

# Environmental Impact Assessment Report

Appendix B11 Soils, Geology and Land Contamination

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**Grangemouth Flood Protection Scheme 2024**  
**Falkirk Council**



**GRANGEMOUTH**  
Flood Protection Scheme  
Protecting the heart of our communities

## Contents (links to appendices)

Figure B11.1: Solid Geology











Figure B11.2 (a-g): Superficial and Artificial Geology

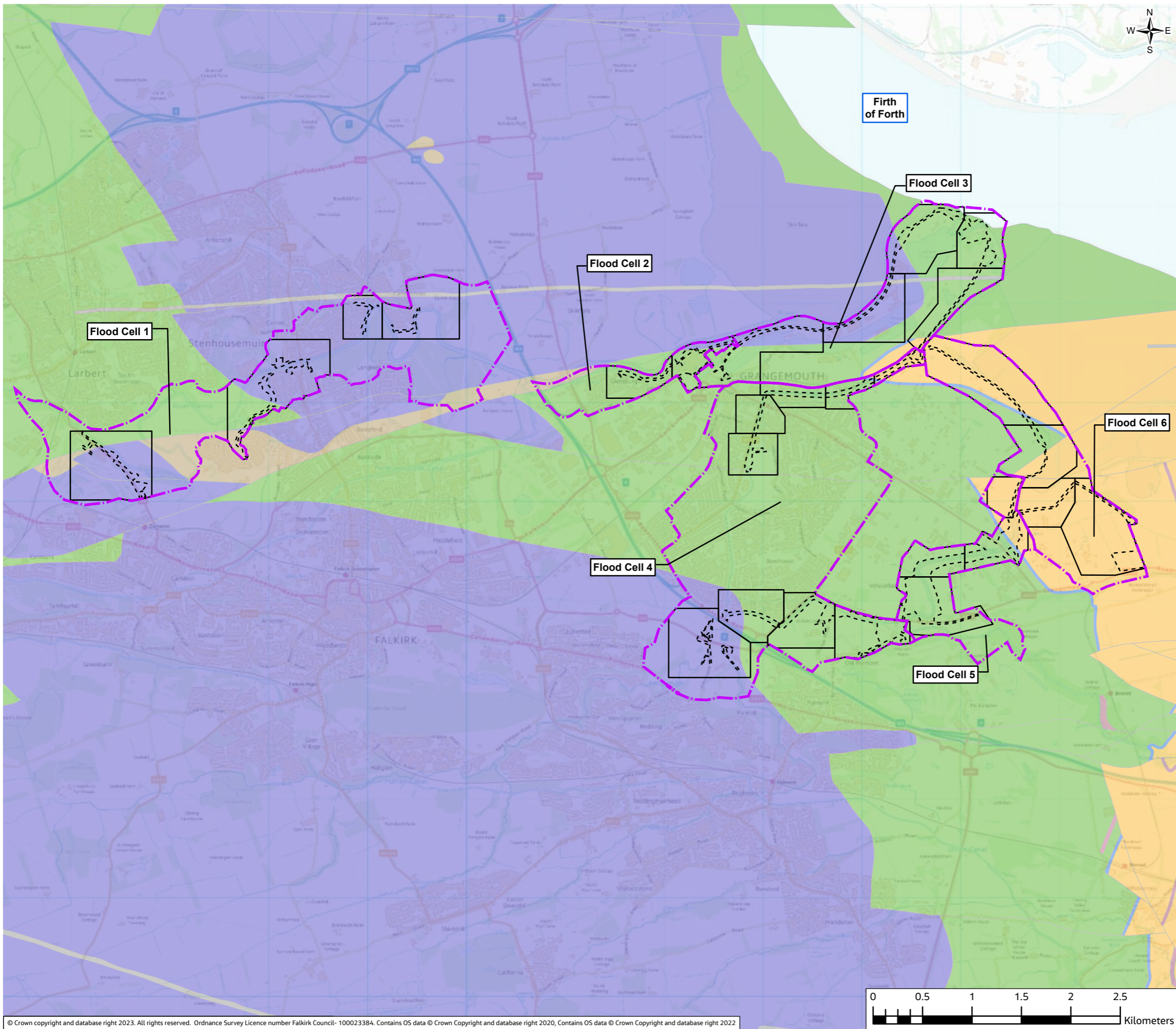
Figure B11.3: Soil Map of Scotland (1:50,000 scale mapping)

Figure B11.4: Land Capability for Agriculture (LCA) (1:50,000 scale mapping)

Figure B11.5 (a-i): Potential Contamination Sources



**FIGURE B11.1**

- Legend**
-  Cell
  -  Site Boundary
  -  Working Area
- Solid Geological Units**
-  Calmy Limestone
  -  Castleary Limestone
  -  Central Scotland Late Carboniferous Tholleititic Dyke Swarm
  -  Passage Formation
  -  Roman Cement Limestone
  -  Scottish Lower Coal Measures Formation
  -  Scottish Middle Coal Measures Formation
  -  Upper Limestone Formation



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**Drawing Title**  
 SOLID GEOLOGY

SHEET 1 OF 1

**Drawing Status** S8-SUITABLE FOR STATUTORY CONSENT

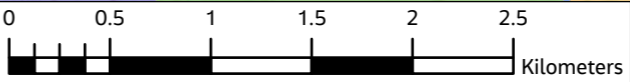
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


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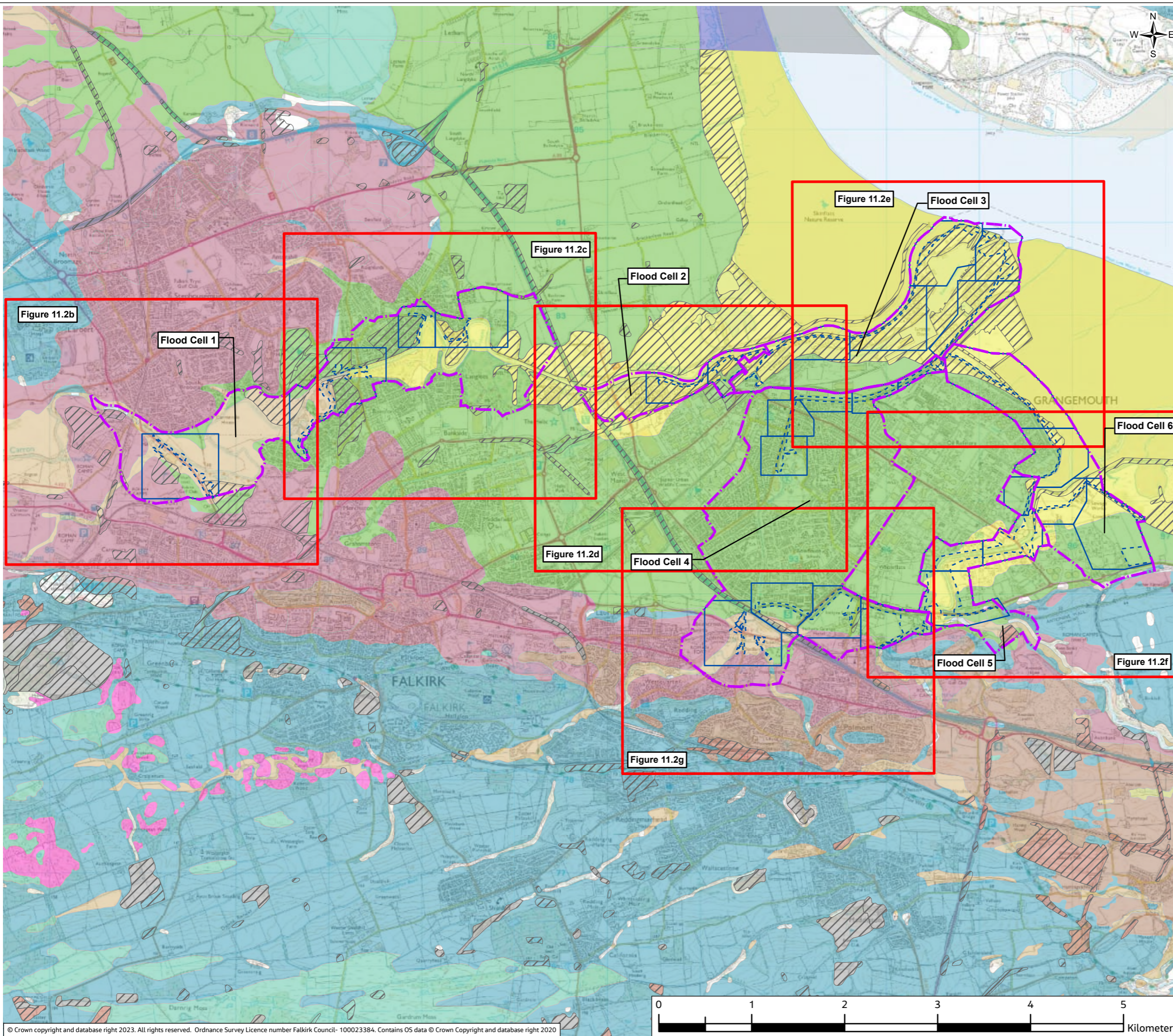
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**FIGURE B11.2A**


- Legend**
-  Cell
  -  Working Area
  -  Site Boundary
  -  Artificial Geology
- Superficial Geology**
-  Alluvium
  -  Glaciofluvial Ice Contact Deposits
  -  Hummocky (Moundy) Glacial Deposits
  -  Intertidal Deposits (Undifferentiated)
  -  Lacustrine Deposits
  -  Peat
  -  Raised Marine Deposits, Devensian
  -  Raised Tidal Flat Deposits of Flandrian Age
  -  Reclaimed Intertidal Deposits
  -  Superficial Deposits
  -  Superficial Theme Not Mapped (for digital map use only)
  -  Till, Devensian



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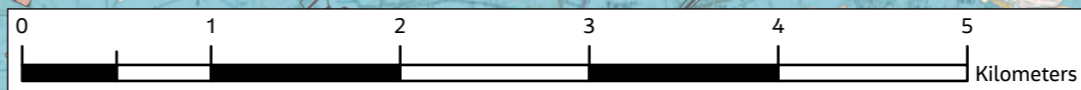
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Drawing Title	SUPERFICIAL AND ARTIFICIAL GEOLOGY	SHEET 1 OF 7
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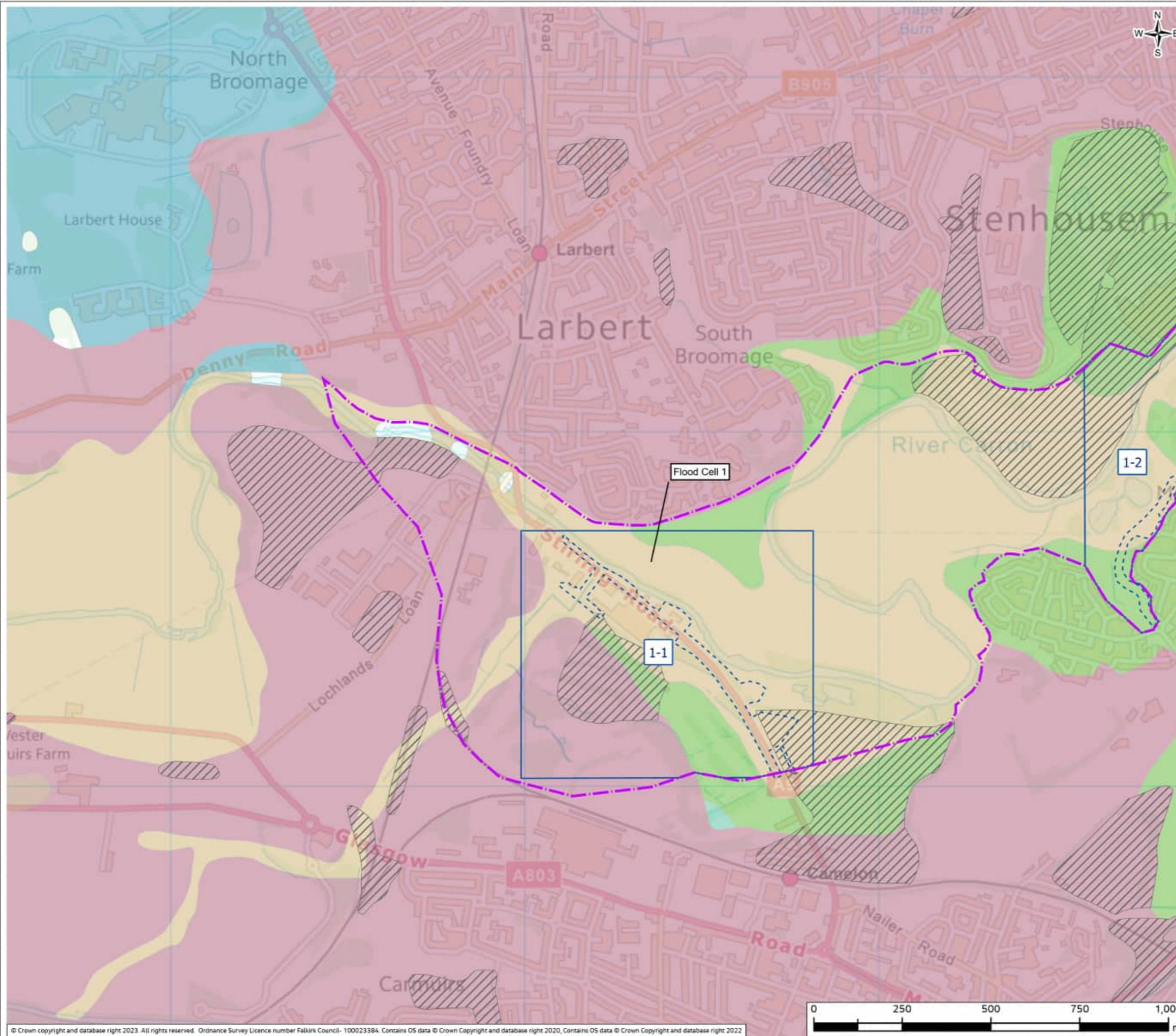
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**FIGURE B 11.2B**



