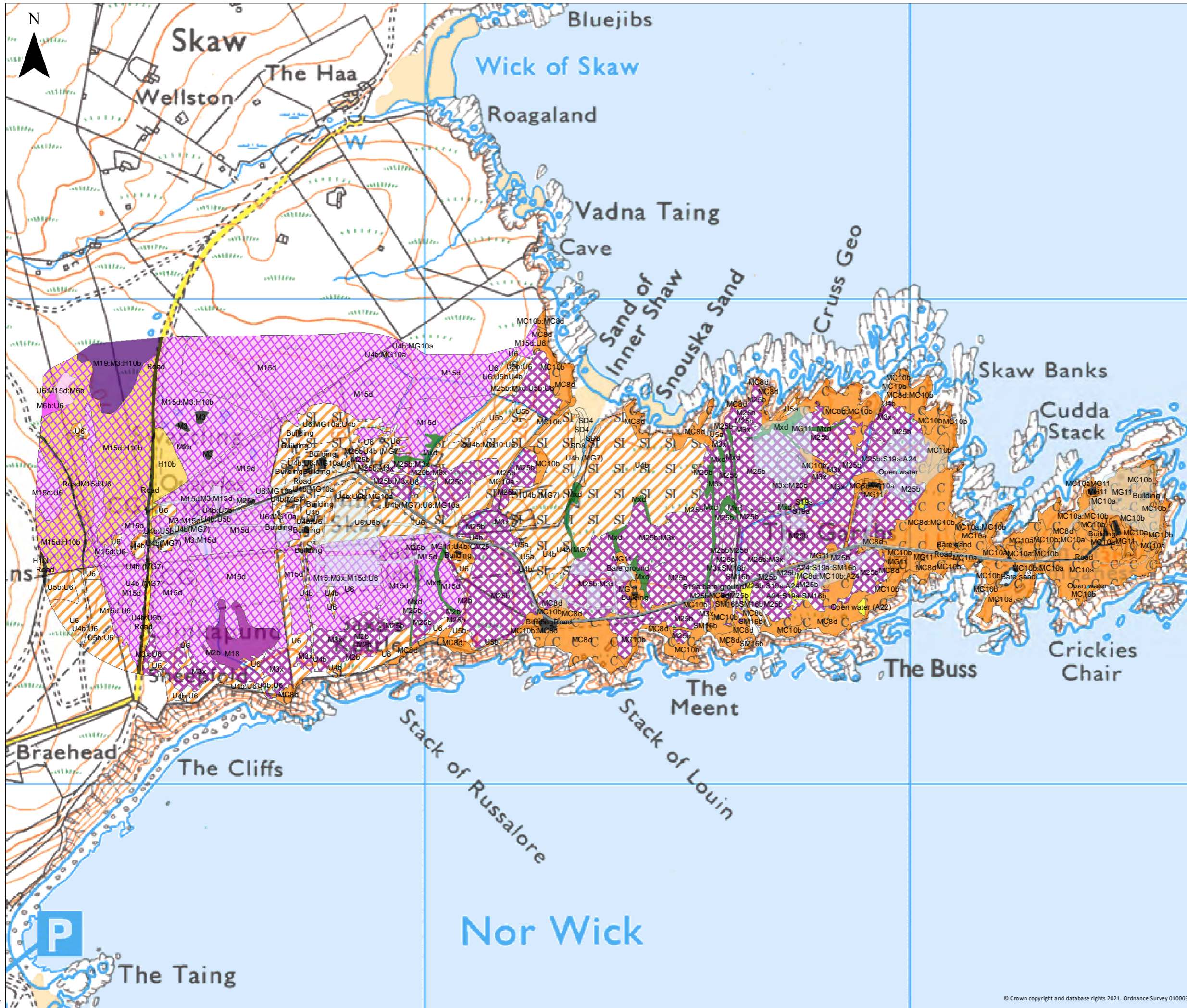
Drawing 6.3








Phase 1 Habitats

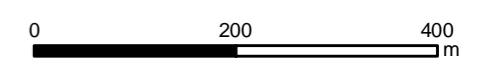


Chapter 6 Drawing 6.4 NVC Habitat Study Area





- KEY**
-  Infrastructure
 -  Unimproved acid grassland, U5, U6
 -  Semi-improved acid grassland, U4
 -  Neutral grassland, MG10
 -  Blanket bog, M2b, M18
 -  Wet modified bog, M25, M3x
 -  Wet modified bog/wet heath, M15
 -  Blanket bog/bare peat, M19/M3
 -  Wet modified bog/wet heath/bare peat, M15d/M3
 -  Wet modified bog/wet heath/acid flush, M15d/M6
 -  Dry dwarf shrub heath, H10
 -  Fen, Mxd
 -  Acid flush, M6
 -  Wet modified bog/wet heath/dry heath, M15d/H10b
 -  Bare peat, M3
 -  Marginal vegetaion, S19, A24, A22
 -  Standing water
 -  Saltmarsh, SM16
 -  Sand dunes, SD4, SD8
 -  Coastal grassland, MC8, MC10, MG11
 -  Buildings and roads
 -  Bare ground



Scale 1:7,500 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects

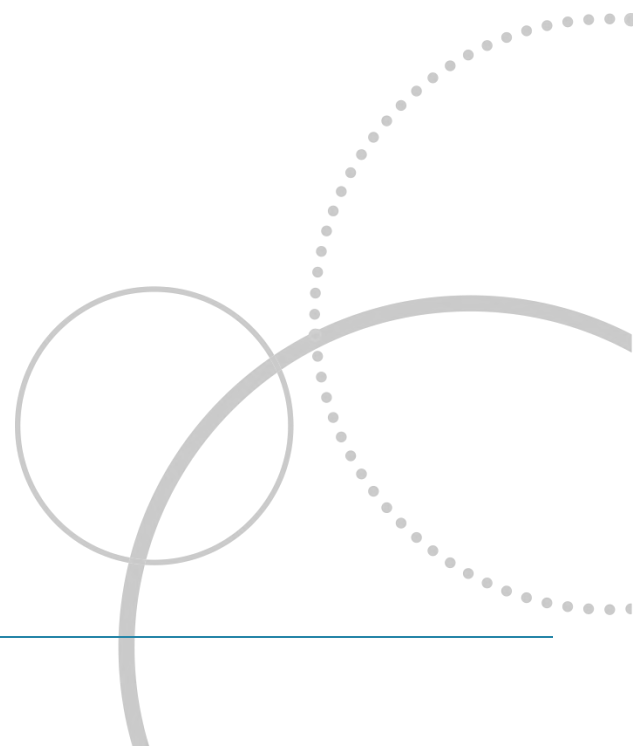
Drawing 6.4

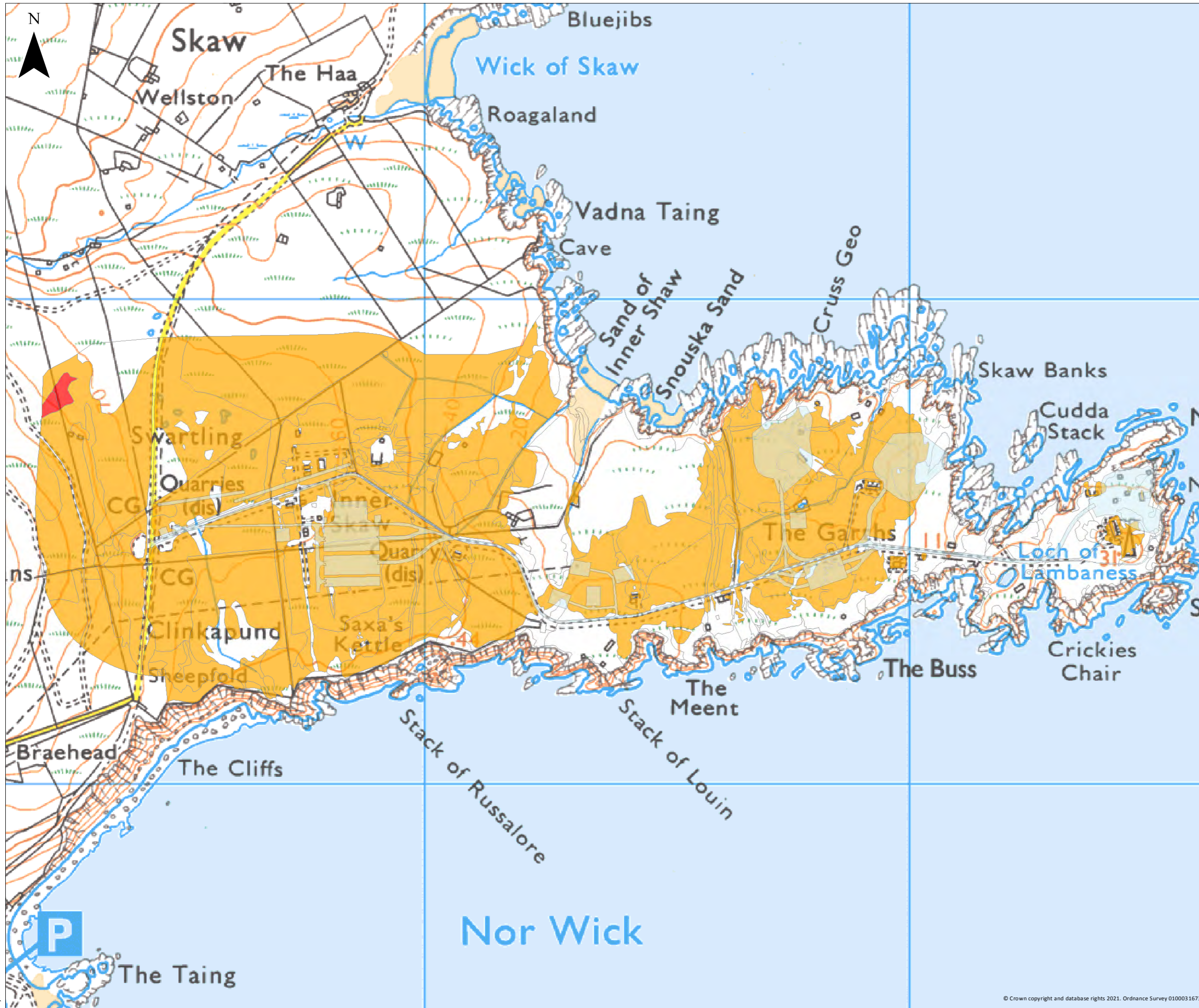
NVC

Project Number: 3148



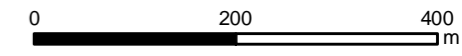
Chapter 6 Drawing 6.5 Potential Ground Water Dependant Terrestrial Ecosystems





KEY

- Infrastructure
- Potentially high GWDTE
- Potentially moderate GWDTE
- Not a GWDTE



Scale 1:7,500 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects

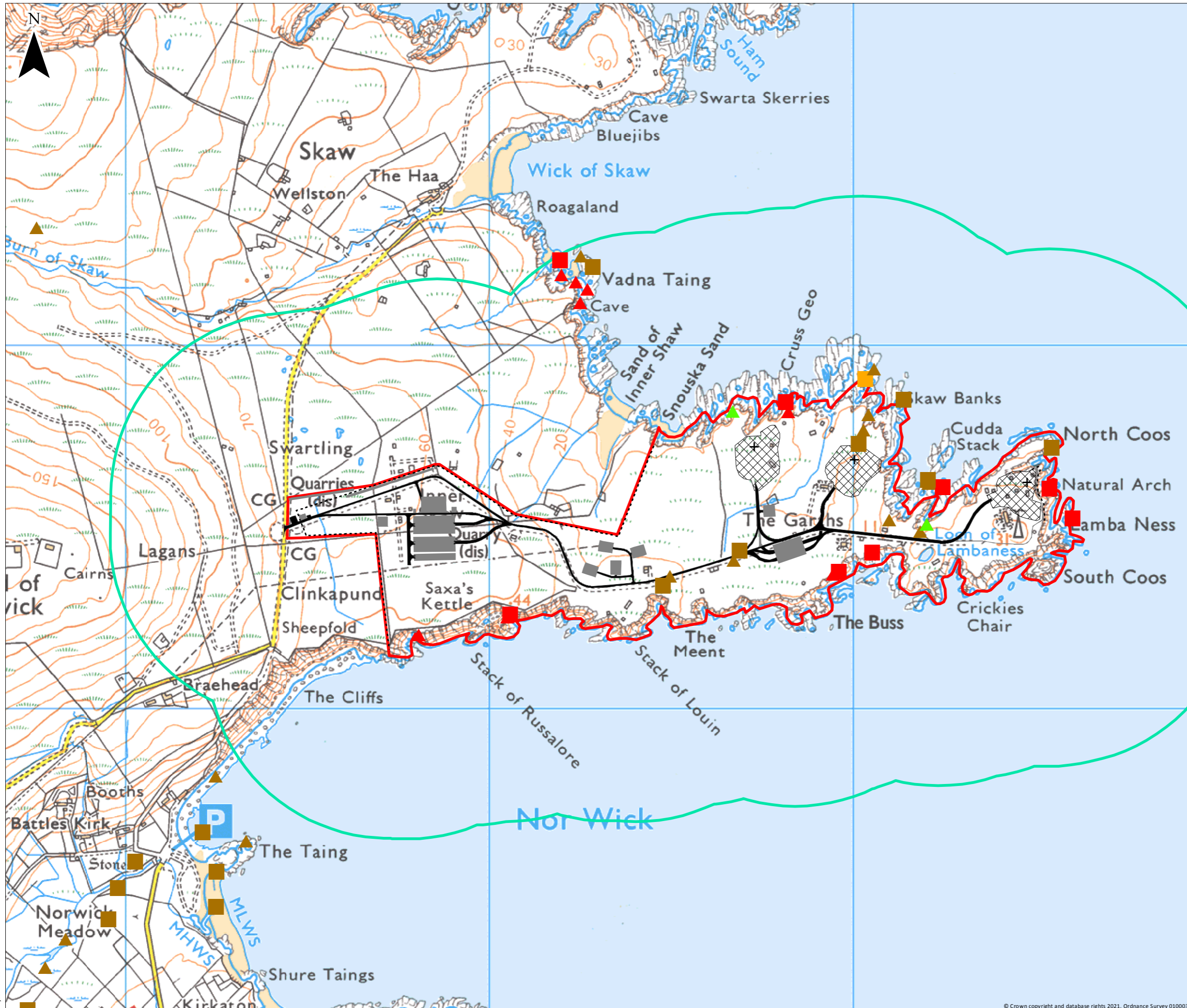
Drawing 6.5

Potential GWDTE

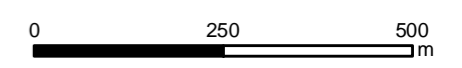
Project Number: 3148

Chapter 6 Drawing 6.6 Otter Signs 2018





- KEY**
- ▲ Holts, spring 2018
 - ▲ Spraints and prints, spring 2018
 - ▲ Run, spring 2018
 - Holt, autumn 2018
 - Lay up, autumn 2018
 - Spraints and prints, autumn 2018
 - +
 Launch Pad
 - Fence
 - Fenced Launch Pad Area
 - Building/Infrastructure
 - Road
 - Proposed Project Site Boundary
 - Otter Study Area, 500m buffer



