
Water Framework Directive
Groundwater Monitoring Programme
Site Information
Abbeyleix 1 PUB Aughfeerish

Abbeyleix 1 PUB feeds the north side of the town and comprises a spring at Aughfeerish and Maxwell. The total abstraction rate for both is 1200m³/d from sands and gravels. The ZOCs for both springs are different - Maxwell is a separate site folder.



Laois

August 2011

SITE INFORMATION					
Site Name:	Abbeyleix 1 PUB Aughfeerish		County:	Laois	
RBD:	SERBD		EU Reporting Code:	---	
Easting:	245906		GWB Name:	Freshford	
Northing:	184109		GWB Code:	IE_SE_G_066	
Site Use:	Drinking Water (PWS)		Drinking Water Code:	1600PUB1056	
Hydrometric Area:	15		Water Level Monitoring Network:	Level	Flow
Townland:	RALISH			N	N
Ownership:	Laois CoCo				
Water Quality Monitoring Network:	Surveillance		Operational (Point)		Operational (Diffuse)
	N		N		N
Site Comments:	---				

SITE DIRECTIONS					
Location and Access Information:	Take R430 east out of Abbeyleix; there is an access track after 2km on right hand side that leads to spring.				
Additional Comments:	---				

WELL INFORMATION					
Monitoring Point Type:	Spring	Abstraction Rate (m³/d):	600	Ground Elevation (m OD):	---
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:	Abbeyleix 1 PUB	Number of Abstraction Points in the Scheme:	2	Source Report Available	N
Source Report Info:	---				
Scheme Summary:	Abbeyleix 1 PUB comprises 2 springs - Aughfeerish and Maxwell. These feed the north side of the town. Maxwell is a separate site folder.				

HYDROGEOLOGY								
GEOLOGY	Soil:	Shallow well drained mineral (BminSW)					Subsoil Permeability:	High
	Subsoil:	Glaciofluvial sands and gravels (GLs)						
	Bedrock:	Namurian Shales						
HYDROGEOLOGY	Aquifer Category:	Lg	Vulnerability at Monitoring site:	Extreme (high water table)			Flow Regime:	Intergranular
ZONE OF CONTRIBUTION	Estimated ZOC Size (km²):	0.5	ZOC Delineated By:	Tobin			Recharge Estimate (mm/yr):	470
	ZOC Delineation Comments:	Spring located at based of slope discharging to Ballymaddock Stream. Boundaries based on topography. Abstraction values are based on subtraction of metres flow incoming to the compound site from Maxwell waterpipe and total metered outflow from compound. There is an overflow but not known what the range/mean are. The ZOCs for Aughfeerish and Maxwell (includes Ballypickas) are difficult to delineate as the discharges appear to be greater than what the topographic area could generate at the recharge rate of 470mm. It is assumed that the Ballymaddock Stream is the main discharge zone in the area and the springs are overflow springs.						
Groundwater Vulnerability within ZOC (% area):	Extreme (X)	Extreme (E)	High	Moderate	Low	High to Low	Unclassified	
	1.3	24.31	46.25	28.14	0	0	0	
HYDROCHEMISTRY								
Hydrochemical Signature:	Ca-HCO3			Additional Water Chemistry Information:	Hard, with high Nitrate concentrations. Cannot distinguish Aughfeerish from Maxwell. However both are springs in the same gravel unit.			
Alkalinity (mg/l HCO3):	Average:	Range:						
	---	---						
Hardness (mg/l CaCO3):	Average:	Range:						
	---	---						
Conductivity (uS/cm):	Average:	Range:						
	---	690-800						
Monitoring Record Period:	From:	To:						
	---	---						
RISK ASSESSMENT								
Pressure (e.g., Nitrates, Phosphates, Abstractions):	Phosphates			Typical Contaminants:		---		
Risk Category:	At risk, high confidence			GWB Status:		Good		
Impact Potential within ZOC (% area):	Extreme:	High:	Moderate:		Low:	Negligible:		
	0.00	57.71	42.28		0.01	0.00		
OTHER INFORMATION								



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 NO₃)

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).