- Legend**
- Cell
  - Working Area
  - Site Boundary
  - Artificial Geology
- Superficial Geology**
- Alluvium
  - Glaciofluvial Ice Contact Deposits
  - Peat
  - Raised Marine Deposits, Devensian
  - Raised Tidal Flat Deposits of Flandrian Age
  - Till, Devensian



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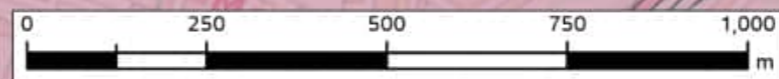
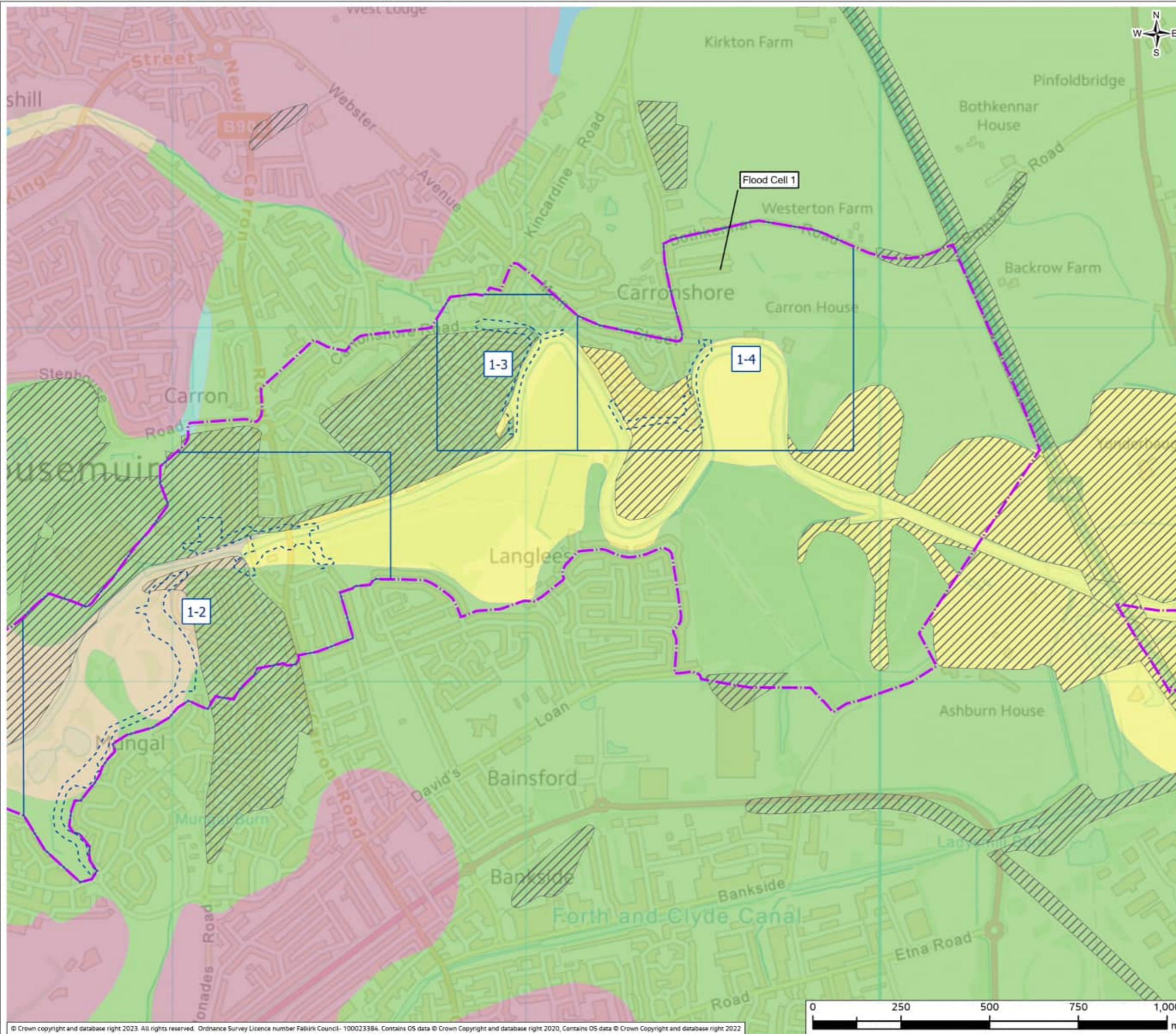


FIGURE B11.2C



Legend

- Cell
- Working Area
- Site Boundary
- Artificial Geology
- Superficial Geology**
- Alluvium
- Intertidal Deposits (Undifferentiated)
- Peat
- Raised Marine Deposits, Devensian
- Raised Tidal Flat Deposits of Flandrian Age
- Till, Devensian



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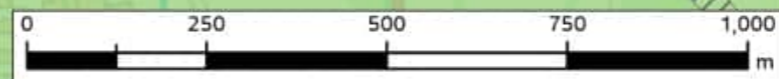
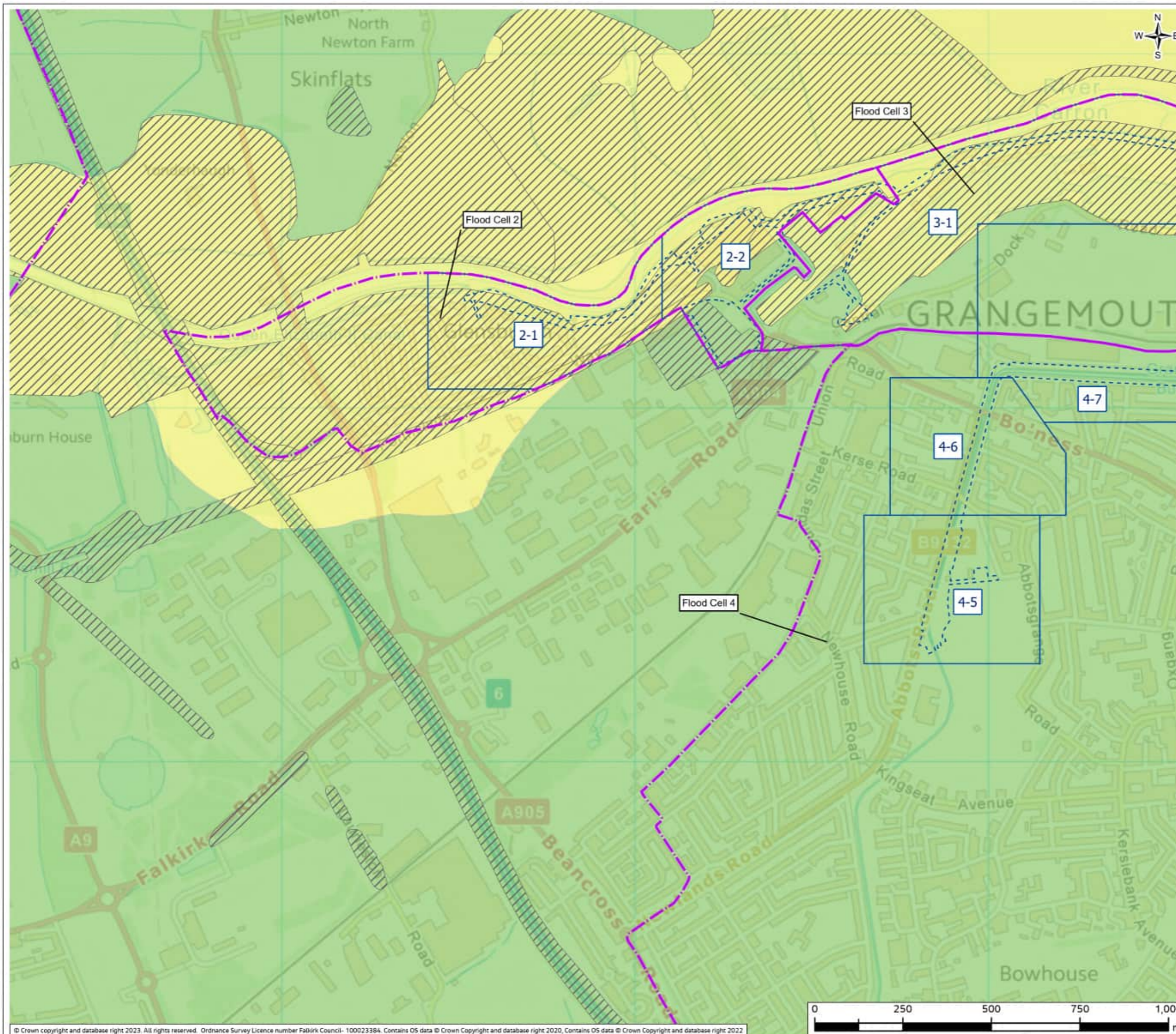


FIGURE B11.2D



Legend

- Cell
- Working Area
- Site Boundary
- Artificial Geology
- Superficial Geology**
- Intertidal Deposits (Undifferentiated)
- Raised Tidal Flat Deposits of Flandrian Age



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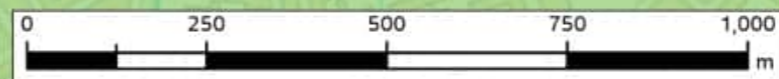





