

Water Framework Directive Groundwater Monitoring Programme

Site Information

Kilasser



Kilasser is a spring that is used for a group water supply. This site is located in a poorly productive aquifer, but has an abstraction rate of 400-1192m³/day. This site is included in the surveillance groundwater monitoring network.



Mayo

August 2011

SITE INFORMATION					
Site Name:	Kilasser		County:	Mayo	
RBD:	WRBD		EU Reporting Code:	IE_WE_G_0034_16_011	
Easting:	135713		GWB Name:	Foxford	
Northing:	307114		GWB Code:	IE_WE_G_0034	
Site Use:	Drinking Water (GWS)		Drinking Water Code:	2200PRI2072	
Hydrometric Area:	34		Water Level Monitoring Network:	Level	Flow
Townland:	DOONTY			N	Y
Ownership:	Kilasser Group Water Scheme				
Water Quality Monitoring Network:	Surveillance		Operational (Point)		Operational (Diffuse)
	Y		N		N
Site Comments:	Kilasser is a spring that is used for a group water supply. This site is located in a poorly productive aquifer, but has an abstraction rate of 400-1192m³/day. This site is included in the surveillance groundwater monitoring network.				

SITE DIRECTIONS	
Location and Access Information:	Located 3.5km northwest of Kilasser. The spring is located in a field a few metres from the road. The sample is taken directly from the spring source.
Additional Comments:	---

WELL INFORMATION					
Monitoring Point Type:	Spring	Abstraction Rate (m³/d):	400-1192	Ground Elevation (m OD):	160
Borehole Log Available:	---	Total Drilled Depth (m bgl):	n/a	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:	---	Number of Abstraction Points in the Scheme:	---	Source Report Available	N
Source Report Info:	---				
Scheme Summary:	---				

HYDROGEOLOGY							
GEOLOGY	Soil:	Deep well drained mineral (AminDW)				Subsoil Permeability:	n/a
	Subsoil:	Tills (diamictons) (TMp)					
	Bedrock:	Precambrian Quartzites, Gneisses & Schists					
HYDROGEOLOGY	Aquifer Category:	PI	Vulnerability at Monitoring site:	Extreme	Flow Regime:	Poorly productive	
ZONE OF CONTRIBUTION	Estimated ZOC Size (km²):	1.21	ZOC Delineated By:	CDM (HM)	Recharge Estimate (mm/yr):	300	
	ZOC Delineation Comments:	The hydrogeology is complex for this spring; occurring on the slopes of a mountain occupied by Precambrian rocks; with a very high total discharge rate (up to 3000m³/day). The hydrochemistry and geology suggest a deep groundwater flow component. The water balance indicates that the available area is insufficient to provide the discharge. The ZOC delineated is the topographic catchment to the spring. Given the flow regime and extreme vulnerability it is likely that a significant proportion of the available recharge flows as shallow groundwater focussing at the spring. There is one mapped SW-NE trending fault close to the spring.					
Groundwater Vulnerability within ZOC (% area):	Extreme (X)	Extreme (E)	High	Moderate	Low	High to Low	Unclassified
	0.41	7.89	0	0	0	91.7	0
HYDROCHEMISTRY							
Hydrochemical Signature:	Ca-HCO3		Additional Water Chemistry Information:	During the monitoring period: The average nitrate concentration was 3 mg/l NO3 and the maximum nitrate concentration was 5 mg/l NO3. The average ammonium concentration was 0.028 mg/l N and the maximum ammonium concentration was 0.103 mg/l N. The average molybdate reductive phosphorus (MRP) concentration was 0.01 mg/l P and the maximum MRP concentration was 0.067 mg/l P. The average chloride concentration was 13.8 mg/l Cl and the maximum chloride concentration was 17.5 mg/l Cl.			
Alkalinity (mg/l HCO3):	Average:	Range:					
	284	240-344					
Hardness (mg/l CaCO3):	Average:	Range:					
	280	242-375					
Conductivity (uS/cm):	Average:	Range:					
	502	354-577					
Monitoring Record Period:	From:	To:					
	2007	2010					
RISK ASSESSMENT							
Pressure (e.g., Nitrates, Phosphates, Abstractions):	---		Typical Contaminants:	---			
Risk Category:	Not at risk, low confidence		GWB Status:	Good			
Impact Potential within ZOC (% area):	Extreme:	High:	Moderate:	Low:	Negligible:		
	0.00	0.00	6.63	23.98	69.38		
OTHER INFORMATION							



Spring



Weir

Sample Location

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).

