Water Framework Directive

Groundwater Monitoring Programme

Site Information

Ballyclough

Ballyclough is a spring used for public water supply. The abstraction from the spring is 567 m³/d.

Cork

August 2011

SITE INFORMATION

Site Name:	Ballyclough	County:	Cork		
RBD:	SWRBD	EU Reporting Code:	---		
Easting:	149479	GWB Name:	Mitchelstown 1		
Northing:	102058	GWB Code:	IE_SW_G_082		
Site Use:	Drinking Water (PWS)	Drinking Water Code:	0500PUB1301		
Hydrometric Area:	18	Water Level Monitoring Network:	Level	Flow	
Townland:	LISLEAGH		N	N	
Ownership:	Cork County Council				

Water Quality Monitoring Network:	Surveillance	Operational (Point)	Operational (Diffuse)
	N	N	N
Site Comments:	---		

SITE DIRECTIONS

Location and Access Information:	Located in the centre of Ballyclogh village. The pumphouse is on the main street north of the main road and opposite the Post Office. The spring is in a field behind the pumphouse.
Additional Comments:	---

WELL INFORMATION

Monitoring Point Type:	Spring	Abstraction Rate (m³/d):	567	Ground Elevation (m OD):	75
Borehole Log Available:	---	Total Drilled Depth (m bgl):	---	Depth to Bedrock (m bgl):	---
Top of Casing (m agl):	---	Upper Casing Diameter (mm):	---	Lower Casing Diameter (mm):	---
Final Borehole Depth (m):	---	Upper Casing Bottom Depth (m bgl) :	---	Lower Casing Bottom Depth (m bgl):	---
Screen Interval (m bgl):	---	Screen Type (PVC,Steel,other):	---	Screen Slot Size (mm):	---
Grout Type (cement,bentonite):	---	Grouted above (m bgl):	---	Grout Volume Injected (m³):	---
Gravel Pack Interval (m bgl):	---	Gravel Pack Volume (m³):	---	Open Hole Interval (m bgl):	---
Potential Yield (m³/day):	---	Comments on Monitoring Site:	---		
Specific Capacity (m³/d/m):	---				
Static Water Level (m bgl):	---				
Scheme Name:	Mountnorth RWSS	Number of Abstraction Points in the Scheme:	1	Source Report Available	N
Source Report Info:	---				
Scheme Summary:	The Mountnorth RWSS incorporates a spring and borehole at the Mountnorth site and a spring at the Ballyclough site. The Ballyclough supply was restarted ten years ago to augment the Mountnorth supply which could not supply the demand. The spring intake is approximately 300 m downstream of a Holy Well marked on the Ordnance Survey Map. The water is chlorinated before being pumped to the Mountnorth Reservoir				

HYDROGEOLOGY

GEOLOGY	Soil:	Deep poorly drained mineral (AminPD)			Subsoil Permeability:	n/a
	Subsoil:	Tills (diamictons) (TNSSs)				
	Bedrock:	Dinantian Pure Bedded Limestones				
HYDROGEOLOGY	Aquifer Category:	Rkd	Vulnerability at Monitoring site:	Extreme	Flow Regime:	Karstified
ZONE OF CONTRIBUTION	Estimated ZOC Size (km²):	1.03	ZOC Delineated By:	OCM (DC)	Recharge Estimate (mm/yr):	175
	ZOC Delineation Comments:	The ZOC was delineated based on abstraction, recharge and topography. The discharge is unknown and the maximum abstraction was used. The estimated entire hydrogeological catchment was used.				