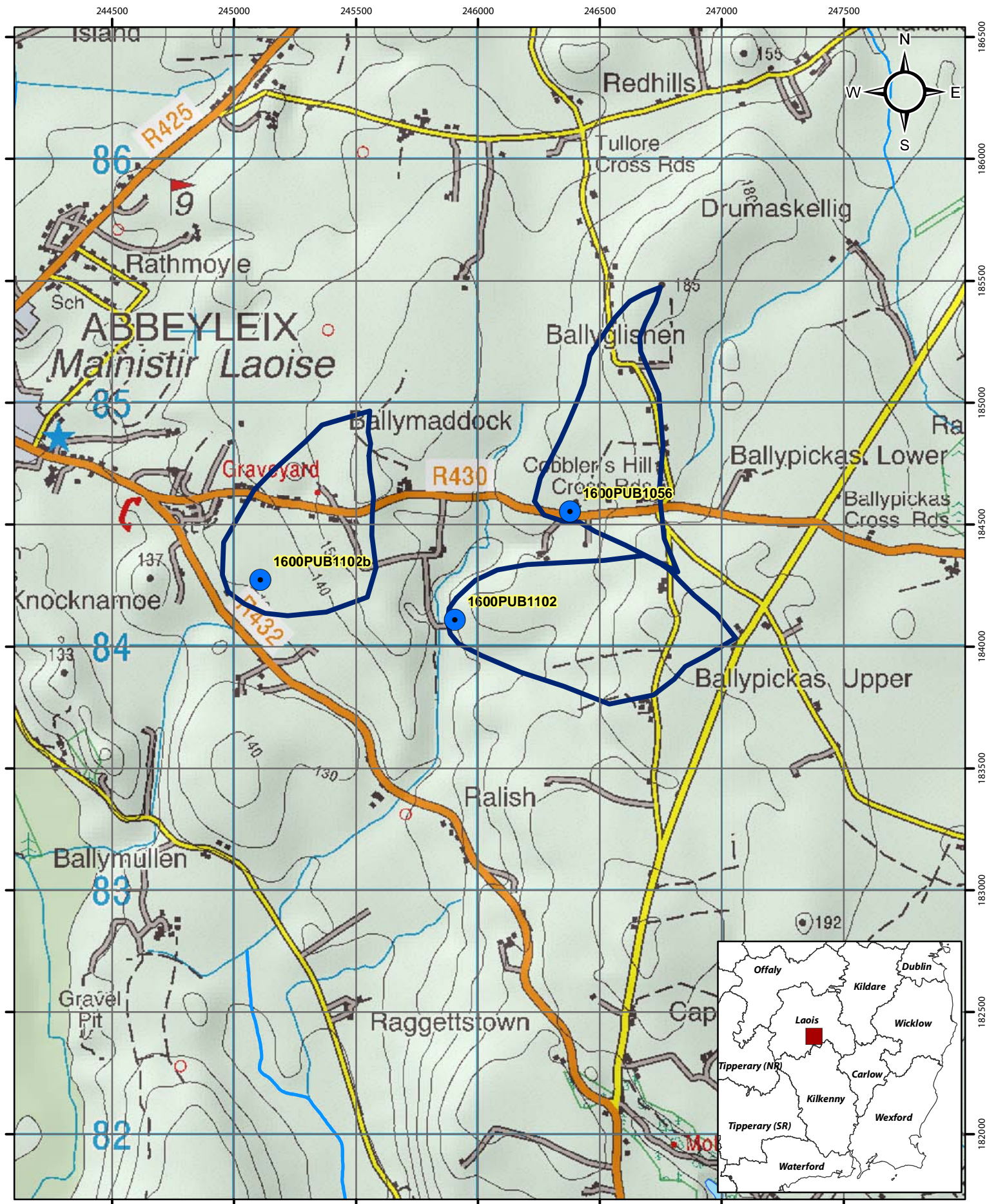
General Downgradient Distances

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:	Apr 2011
Version 2:	Prepared by		Date:	
Version 3:	Prepared by		Date:	
Version 4:	Prepared by		Date:	