Scale 1:10,000 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects

Drawing 6.6

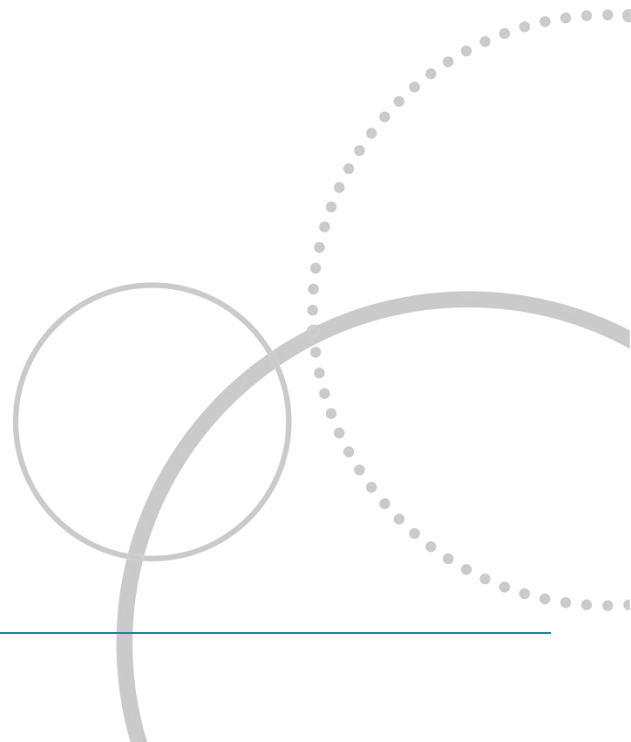
Otter Signs

Date: 16/11/2021 Drawn by: KM Checked by: RF Version: Draft/V1

Project Number: 3148

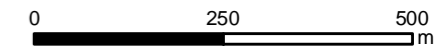
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Chapter 6 Drawing 6.7 Otter signs 2020





- KEY**
- ▲ Holt
 - ▲ Lay up
 - ▲ Spraints and prints
 - ▲ Run
 - +
 Launch Pad
 - Fence
 - ▣ Fenced Launch Pad Area
 - Building/Infrastructure
 - Road
 - ▣ Proposed Project Site Boundary



Scale 1:10,000 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects

Drawing 6.7

Otter Signs

Date: 16/11/2021 Drawn by: KM Checked by: RF Version: Draft/V1

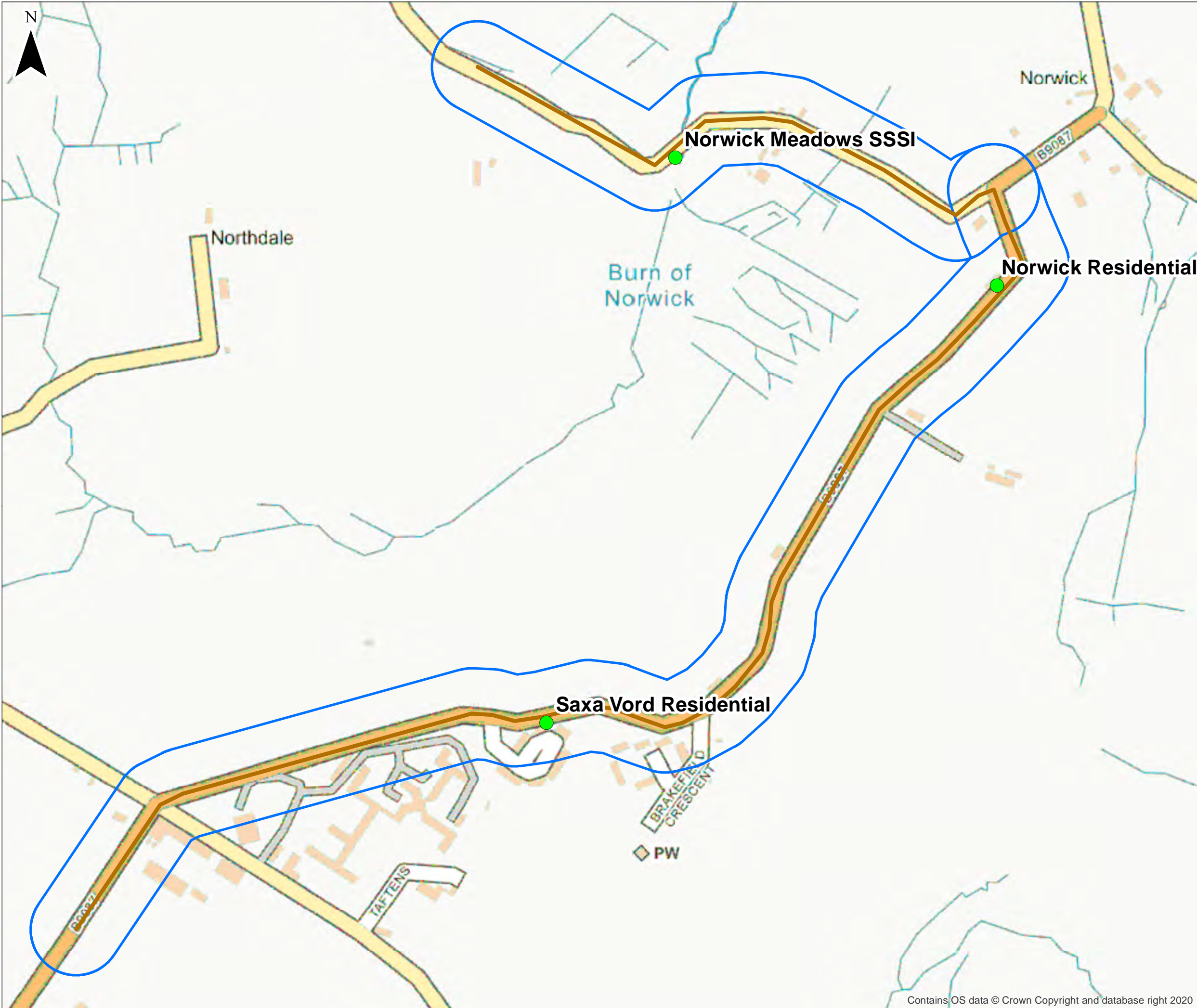
Project Number: 3148

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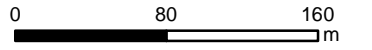


Chapter 7 Drawing 7.1 Modelled Roads and Receptors





- KEY**
- Modelled Receptor
 - Modelled Road Links
 - EZI



Scale 1:4,000 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects

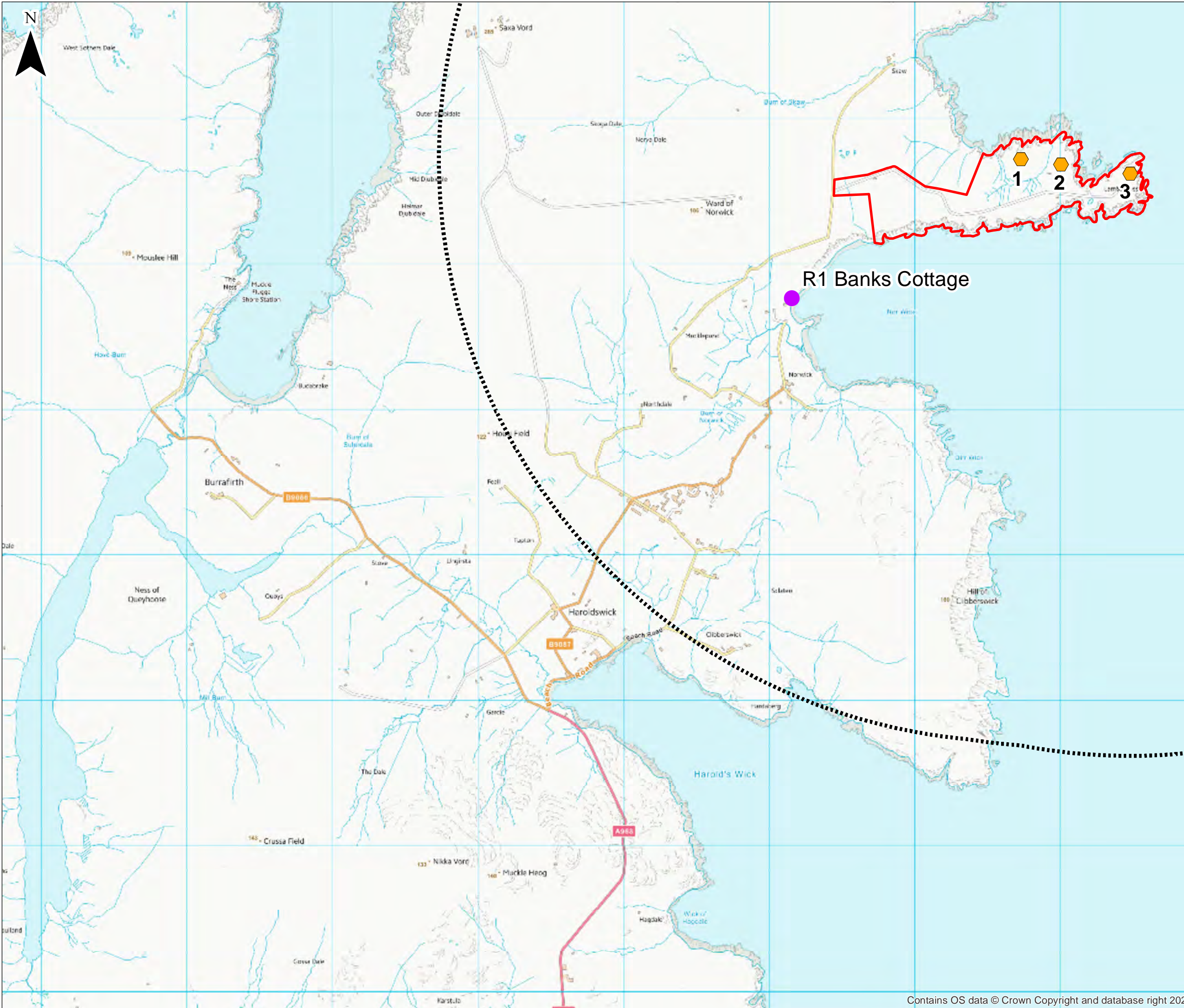
Drawing 7.1

Modelled Roads, Receptors and EZI



Chapter 7 Drawing 7.2 Launch Pad and Receptor Locations





- KEY**
- Proposed Project Boundary
 - EZI
 - Launch Pad - not to scale
 - Residential Receptor



Scale 1:25,000 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects
Drawing 7.2