Groundwater Vulnerability within ZOC (% area):	Extreme (X)	Extreme (E)	High	Moderate	Low	High to Low	Unclassified
	13.78	48.86	0	0	0	37.36	0

HYDROCHEMISTRY

Hydrochemical Signature:	---		Additional Water Chemistry Information:	Few data available.
Alkalinity (mg/l HCO3):	Average:	Range:		
	---	---		
Hardness (mg/l CaCO3):	Average:	Range:		
	---	---		
Conductivity (uS/cm):	Average:	Range:		
	558	554-562		
Monitoring Record Period:	From:	To:		
	---	---		

RISK ASSESSMENT

Pressure (e.g., Nitrates, Phosphates, Abstractions):	Diffuse	Typical Contaminants:	Nitrate
Risk Category:	At risk, high confidence	GWB Status:	Good

Impact Potential within ZOC (% area):	Extreme:	High:	Moderate:	Low:	Negligible:
	0.00	63.41	36.42	0.00	0.17

OTHER INFORMATION

Ballyclough Pumphouse

Inside the pumphouse

Spring Collection Chamber

Data Summary Sheet - July 2011

Disclaimer: The data in this document are based on the best available information and understanding at time of writing. Neither the Environmental Protection Agency, nor the individual bodies supplying data for this document and accompanying maps will be responsible for any loss or damage from the use or interpretation of these data.

Rock Unit Geology Map: GSI, 2009
Aquifer Type Map: GSI, 2009
Groundwater Vulnerability Map: GSI, 2009
Soils & Subsoils Type: Teagasc, 2007
Recharge Map: GSI, 2009
Impact Potential Map: EPA, 2009
Risk Assessment Map: EPA WFD Risk Assessment, 2006
Groundwater Body Status: EPA WFD Status Assessment, 2008
Water Quality Data: EPA WFD Monitoring, 2008

Groundwater Threshold Values

Groundwater threshold values for selected parameters:
Nitrate - General Chemical Test/ Drinking Water Test (37.5 mg/l N03)
Ammonium - Drinking Water Test (0.175 mg/l N) / Surface Water Test (0.065 mg/l N)
Molybdate Reactive Phosphorus (MRP) - Surface Water Test (0.035 mg/l P)
Chloride -Saline/Intrusive Test (24 mg/l) / Drinking Water Test (175 mg/l Cl)
Electrical Conductivity -Saline/Intrusive Test (800 µS/cm) / Drinking Water Test (1,875 µS/cm)
Further information on groundwater threshold values is contained in the Groundwater Regulations (S.I. No.9 of 2010).

