

Water Framework Directive Groundwater Monitoring Programme

Site Information **Ballyleague**



Ballyleague BH abstracts from karstified limestones and supplies the Ballyleague PWS, approximately 430-570m³/day.



Roscommon

August 2011

SITE INFORMATION					
Site Name:	Ballyleague		County:	Roscommon	
RBD:	Shannon IRBD		EU Reporting Code:	---	
Easting:	199133		GWB Name:	Funshinagh	
Northing:	269582		GWB Code:	IE_SH_G_09	
Site Use:	Drinking Water (PWS)		Drinking Water Code:	2600PUB1006	
Hydrometric Area:	26		Water Level Monitoring Network:	Level	Flow
Townland:	BALLYCLARE			N	N
Ownership:	Roscommon Co Co				
Water Quality Monitoring Network:	Surveillance		Operational (Point)		Operational (Diffuse)
	N		N		N
Site Comments:	---				

SITE DIRECTIONS	
Location and Access Information:	Take the N63 out of Lanesborough toward Roscommon. After 1.4km from the bridge over the Shannon; 200m after passing a sports ground on the left hand side there is a narrow access track down to the pumphouse on the left hand side. Green galvanised fencing bounds compound.
Additional Comments:	---

WELL INFORMATION					
Monitoring Point Type:	BH	Abstraction Rate (m³/d):	430-570 (average 550)	Ground Elevation (m OD):	40
Borehole Log Available:	---	Total Drilled Depth (m bgl):	30	Depth to Bedrock (m bgl):	Unknown
Top of Casing (m agl):	-1.5	Upper Casing Diameter (mm):	200	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:	Pumping water level 7.33 m btoc. Borehole is finished in chamber below ground level. Abstraction has been recorded up to 700m³/d when during times of significant leakage. Depth of pump is 24mbg. Pumping water level is about 7m below top of casing so transmissivity, specific capacity are high.		
Specific Capacity (m³/d/m):	---				
Static Water Level (m bgl):	---				
Scheme Name:	Ballyleague WS	Number of Abstraction Points in the Scheme:	1	Source Report Available	N
Source Report Info:	---				
Scheme Summary:	Borehole drilled by dunnes in the 90's.				

HYDROGEOLOGY							
GEOLOGY	Soil:	Poorly drained mineral soils with peaty topsoil (AminPDPT)				Subsoil Permeability:	Moderate
	Subsoil:	Tills (diamictons) (TLPSSs)					
	Bedrock:	Dinantian Pure Bedded Limestones					
HYDROGEOLOGY	Aquifer Category:	Rkc	Vulnerability at Monitoring site:	High	Flow Regime:	Karstified	
ZONE OF CONTRIBUTION	Estimated ZOC Size (km ²):	6.4	ZOC Delineated By:	TOBIN (CK)	Recharge Estimate (mm/yr):	129	
	ZOC Delineation Comments:	Based on geology, assumed groundwater flow directions (from north, northwest) and topography. The north west boundary is based on LI/Rk boundary with a arbitrary buffer. The bedrock is karstified and the boundaries are highly uncertain. It is not known if the streams are in hydraulic connection with the aquifer. The abstraction figure used is 840m3/d which is 150% greater than the max recorded of 700m3/d.					
Groundwater Vulnerability within ZOC (% area):	Extreme (X)	Extreme (E)	High	Moderate	Low	High to Low	Unclassified
	0	1.69	20.97	39.86	37.46	0	0.02
HYDROCHEMISTRY							
Hydrochemical Signature:	Ca-HCO3		Additional Water Chemistry Information:	Few data available. Nitrate concentrations are low. No reported exceedances. Mn filtered. Chlorinated and filtered through sand filters.			
Alkalinity (mg/l HCO3):	Average:	Range:					
	---	---					
Hardness (mg/l CaCO3):	Average:	Range:					
	---	---					
Conductivity (uS/cm):	Average:	Range:					
	573	262-730					
Monitoring Record Period:	From:	To:					
	2001	2006					
RISK ASSESSMENT							
Pressure (e.g., Nitrates, Phosphates, Abstractions):	Diffuse		Typical Contaminants:	Nitrates			
Risk Category:	At risk, high confidence		GWB Status:	Poor			
Impact Potential within ZOC (% area):	Extreme:	High:	Moderate:	Low:	Negligible:		
	0.00	0.00	1.64	66.29	32.07		
OTHER INFORMATION							



Chamber



Site



Well Head

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).