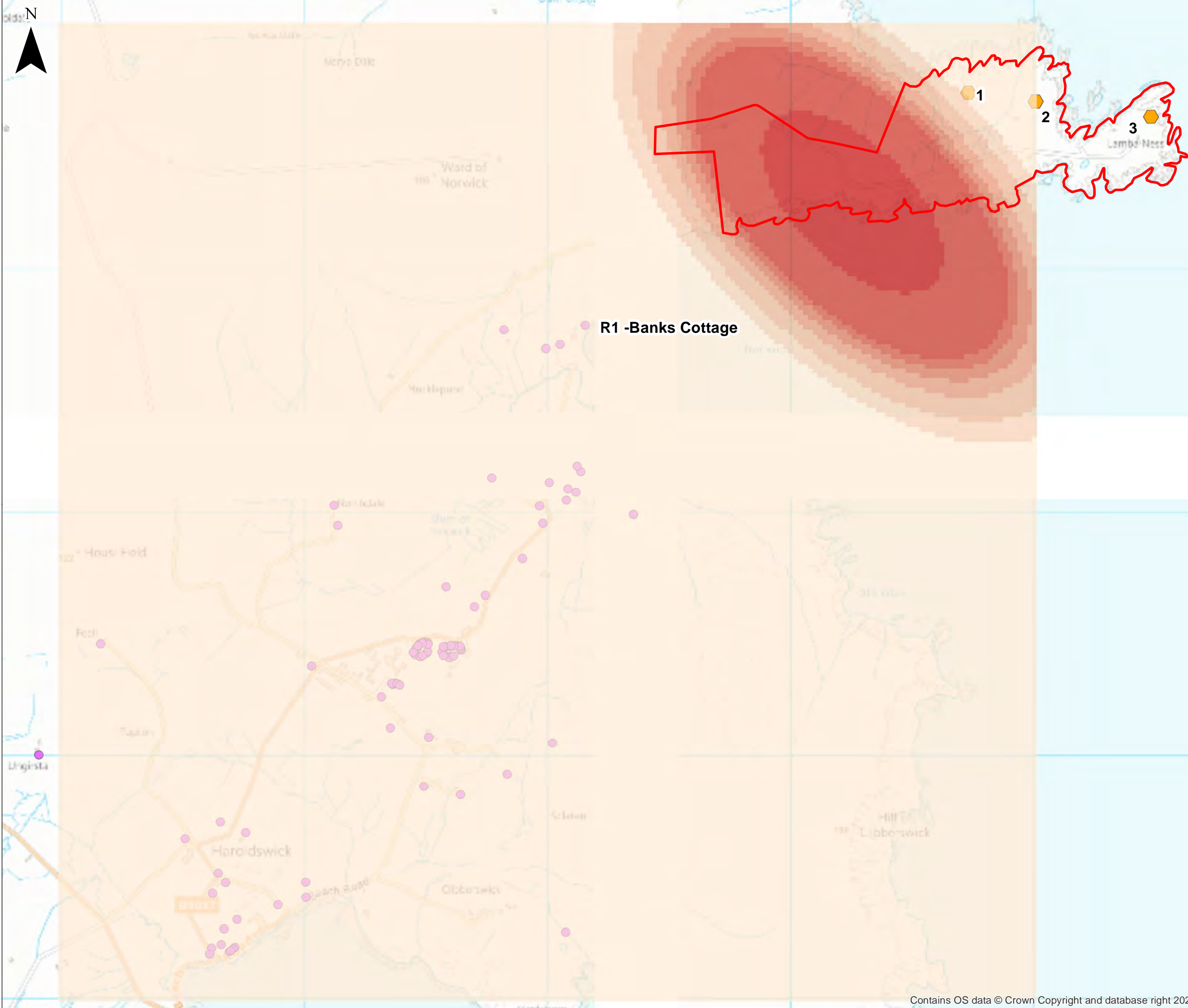
**Launch Pads, Buildings,
Receptor Locations and EZI**

Project Number: 4364



Chapter 7 Drawing 7.3 Launch effects after 5 minutes





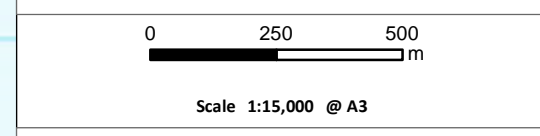
KEY

- Proposed Project Boundary
- Launch Pad - not to scale
- Residential Receptor

CO Concentration mg/m³

5 Minutes After Launch

	0.05
	0.05 - 0.06
	0.06 - 0.07
	0.07 - 0.08
	0.08 - 0.09
	0.09 - 0.1
	0.1 - 0.2
	0.2 - 0.3



Saxa Vord Spaceport
 Assessment of Environmental Effects

Drawing 7.3
Launch Pad 1 Emission Concentration of CO
5 Minutes After Launch

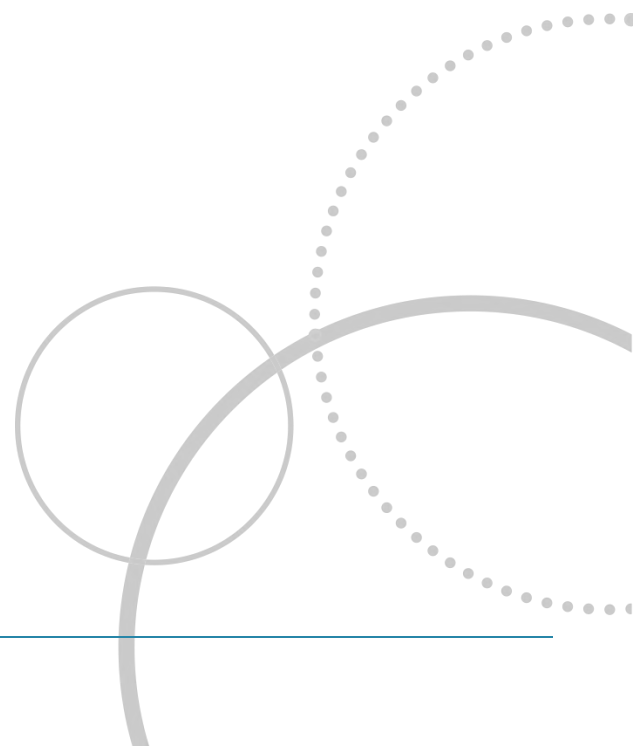
Date: 10/11/2021	Drawn by: AD	Checked by: RF	Version: v1
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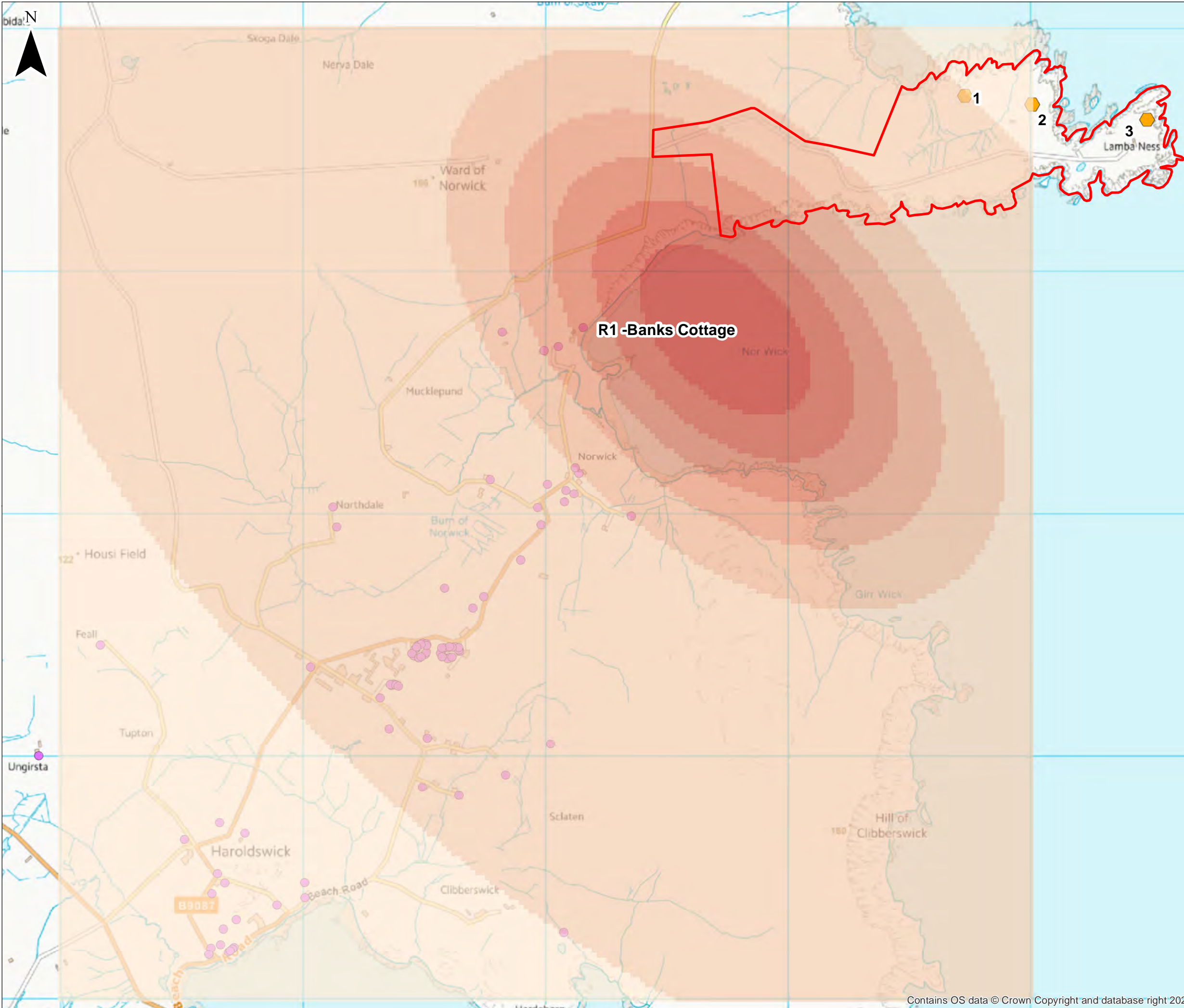
Project Number: 4364

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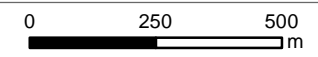
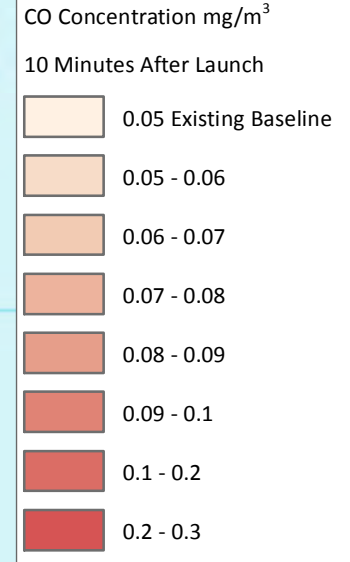


Chapter 7 Drawing 7.4 Launch effects after 10 minutes





- KEY**
- Proposed Project Boundary
 - Launch Pad - not to scale
 - Residential Receptor



Scale 1:15,000 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects

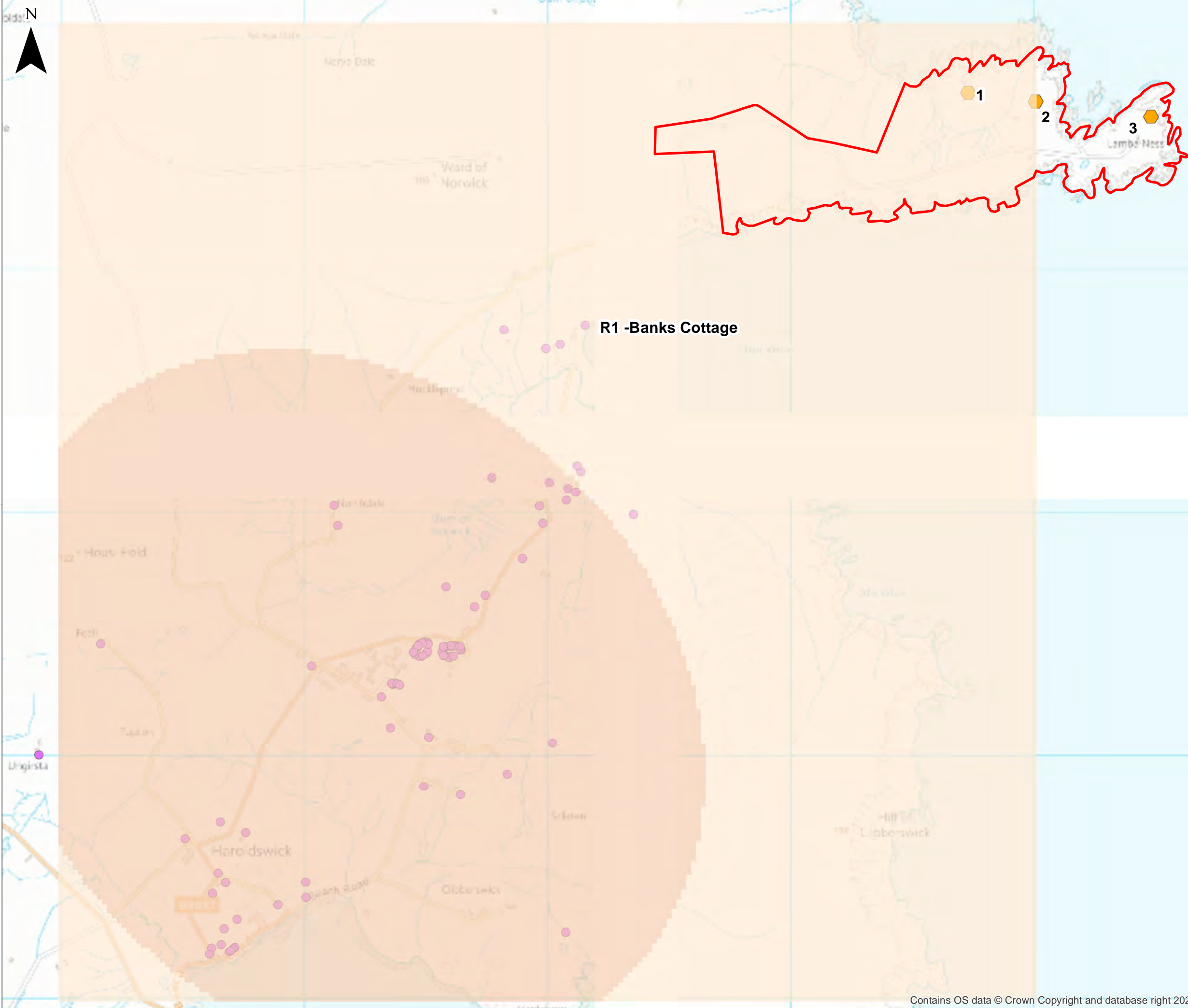
Drawing 7.4
Launch Pad 1 Emission Concentration of CO
10 Minutes After Launch