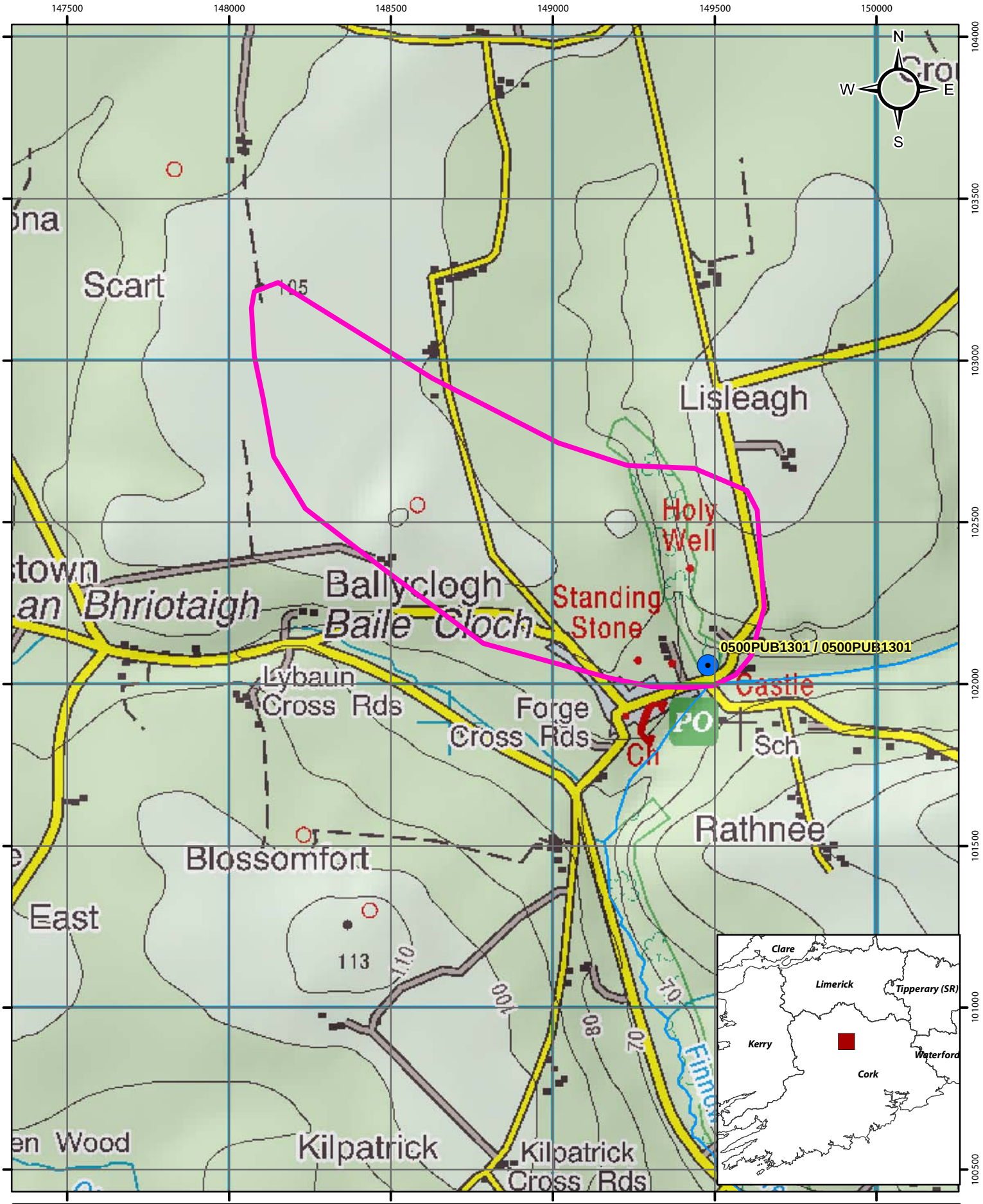
General Downgradient Distances

General Downgradient Distances (XL) applied to boreholes sourced in bedrock aquifers are constrained to estimate approximate limits based on data at the GSI. In some cases they may be higher or lower depending on local conditions.

Rk, Rkd, Lk	225 m
Lm	150 m
Ll, Pl	60 m

It is assumed that groundwater downgradient of a spring cannot flow back up to the spring, however a precautionary 30m buffer is generally applied which allows for instances where pumping under dry weather periods may induce a drawdown or where the ground may be sloping toward the spring from the downgradient side.

Version 0:	Prepared by		Date:	
Version 1:	Prepared by	OCM (DC)	Date:	Feb 2011
Version 2:	Prepared by		Date:	
Version 3:	Prepared by		Date:	
Version 4:	Prepared by		Date:	