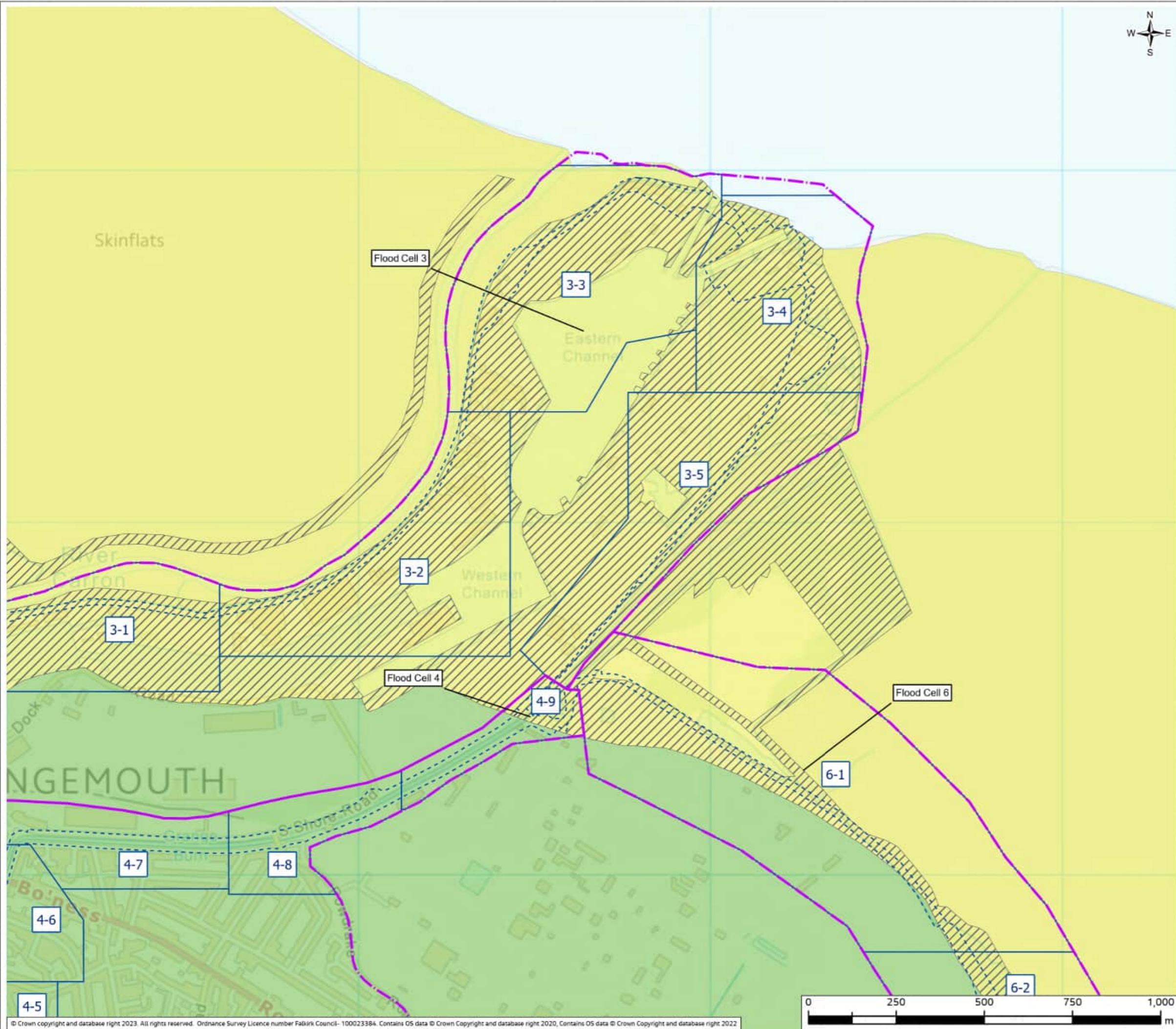


FIGURE B11.2E



Legend

-  Cell
-  Working Area
-  Site Boundary
-  Artificial Geology
- Superficial Geology**
-  Intertidal Deposits (Undifferentiated)
-  Raised Tidal Flat Deposits of Flandrian Age



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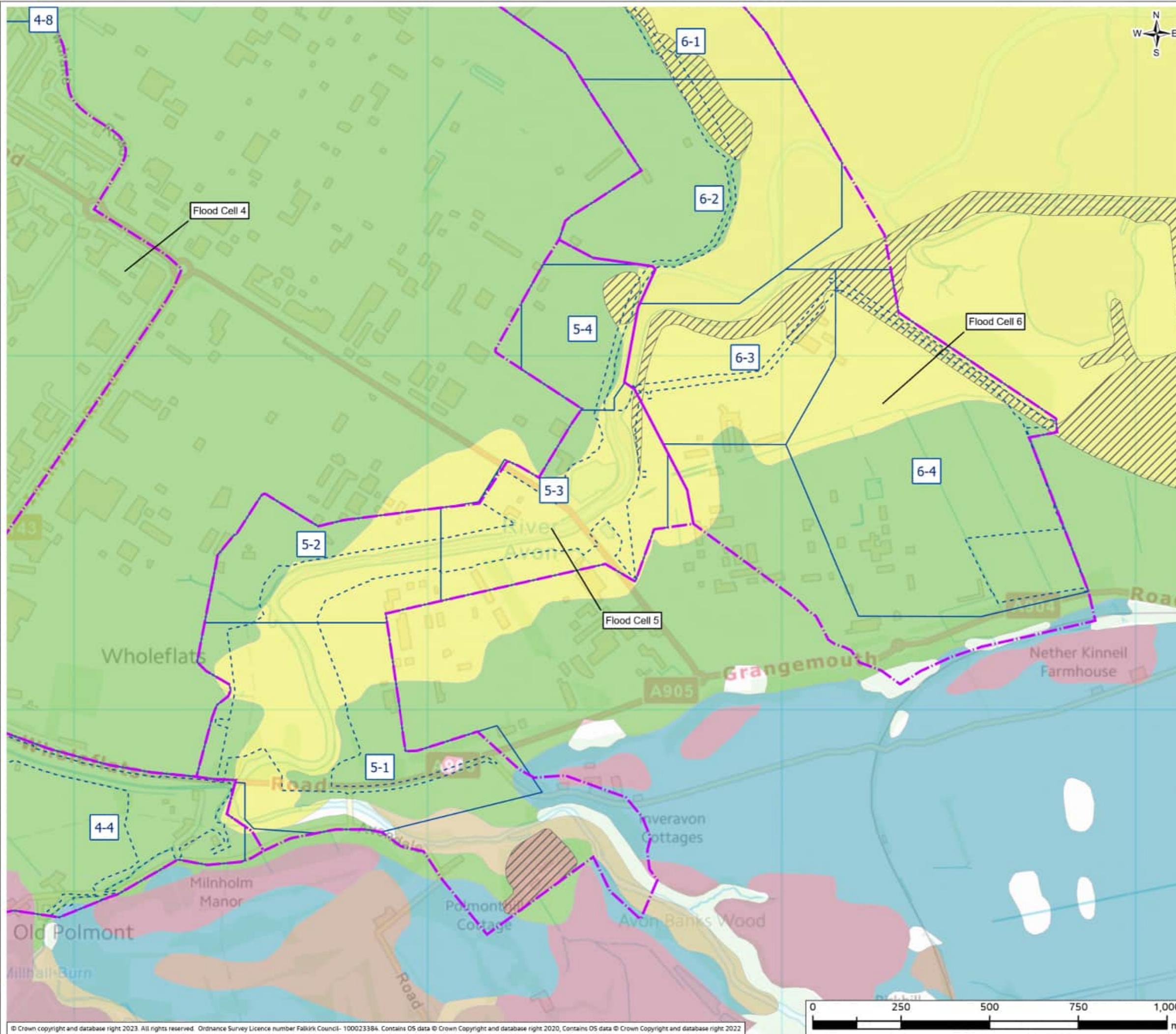
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FIGURE B11.2F



- Legend**
- Cell
  - Working Area
  - Site Boundary
  - Artificial Geology
- Superficial Geology**
- Alluvium
  - Glaciofluvial Ice Contact Deposits
  - Intertidal Deposits (Undifferentiated)
  - Raised Marine Deposits, Devensian
  - Raised Tidal Flat Deposits of Flandrian Age
  - Superficial Deposits
  - Till, Devensian



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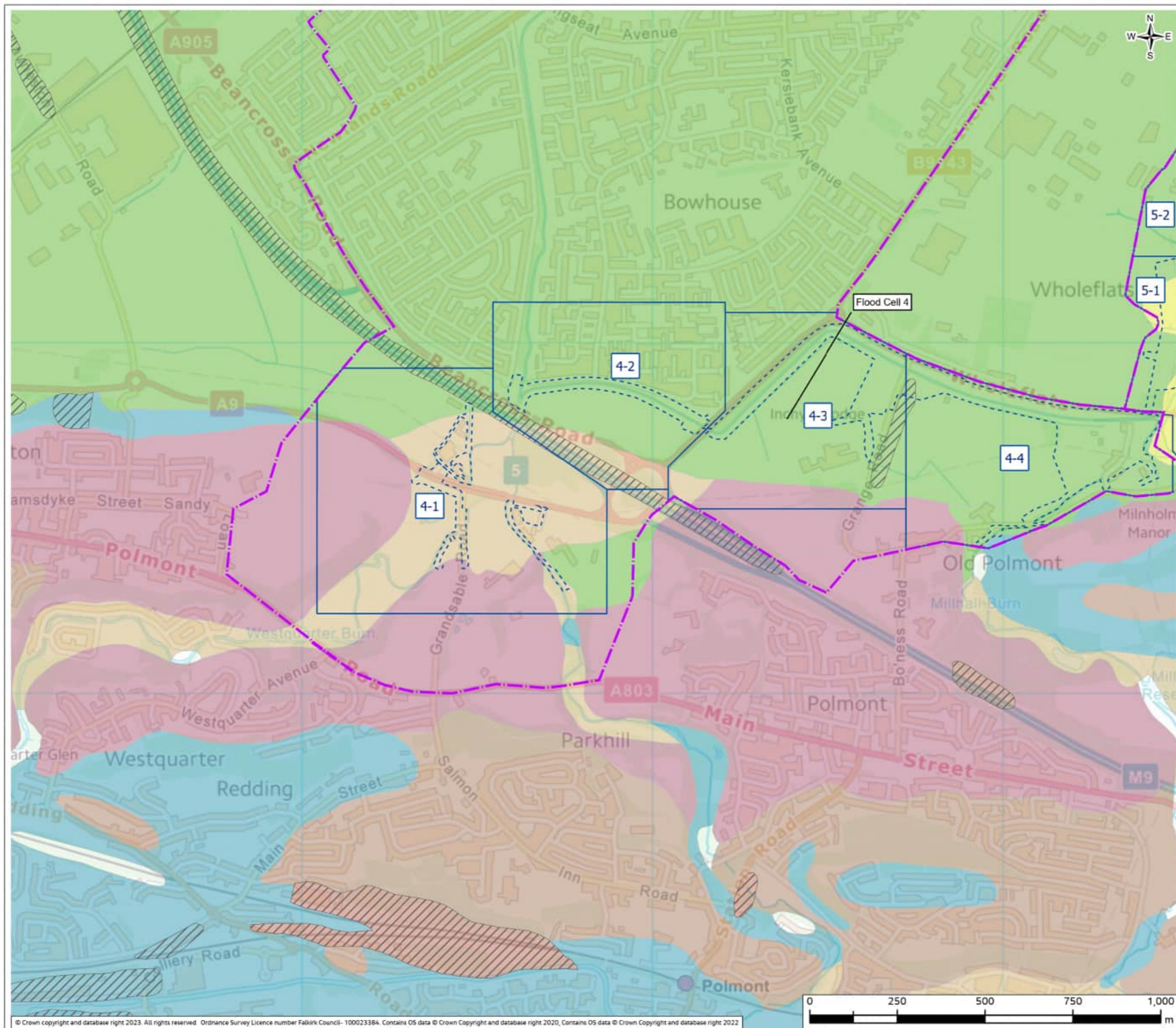
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FIGURE B11.2G



- Legend**
- Cell
  - Working Area
  - Site Boundary
  - Artificial Geology
- Superficial Geology**
- Alluvium
  - Glaciofluvial Ice Contact Deposits
  - Intertidal Deposits (Undifferentiated)
  - Raised Marine Deposits, Devensian
  - Raised Tidal Flat Deposits of Flandrian Age
  - Superficial Deposits
  - Superficial Theme Not Mapped (for digital map use only)
  - Till, Devensian