Project Number: 4364






Chapter 7 Drawing 7.5 Launch effects after 20 minutes











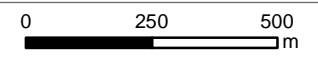


KEY

-  Proposed Project Boundary
-  Launch Pad - not to scale
-  Residential Receptor

CO Concentration mg/m³
20 Minutes After Launch

-  0.05 Existing Baseline
-  0.05 - 0.06
-  0.06 - 0.07
-  0.07 - 0.08
-  0.08 - 0.09
-  0.09 - 0.1
-  0.1 - 0.2
-  0.2 - 0.3



Scale 1:15,000 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects

Drawing 7.5
Emission Concentration of CO
20 Minutes After Launch

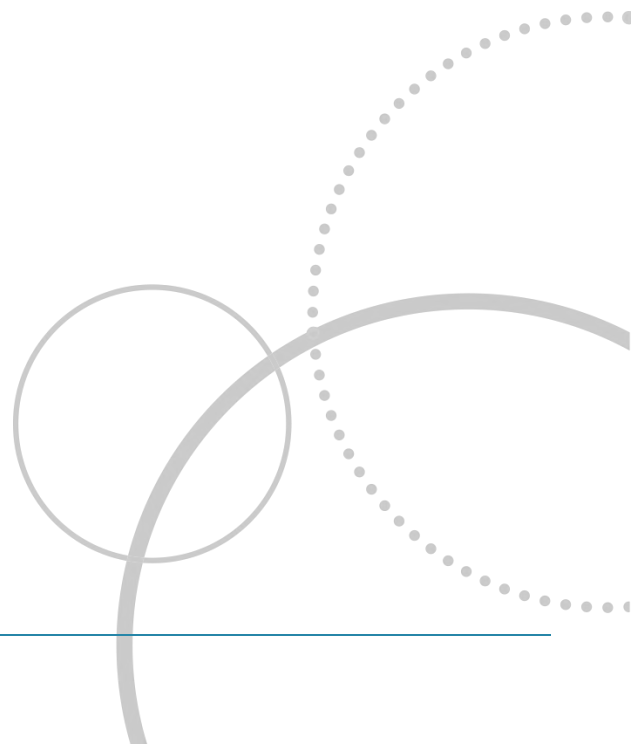
Project Number: 4364

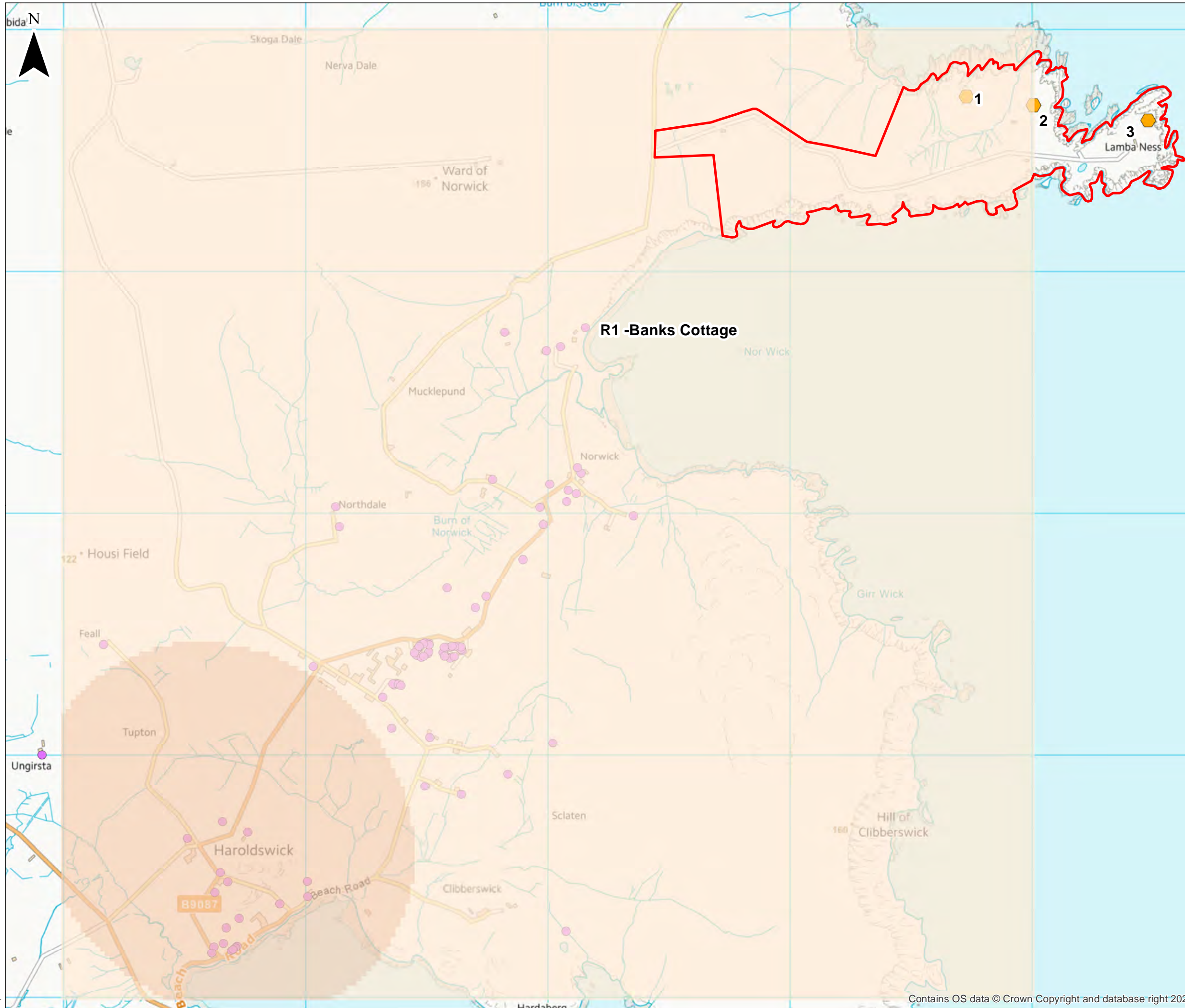
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Chapter 7 Drawing 7.6 Launch effects after 30 minutes



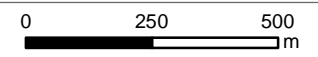


KEY

- Proposed Project Boundary
- Launch Pad - not to scale
- Residential Receptor

CO Concentration mg/m³
30 Minutes After Launch

- 0.05 Existing Baseline
- 0.05 - 0.06
- 0.06 - 0.07
- 0.07 - 0.08
- 0.08 - 0.09
- 0.09 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3



Scale 1:15,000 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects

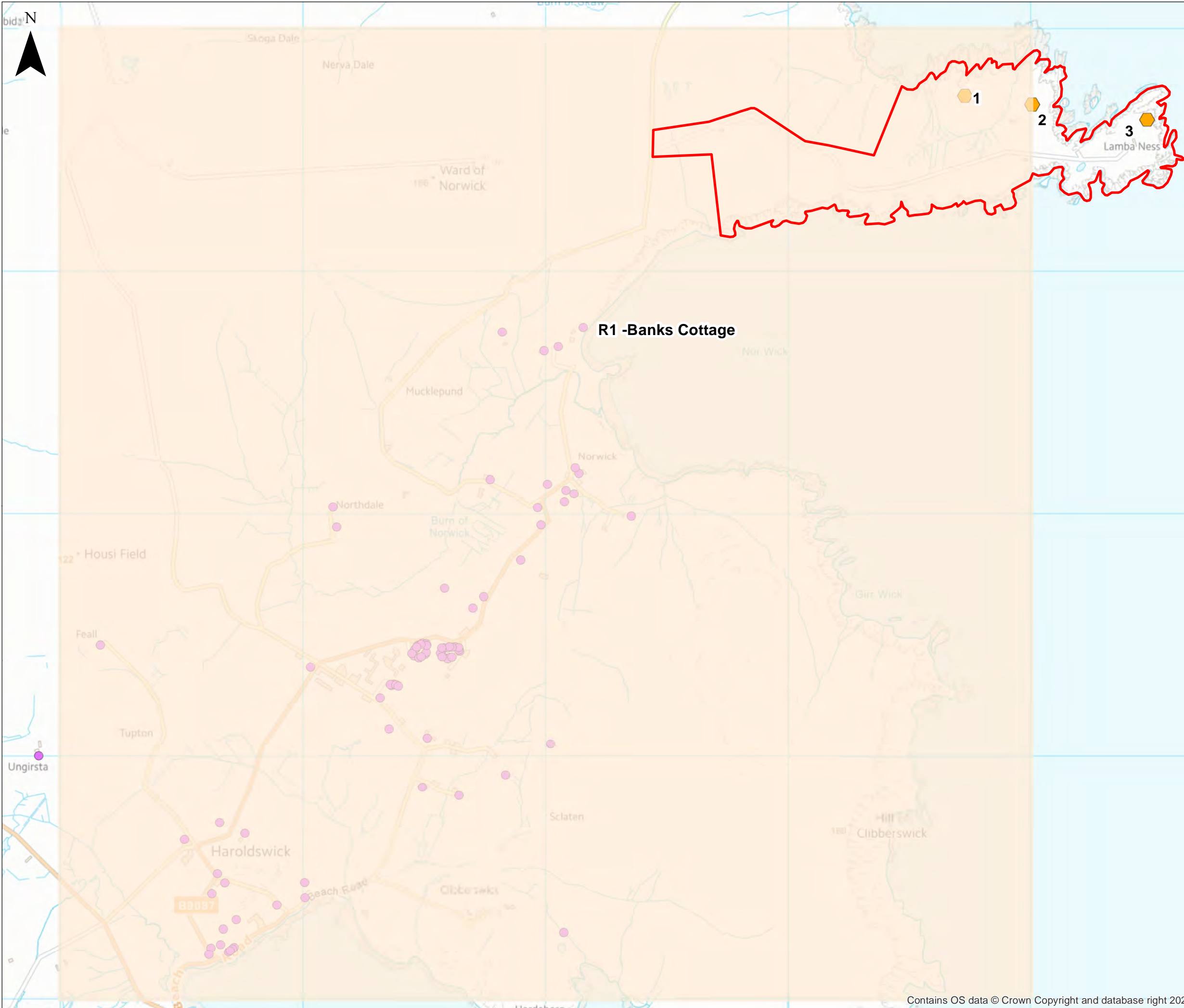
Drawing 7.6
Launch Pad 1 Emission Concentration of CO
30 Minutes After Launch

Project Number: 4864



Chapter 7 Drawing 7.7 Launch effects after 40 minutes





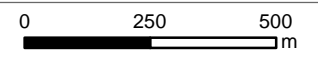
KEY

- Proposed Project Boundary
- Launch Pad - not to scale
- Residential Receptor

CO Concentration mg/m³

40 Minutes After Launch

- 0.05 Existing Baseline
- 0.05 - 0.06
- 0.06 - 0.07
- 0.07 - 0.08
- 0.08 - 0.09
- 0.09 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3



Scale 1:15,000 @ A3



Shetland Space Centre
Air Quality Assessment

Drawing 7.7
Launch Pad 1 Emission Concentration of CO
40 Minutes After Launch

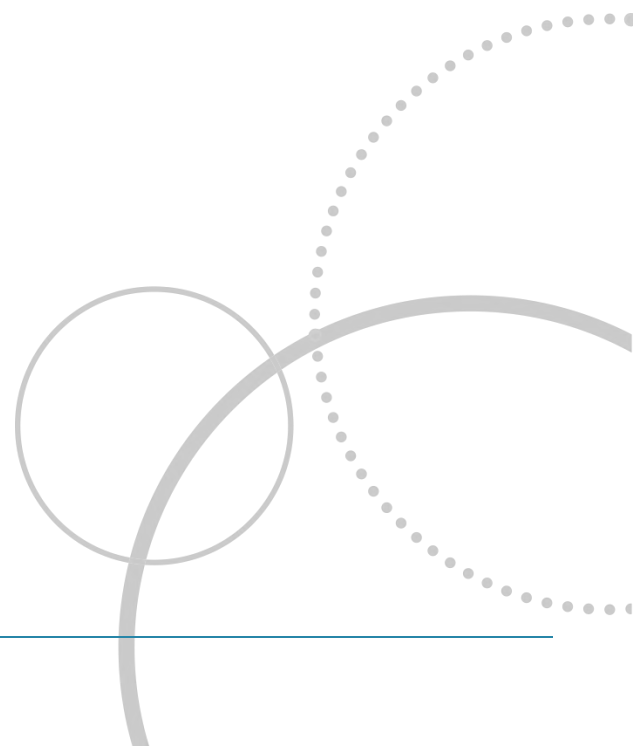
Project Number: 4864

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Date: 10/11/2021	Drawn by: AD	Checked by: RF	Version: v1
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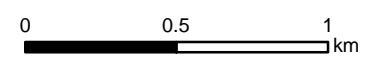
Chapter 8 Drawing 8.1 Study Area and Noise Sensitive Receptors





