

Water Framework Directive Groundwater Monitoring Programme

Site Information **Caherconlish**



Caherconlish PWS is a shallow well / spring with an abstraction of 545m³/day.

SITE INFORMATION					
Site Name:	Caherconlish		County:	Limerick	
RBD:	Shannon IRBD		EU Reporting Code:	IE_SH_G_036_13_004	
Easting:	168409		GWB Name:	Ballyneety	
Northing:	150500		GWB Code:	IE_SH_G_036	
Site Use:	Drinking Water (PWS)		Drinking Water Code:	1900PUB1015	
Hydrometric Area:	25		Water Level Monitoring Network:	Level	Flow
Townland:	KNOCKATANCASHLANE			N	N
Ownership:	Limerick County Council				
Water Quality Monitoring Network:	Surveillance		Operational (Point)		Operational (Diffuse)
	Y		N		N
Site Comments:	Caherconlish PWS is essentially a spring situated a Locally Important Aquifer which is generally moderately productive (Lm) / Dinantian Pure Bedded Limestone; with some area within the ZOC to the west of the borehole coming from the Regionally Important Karstified Aquifer / Dinantian Pure Bedded Limestones. The PWS is included in the GW surveillance monitoring network.				

SITE DIRECTIONS	
Location and Access Information:	Take N24 from Limerick for about 9km then take a right on the R513 for Caherconlish. After approximately 2km take a left through a white walled entrance marked by the 50kph speed limit. Drive until arrive at a new pumphouse.
Additional Comments:	---

WELL INFORMATION					
Monitoring Point Type:	Shallow dug well / spring	Abstraction Rate (m³/d):	545	Ground Elevation (m OD):	40
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:	Caherconlish	Number of Abstraction Points in the Scheme:	1	Source Report Available	N
Source Report Info:	---				
Scheme Summary:	Scheme comprises a shallow dug well / spring.				

HYDROGEOLOGY							
GEOLOGY	Soil:	Deep poorly drained mineral (BminPD)				Subsoil Permeability:	Moderate
	Subsoil:	Tills (diamictos) (TLs)					
	Bedrock:	Dinantian Pure Bedded Limestones					
HYDROGEOLOGY	Aquifer Category:	Lm	Vulnerability at Monitoring site:	High to Low	Flow Regime:	Productive fissured bedrock	
ZONE OF CONTRIBUTION	Estimated ZOC Size (km²):	0.76	ZOC Delineated By:	Tobin (JD)	Recharge Estimate (mm/yr):	280	
	ZOC Delineation Comments:	ZOC is based on topography, assuming streams are groundwater divides. Discharge and hydrogeological field mapping required; ZOC uncertain. It is large enough for slightly more than the current abstraction (105%) but it is unlikely that 150% is available. The hydrochemistry suggests that there may be a component of deeper groundwater contributing to the spring.					
Groundwater Vulnerability within ZOC (% area):	Extreme (X)	Extreme (E)	High	Moderate	Low	High to Low	Unclassified
	3.82	49.33	0	0	0	46.86	0
HYDROCHEMISTRY							
Hydrochemical Signature:	Ca-HCO3		Additional Water Chemistry Information:	During the monitoring period: The average nitrate concentration was 13 mg/l NO3 and the maximum nitrate concentration was 17 mg/l NO3. The average ammonium concentration was 0.012 mg/l N and the maximum ammonium concentration was 0.043 mg/l N. The average molybdate reductive phosphorus (MRP) concentration was 0.017 mg/l P and the maximum MRP concentration was 0.061 mg/l P. The average chloride concentration was 25.6 mg/l Cl and the maximum chloride concentration was 33 mg/l Cl.			
Alkalinity (mg/l HCO3):	Average:	Range:					
	306	130-370					
Hardness (mg/l CaCO3):	Average:	Range:					
	334	150-467					
Conductivity (uS/cm):	Average:	Range:					
	665	490-813					
Monitoring Record Period:	From:	To:					
	1995	2010					
RISK ASSESSMENT							
Pressure (e.g., Nitrates, Phosphates, Abstractions):	Diffuse		Typical Contaminants:	Nitrate			
Risk Category:	At risk, high confidence		GWB Status:	Poor			
Impact Potential within ZOC (% area):	Extreme:	High:	Moderate:	Low:	Negligible:		
	0.00	47.18	45.87	0.00	6.95		
OTHER INFORMATION							



Pump House



Sampling Tap



Spring Cover

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 μ S/cm) / Drinking Water Test (1,875 μ S/cm)

Further information on groundwater threshold values is contained in the Groundwater Regulations (S.I. No.9 of 2010).