Location Map for Ballyclough

Abstractions

Zone of Contribution

River

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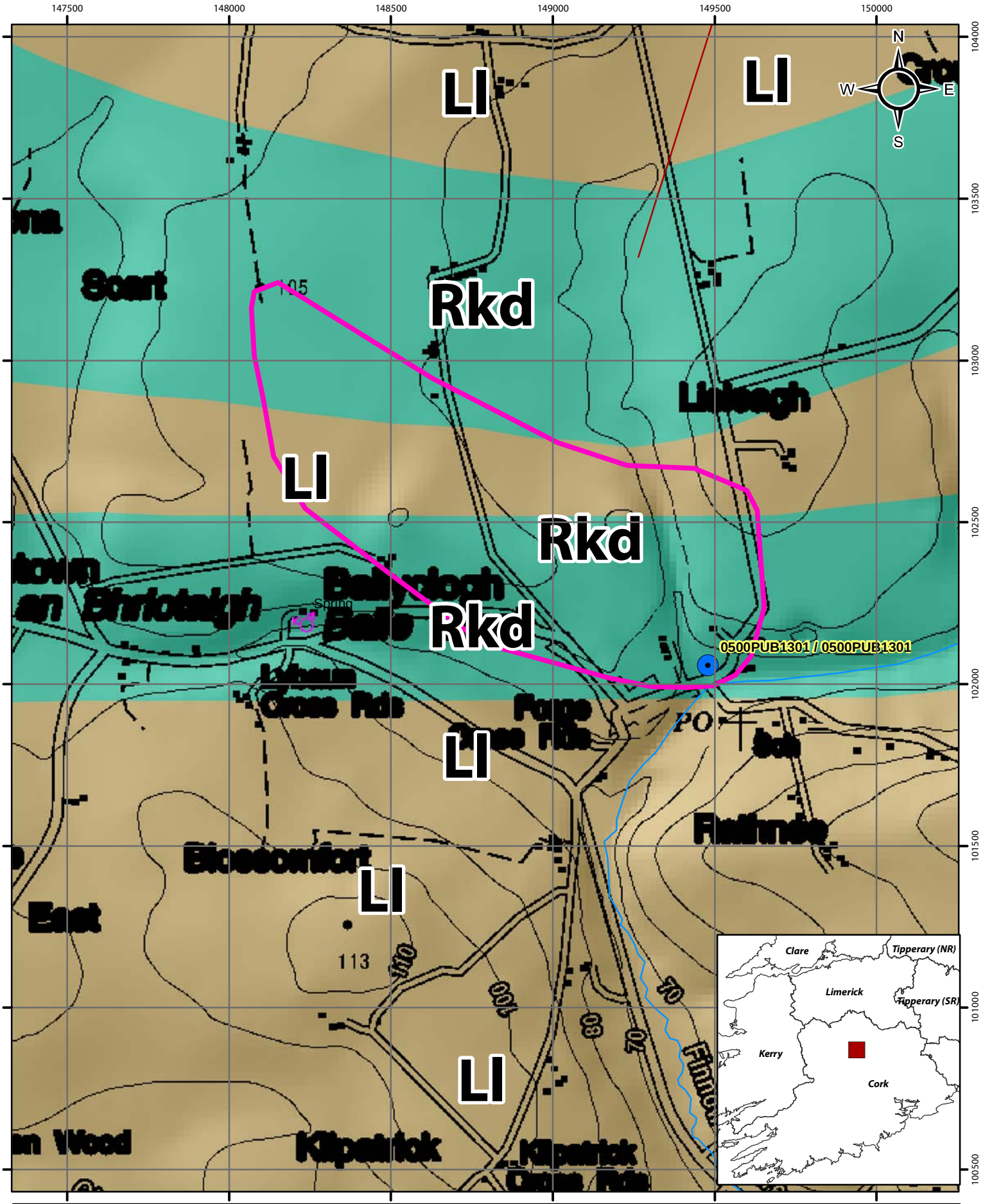
0 0.25 0.5 1 km