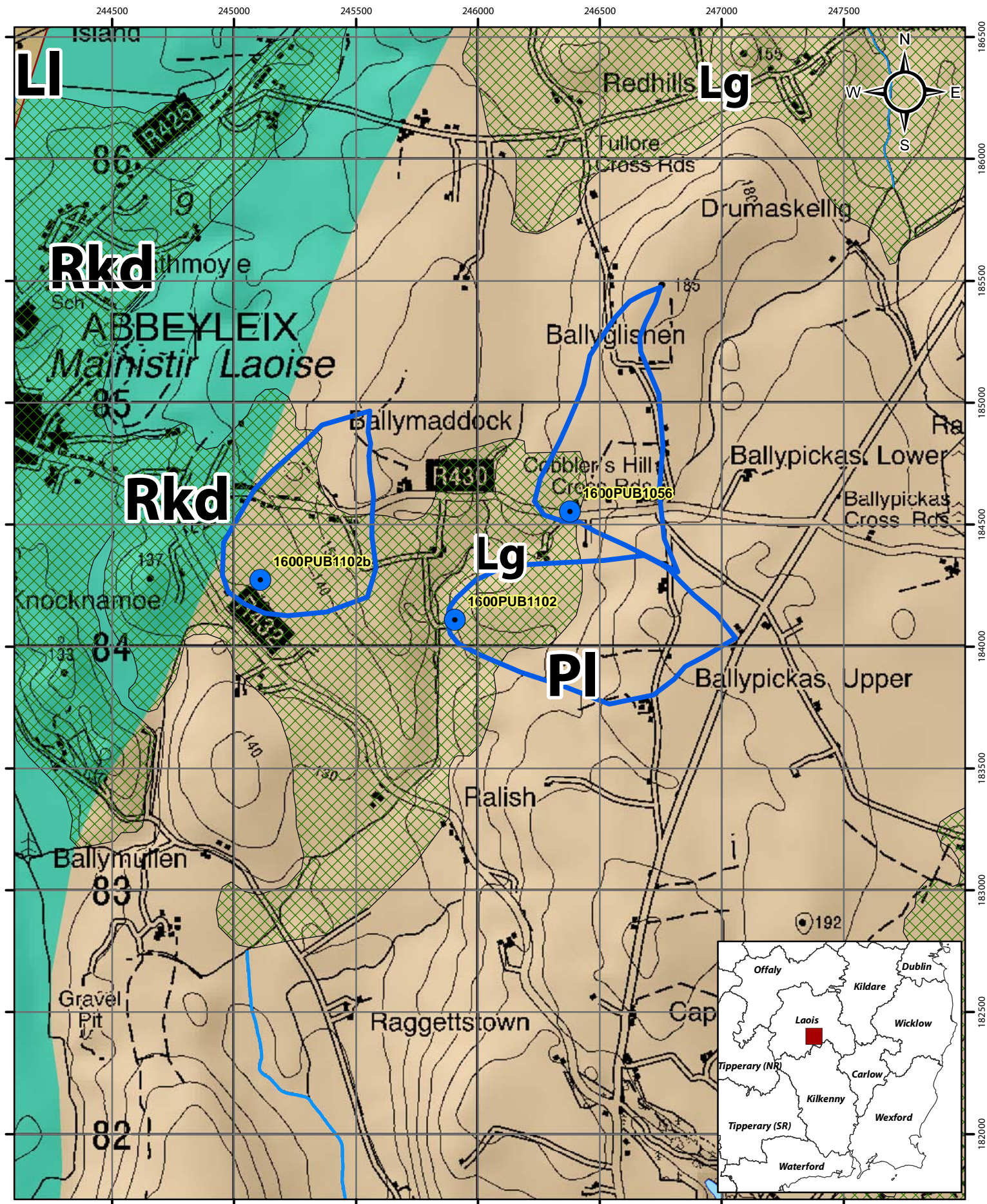


Location Map for Abbeyleix - Aughfeerish and Five Wells

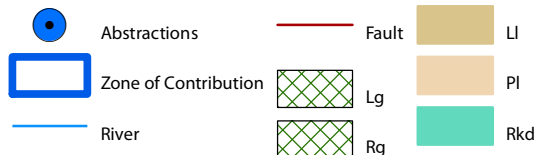
- Abstractions