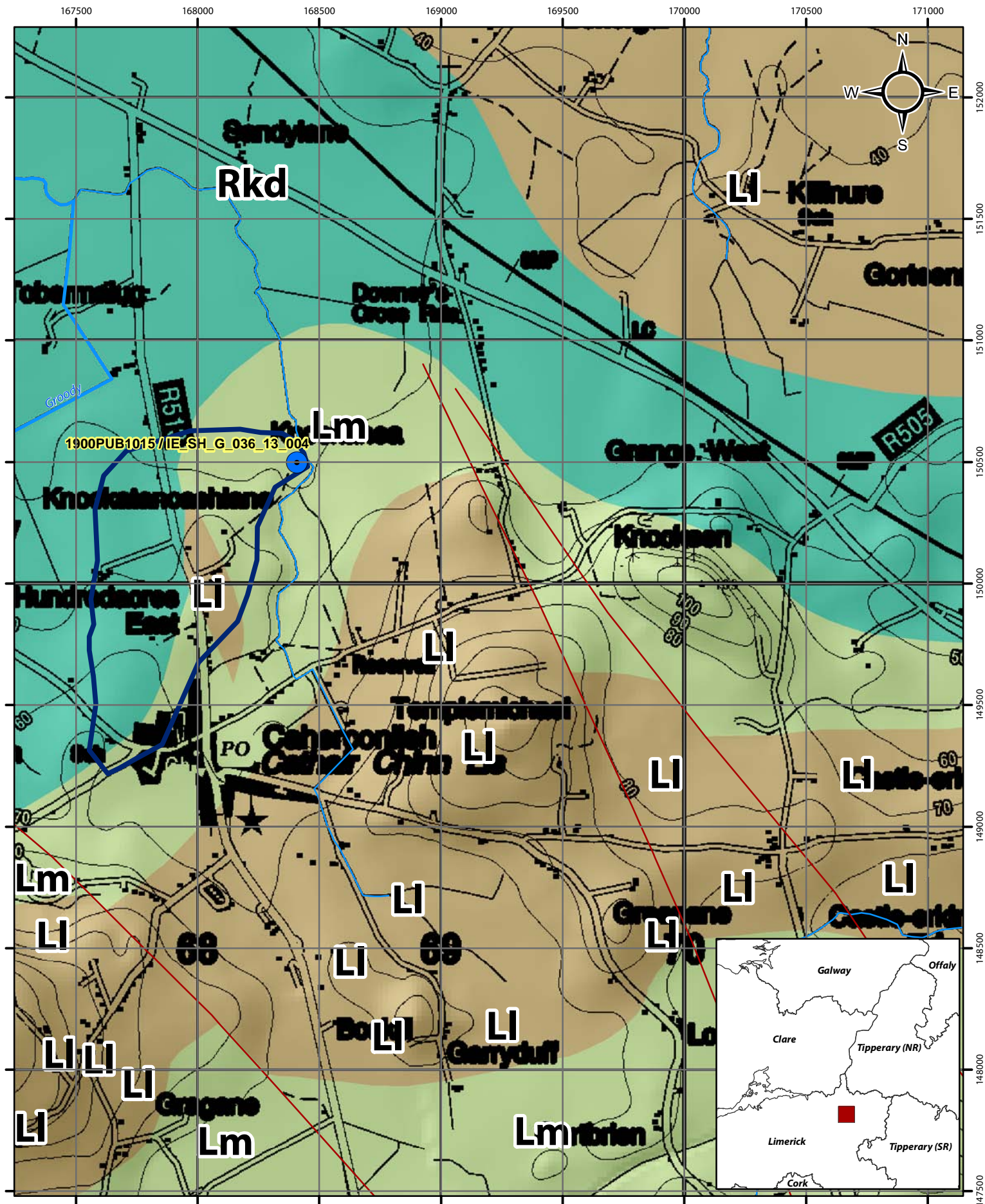
General Downgradient Distances

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
LI, PI	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 (JD)	Date:	Mar 2011
Version 2:	Prepared by		Date:	
Version 3:	Prepared by		Date:	
Version 4:	Prepared by		Date:	