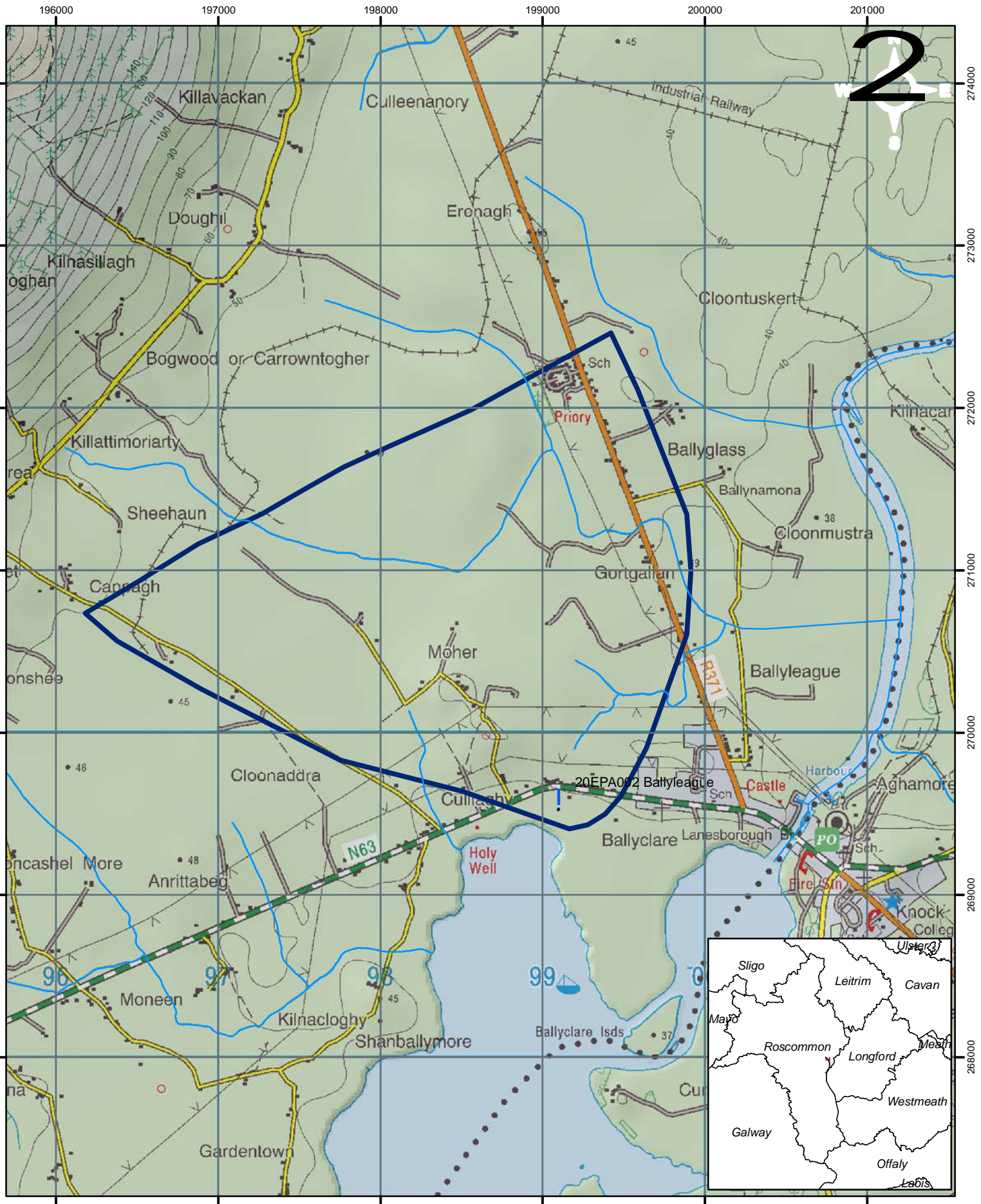
General Downgradient Distances

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	TOBIN (CK)	Date:	3/10/2011
Version 2:	Prepared by		Date:	
Version 3:	Prepared by		Date:	
Version 4:	Prepared by		Date:	