- Zone of Contribution
- River

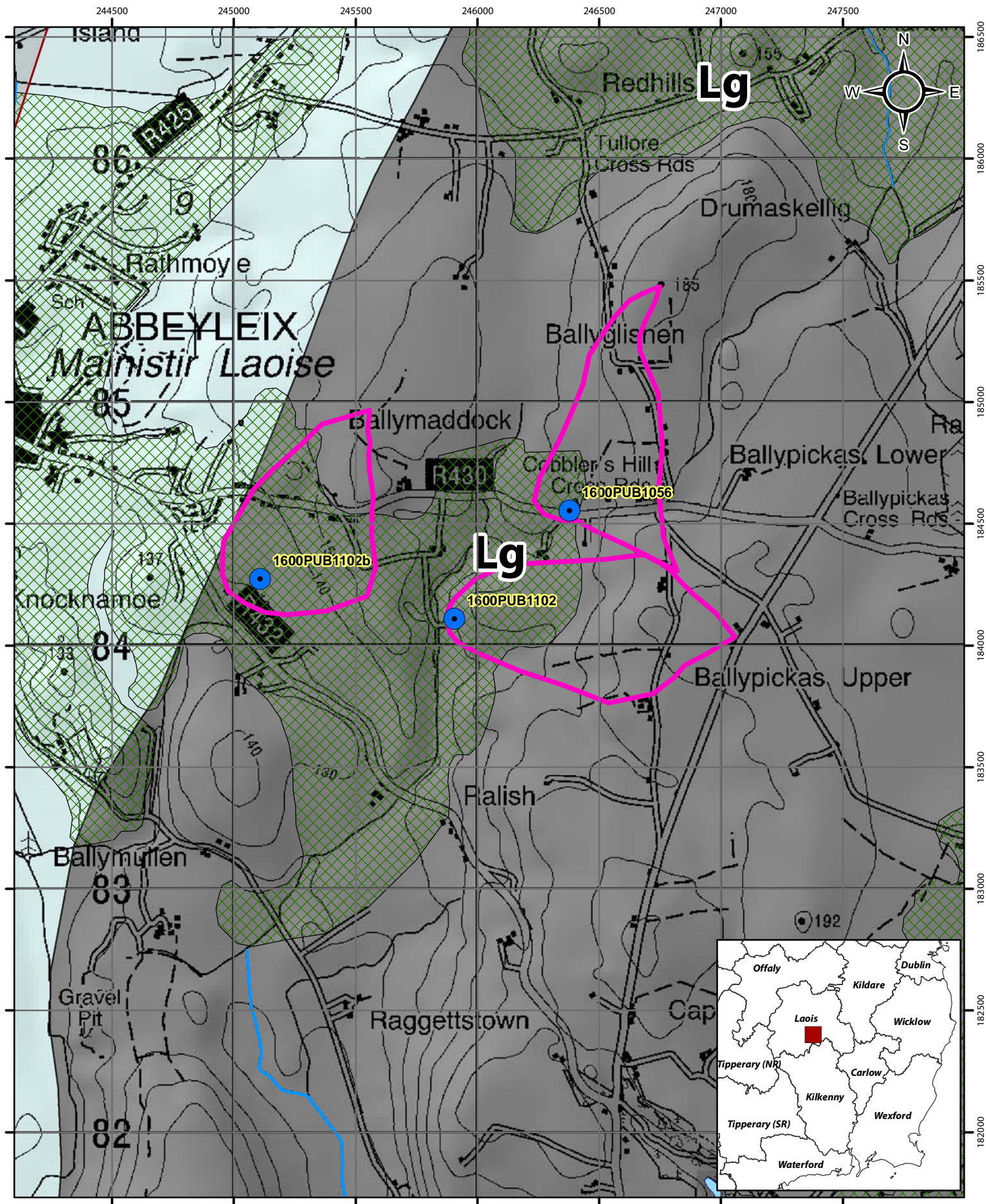
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0 0.25 0.5 1 km