KEY

-  Proposed Project Boundary
-  NSRs
-  5km Study Area



Scale 1:25,000 @ A3

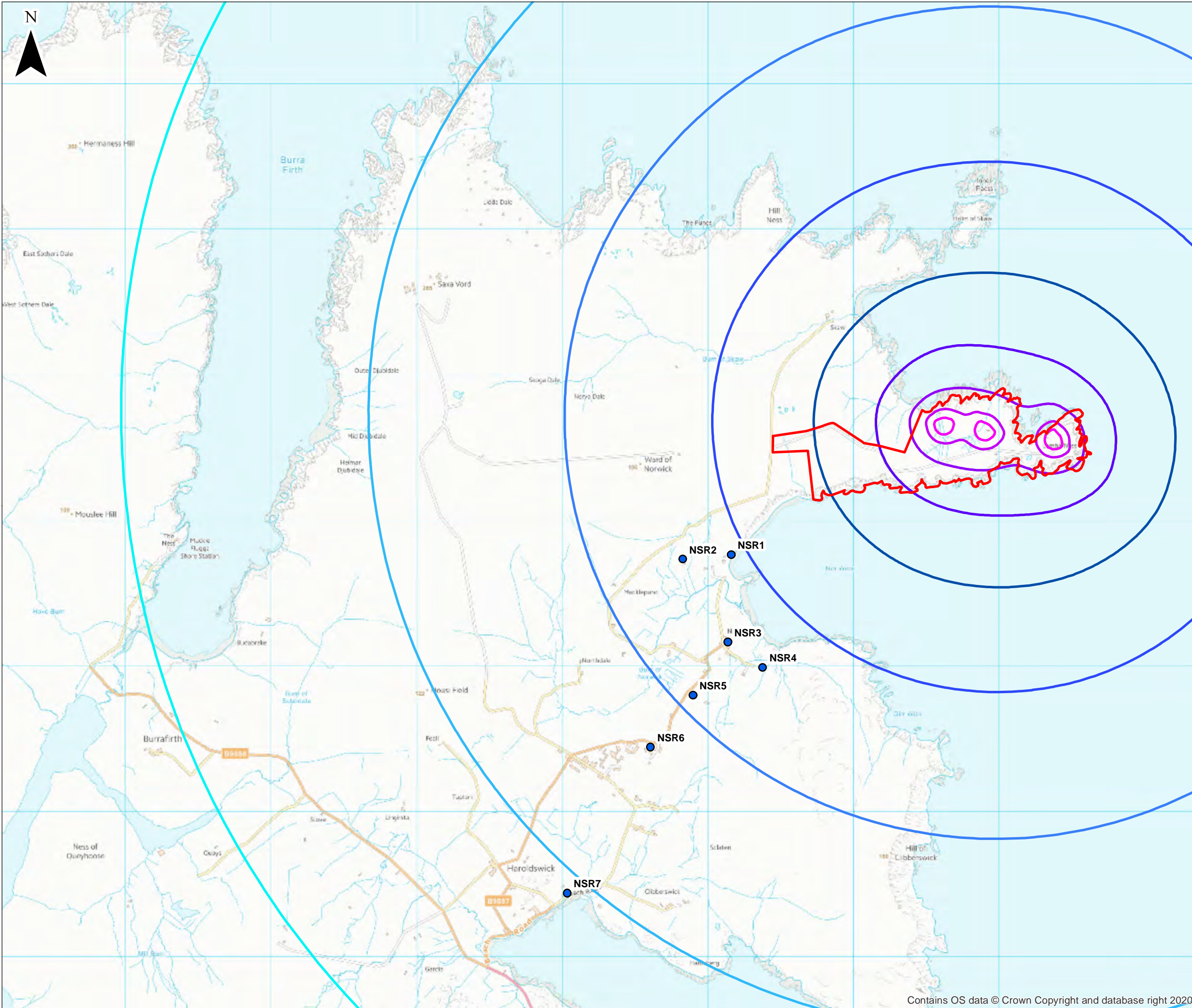


Saxa Vord Spaceport
Assessment of Environmental Effects

Drawing 8.1

Study Area and NSRs

Chapter 8 Drawing 8.2 Lden Noise Contours

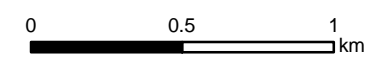


KEY

- Proposed Project Boundary
- NSRs

Lden, dBA

- 45
- 50
- 55
- 60
- 65
- 70
- 75
- 80
- 85



Scale 1:25,000 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects

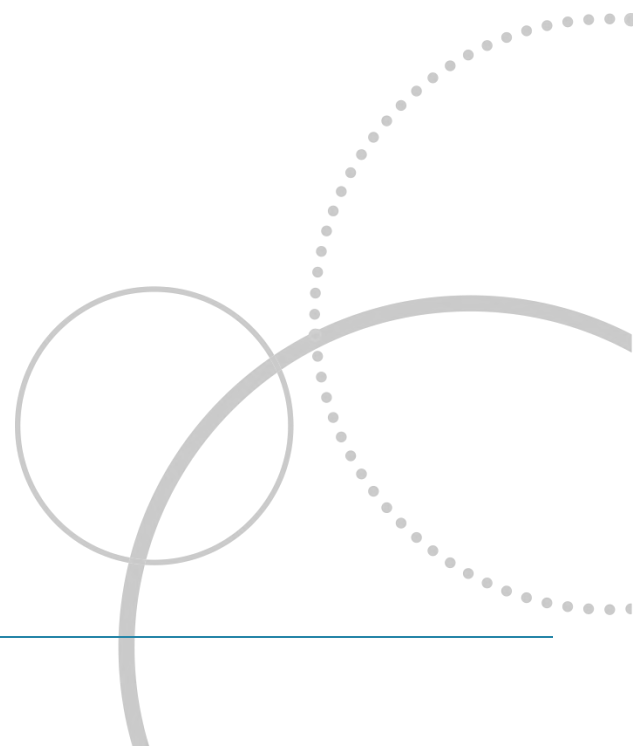
Drawing 8.2

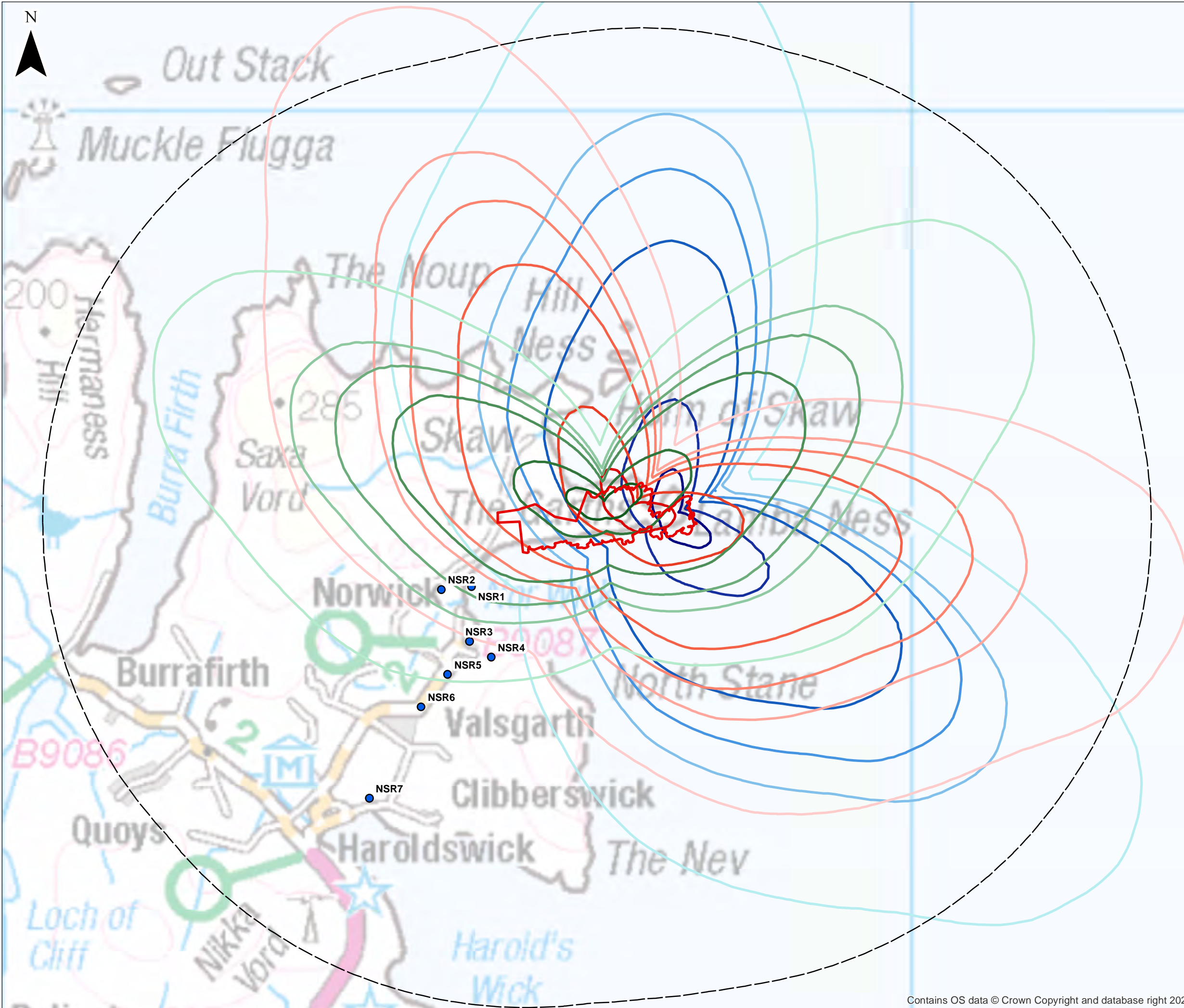
Lden noise contours

Project Number: 4364



Chapter 8 Drawing 8.3 LA_{max}, 1sec Noise Contours - Static Engine Tests





KEY

- Proposed Project Boundary
- NSRs
- 5km Buffer

Pad 1 Static LAmax, dBA

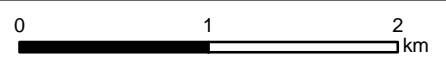
- 80
- 85
- 87
- 90
- 100
- 110

Pad 2 Static LAmax, dBA

- 80
- 85
- 87
- 90
- 100
- 110

Pad 3 Static LAmax, dBA

- 80
- 85
- 87
- 90
- 100
- 110



Scale 1:40,000 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects

Drawing 8.3

LAmax,1sec noise contours - static engine tests






Chapter 8 Drawing 8.3a LA_{max}, 1sec Noise Contours - Static Engine Tests - Pad 1











KEY

-  Proposed Project Boundary
-  NSRs
-  5 km Buffer

Pad 1 Static LAmax, dBA

-  80
-  85
-  87
-  90
-  100
-  110



Scale 1:40,000 @ A3



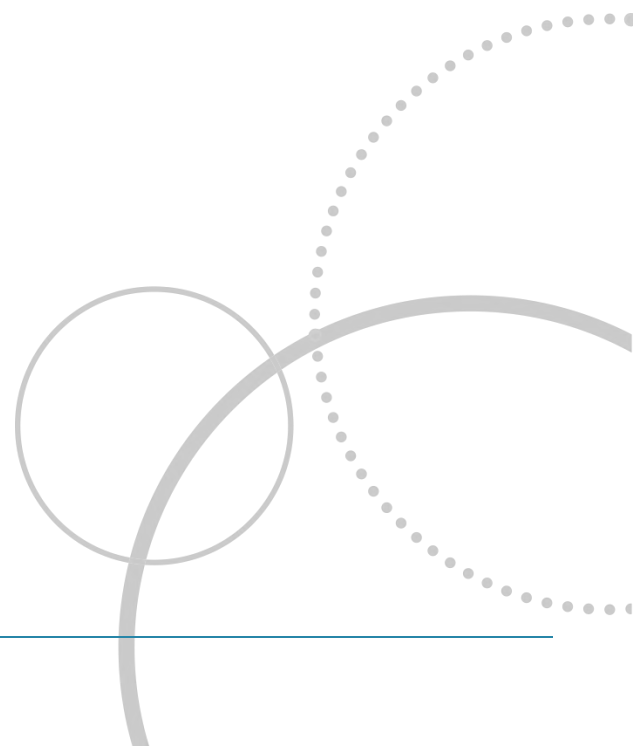
Saxa Vord Spaceport
Assessment of Environmental Effects