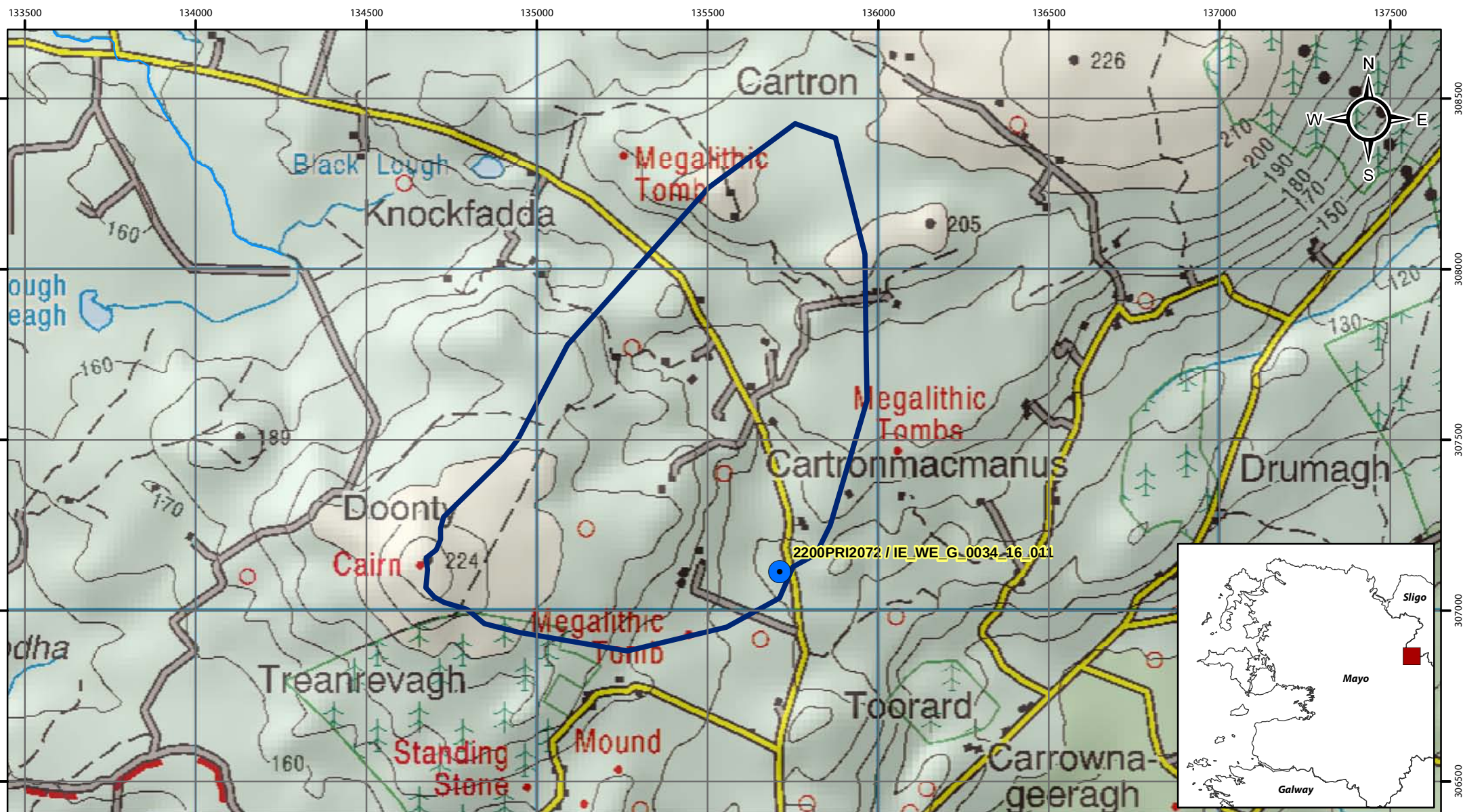
General Downgradient Distances

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
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.