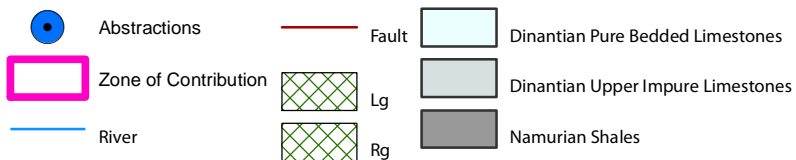


Aquifer Category Map for Abbeyleix - Aughfeerish and Five Wells

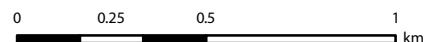


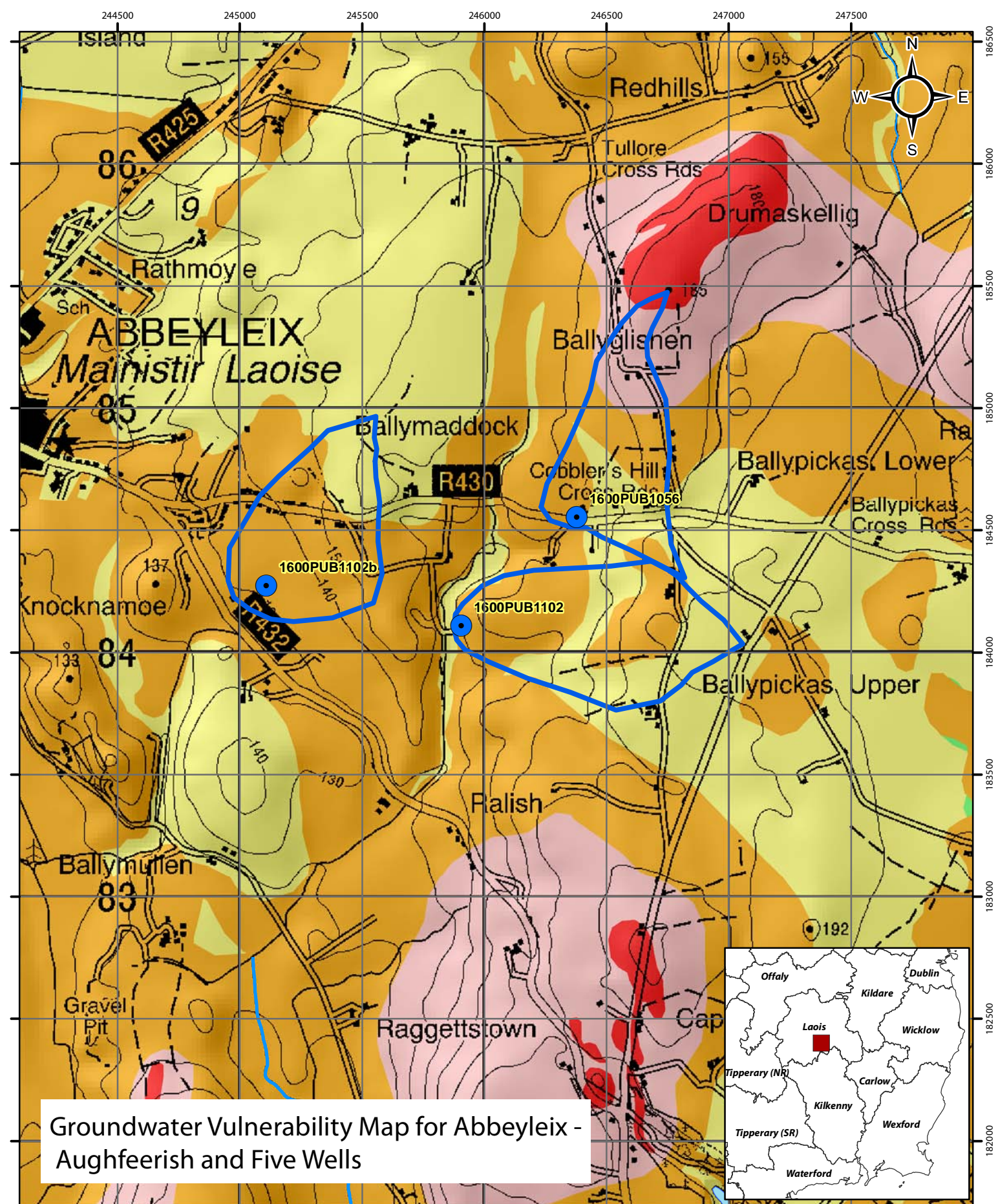