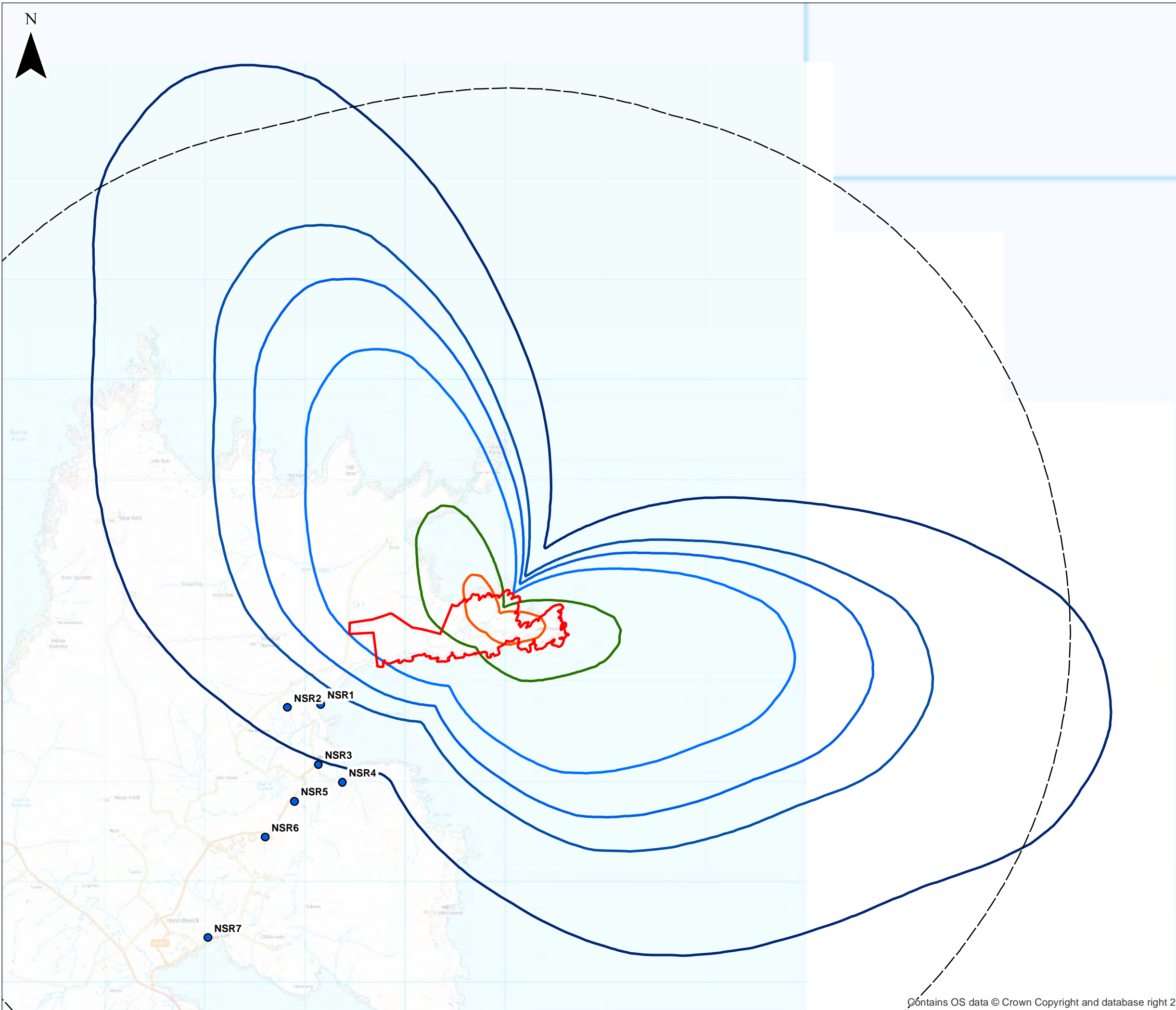
Drawing 8.3a (Pad 1)

L_{Amax},1sec noise contours - static engine tests



Chapter 8 Drawing 8.3b LA_{max}, 1sec Noise Contours - Static Engine Tests - Pad 2



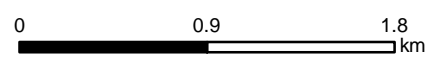


KEY

- Proposed Project Boundary
- NSRs
- 5 km Buffer

Pad 2 Static LAmax, dBA

- 80
- 85
- 87
- 90
- 100
- 110



Scale 1:36,255 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects

Drawing 8.3b (Pad 2)

LAmax,1sec noise contours - static engine tests

Project Number: 4364

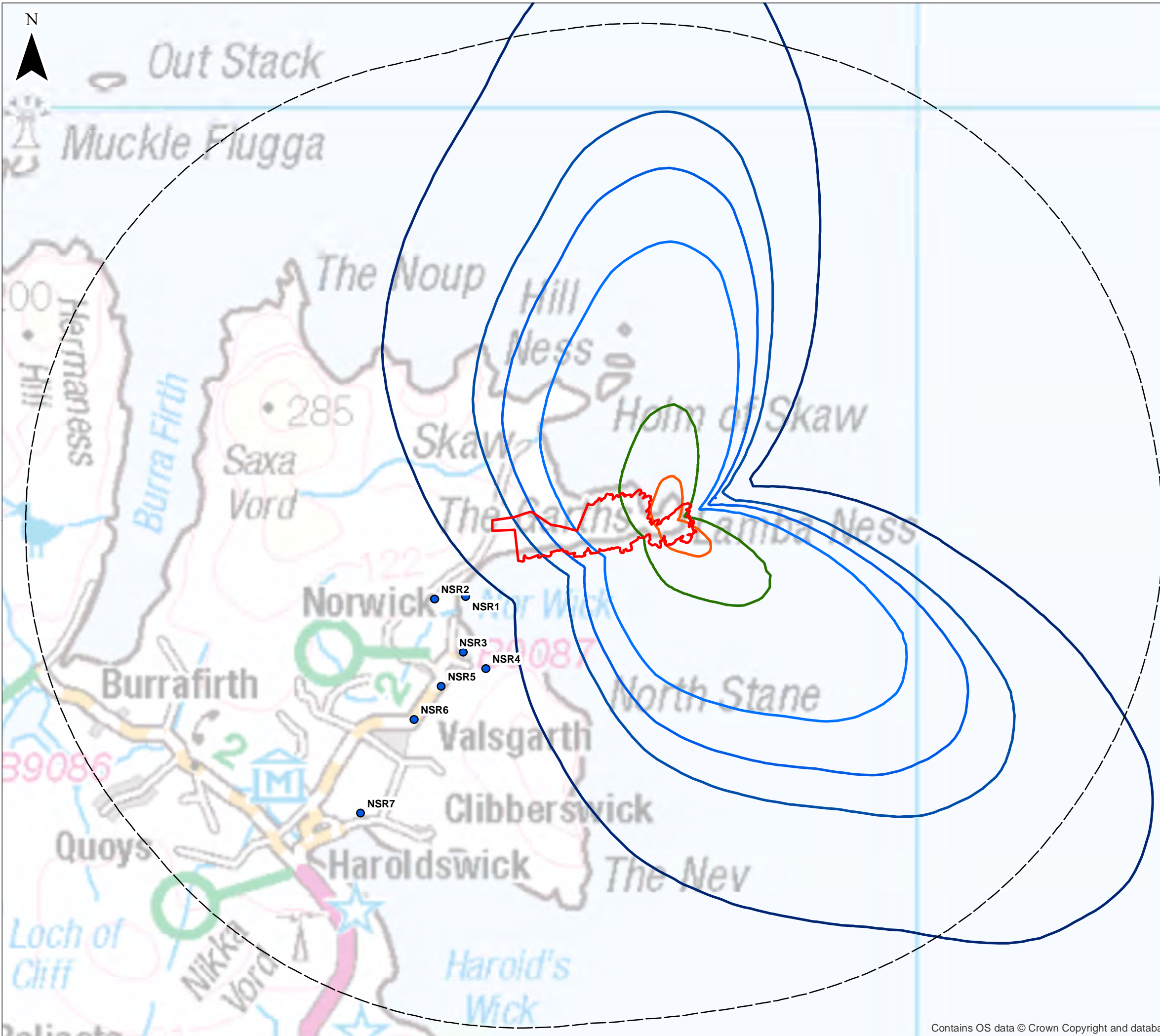
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


Chapter 8 Drawing 8.3c LA_{max}, 1sec Noise Contours - Static Engine Tests - Pad 3









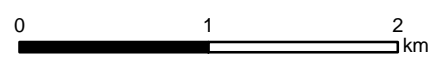


KEY

-  Proposed Project Boundary
-  NSRs
-  5 km Buffer

Pad 3 Static LAmax, dBA

-  80
-  85
-  87
-  90
-  100
-  110



Scale 1:40,000 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects

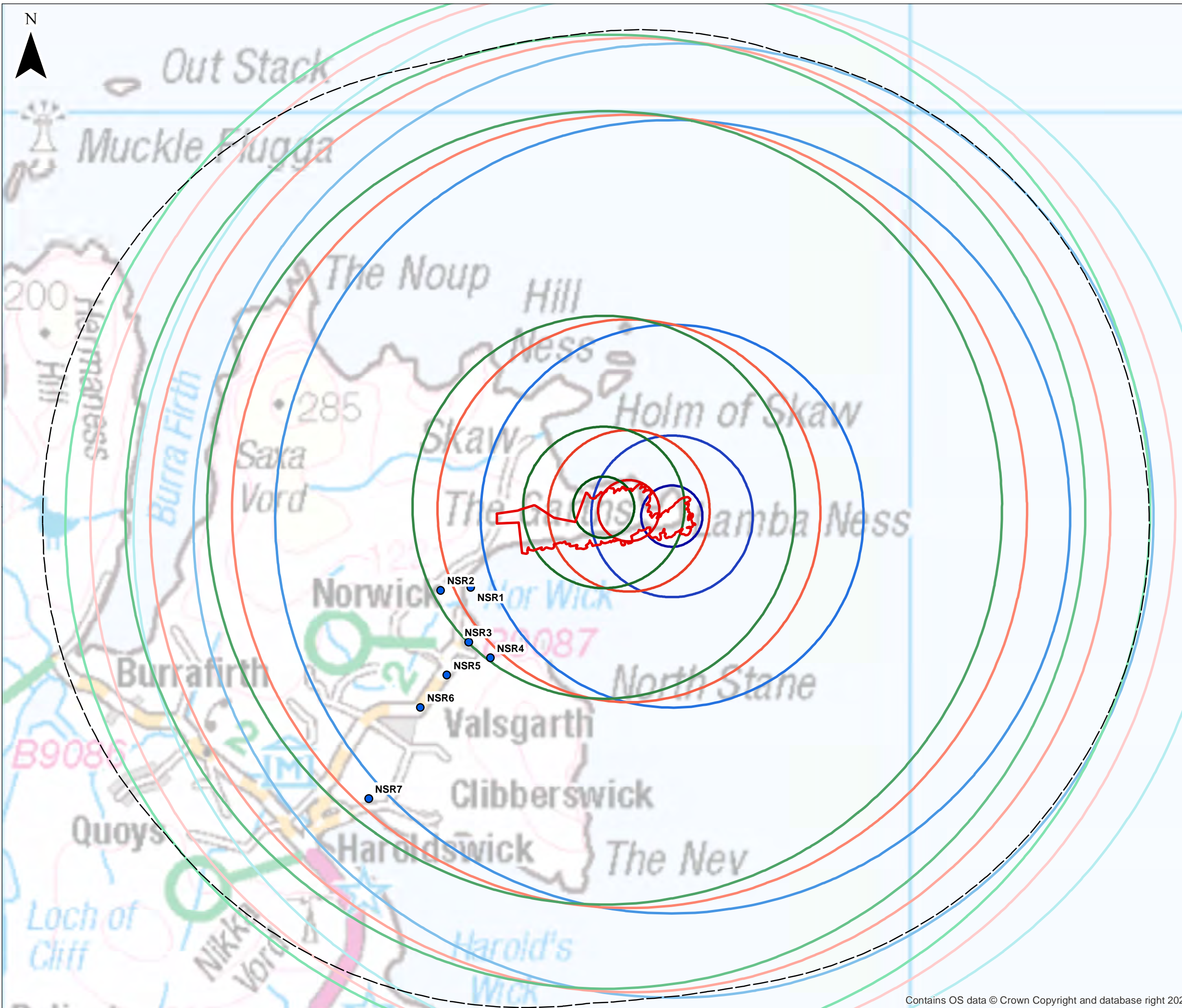
Drawing 8.3c (Pad 3)

LAmax,1sec noise contours - static engine tests



Chapter 8 Drawing 8.4 LAmax, 1sec Noise Contours - Launches





KEY

- Proposed Project Boundary
- NSRs
- 5km Buffer

Pad 1 Launch LAmax, dBA

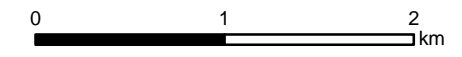
- 85
- 87
- 90
- 100
- 110
- 120

Pad 2 Launch LAmax, dBA

- 85
- 87
- 90
- 100
- 110
- 120

Pad 3 Launch LAmax, dBA

- 85
- 87
- 90
- 100
- 110
- 120



Scale 1:40,000 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects

Drawing 8.4

LAmax,1sec noise contours - launches

Project Number: 4364

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Date: 10/11/2021	Drawn by: GM	Checked by: SW	Version: v1
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Chapter 8 Drawing 8.4a LAmax, 1sec Noise Contours - Launches - Pad 1









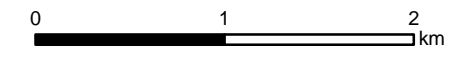


KEY

-  Proposed Project Boundary
-  NSRs
-  5km Buffer

Pad 1 Launch LAmax, dBA

-  85
-  87
-  90
-  100
-  110
-  120



Scale 1:40,000 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects

Drawing 8.4a (Pad 1)