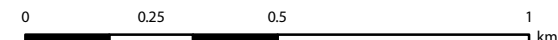
Version 0:	Prepared by		Date:	
Version 1:	Prepared by	CDM (HM)	Date:	Mar 2011
Version 2:	Prepared by		Date:	
Version 3:	Prepared by		Date:	
Version 4:	Prepared by		Date:	

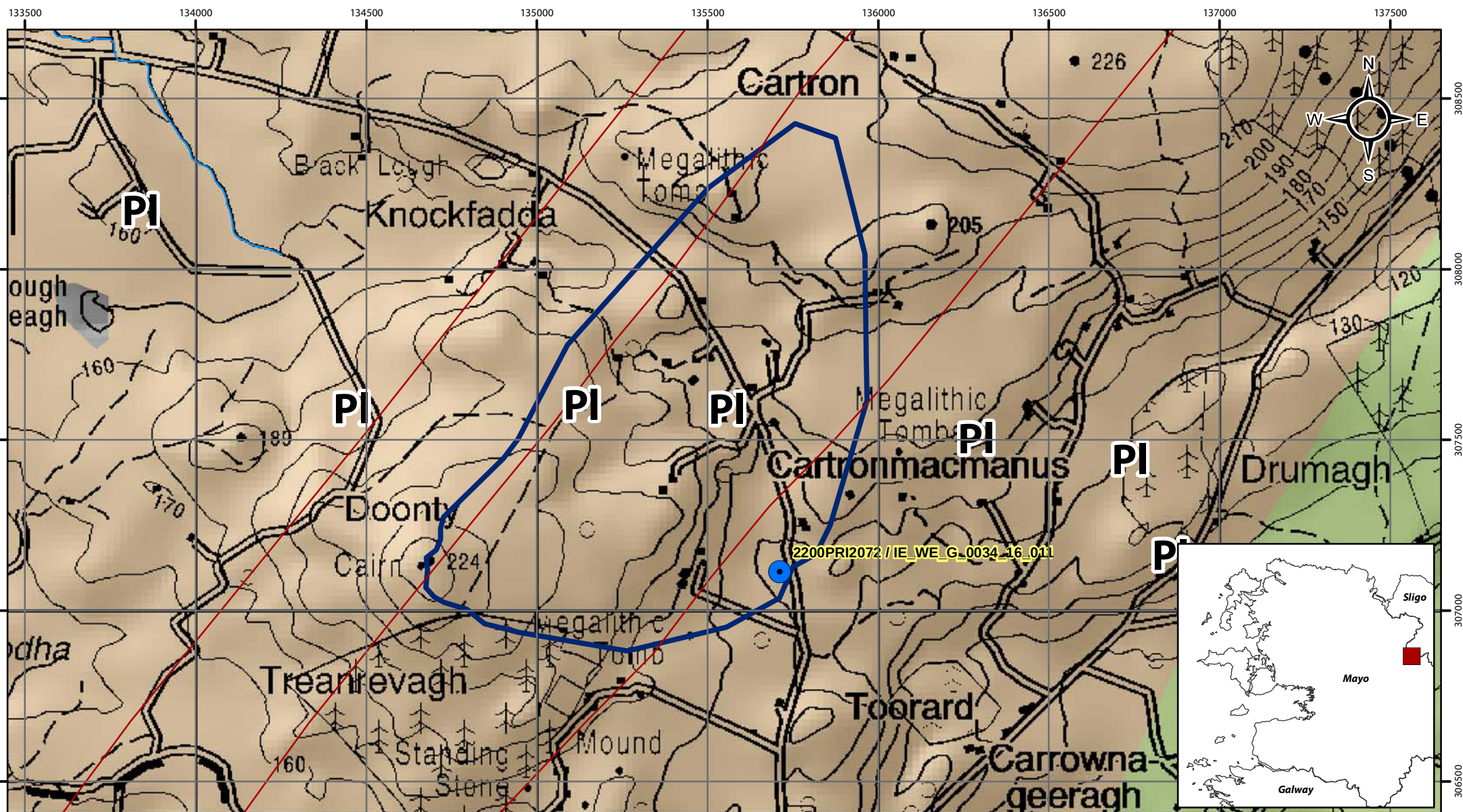


Location Map for Kilasser

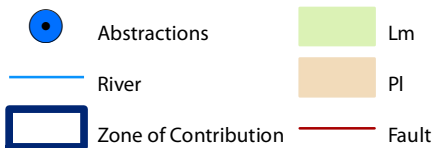
-  Abstractions
-  River
-  Zone of Contribution

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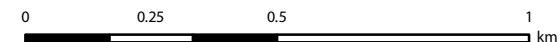