Aquifer Category Map for Ballyclough

Abstractions
Zone of Contribution
River
Fault
Spring
LI
Rkd

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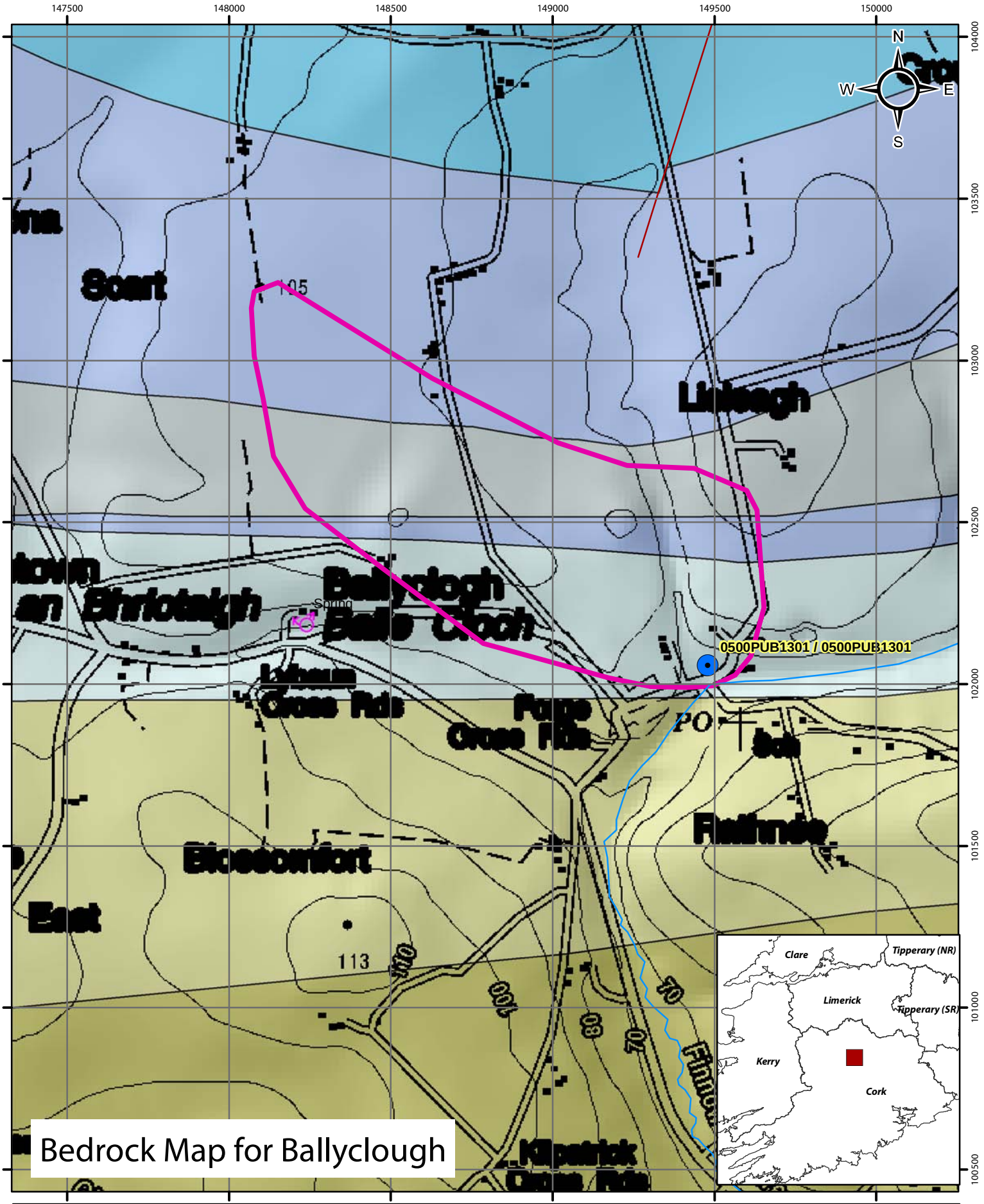
0 0.25 0.5 1 km



Bedrock Map for Ballyclough

Abstractions
Zone of Contribution
River
Dinantian Lower Impure Limestones
Dinantian Pure Bedded Limestones
Dinantian Pure Unbedded Limestones
Dinantian Upper Impure Limestones
Namurian Sandstones
Namurian Undifferentiated
Spring
Fault