Bedrock Map for Abbeyleix - Aughfeerish and Five Wells



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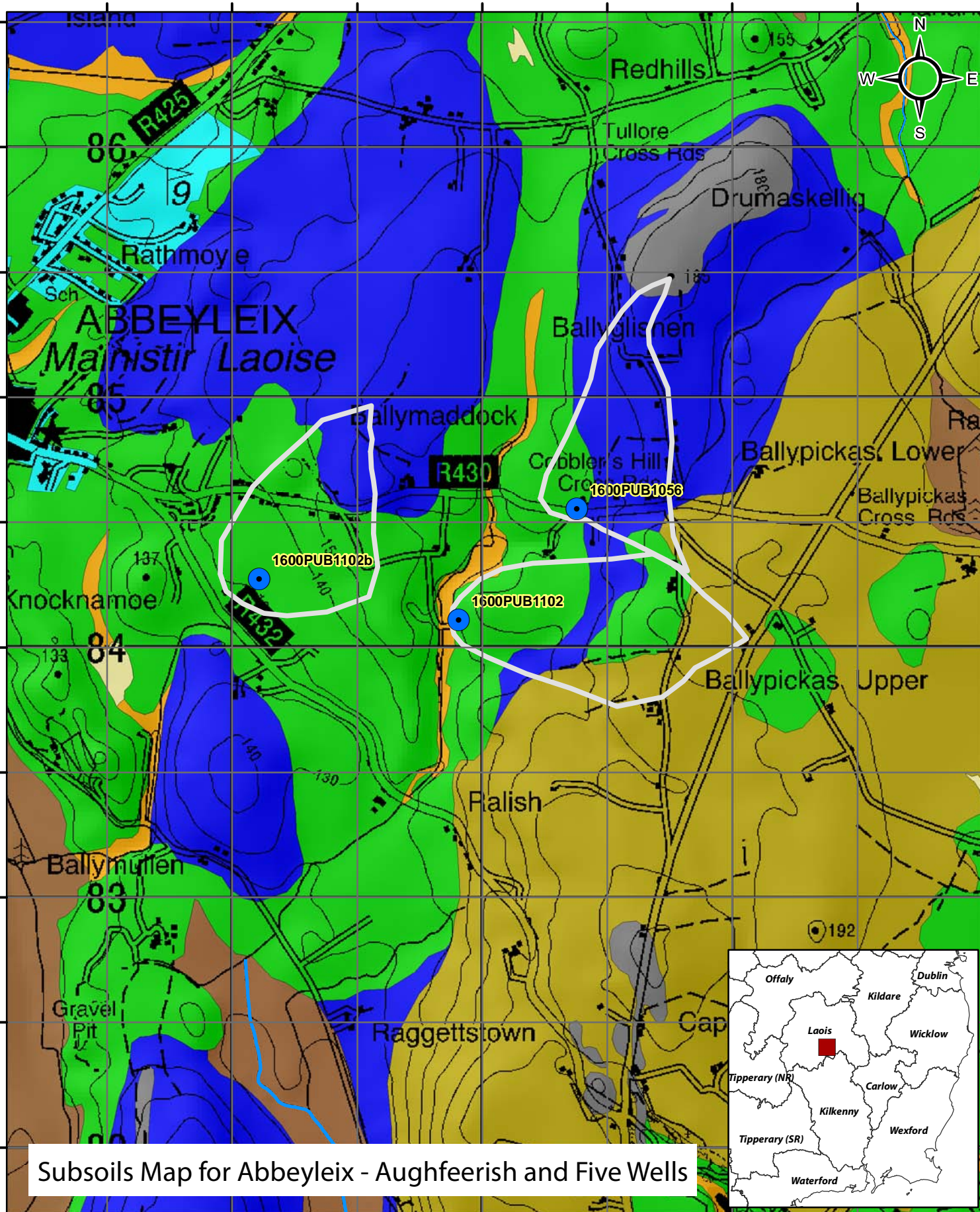