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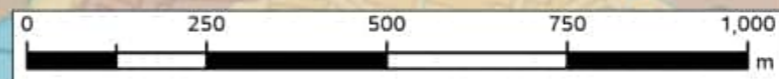
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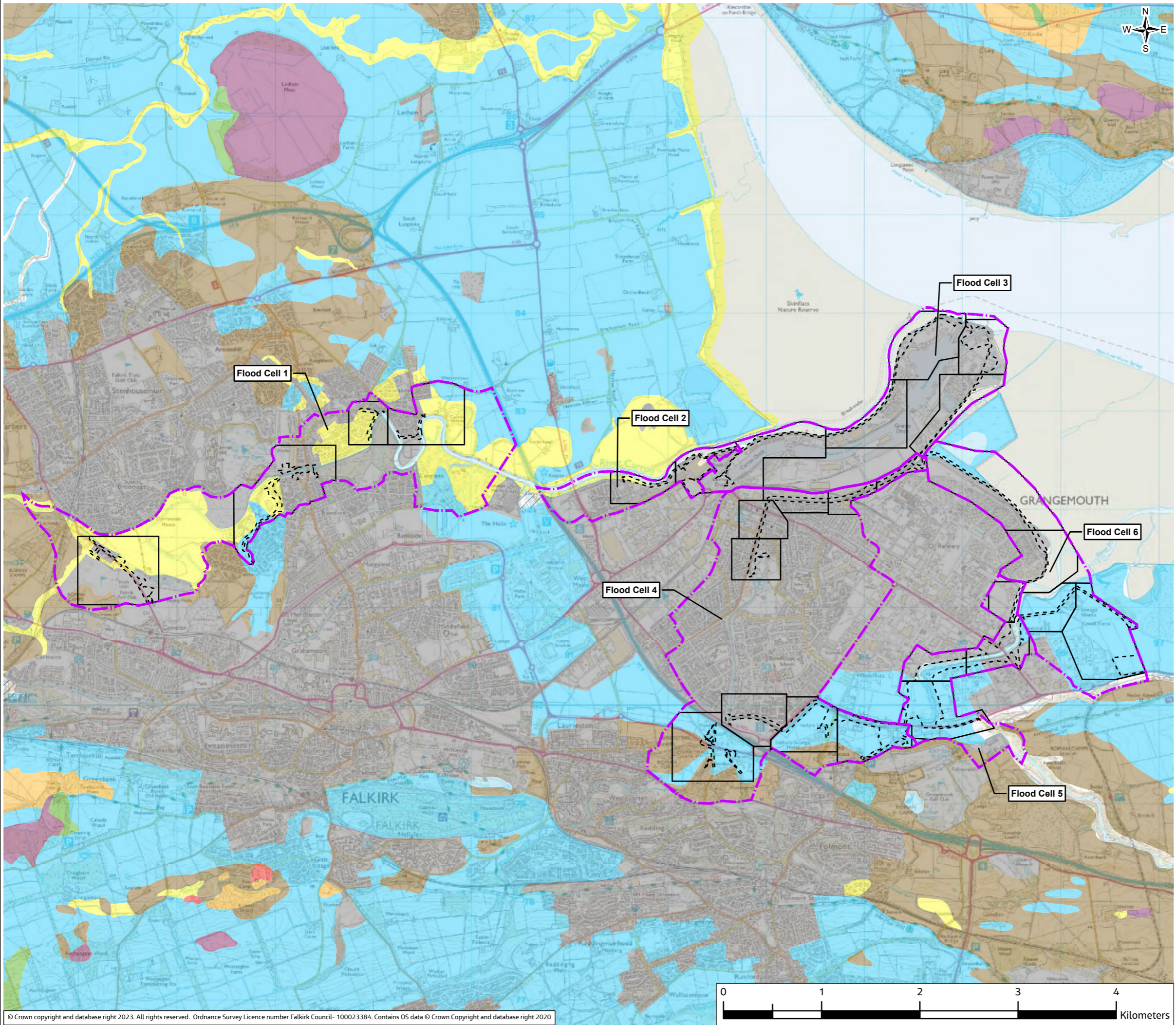
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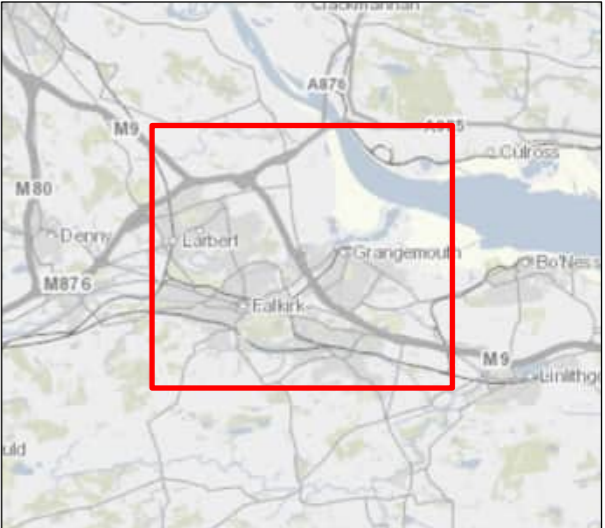


**FIGURE B11.3**



**Legend**

- Cell
- Site Boundary
- Working Area
- Generalised Soil Type**
- Alluvial soils
- Brown soils
- Mineral gleys
- Mineral podzols
- Peat
- Peaty gleys
- Peaty podzols
- Lochs
- Made up ground
- No data
- Non-soil



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Drawing Title

SOIL MAP OF SCOTLAND

SHEET 1 OF 1

Drawing Status

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1:37,500

DO NOT SCALE

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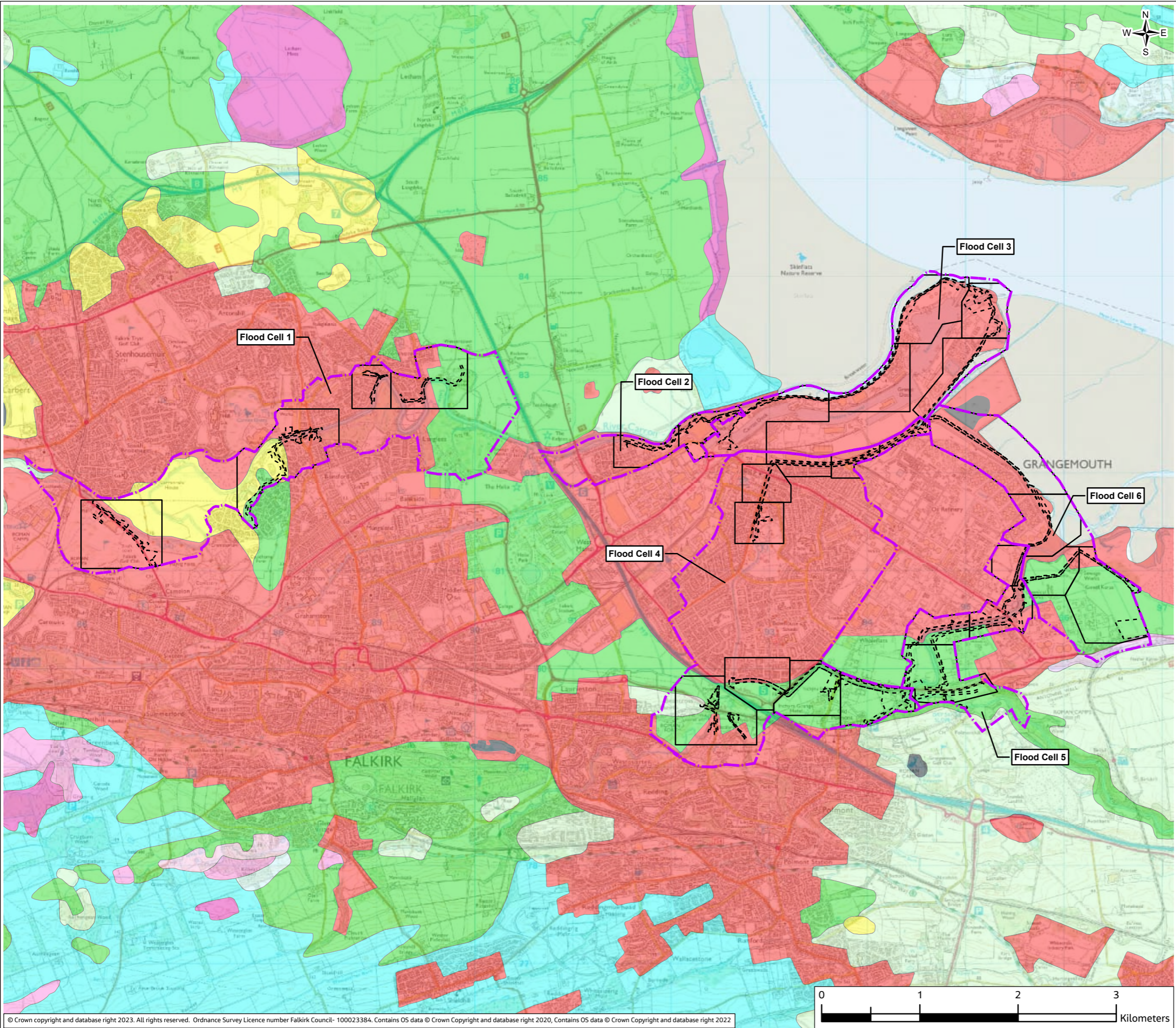
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Figure B11.3

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**FIGURE B11.4**



**Legend**

- Cell
- Site Boundary
- Working Area
- Land Capability for Agriculture Class - 50k
  - 2
  - 3.1
  - 3.2
  - 4.1
  - 4.2
  - 5.1
  - 5.2
  - 5.3
  - 6.1
- Built-up area
- Inland water



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**Drawing Title**

LAND CAPABILITY FOR AGRICULTURE  
(LCA)

SHEET 1 OF 1

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


Figure B11.4



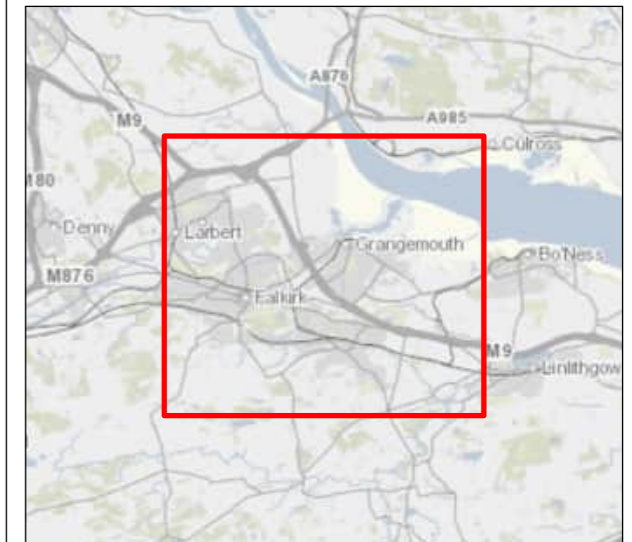
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**FIGURE B11.5a**

**Legend**

-  Cell
-  Site Boundary
-  Working Area
-  Reclaimed Land (Indicative) (GC-116)



Note: The Site Boundary includes the Permanent Work Footprint, haul roads and site compound areas.