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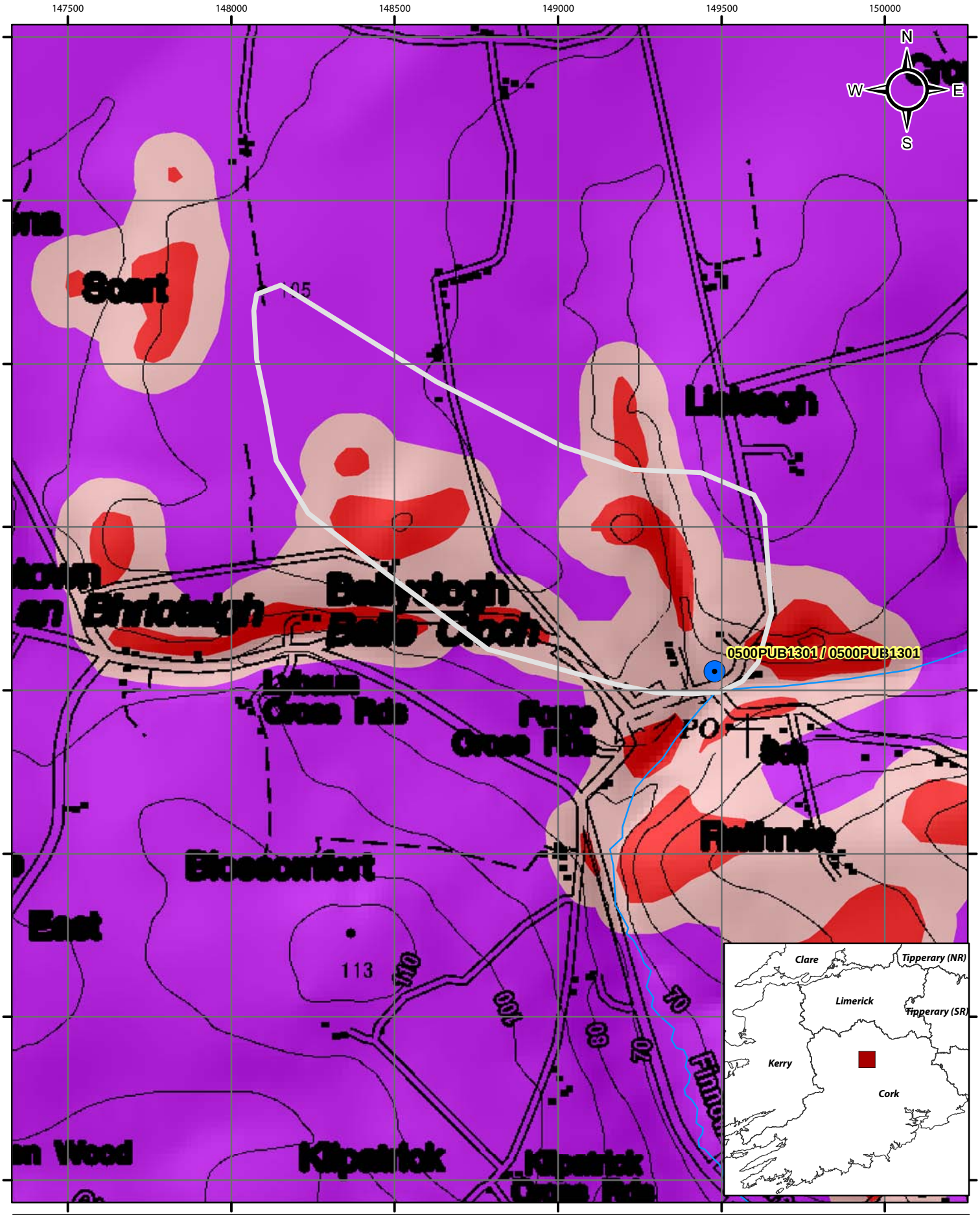
0 0.25 0.5 1 km



Groundwater Vulnerability Map for Ballyclough

Abstractions	E (Rock near surface or Karst)	M (Moderate)	Water
Zone of Contribution	E (Extreme)	L (Low)	No Data
River	H (High)	HL (unmapped - High to Low)	