Groundwater Vulnerability Map for Abbeylax - Augheerish and Five Wells

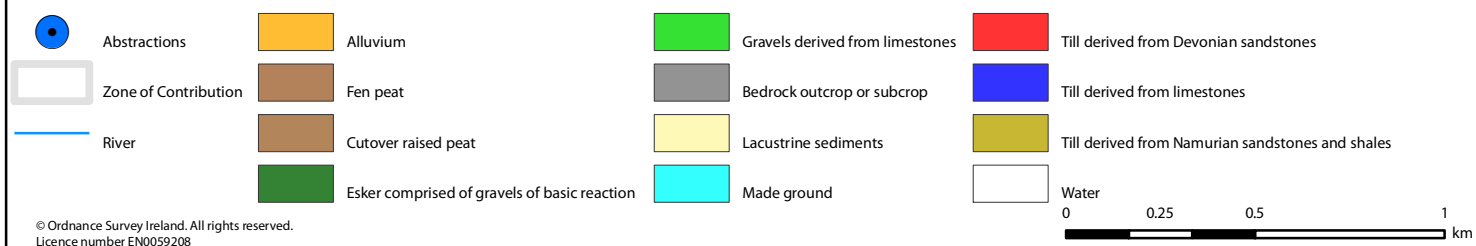
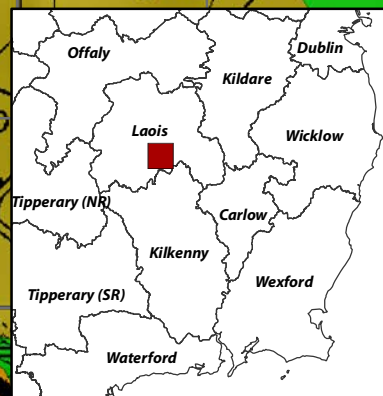