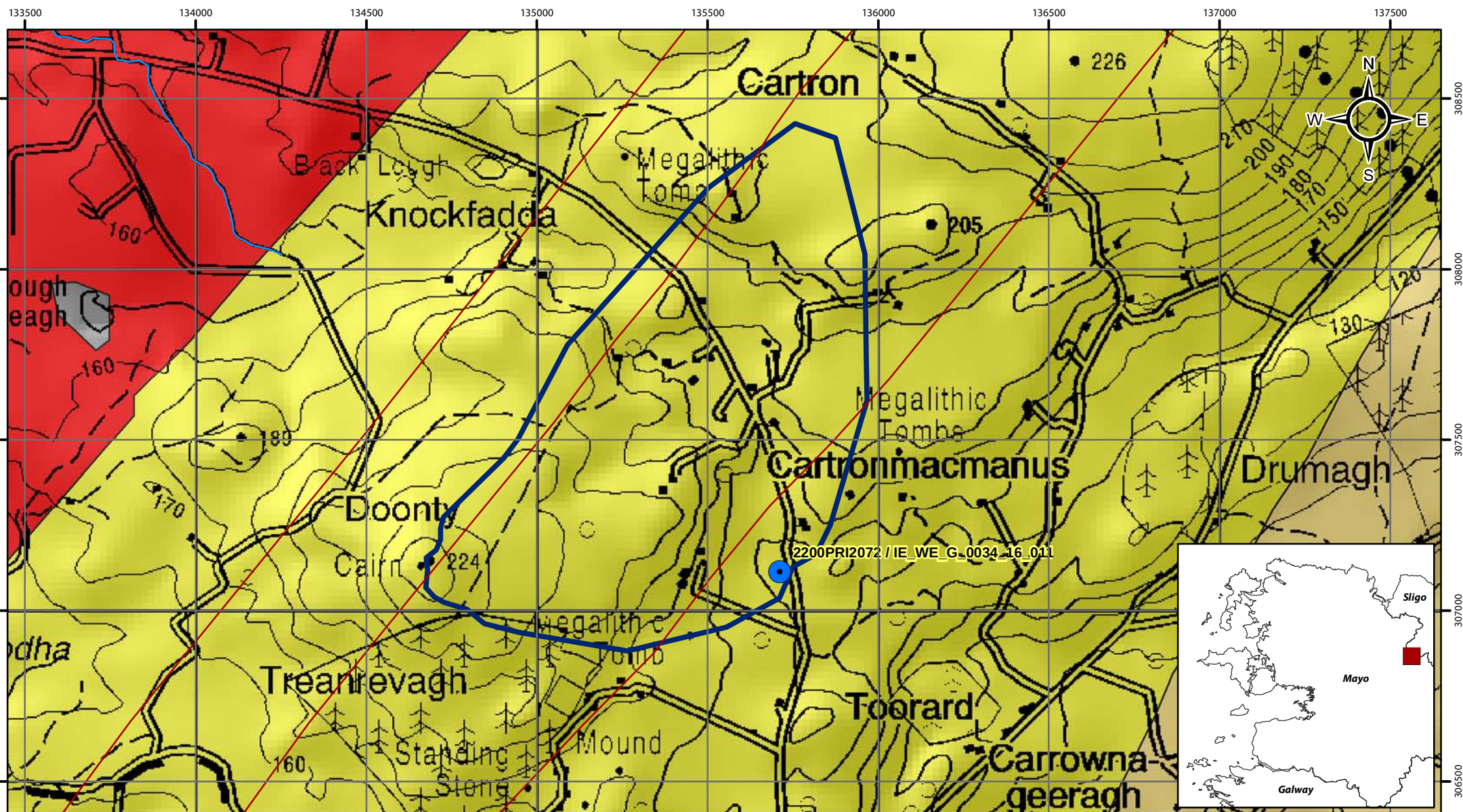


Aquifer Category Map for Kilasser



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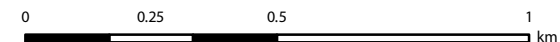