0 0.25 0.5 1 km

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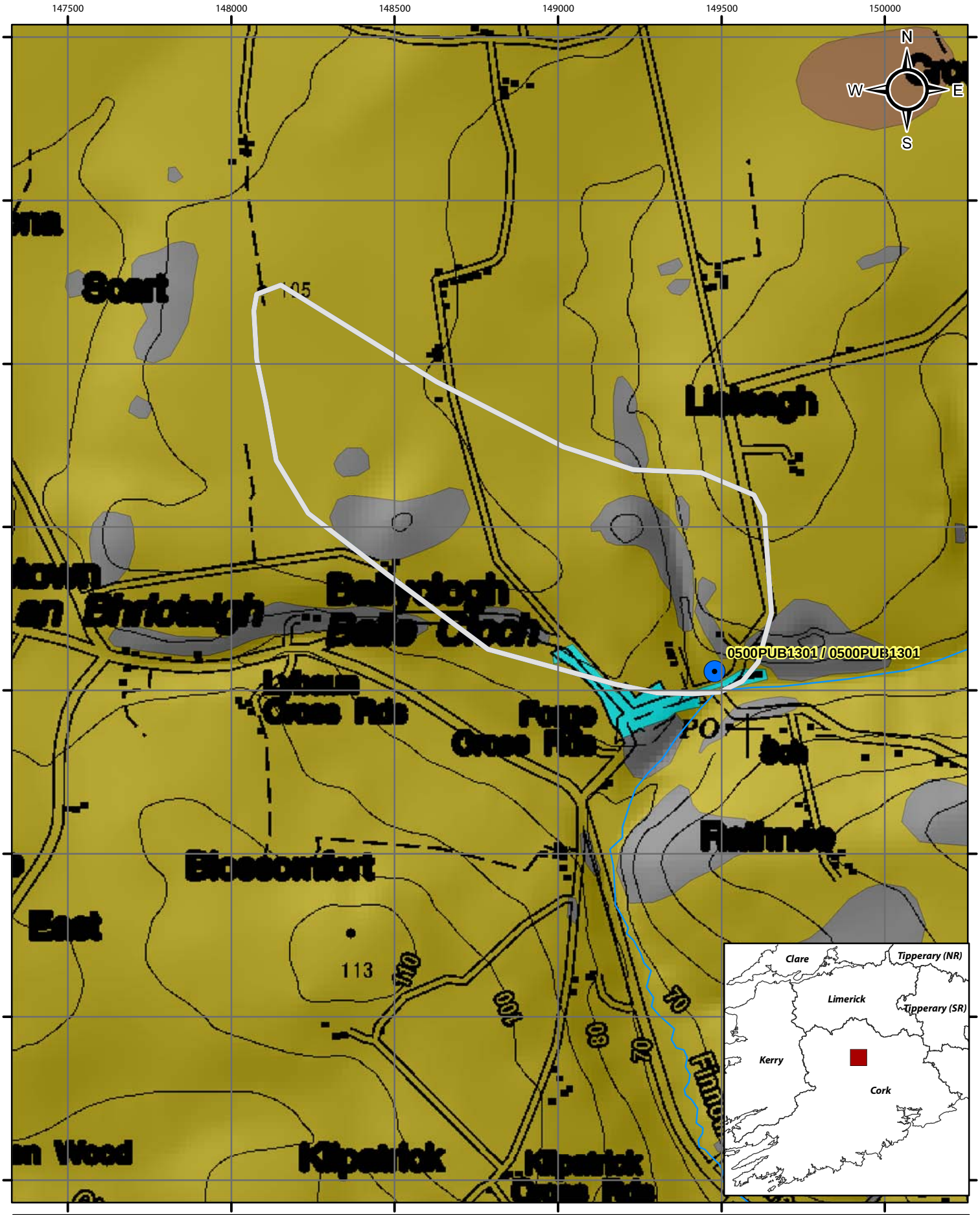

Subsoils Map for Ballyclough

- Abstractions
- Zone of Contribution
- River
- Cutover raised peat
- Bedrock outcrop or subcrop
- Made ground
- Till derived from Devonian sandstones
- Till derived from Namurian sandstones and shales

