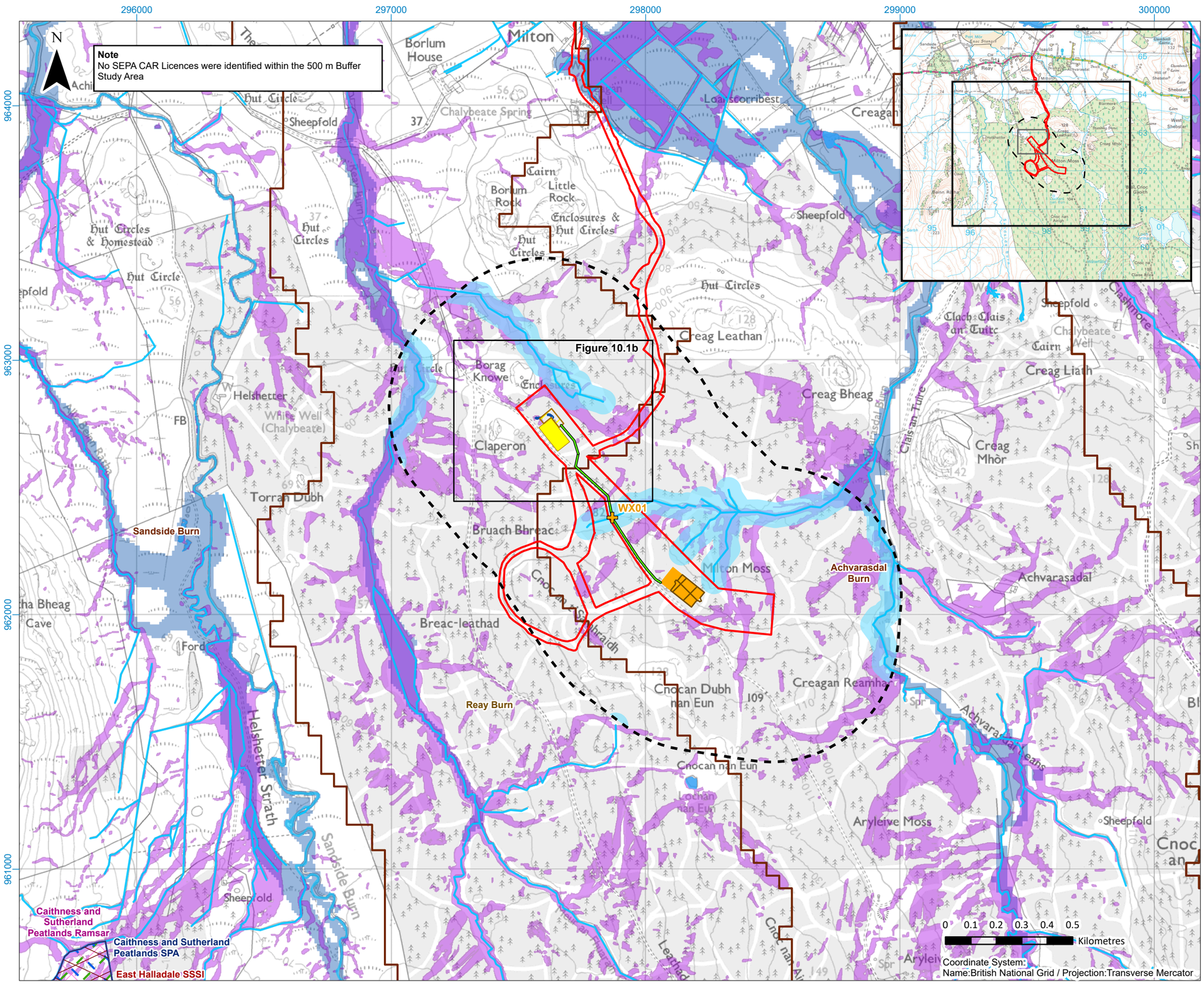
Figure 10.1a : Local Hydrology



Legend:

- Proposed Site Boundary
- Study Area (Developable Area 500 m Buffer)
- Proposed Substation Extension
- Existing Substation
- Proposed Battery Energy Storage System (BESS) Compound Area
- Proposed Battery Energy Storage System (BESS)
- Indicative Underground Cable Route