LAm_{ax},1sec noise contours - launches

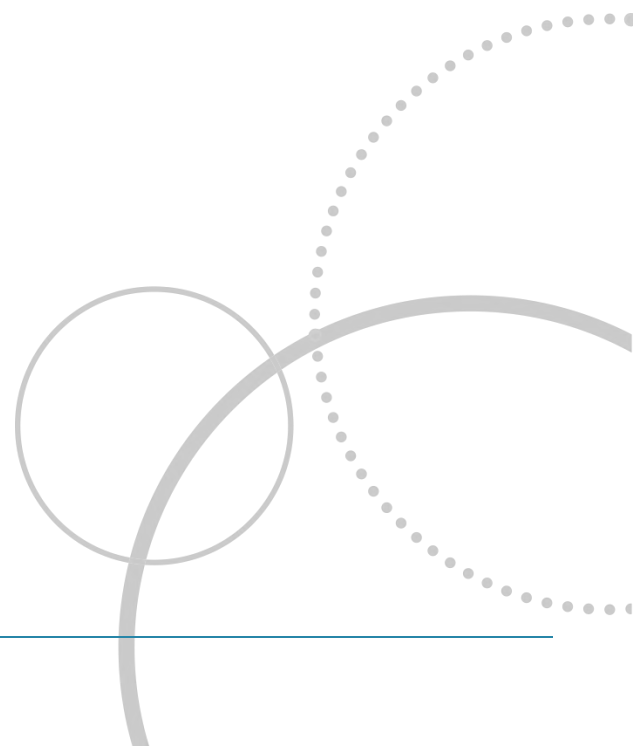
Project Number: 4364

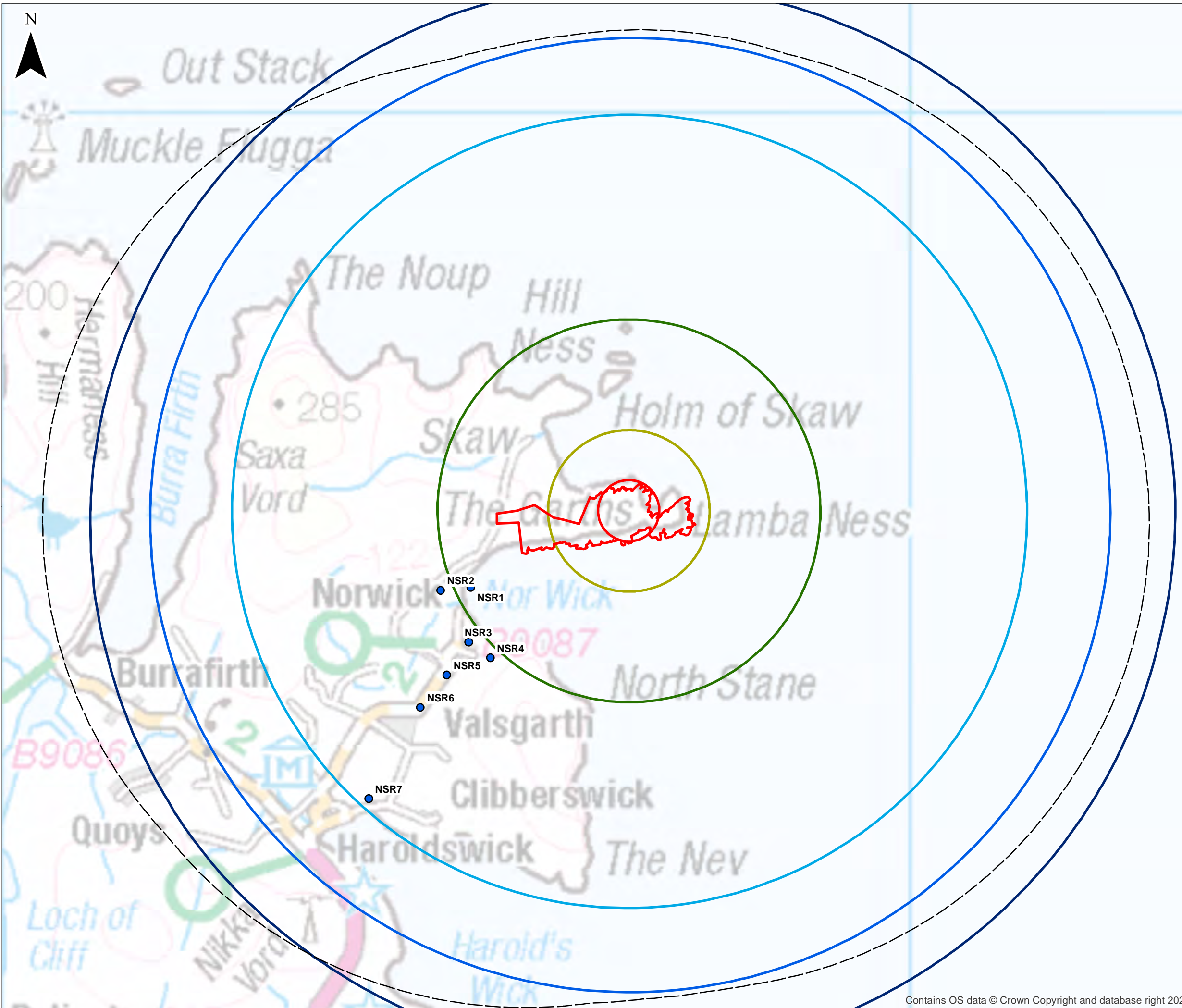
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Date: 10/11/2021	Drawn by: GM	Checked by: SW	Version: v1
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Chapter 8 Drawing 8.4b LA_{max}, 1sec Noise Contours - Launches - Pad 2



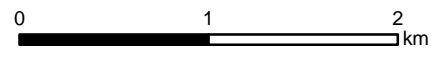


KEY

- Proposed Project Boundary
- NSRs
- 5km Buffer

Pad 2 Launch LAmax,dBA

- 85
- 87
- 90
- 100
- 110
- 120



Scale 1:40,000 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects

Drawing 8.4b (Pad 2)

LAmax,1sec noise contours - launches

Project Number: 4364

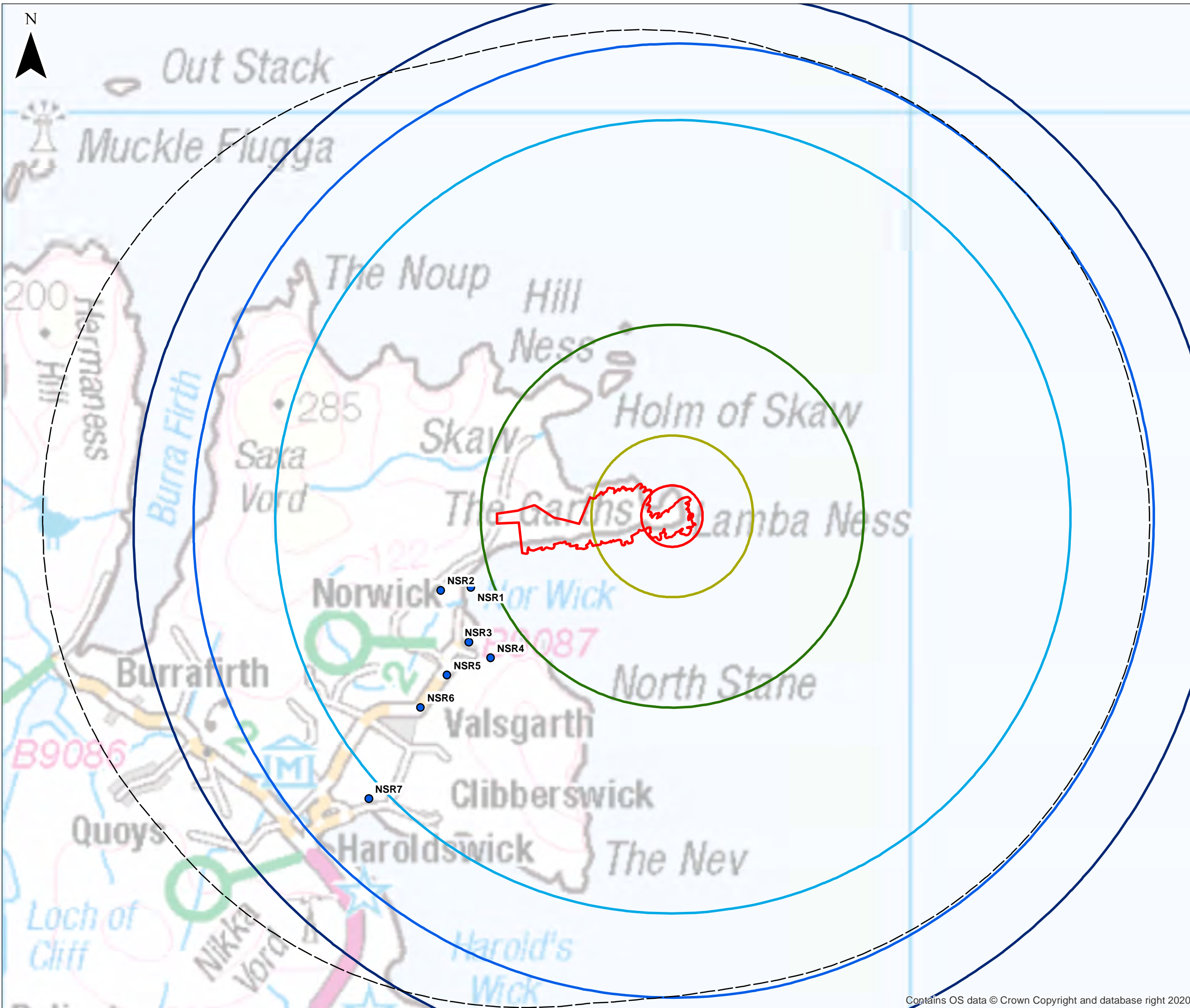
Contains OS data © Crown Copyright and database right 2020

Date: 10/11/2021 Drawn by: GM Checked by: SW Version: v1






Chapter 8 Drawing 8.4c LAmax, 1sec Noise Contours - Launches - Pad 3









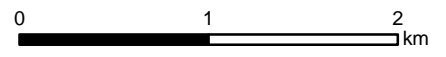


KEY

-  Proposed Project Boundary
-  NSRs
-  5km Buffer

Pad 3 Launch LAmax, dBA

-  85
-  87
-  90
-  100
-  110
-  120



Scale 1:40,000 @ A3



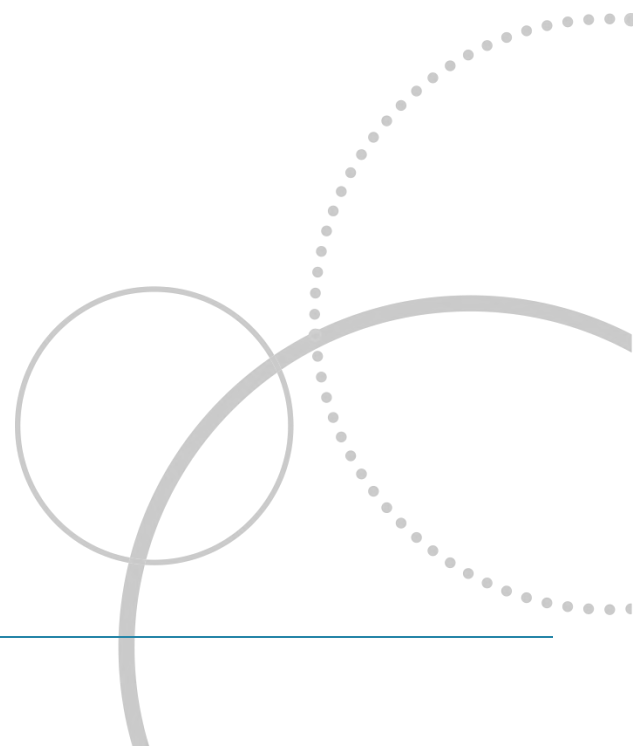
Saxa Vord Spaceport
Assessment of Environmental Effects