244500 245000 245500 246000 246500 247000 247500

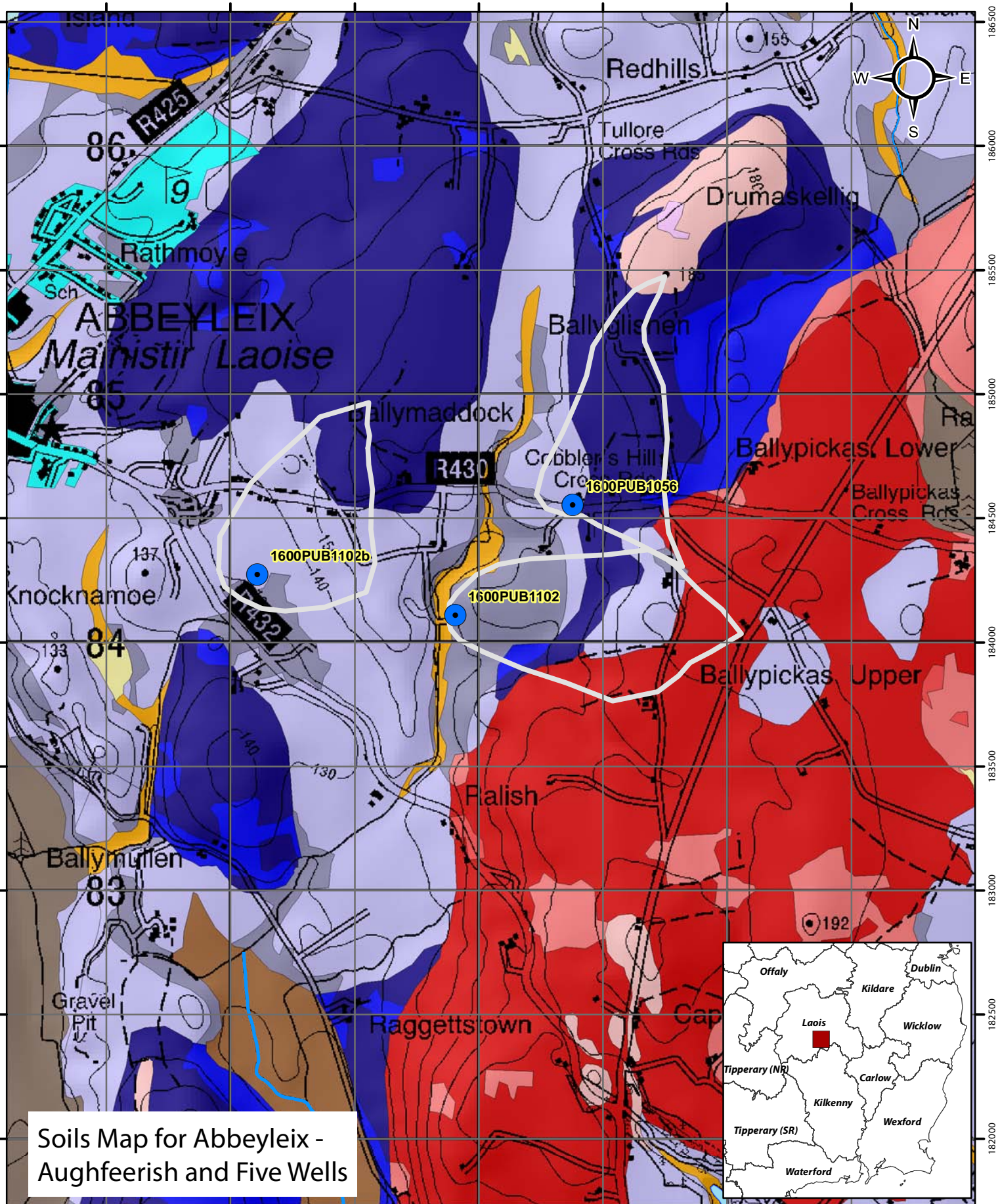
186500
186000
185500
185000
184500
184000
183500
183000
182500
182000



Subsoils Map for Abbeyleix - Aughfeerish and Five Wells



244500 245000 245500 246000 246500 247000 247500



Soils Map for Abbeyleix -
Aughfeerish and Five Wells