0 0.25 0.5 1 km

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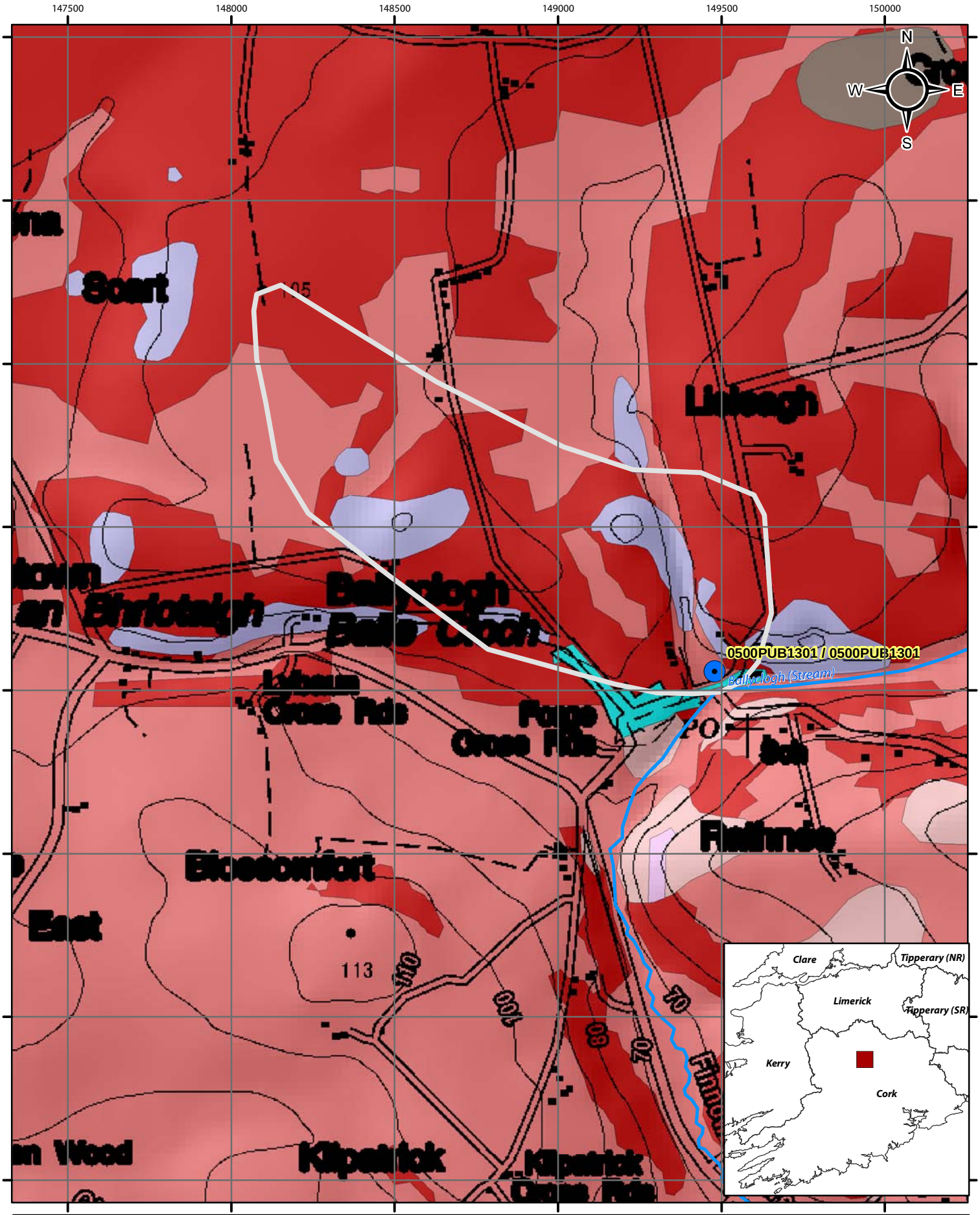

Soils Map for Ballyclough

- Abstractions
- Zone of Contribution
- River
- Acid Deep Well Drained Mineral
- Acid Deep Poorly Drained Mineral
- Acid Shallow Well Drained Mineral
- Acid Shallow/Rocky/Peaty Mineral
- Basic Shallow Well Drained Mineral
- Cutover/Cutaway Peat
- Made

0 0.25 0.5 1 km

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