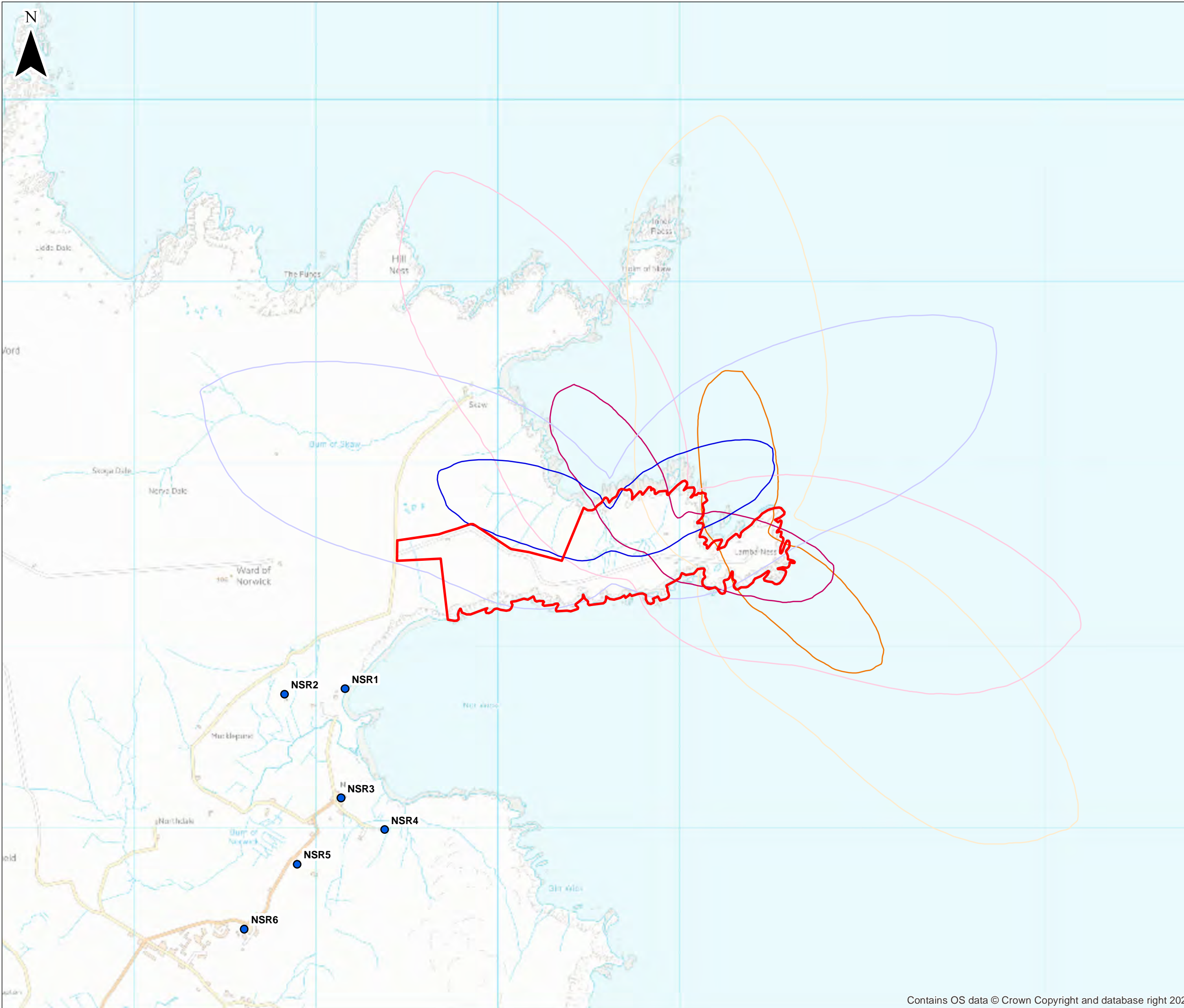
Drawing 8.4c (Pad 3)

LAm_{ax},1sec noise contours - launches





Chapter 8 Drawing 8.5 Predicted Unweighted Lmax noise contours for Static Engine Tests









KEY

-  Proposed Project Boundary
-  NSRs



Pad 1 Static Lmax, dBA

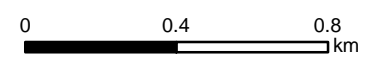
-  111
-  120

Pad 2 Static Lmax, dBA

-  111
-  120

Pad 3 Static Lmax, dBA

-  111
-  120



Scale 1:20,000 @ A3



Saxa Vord Spaceport
Environmental of Environmental Effects

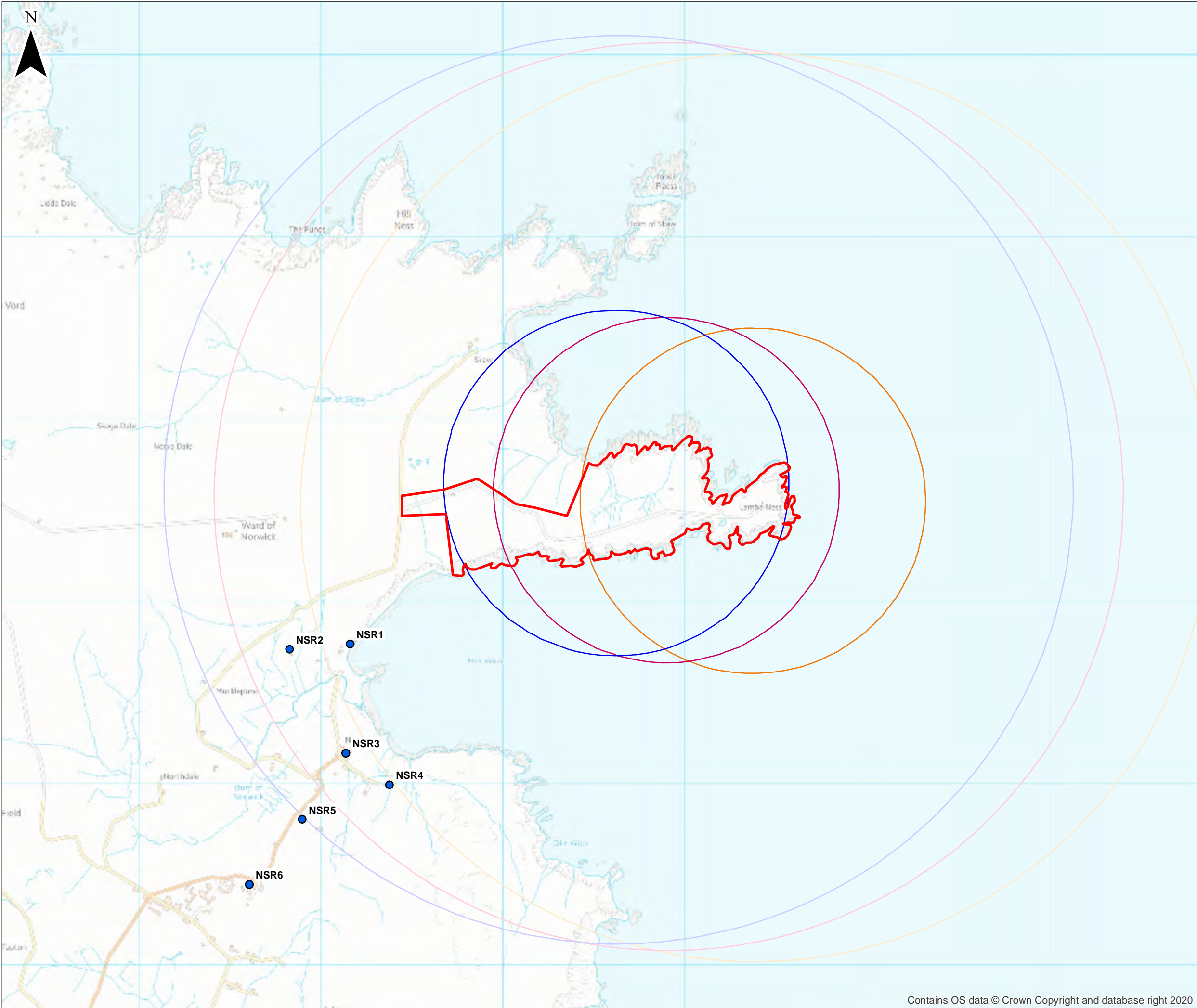
Drawing 8.5
Predicted Unweighted Lmax Noise
Contours for Static Engine Tests

Project Number: 4864





Chapter 8 Drawing 8.6 Predicted Unweighted Lmax noise contours for Launch Events









KEY

-  Proposed Project Boundary
-  NSRs



Pad 1 Launch Lmax, dBA

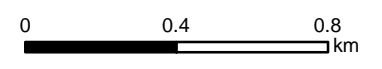
-  111
-  120

Pad 2 Launch Lmax, dBA

-  111
-  120

Pad 3 Launch Lmax, dBA

-  111
-  120



Scale 1:20,000 @ A3

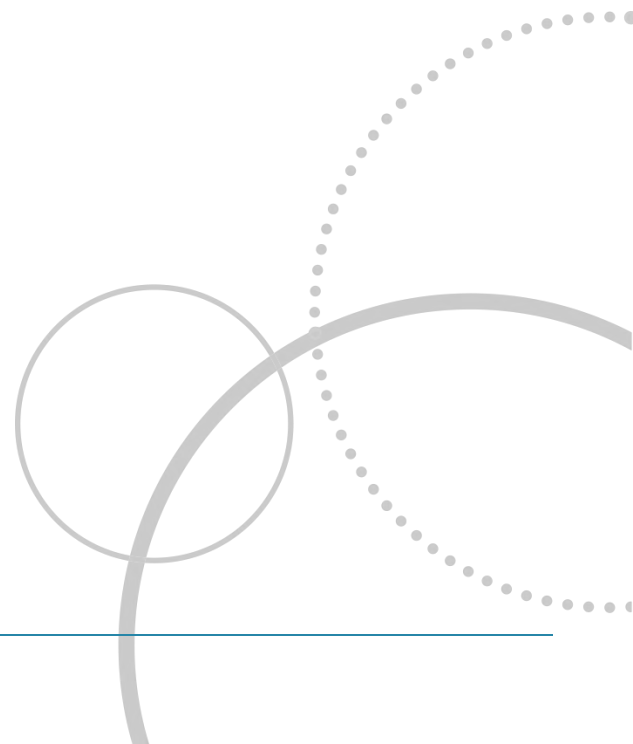


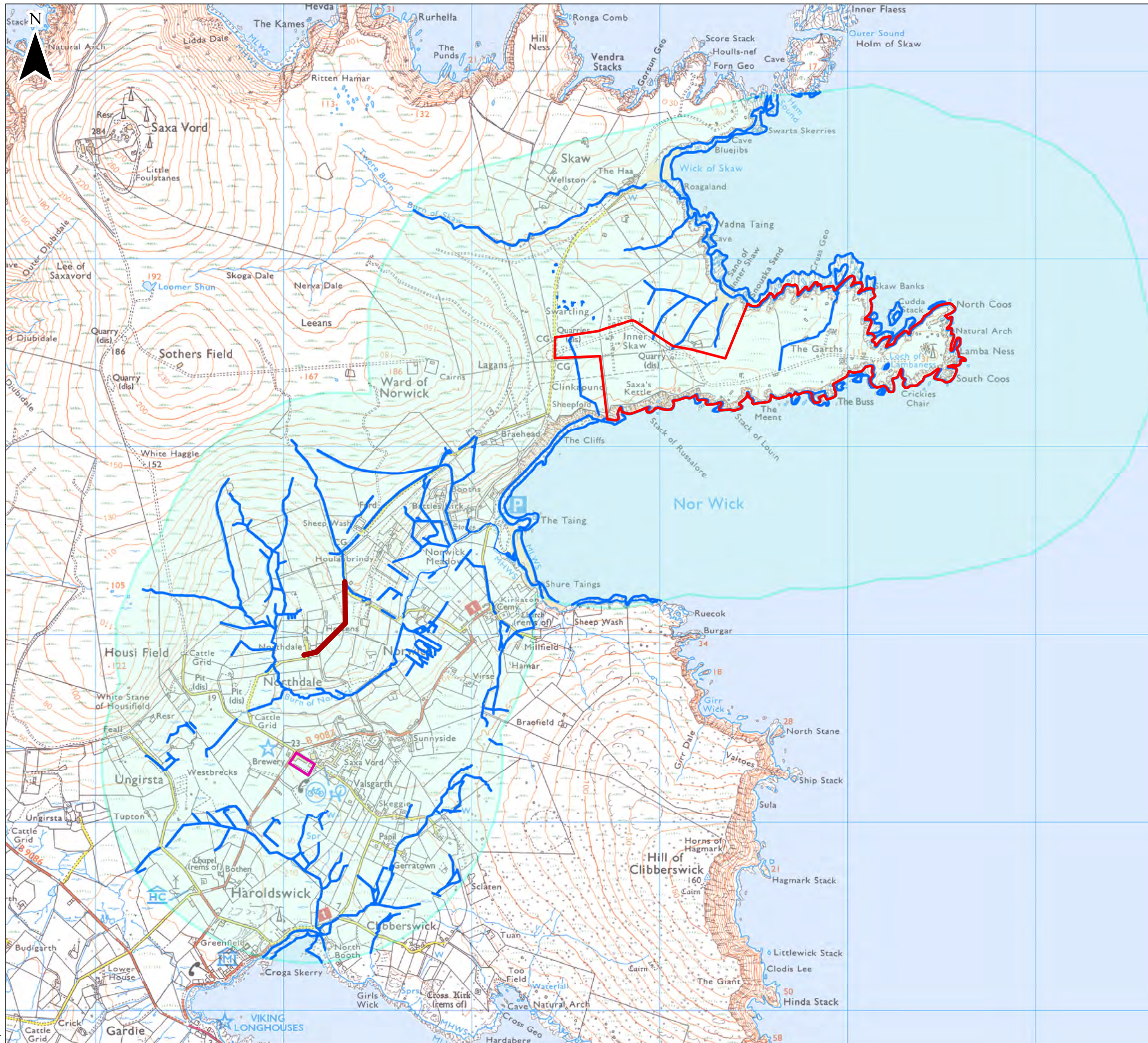
Saxa Vord Spaceport
Assessment of Environmental Effects

Drawing 8.6
Predicted Unweighted Lmax Noise
Contours for launch events

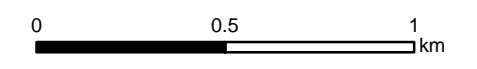


Chapter 9 Drawing 9.1 Study Area and Watercourses





- KEY**
- Proposed Project Boundary
 - New Section of Access Road
 - Launch and Range Control Centre Boundary
 - Hydrology Study Area
 - Watercourse
 - Water Body



Scale 1:20,000 @ A3



Saxa Vord Spaceport
Assessment of Environmental Effects

Drawing 9.1
Hydrology Study Area and Watercourses

Date: 04/12/2020	Drawn by: JH	Checked by: RF	Version: v1
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Project Number: 3148