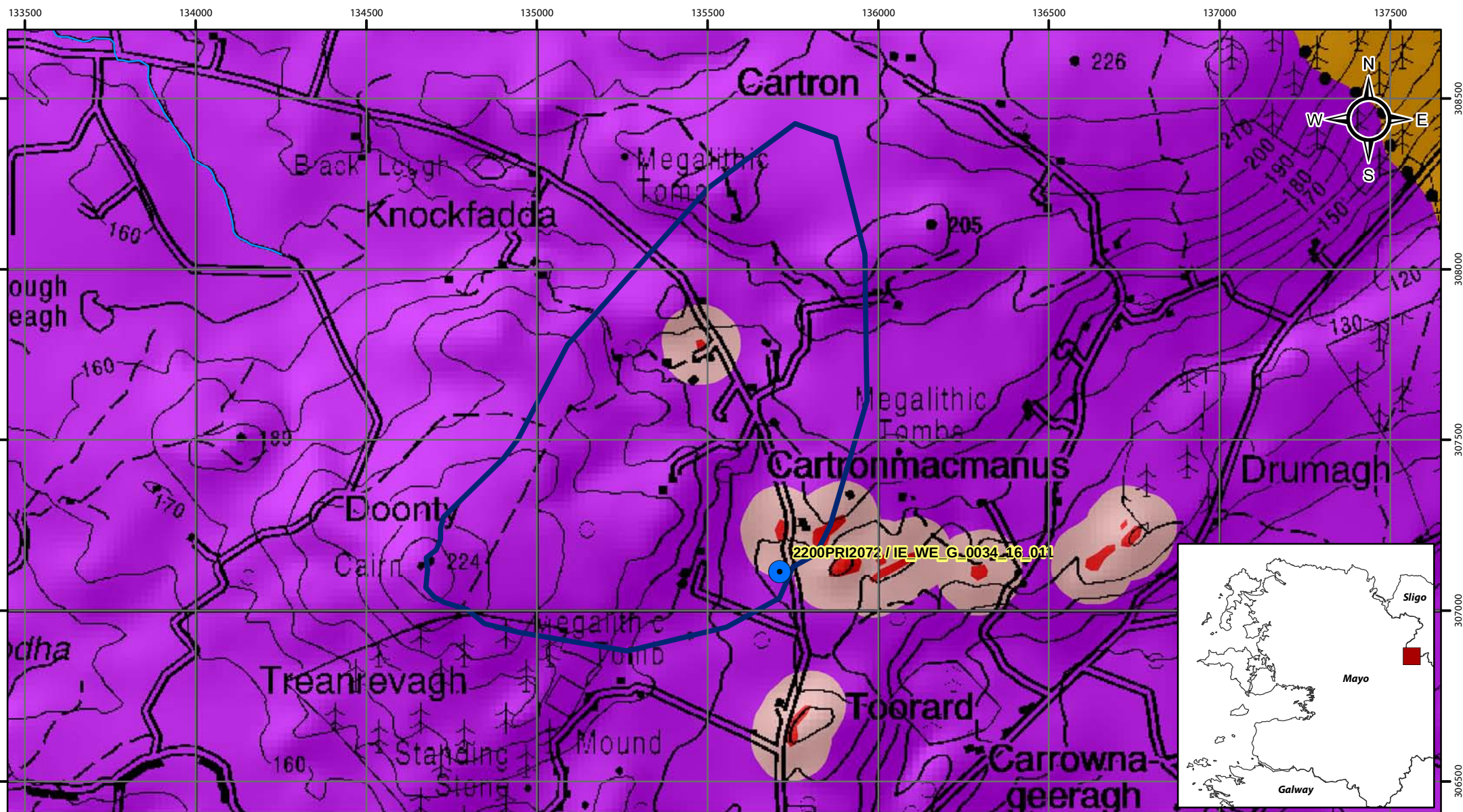


Bedrock Map for Kilasser

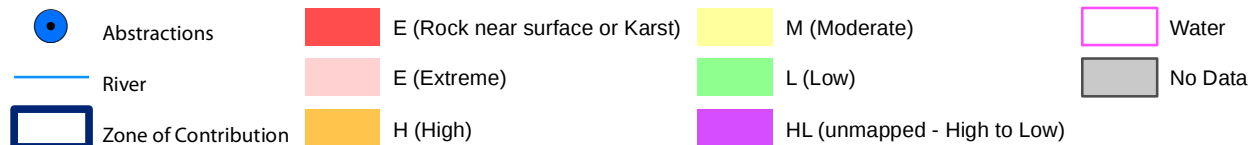
- | | | | | | |
|--|----------------------|---|--|---|-------|
|  | Abstractions |  | Dinantian Sandstones | | Fault |
| | River |  | Granites & other Igneous Intrusive rocks | | |
|  | Zone of Contribution |  | Precambrian Quartzites, Gneisses & Schists | | |