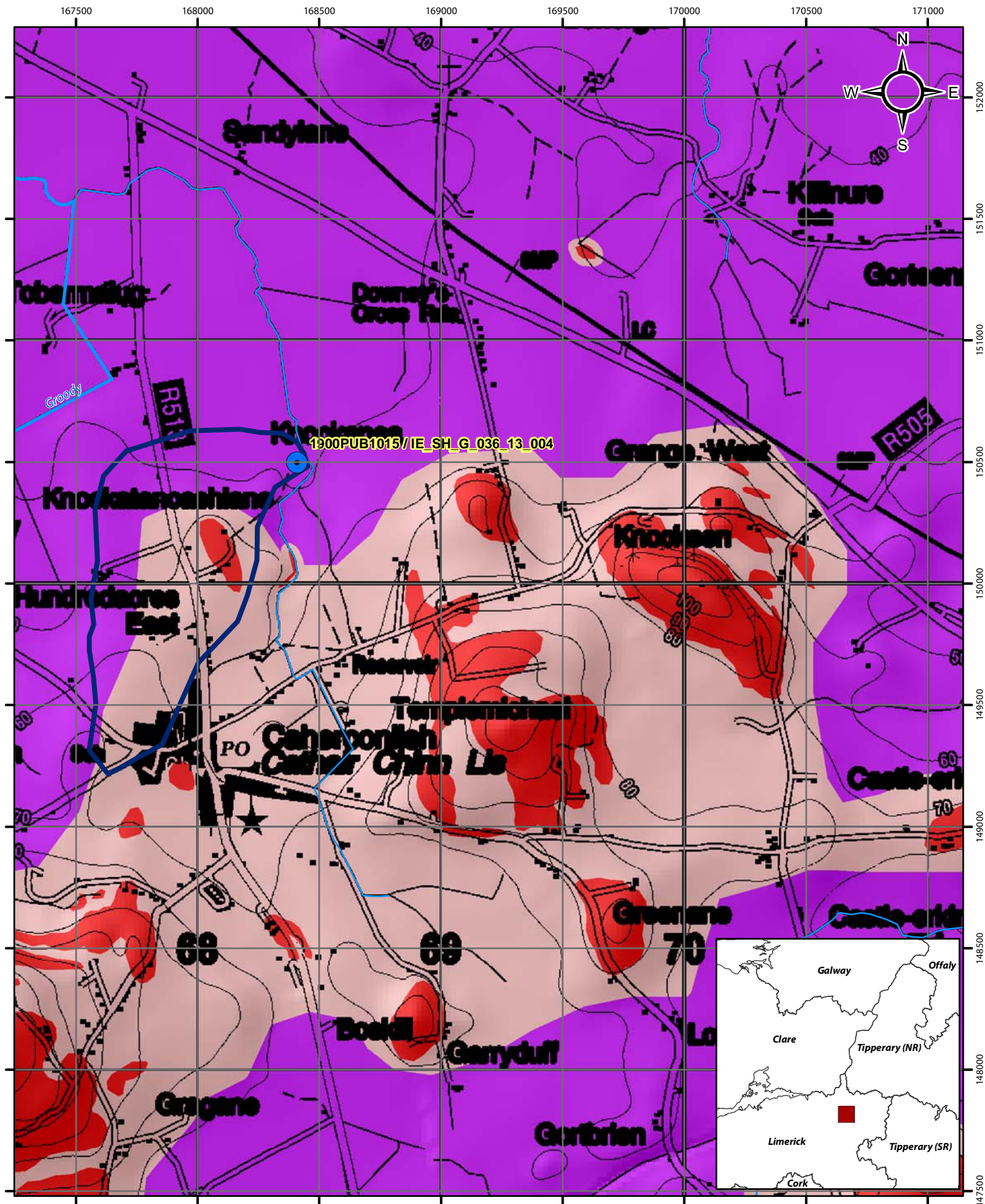


Aquifer Category Map for Caherconlish

- Abstractions
- Zone of Contribution
- River
- LI
- Lm
- Rkd
- Fault

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0 0.25 0.5 1 km