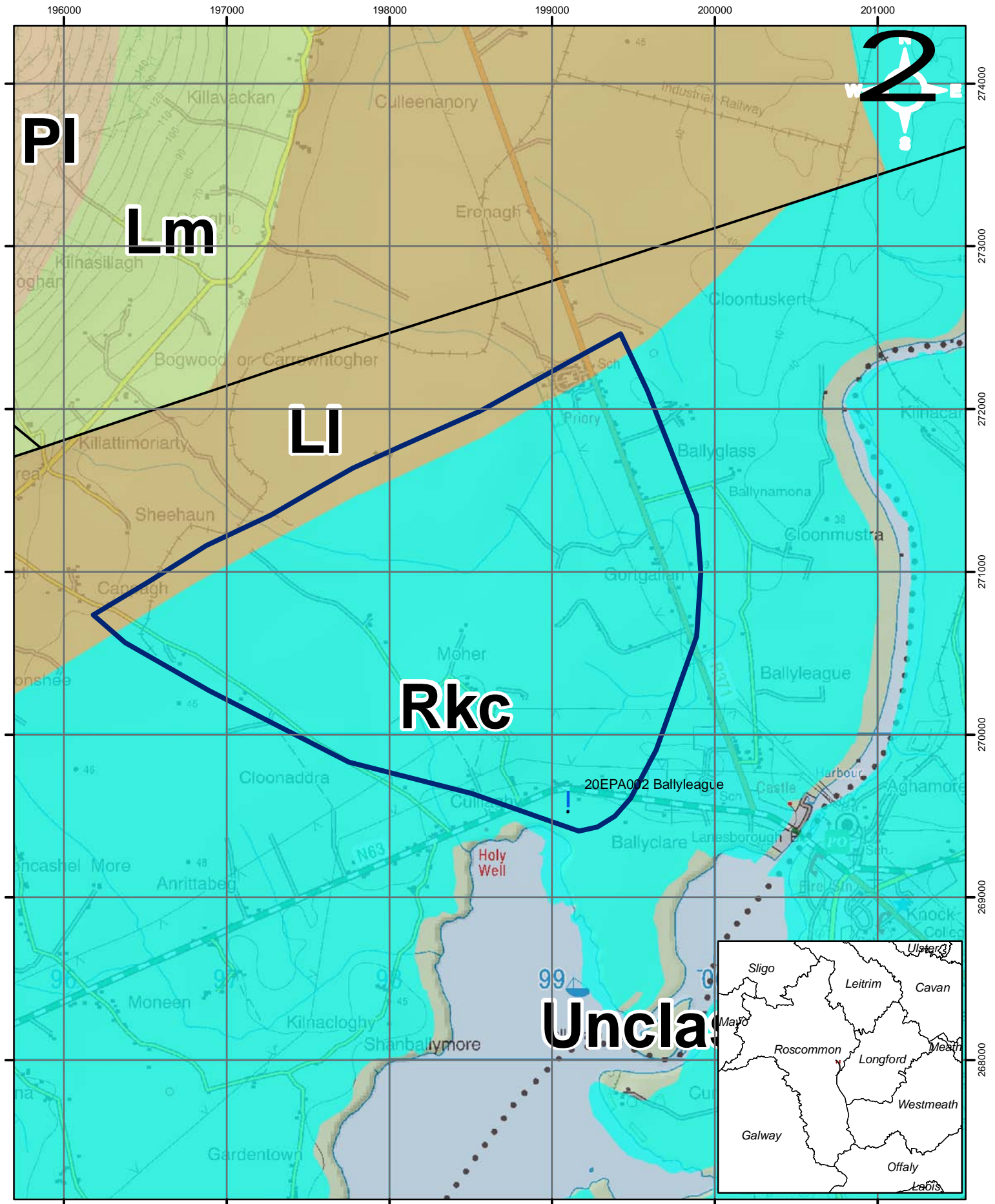


Location Map for Ballyleague

- ! Abstraction Point
- River
- Zone of Contribution

© Ordnance Survey Ireland. All rights reserved.