Ecological Designations

- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Ramsar
- Site of Special Scientific Interest (SSSI)

Local Hydrology

- SEPA Nested Waterbody Catchment
- Proposed Watercourse Crossing (WX)
- Existing Drainage Ditch
- Watercourse (OS OpenMap Local)
- Waterbody (OS OpenMap Local)
- Watercourse and Waterbody 50 m Buffer
- Future (2070) Surface Water and Small Watercourses Medium Likelihood Flood Extent (0.5% AEP)
- Future (2080) River Medium Likelihood Flood Extent (0.5% AEP)

Title

Local Hydrology

Project:

Limekiln Battery Energy Storage System (BESS)

Source:

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Figure 10.1b : Local Hydrology

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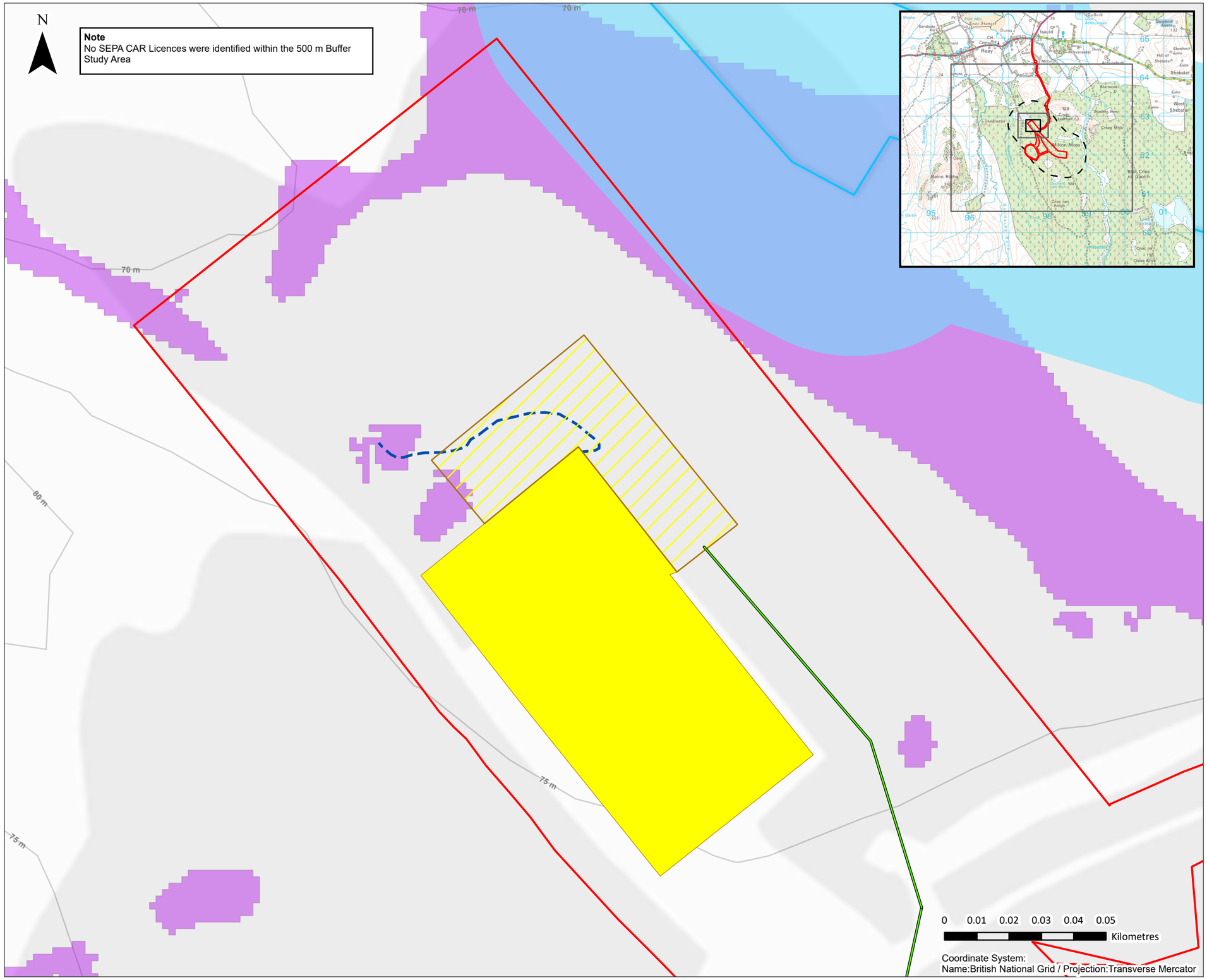