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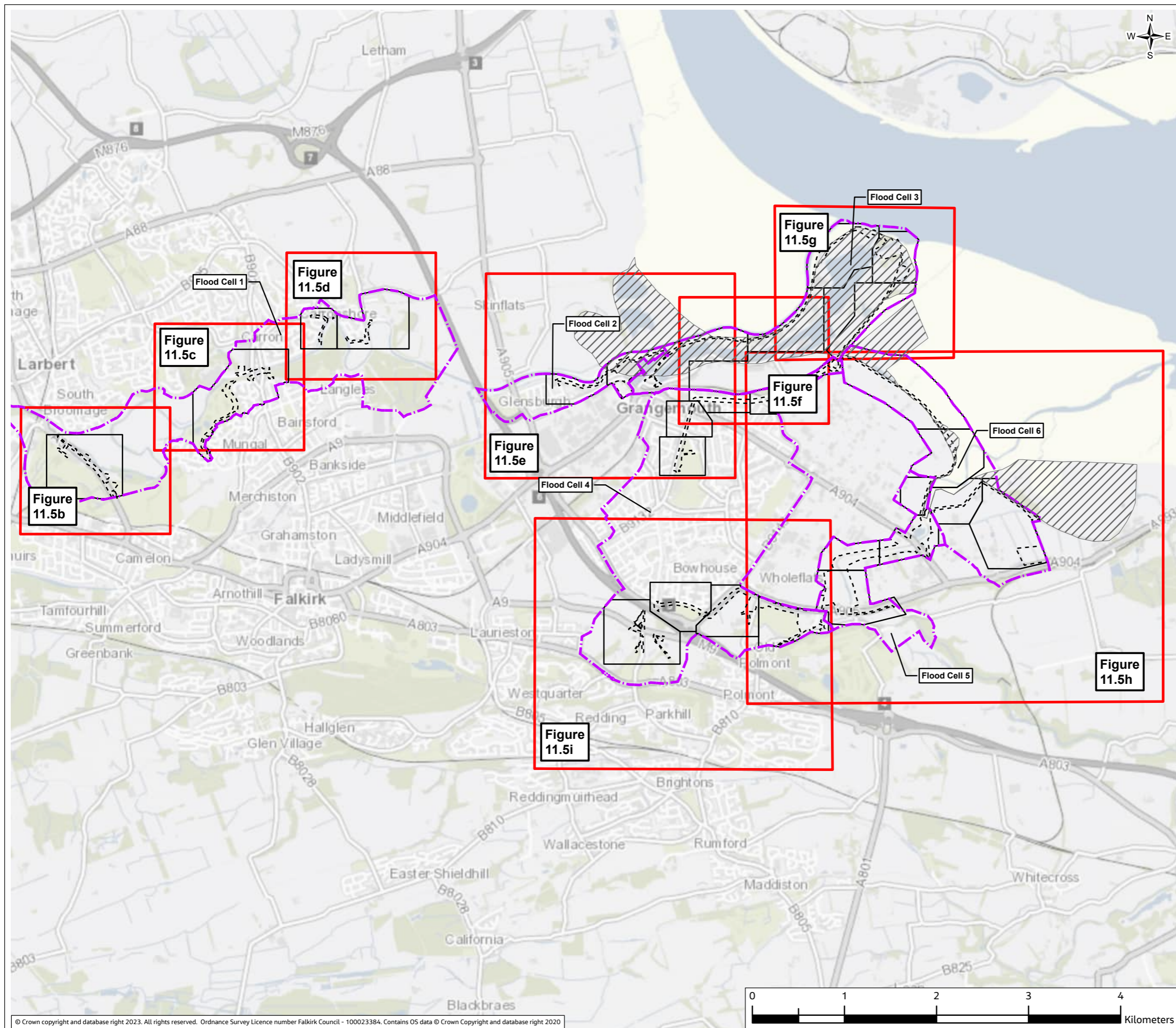
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Jacobs No.	B2386100
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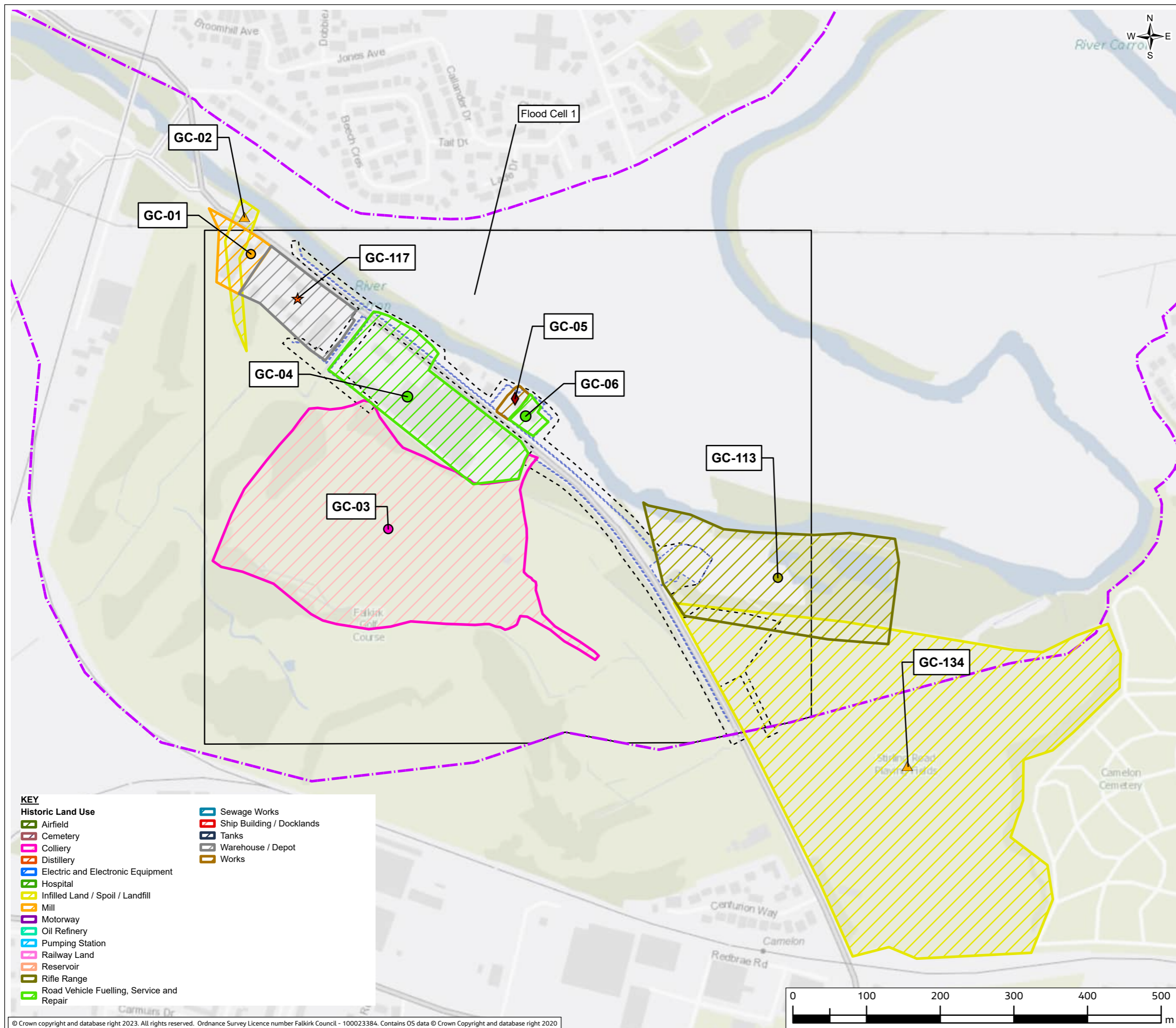
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Drawing No.	Figure B11.5a
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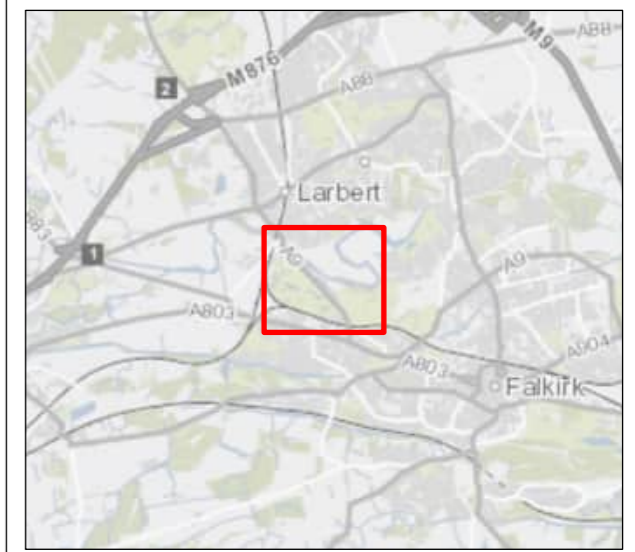


**FIGURE B11.5b**



- Legend**
- Cell
  - Site Boundary
  - Working Area
  - Permanent Works Footprint
  - Colliery
  - Mill
  - Rifle Range
  - Road Vehicle
  - Fuelling Service & Repair
  - Warehouse / Depot, Depot / Warehouse
  - Works
  - Metal Works
  - Infilled Land / Spoil / Landfill
  - Spoil
  - Tip

Note: The Site Boundary includes the Permanent Work Footprint, haul roads and site compound areas.



- KEY**
- Historic Land Use**
- Airfield
  - Cemetery
  - Colliery
  - Distillery
  - Electric and Electronic Equipment
  - Hospital
  - Infilled Land / Spoil / Landfill
  - Mill
  - Motorway
  - Oil Refinery
  - Pumping Station
  - Railway Land
  - Reservoir
  - Rifle Range
  - Road Vehicle Fuelling, Service and Repair
  - Sewage Works
  - Ship Building / Docklands
  - Tanks
  - Warehouse / Depot
  - Works

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Drawing Title **POTENTIAL CONTAMINATION SOURCES**  
 SHEET 2 OF 9

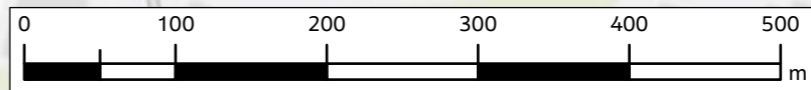
Drawing Status **S8-SUITABLE FOR STATUTORY CONSENT**

Scale @ A3 **1:5,000** **DO NOT SCALE**

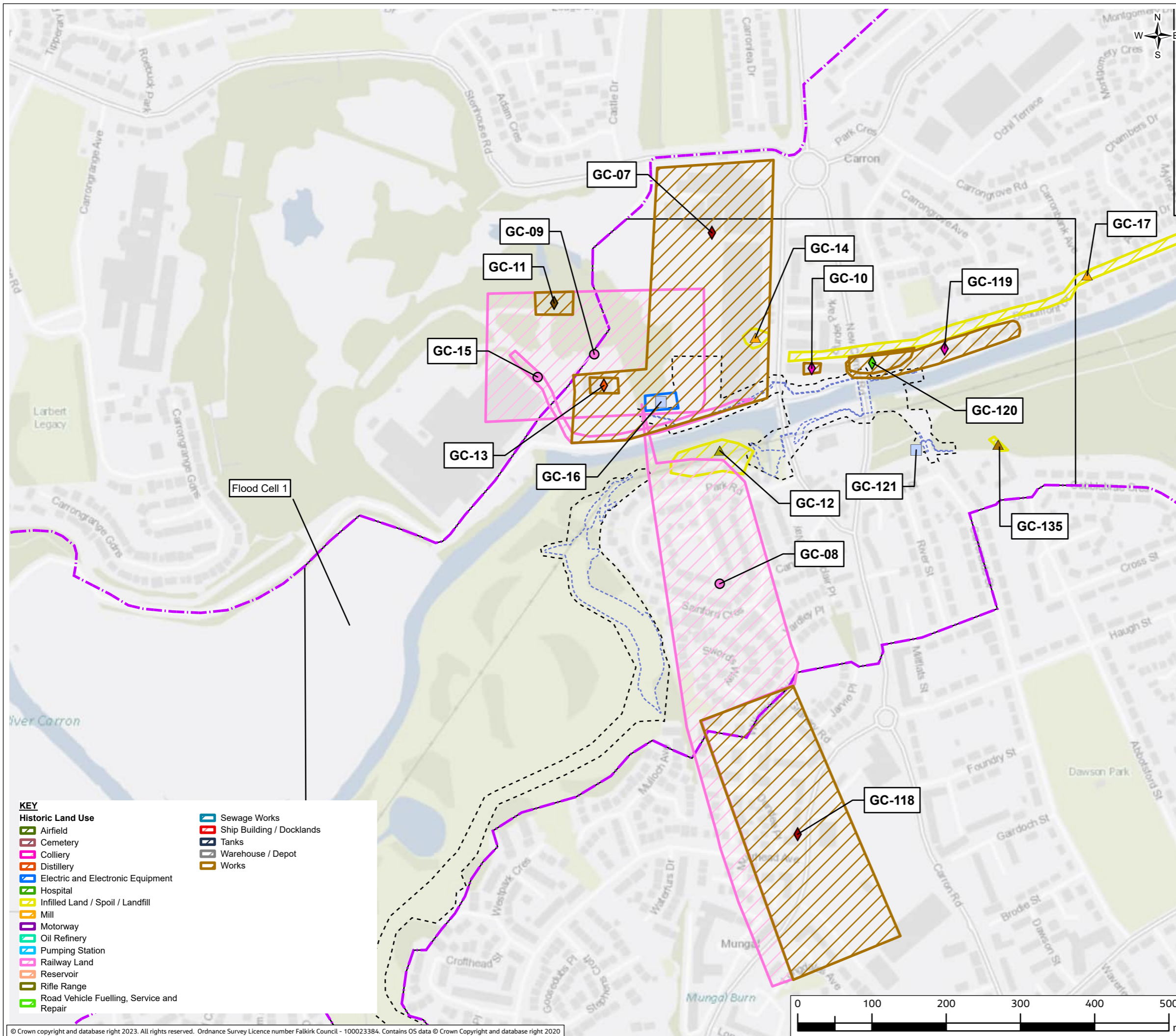
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Client No. **Figure B11.5b**

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**FIGURE B11.5c**



- Legend**
- Cell
  - Site Boundary
  - Working Area
  - Permanent Works Footprint
  - Electric, Electricity Substation
  - Railway Land
- Works**
- ◆ Gas Works
  - ◆ Lime Works
  - ◆ Metal Works
  - ◆ Timber Works
  - ◆ Charcoal Works
- Historic Land Use Sub Category**
- Electric, Electricity Substation
  - Railway Land
- Infilled Land Spoil**
- ▲ Infilled Land / Spoil / Landfill
  - ▲ Spoil
  - ▲ Tip

Note: The Site Boundary includes the Permanent Work Footprint, haul roads and site compound areas.