Licence number EN0059208

0 0.25 0.5 1
km

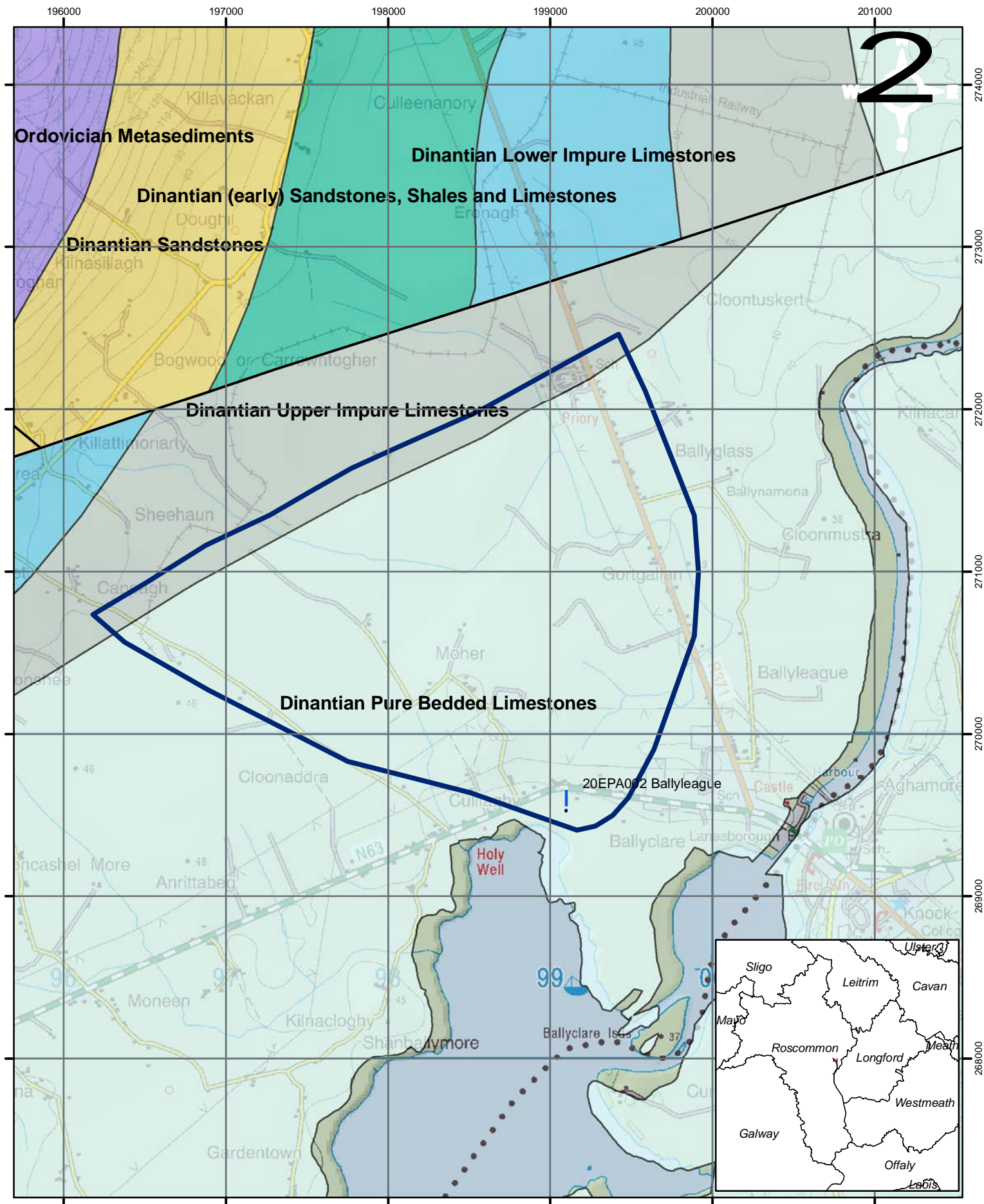


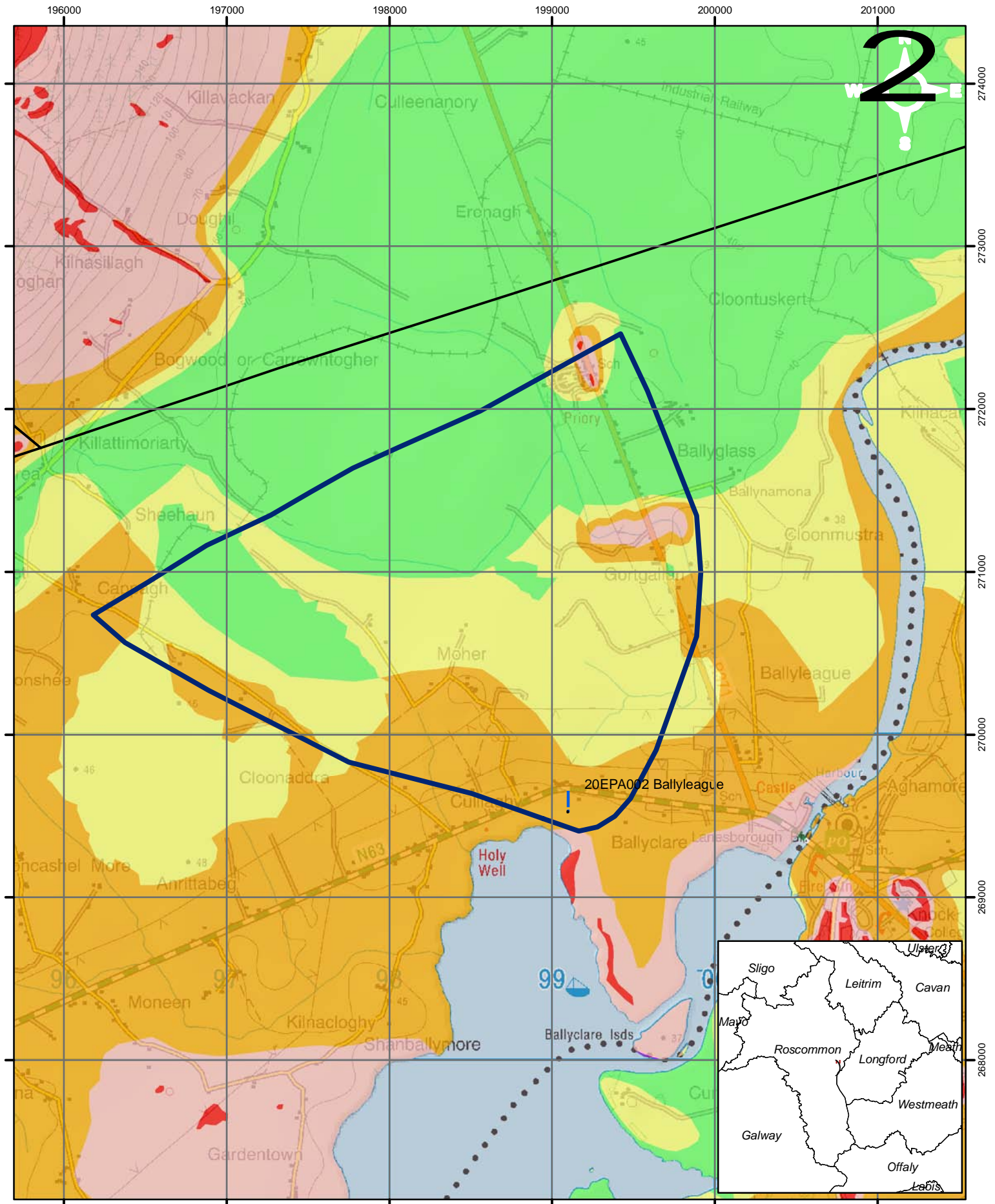
Aquifer Map for Ballyleague

- ! Abstraction Point
- Fault