Legend:

- Proposed Site Boundary
- Proposed Substation Extension
- Existing Substation
- Indicative Underground Cable Route
- Existing Drainage Ditch
- Watercourse (OS OpenMap Local)
- Watercourse and Waterbody 50 m Buffer
- Future (2070) Surface Water and Small Watercourses Medium Likelihood Flood Extent (0.5% AEP)

Title

Local Hydrology

Project:

Limekiln Battery Energy Storage System (BESS)

Source:

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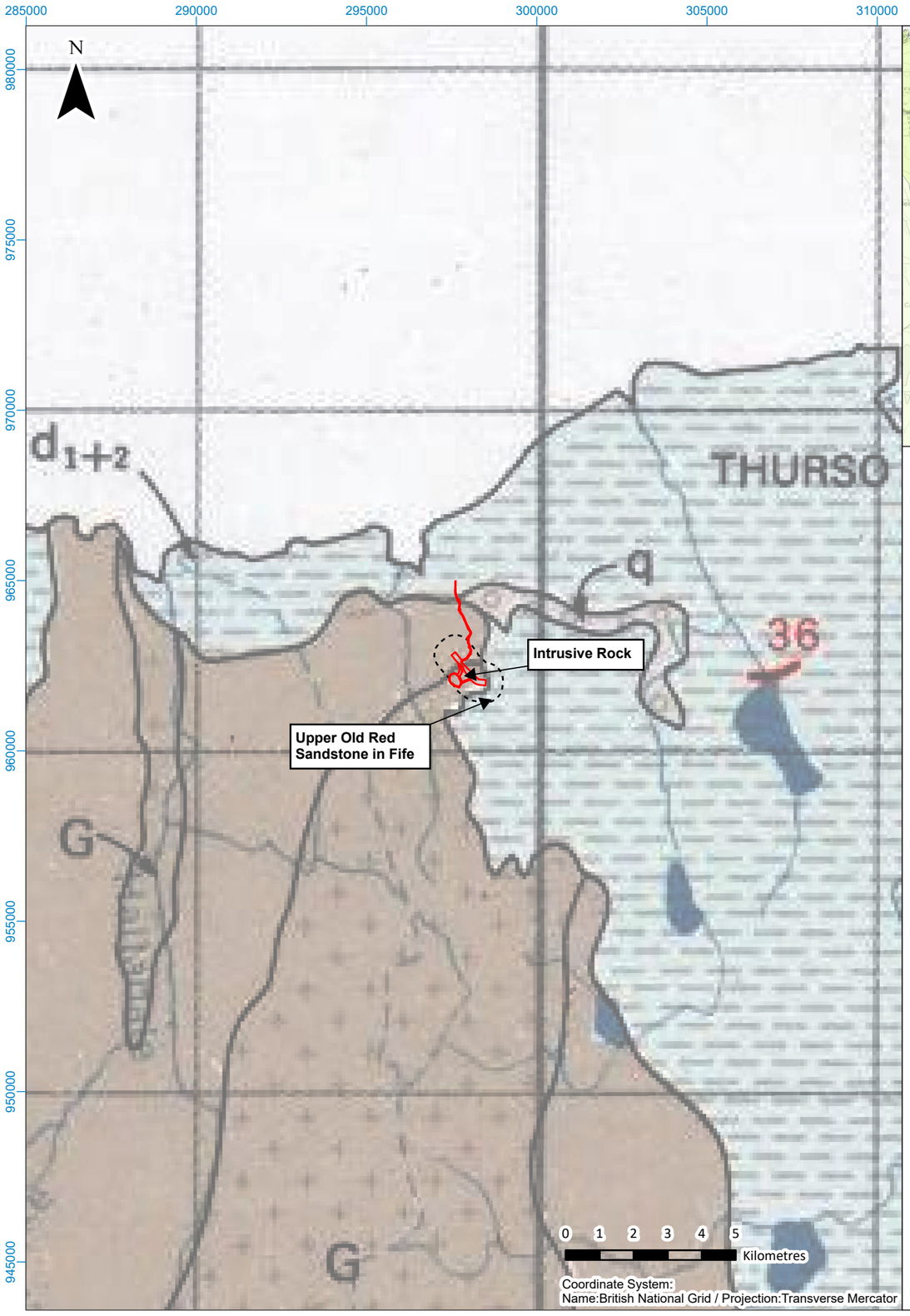
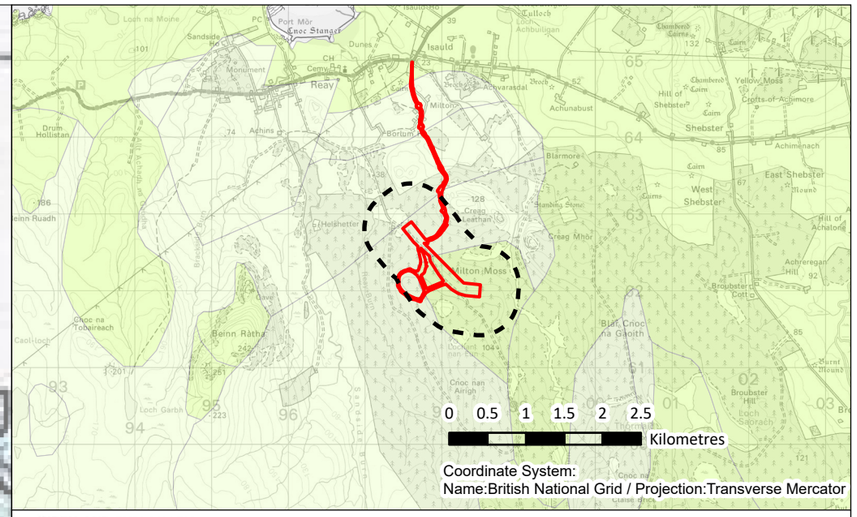
Figure 10.2 : Regional Hydrogeology