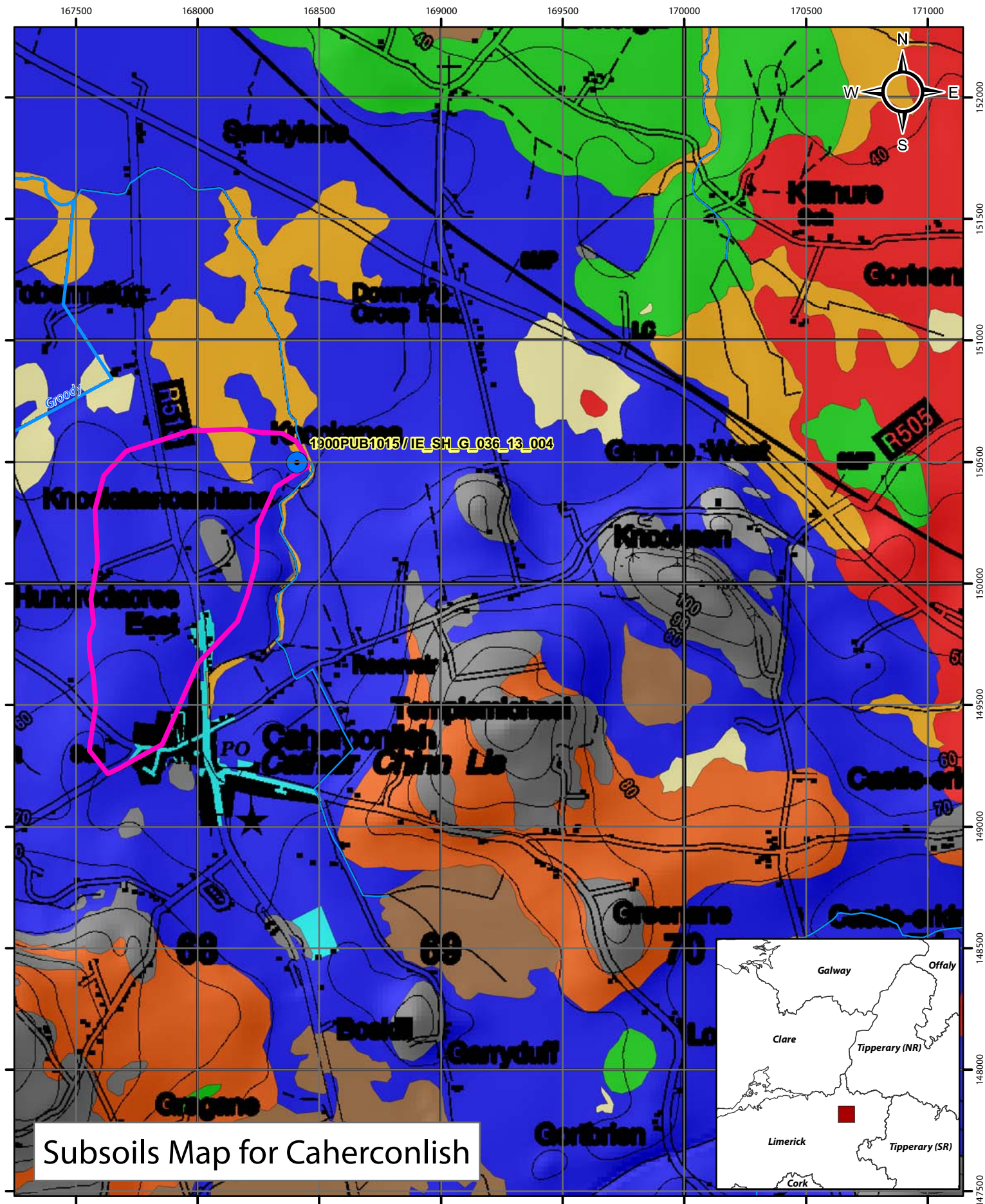


Groundwater Vulnerability Map for Caherconlish

- 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)

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0 0.25 0.5 1
km



Subsoils Map for Caherconlish