- KEY**
- Historic Land Use**
- Airfield
  - Cemetery
  - Colliery
  - Distillery
  - Electric and Electronic Equipment
  - Hospital
  - Infilled Land / Spoil / Landfill
  - Mill
  - Motorway
  - Oil Refinery
  - Pumping Station
  - Railway Land
  - Reservoir
  - Rifle Range
  - Road Vehicle Fuelling, Service and Repair
- Sewage Works
  - Ship Building / Docklands
  - Tanks
  - Warehouse / Depot
  - Works

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Project **Grangemouth  
Flood Protection Scheme**

Drawing Title **POTENTIAL CONTAMINATION SOURCES**  
SHEET 3 OF 9

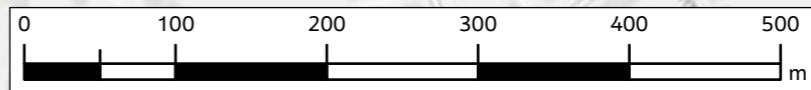
Drawing Status **S8-SUITABLE FOR STATUTORY CONSENT**

Scale @ A3 **1:5,000** **DO NOT SCALE**

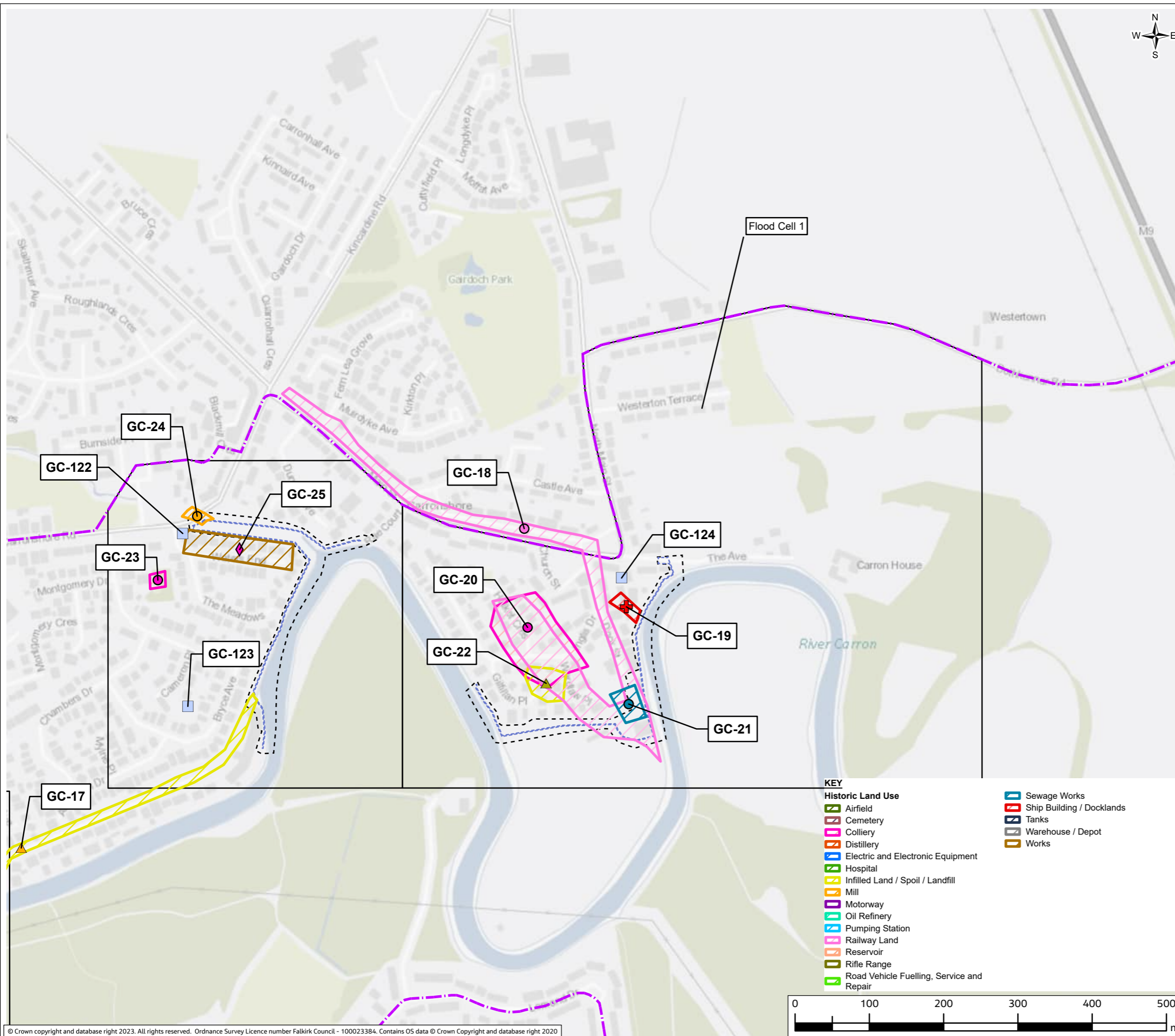
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Drawing No. **Figure B11.5c**

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**FIGURE B11.5d**

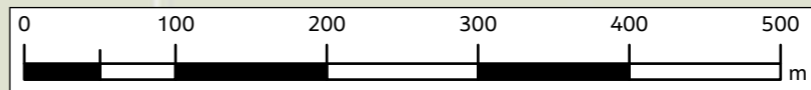


- Legend**
- Cell
  - Site Boundary
  - Working Area
  - Permanent Works Footprint
  - Colliery
  - Electric, Electricity Substation
  - Mill
  - Railway Land
  - Sewage Works
  - + Ship Building / Docklands, Dock
  - Works**
  - ◆ Timber Works
  - Infilled Land Spoil**
  - ▲ Infilled Land / Spoil / Landfill
  - ▲ Spoil
  - ▲ Tip

Note: The Site Boundary includes the Permanent Work Footprint, haul roads and site compound areas.



- KEY**
- Historic Land Use**
- Airfield
  - Cemetery
  - Colliery
  - Distillery
  - Electric and Electronic Equipment
  - Hospital
  - Infilled Land / Spoil / Landfill
  - Mill
  - Motorway
  - Oil Refinery
  - Pumping Station
  - Railway Land
  - Reservoir
  - Rifle Range
  - Road Vehicle Fuelling, Service and Repair
  - Sewage Works
  - Ship Building / Docklands
  - Tanks
  - Warehouse / Depot
  - Works



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Drawing Title **POTENTIAL CONTAMINATION SOURCES**  
SHEET 4 OF 9

Drawing Status **S8-SUITABLE FOR STATUTORY CONSENT**

Scale @ A3 **1:5,000** **DO NOT SCALE**

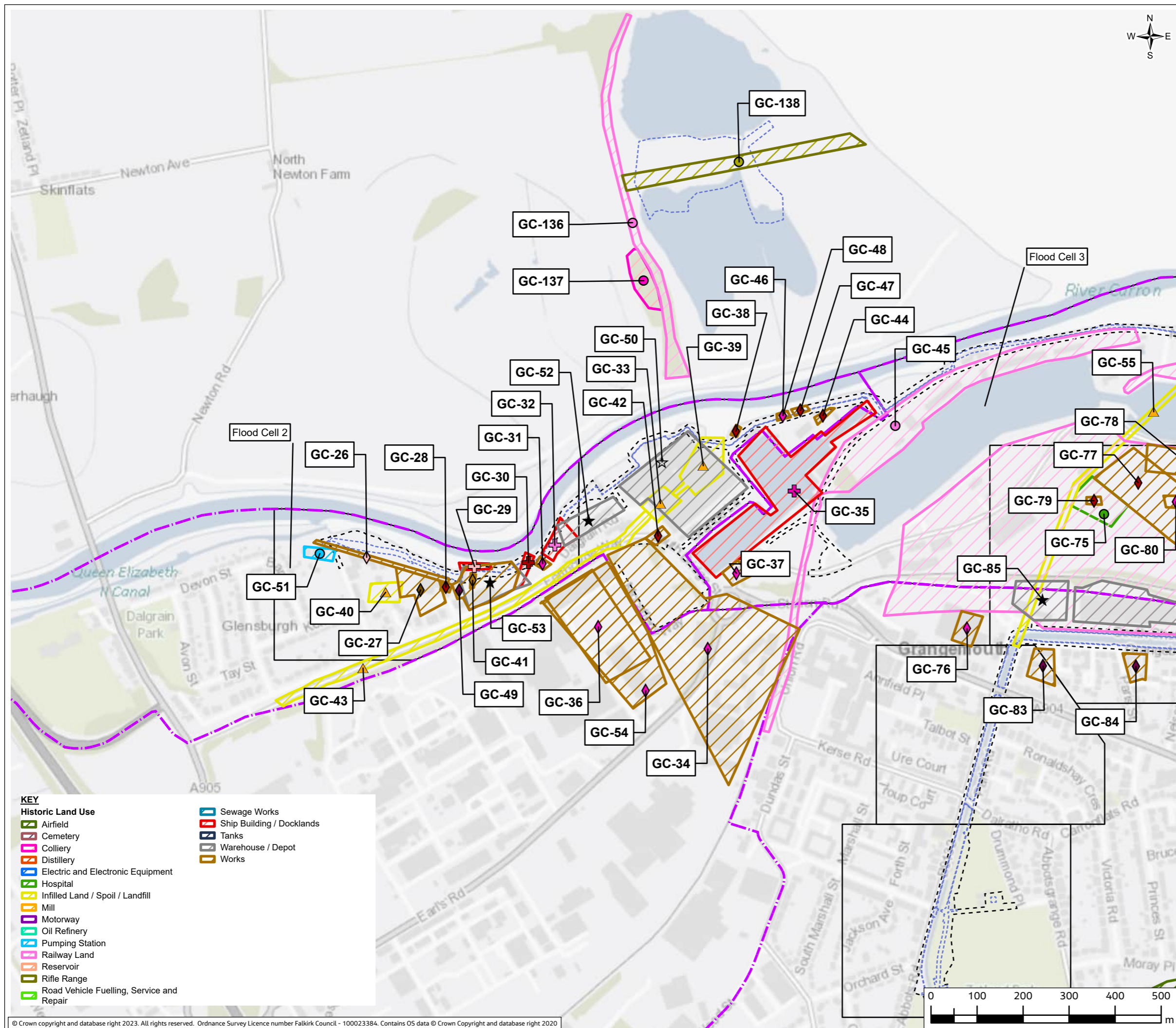
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Drawing No. **Figure B11.5d**

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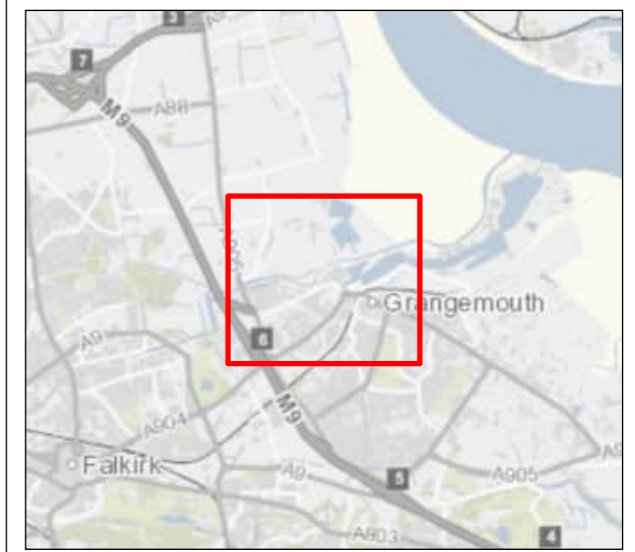


**FIGURE B11.5e**



- Legend**
- Cell
  - Site Boundary
  - Working Area
  - Permanent Works Footprint
  - Colliery
  - Hospital
  - Pumping Station
  - Railway Land
  - Rifle Range
  - + Ship Building / Docklands, Graving Dock
  - + Ship Building / Docklands, Quay
  - + Ship Building / Docklands, Ship Building Yard
  - + Ship Building / Docklands, Wet Dock
  - ★ Warehouse / Depot, Depot
  - ★ Warehouse / Depot, Warehouse
  - ◆ Engineering Works
  - ◆ Gas Works
  - ◆ Metal Works
  - ◆ Rope Works
  - ◆ Timber Works
  - ◆ Works
  - ▲ Infilled Land / Spoil / Landfill
  - ▲ Spoil
  - ▲ Tip

Note: The Site Boundary includes the Permanent Work Footprint, haul roads and site compound areas.