INDEX AND EXPLANATION

1. Aquifers in which intergranular flow is significant

a. Highly productive aquifers (not extensive)
- p — Permian at Thornhill
- d_3 — Upper Old Red Sandstone in Fife

b. Locally important aquifers
- q'e — Recent: Blown sand
- q — Quaternary sands and gravels
- p — Permian in North West Grampian

2. Aquifers in which flow is dominantly in fissures and other discontinuities

a. Highly productive aquifers (not extensive)
- p — Permian
- h_1 — Carboniferous: Dinantian and Namurian
- d_3 — Upper Old Red Sandstone

b. Locally important aquifers
- t + p — Triassic and Permian
- h_2 — Carboniferous: Westphalian
- d_{1+2} — Lower and Middle Old Red Sandstone

3. Concealed aquifers, aquifers of limited potential, regions without significant groundwater

a. Concealed aquifers; aquifers with limited or local potential
- q — Quaternary: coastal and river alluvium
- Jurassic
- p — Permian at Stranraer
- cb + pr — Cambro-Ordovician and Precambrian Limestones

b. Regions underlain by impermeable rocks, generally without groundwater except at shallow depth
- s + o — Silurian and Ordovician
- pr — Precambrian
- V — Extrusive rocks
- G — Intrusive rocks

Surface water features
- Perennial river or stream
- Perennial river or stream in which the chloride ion concentration is known to exceed 1000 mg/l under low flow conditions
- 2.3 / 844 — Stream gauging station with mean annual runoff in m^3/s, over catchment area in km^2
- Hydrometric area boundary
- Freshwater loch, reservoir or standing water
- Loch or standing water in which the chloride ion concentration is known to exceed 1000 mg/l

Groundwater features
- Recognised mineral water spring or borehole with less than 1000 mg/l total dissolved solids.
- Spa water spring or well with greater than 1000 mg/l total dissolved solids
- Areas where the chloride ion concentration exceeds 1000 mg/l above ~80 m O.D.