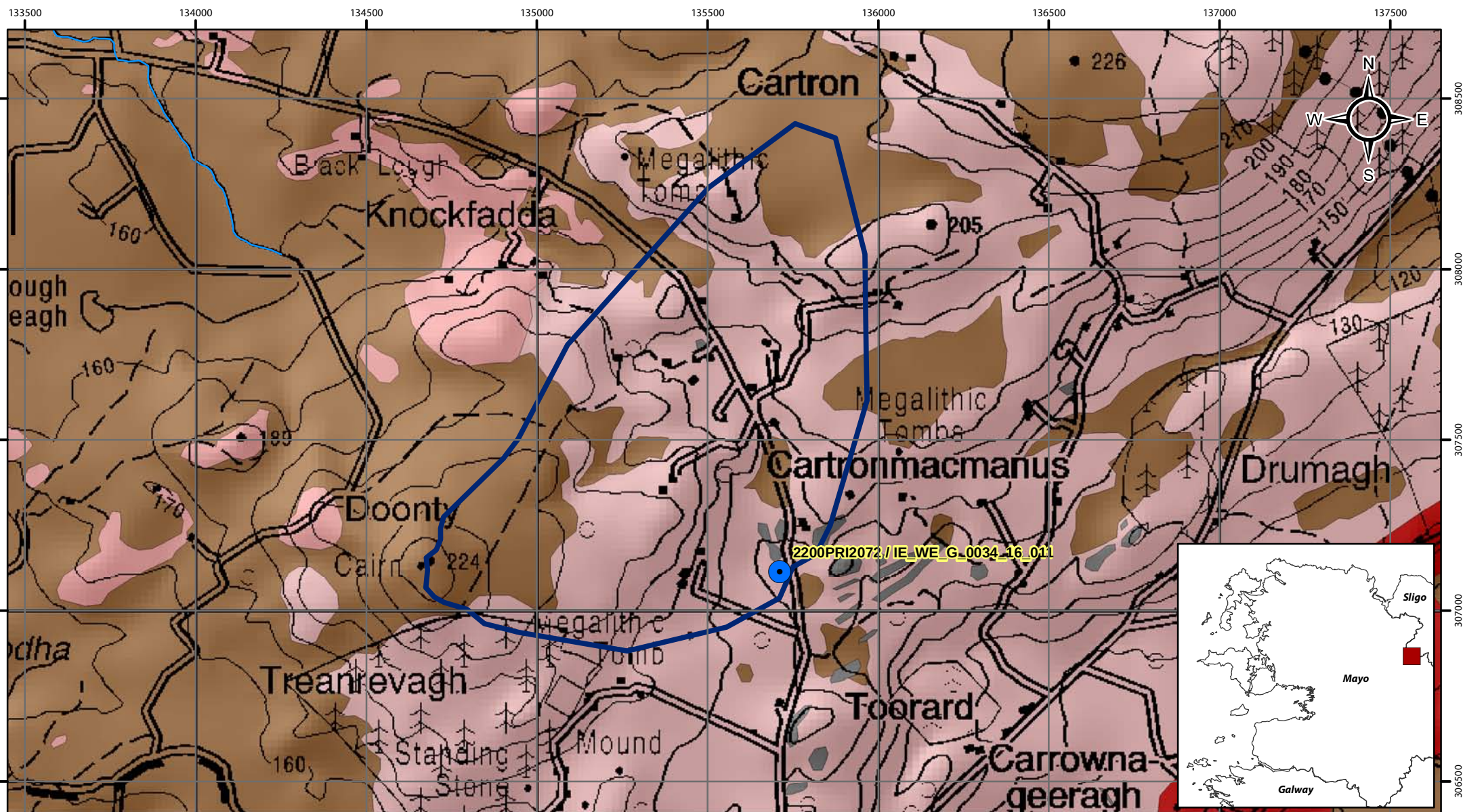
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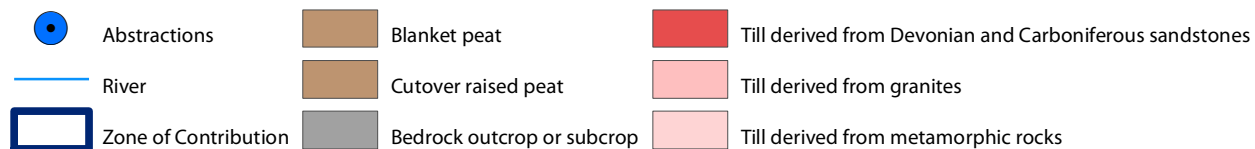