- KEY**
- Historic Land Use**
- Airfield
  - Cemetery
  - Colliery
  - Distillery
  - Electric and Electronic Equipment
  - Hospital
  - Infilled Land / Spoil / Landfill
  - Mill
  - Motorway
  - Oil Refinery
  - Pumping Station
  - Railway Land
  - Reservoir
  - Rifle Range
  - Road Vehicle Fuelling, Service and Repair
  - Sewage Works
  - Ship Building / Docklands
  - Tanks
  - Warehouse / Depot
  - Works

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Drawing Title	POTENTIAL CONTAMINATION SOURCES
	SHEET 5 OF 9

Drawing Status	S8-SUITABLE FOR STATUTORY CONSENT
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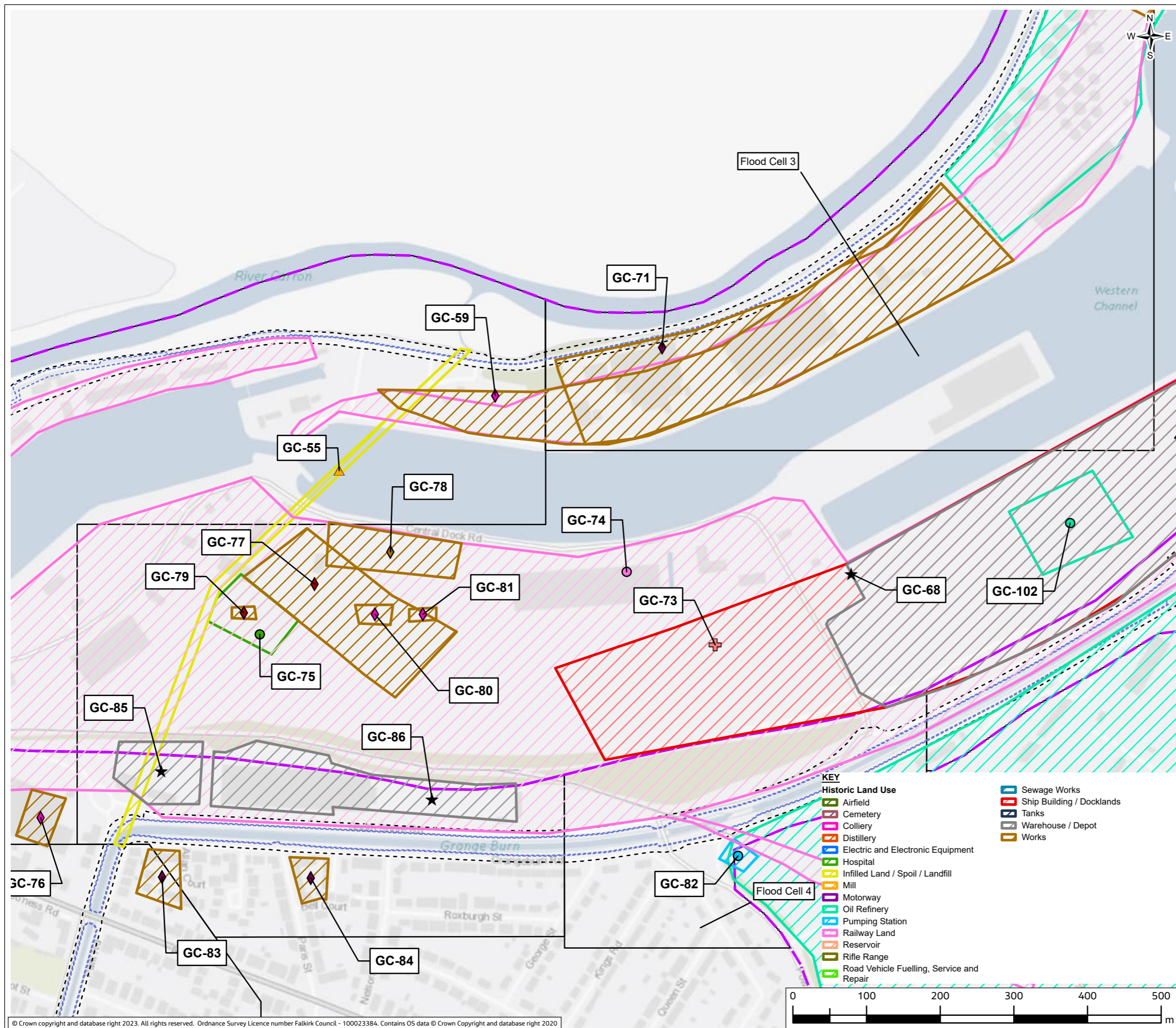
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Drawing No.	Figure B11.5e
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**FIGURE B11.5f**



- Legend**
- Cell
  - Site Boundary
  - Working Area
  - Permanent Works Footprint
  - Hospital
  - Oil Refinery
  - Pumping Station
  - Railway Land
  - + Ship Building / Docklands, Container Base
  - ★ Warehouse / Depot, Depot
  - Works**
  - ◆ Engineering Works
  - ◆ Metal Works
  - ◆ Timber Works
  - ◆ Works
  - Infilled Land Spoil**
  - ▲ Infilled Land / Spoil / Landfill
  - ▲ Spoil
  - ▲ Tip

Note: The Site Boundary includes the Permanent Work Footprint, haul roads and site compound areas.



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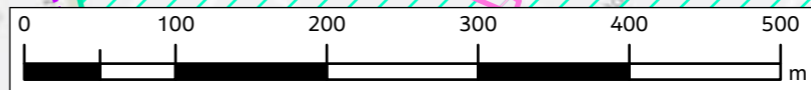
Project	Grangemouth Flood Protection Scheme
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Drawing Title	POTENTIAL CONTAMINATION SOURCES
	SHEET 6 OF 9

Drawing Status	S8-SUITABLE FOR STATUTORY CONSENT
Scale @ A3	1:5,000
Jacobs No.	B2386100
Client No.	

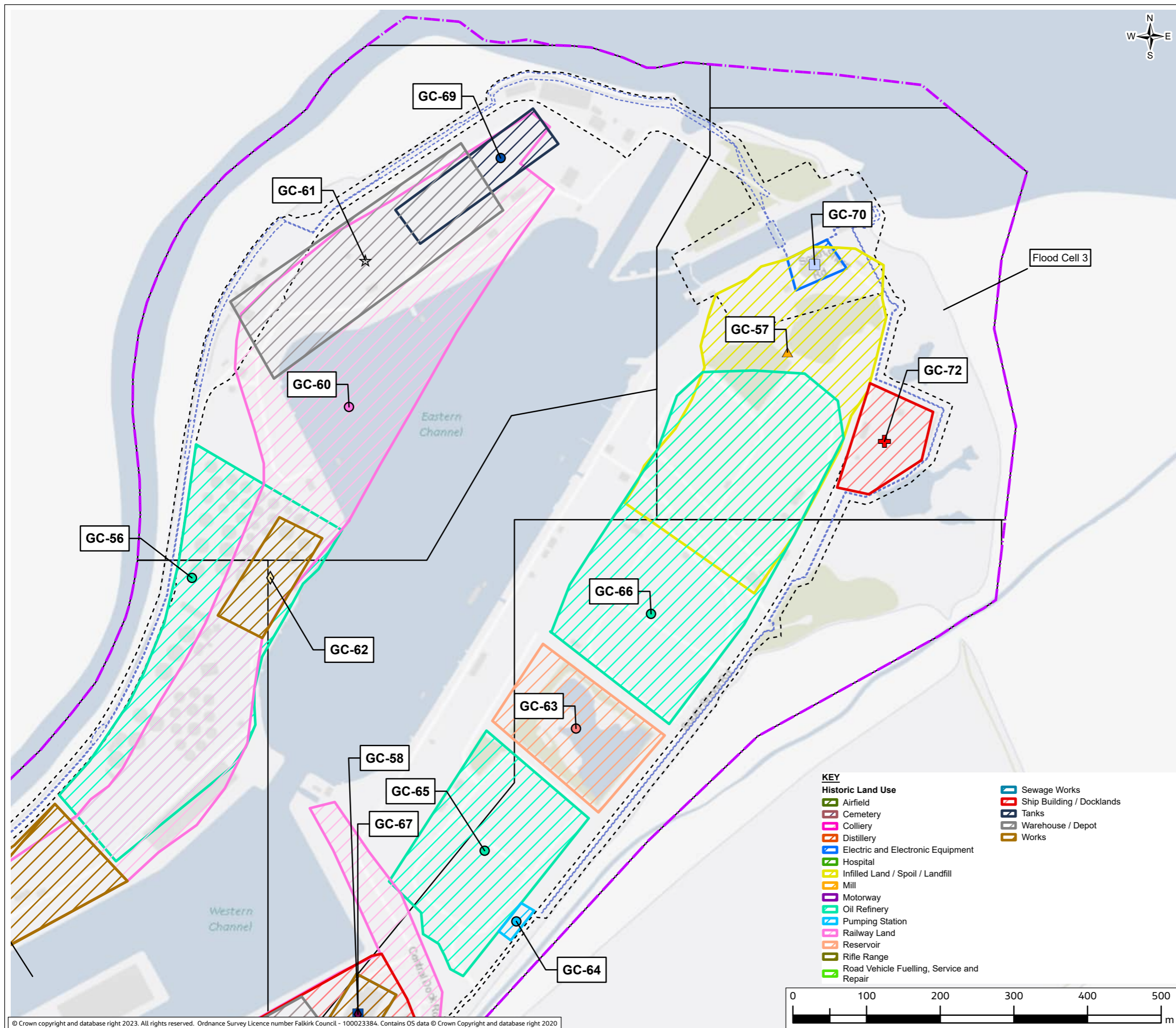
Drawing No.	Figure B11.5f
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- KEY**
- Historic Land Use
  - Airfield
  - Cemetery
  - Colliery
  - Distillery
  - Electric and Electronic Equipment
  - Hospital
  - Infilled Land / Spoil / Landfill
  - Mill
  - Motorway
  - Oil Refinery
  - Pumping Station
  - Railway Land
  - Reservoir
  - Rifle Range
  - Road Vehicle Fuelling, Service and Repair
  - Sewage Works
  - Ship Building / Docklands
  - Tanks
  - Warehouse / Depot
  - Works



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**FIGURE B11.5g**

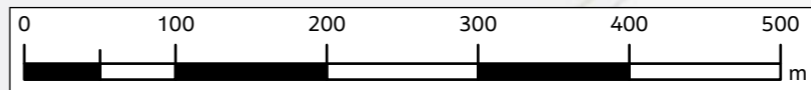


- Legend**
- Cell
  - Site Boundary
  - Working Area
  - Permanent Works Footprint
  - Reservoir
  - Ship Building / Docklands, Dock
  - Tanks
  - Warehouse / Depot, Warehouse
- Historic Land Use Sub Category**
- Electric, Electric Power Station
  - Electric, Electricity Substation
  - Oil Refinery
  - Pumping Station
  - Railway Land
  - Animal Works
  - Works
- Infilled Land Spoil**
- Infilled Land / Spoil / Landfill
  - Spoil
  - Tip

Note: The Site Boundary includes the Permanent Work Footprint, haul roads and site compound areas.