Sources of known abstraction (licences are not required):

a) 10-19 l/s
b) 20-29 l/s
c) > 29 l/s
} normal discharge or pumping yield

a) b) c)
- Springs
- Springs used for public supply
- Wells and boreholes
- Sources of public supply
- Artesian boreholes
- Artesian boreholes used for public supply
- River or loch intake for public supply with ≥ 10 Ml/d capacity

Artificial works
- 24 — Impounding reservoir with design yield ≥ 10 Ml/d (figures in Ml/d)
- Canal
- Hydroelectric station

Geological symbols
- Geological boundary
- Geological boundary beneath cover
- Fault
- -1000- — Contours on the surface of the Old Red Sandstone in m relative to O.D.

Legend:
- Proposed Site Boundary
- Study Area (Developable Area 500 m Buffer)

Aquifer Classification
- Moderately Productive Aquifer
- Low Productivity Aquifer

Title

Regional Hydrogeology

Project:

Limekiln Battery Energy Storage System (BESS)

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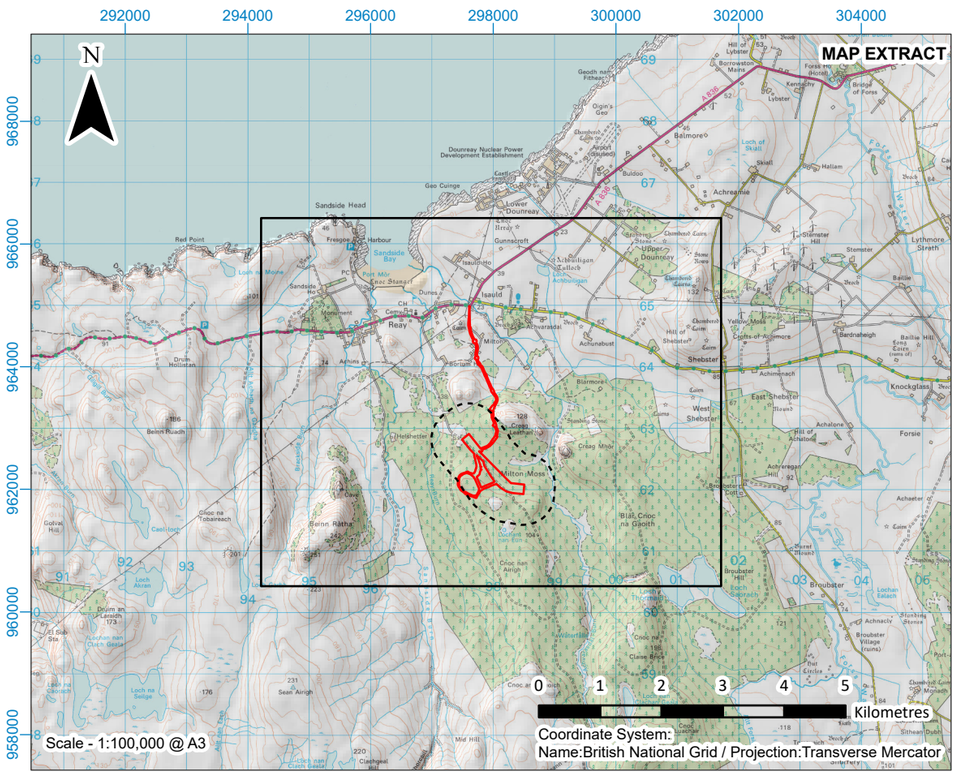
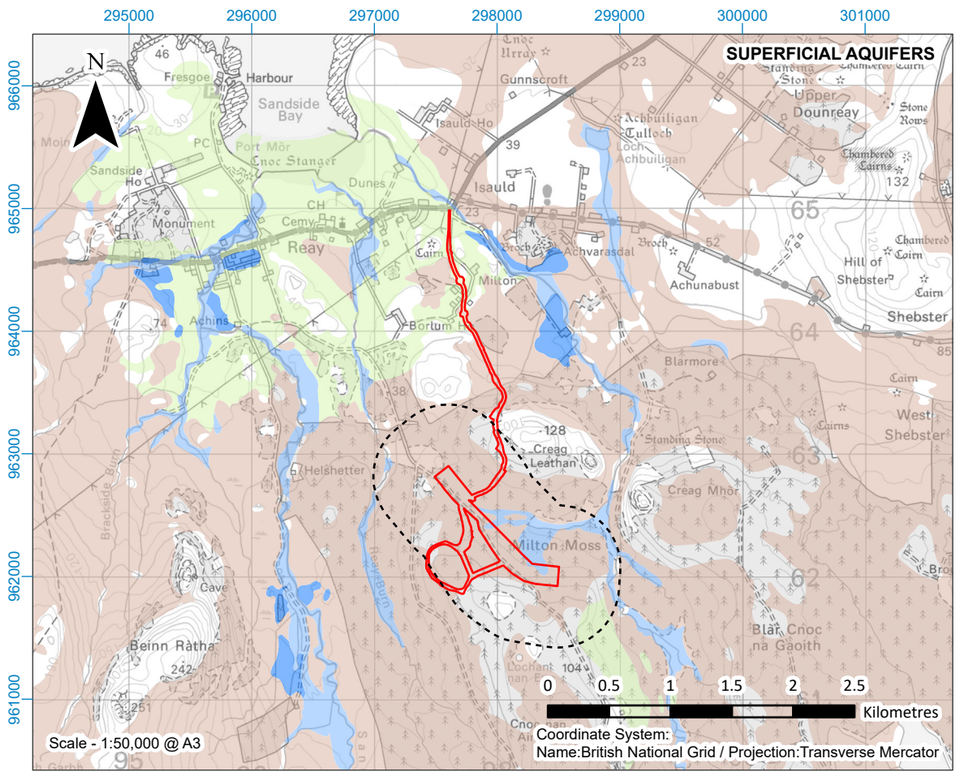
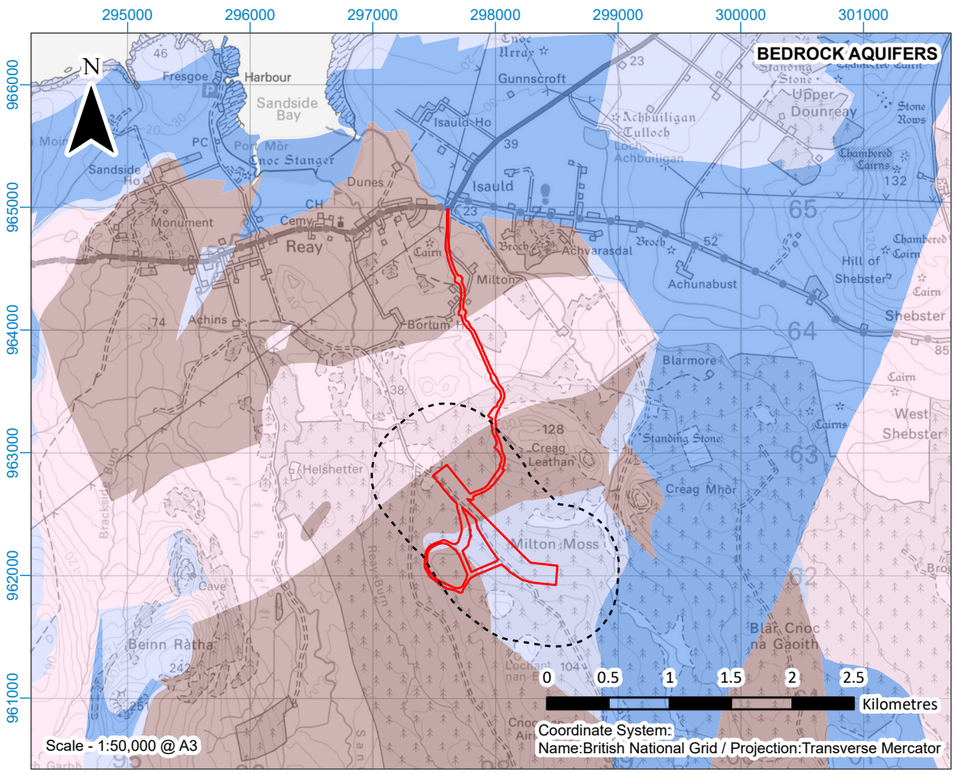
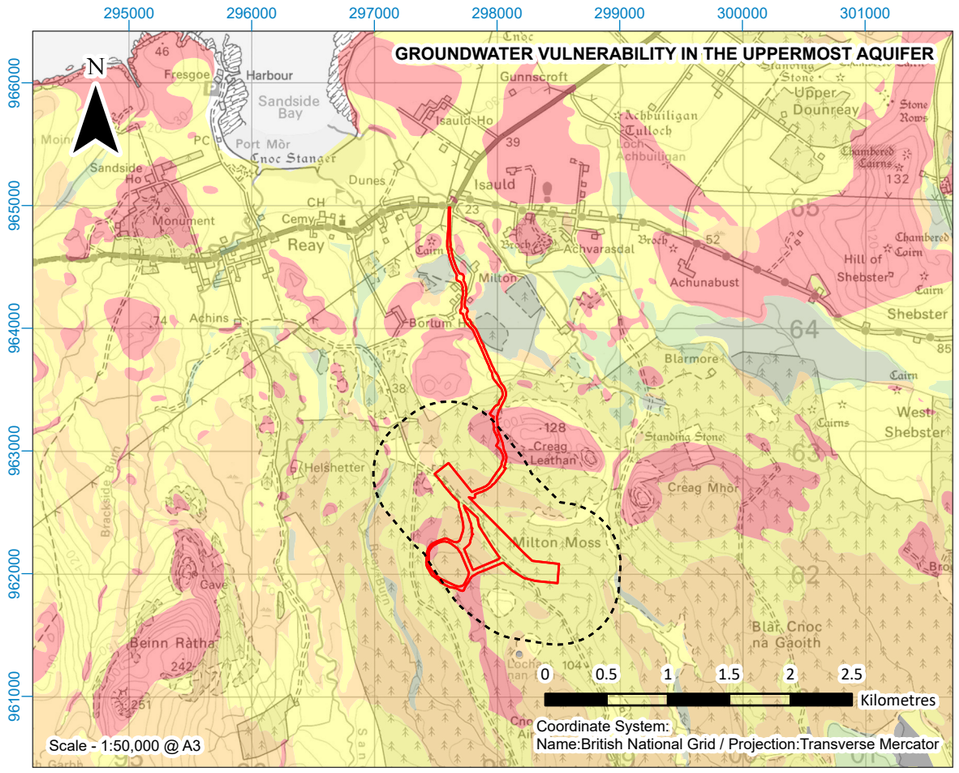
Figure 10.3: Groundwater Vulnerability