Groundwater Vulnerability Map for Kilasser

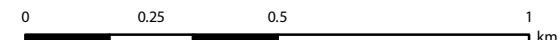


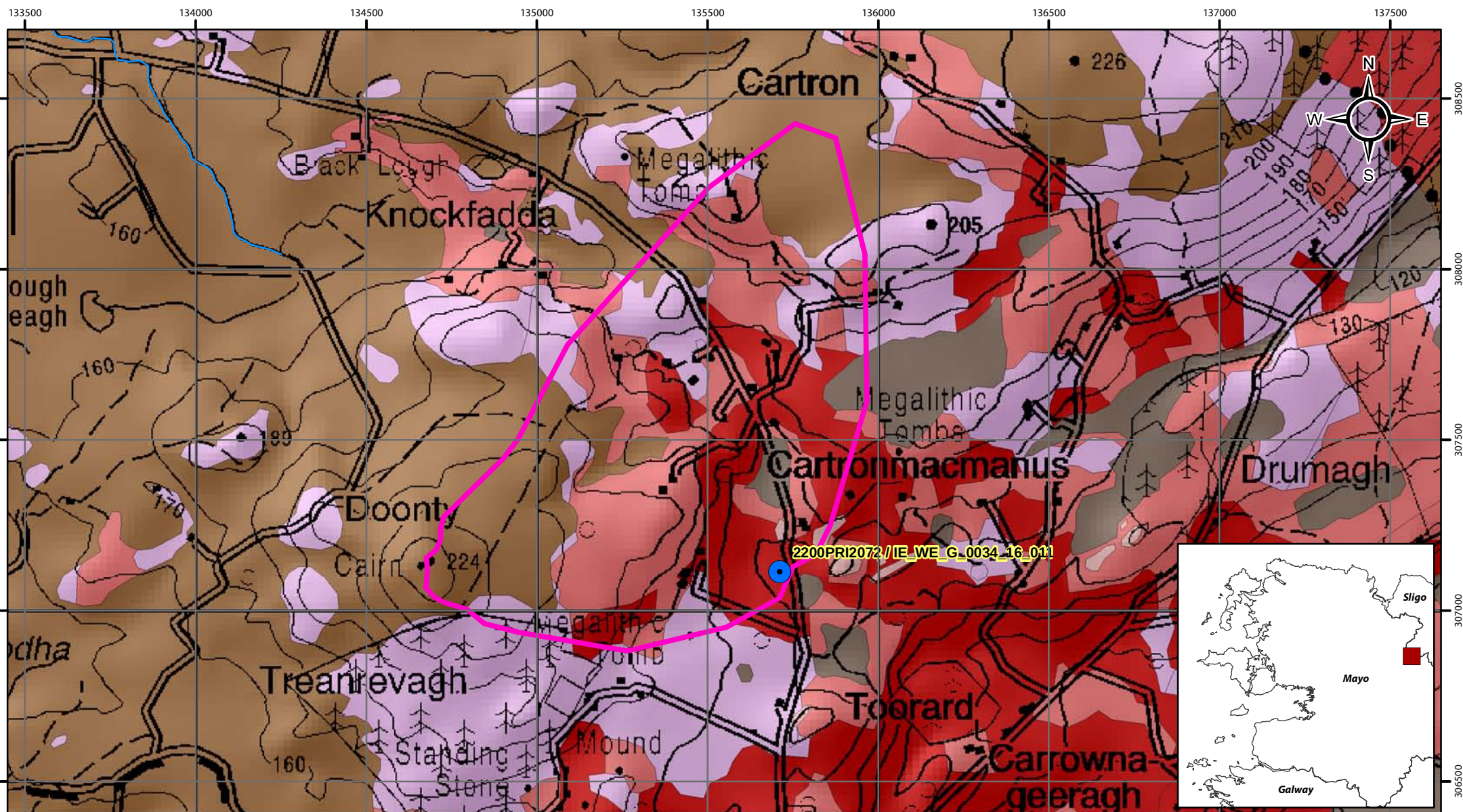


Subsoils Map for Kilasser



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Soils Map for Kilasser



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