- KEY**
- Historic Land Use**
- Airfield
  - Cemetery
  - Colliery
  - Distillery
  - Electric and Electronic Equipment
  - Hospital
  - Infilled Land / Spoil / Landfill
  - Mill
  - Motorway
  - Oil Refinery
  - Pumping Station
  - Railway Land
  - Reservoir
  - Rifle Range
  - Road Vehicle Fuelling, Service and Repair
  - Sewage Works
  - Ship Building / Docklands
  - Tanks
  - Warehouse / Depot Works



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Drawing Title: **POTENTIAL CONTAMINATION SOURCES**  
 SHEET 7 OF 9

Drawing Status: **S8-SUITABLE FOR STATUTORY CONSENT**

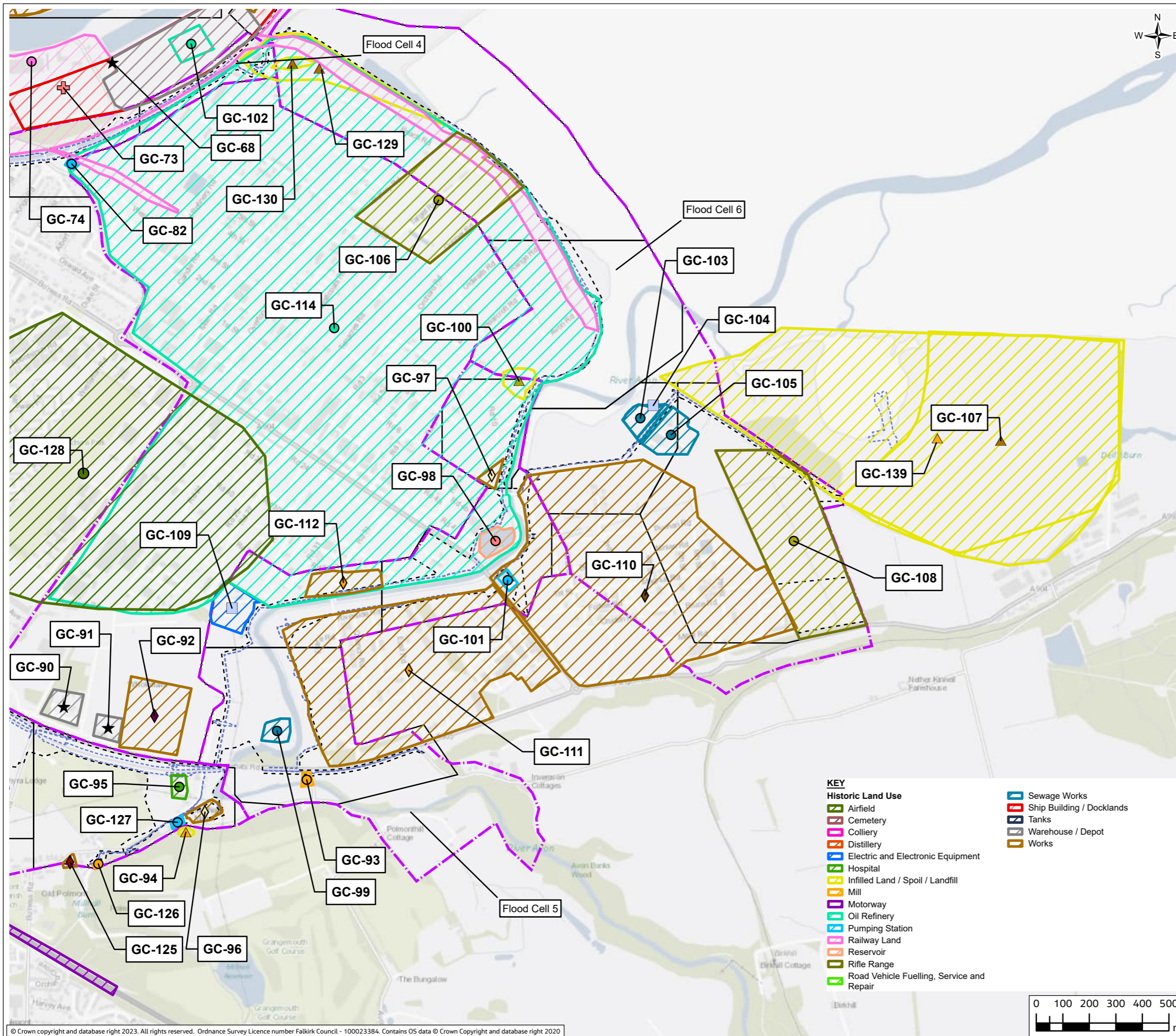
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**FIGURE B11.5h**



- Legend**
- Cell
  - Site Boundary
  - Working Area
  - Permanent Works Footprint
  - Airfield, Airfield
  - Electric, Electricity Substation
  - Hospital
  - Mill
  - Oil Refinery
  - Pumping Station
  - Railway Land
  - Reservoir
  - Rifle Range
  - Sewage Works
  - + Ship Building / Docklands, Container Base
  - ★ Warehouse / Depot, Depot
  - ◇ Animal Works
  - ◇ Chemical Works
  - ◇ Gas Works
  - ◇ Metal Works
  - ◇ Works
  - Infilled Land Spoil**
  - ▲ Infilled Land / Spoil / Landfill
  - ▲ Spoil
  - ▲ Tip

Note: The Site Boundary includes the Permanent Work Footprint, haul roads and site compound areas.



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Drawing Title	POTENTIAL CONTAMINATION SOURCES	SHEET 8 OF 9
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Drawing Status	S8-SUITABLE FOR STATUTORY CONSENT
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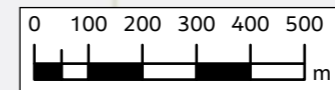
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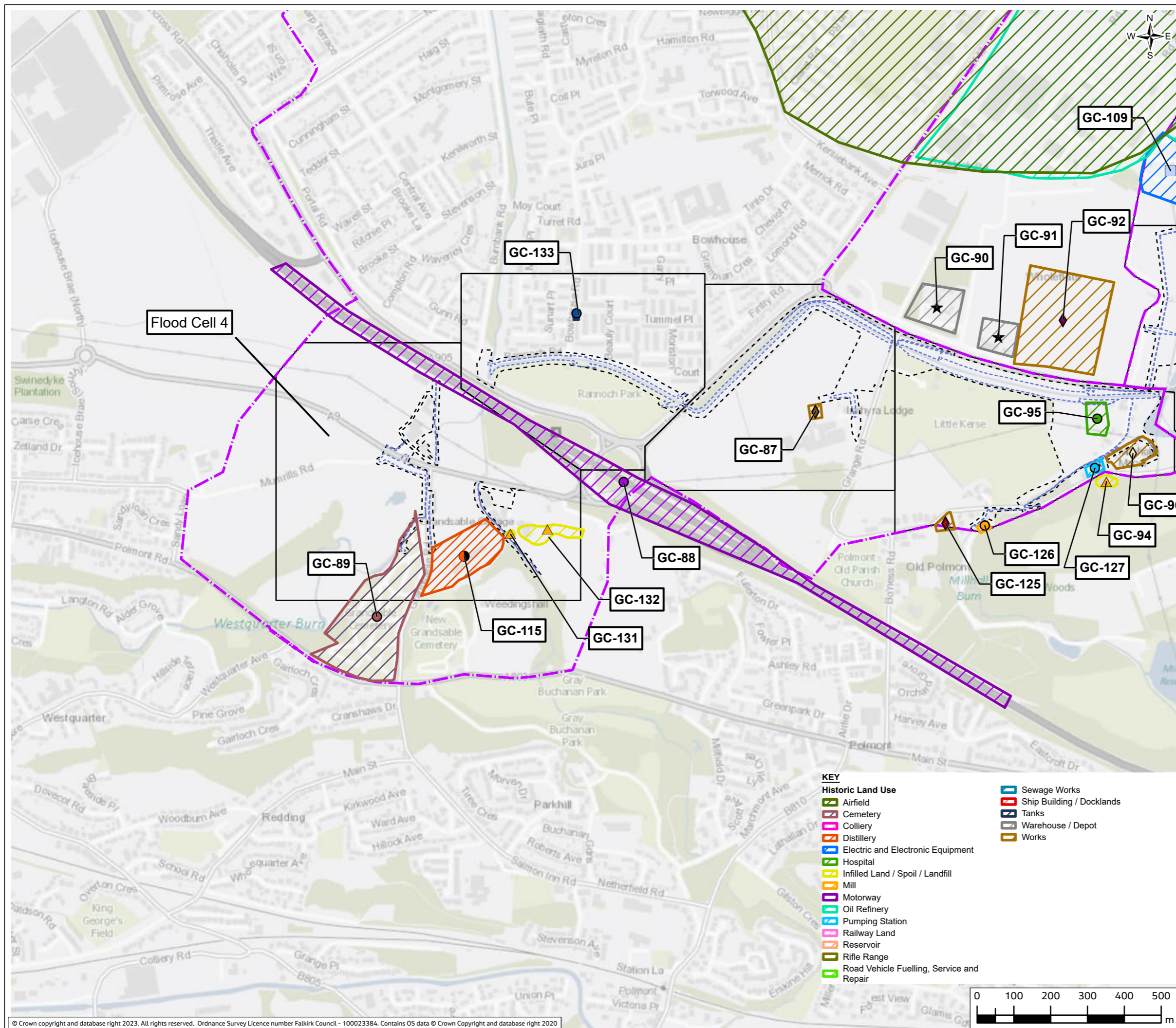
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- KEY**
- Historic Land Use**
- Airfield
  - Cemetery
  - Colliery
  - Distillery
  - Electric and Electronic Equipment
  - Hospital
  - Infilled Land / Spoil / Landfill
  - Mill
  - Motorway
  - Oil Refinery
  - Pumping Station
  - Railway Land
  - Reservoir
  - Rifle Range
  - Road Vehicle Fuelling, Service and Repair
  - Sewage Works
  - Ship Building / Docklands
  - Tanks
  - Warehouse / Depot
  - Works

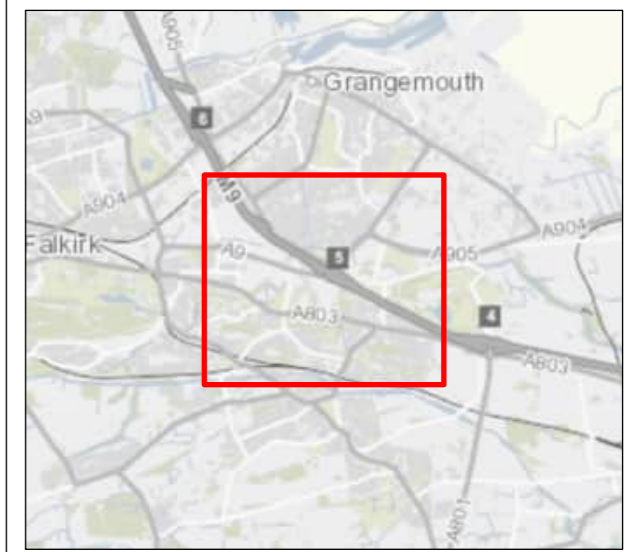


**FIGURE B11.5i**



- Legend**
- Cell
  - Site Boundary
  - Working Area
  - Permanent Works Footprint
  - Historic Land Use Sub Category**
  - Cemetery
  - Distillery, Distillery
  - Electric, Electricity Substation
  - Hospital
  - Mill
  - Motorway
  - Pumping Station
  - Tanks
  - Warehouse / Depot, Depot
  - Works**
  - Animal Works
  - Gas Works
  - Metal Works
  - Works
  - Infilled Land Spoil**
  - Infilled Land / Spoil / Landfill
  - Spoil
  - Tip

Note: The Site Boundary includes the Permanent Work Footprint, haul roads and site compound areas.



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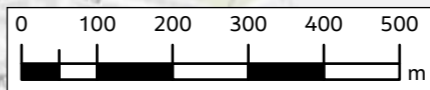
Drawing Title	POTENTIAL CONTAMINATION SOURCES	SHEET 9 OF 9
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Scale @ A3	1:10,000	DO NOT SCALE
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Client No.		

Drawing No.	Figure B11.5i
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- KEY**
- Airfield
  - Cemetery
  - Colliery
  - Distillery
  - Electric and Electronic Equipment
  - Hospital
  - Infilled Land / Spoil / Landfill
  - Mill
  - Motorway
  - Oil Refinery
  - Pumping Station
  - Railway Land
  - Reservoir
  - Rifle Range
  - Road Vehicle Fuelling, Service and Repair
  - Sewage Works
  - Ship Building / Docklands
  - Tanks
  - Warehouse / Depot
  - Works



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