Legend:

- Proposed Site Boundary
- Study Area (Developable Area 500 m Buffer)

Superficial Deposits Aquifer Productivity Scotland, Version 2

- Intergranular; High Productivity
- Intergranular; Moderate to High Productivity
- Intergranular; Low to Moderate Productivity
- Not a significant aquifer

Bedrock Aquifer Productivity Scotland, Version 2

- Intergranular/Fracture; High Productivity
- Intergranular/Fracture; Moderate Productivity
- Fracture; Low Productivity
- Fracture; Very Low Productivity

Groundwater Vulnerability in the Uppermost Aquifer Vulnerability Class

- 0 - Not sufficient data to classify vulnerability: e.g. below lochs; in urban areas where geological and/or soils data are missing; or where superficial deposits are mapped but not classified.
- 2 - Vulnerable to some pollutants, but only when they are continuously discharged/leached.
- 3 - Vulnerable to some pollutants; many others significantly attenuated.
- 4a - Vulnerable to those pollutants not readily adsorbed or transformed. Less likely to have clay present in superficial deposits (therefore generally higher vulnerability than 4b).
- 4b - Vulnerable to those pollutants not readily adsorbed or transformed. More likely to have clay present in superficial deposits (therefore generally lower vulnerability than 4a).
- 5 - Vulnerable to most pollutants, with rapid impact in many scenarios.