- Zone of Contribution

- Rkc
- LI
- Lm
- PI

No Karst Features in map extent



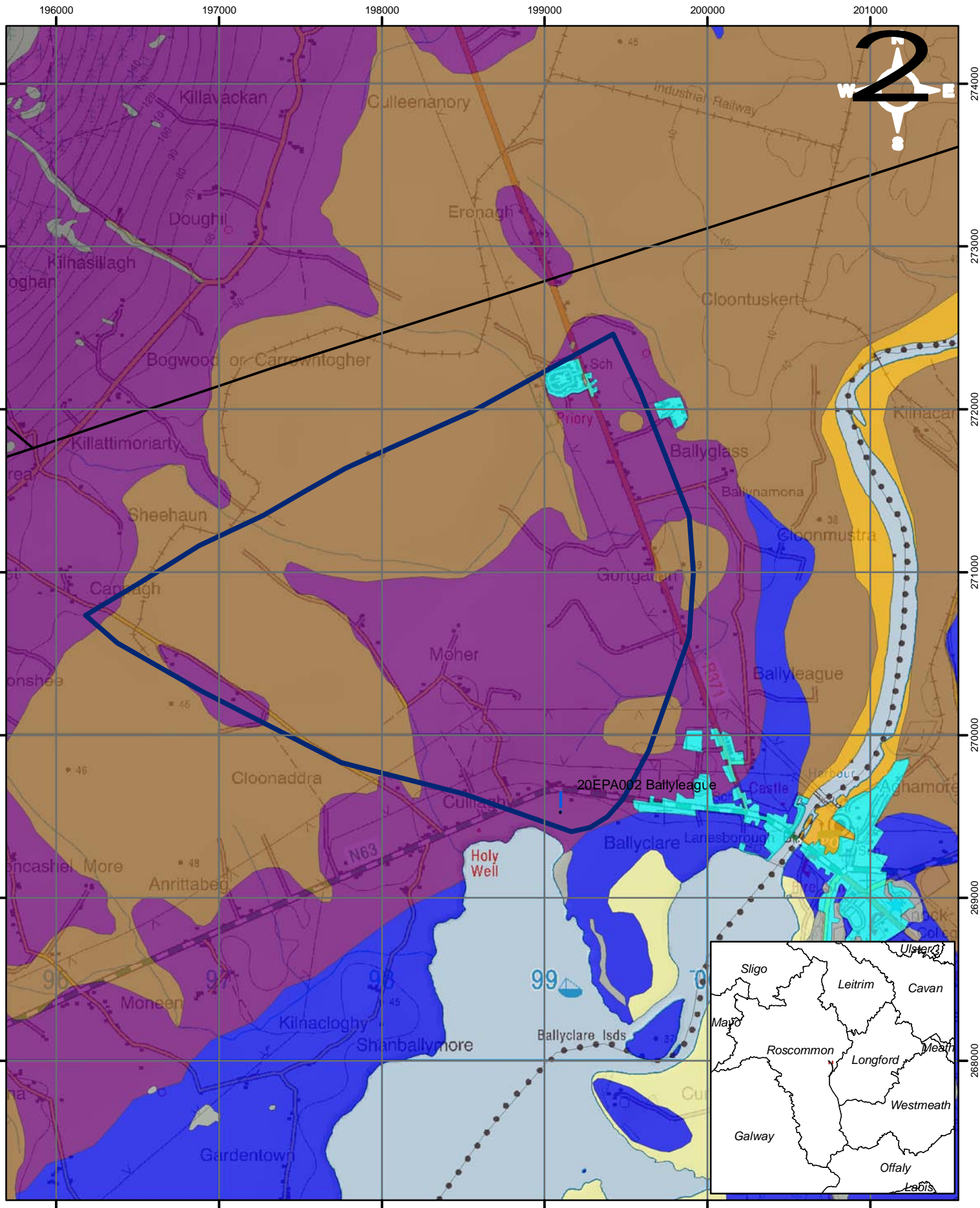


Groundwater vulnerability Map for Ballyleague

- ! Abstraction Point
- Fault
- Zone of Contribution
- VUL_N**
 - E (Rock near surface or Karst)
 - E (Extreme)
 - H (High)
 - M (Moderate)
 - L (Low)
 - HL (unmapped - High to Low)