Title

Groundwater Vulnerability

Project:

Limekiln Battery Energy Storage System (BESS)

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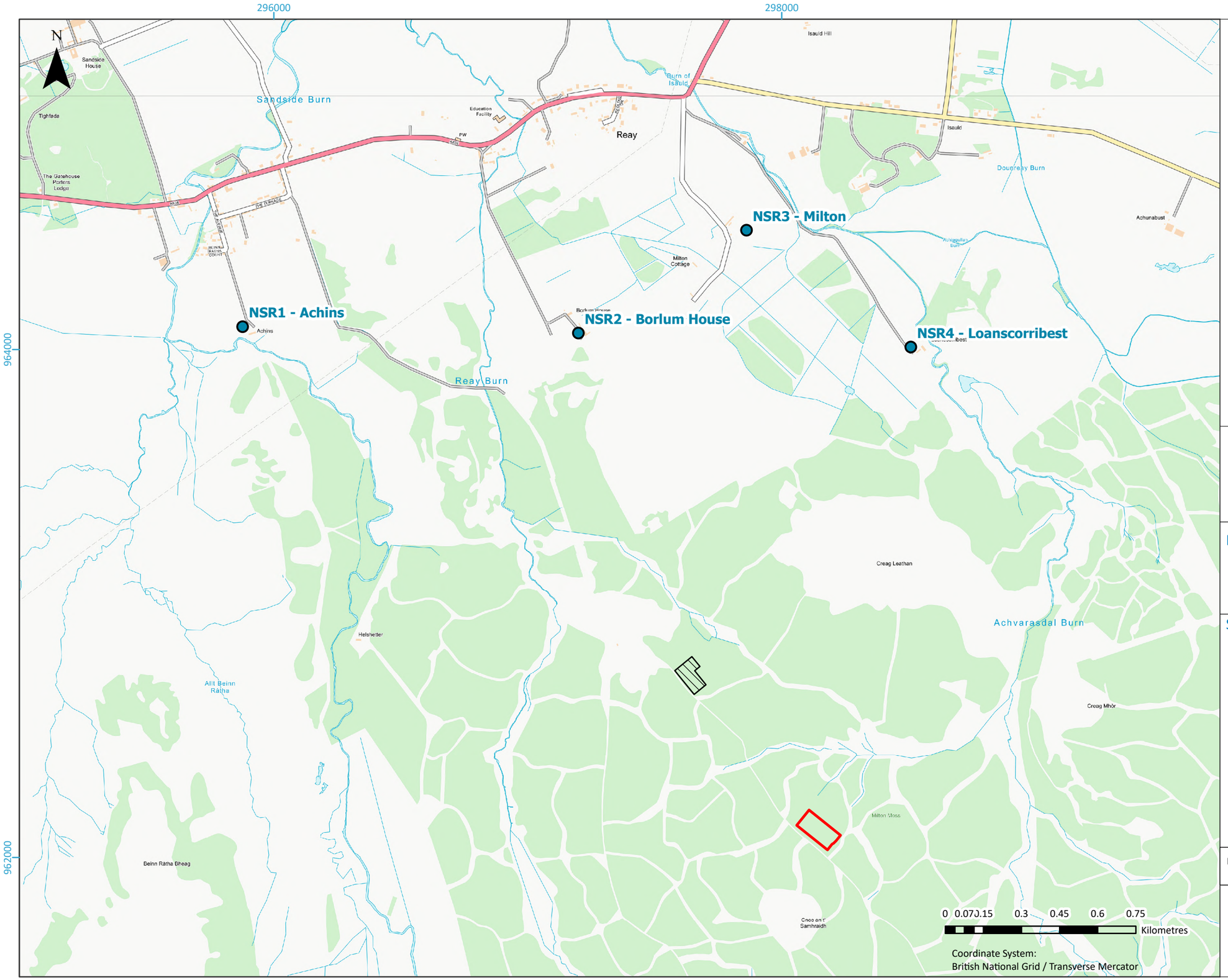
Figure 11.1 - Noise Sensitive Receptors and BESS Area



Legend

- BESS Compound Area
- Substation Area
- Noise Sensitive Receptors (NSRs)

Title

Figure 11.1
Noise Sensitive Receptors & BESS Area

Project

Limekiln BESS

Source

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