© Ordnance Survey Ireland. All rights reserved.
Licence number EN0059208

0 0.25 0.5 1 km

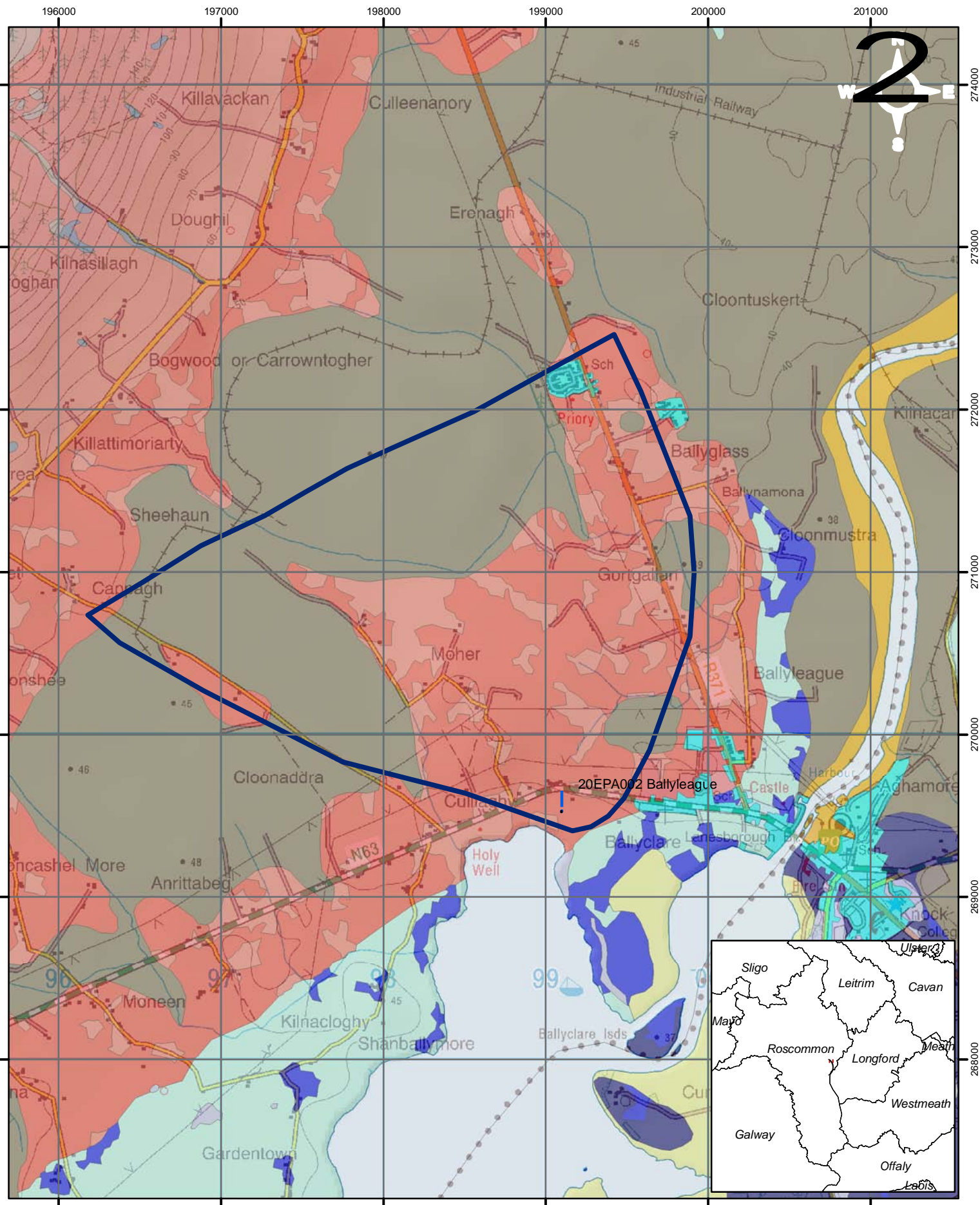


Subsoils Map for Ballyleague

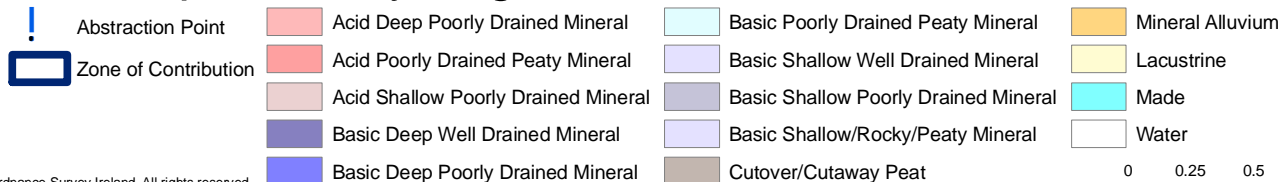
- | | | |
|----------------------|---------------------------------------|--|
| Abstraction Point | Alluvium | Made ground |
| Fault | Cutover raised peat | Till derived from Lower Palaeozoic sandstones and shales |
| Zone of Contribution | Bedrock outcrop or subcrop | Till derived from limestones |
| | Karstified bedrock outcrop or subcrop | Water |
| | Lacustrine sediments | |

© Ordnance Survey Ireland. All rights reserved.
Licence number EN0059208

0 0.25 0.5 1 km



Soils Map for Ballyleague



© Ordnance Survey Ireland. All rights reserved.
Licence number EN0059208

0 0.25 0.5 1 km