

Water Framework Directive Groundwater Monitoring Programme

Site Information

Dungarvan PWS (Springmount)




Dungarvan PWS (Springmount) is a spring that was used to augment a public water supply in the past.

SITE INFORMATION					
Site Name:	Dungarvan PWS (Springmount)		County:	Waterford	
RBD:	SERBD		EU Reporting Code:	IE_SE_G_055_24_008	
Easting:	224638		GWB Name:	Dungarvan Town_2	
Northing:	92840		GWB Code:	IE_SE_G_055	
Site Use:	Drinking Water (PWS)		Drinking Water Code:	---	
Hydrometric Area:	17		Water Level Monitoring Network:	Level	Flow
Townland:	CLOGHERANE			N	Y
Ownership:	Waterford County Council				
Water Quality Monitoring Network:	Surveillance		Operational (Point)		Operational (Diffuse)
	N		N		Y
Site Comments:	Unused spring in public park surrounded by roads, relatively close to the sea.				

SITE DIRECTIONS	
Location and Access Information:	Located on southside of Dungarvan town just off the bypass, adjacent to Springfield Road. Take Springmount Road off the bypass for St Vincents hospital and take first right onto Springfield Road.
Additional Comments:	---

WELL INFORMATION					
Monitoring Point Type:	Spring	Abstraction Rate (m³/d):	n/a	Ground Elevation (m OD):	7
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:	Dungarvan (Springmount)	Number of Abstraction Points in the Scheme:	1	Source Report Available	N
Source Report Info:	---				
Scheme Summary:	The Springmount spring is intended to augment the Dungarvan Ballinamuck PWS scheme, but only in an emergency. It has not been used for over five years.				


HYDROGEOLOGY							
GEOLOGY	Soil:	Made/Built land (Made)				Subsoil Permeability:	Moderate
	Subsoil:	n.a. (Made)					
	Bedrock:	Dinantian Pure Unbedded Limestones					
HYDROGEOLOGY	Aquifer Category:	Rkd	Vulnerability at Monitoring site:	High to Low	Flow Regime:	Karstified	
ZONE OF CONTRIBUTION	Estimated ZOC Size (km ²):	12.1	ZOC Delineated By:	TOBIN (CK)	Recharge Estimate (mm/yr):	427	
	ZOC Delineation Comments:	This is a karst spring and the defined boundaries for the ZOC are uncertain, based primarily on topography, representing the most likely contributing area. There is an overlap with the ZOC for the borehole supply at Ballinamuck and it includes the sinking stream at Ballymacmague. The western and southern boundaries are based on the assumption that groundwater discharges to the Brickey west and south of the delineated boundary.					
Groundwater Vulnerability within ZOC (% area):	Extreme (X)	Extreme (E)	High	Moderate	Low	High to Low	Unclassified
	10.02	18.42	0	0	0	71.47	0.09
HYDROCHEMISTRY							
Hydrochemical Signature:	Ca-HCO ₃		Additional Water Chemistry Information:	During the monitoring period: The average nitrate concentration was 30 mg/l NO ₃ and the maximum nitrate concentration was 38 mg/l NO ₃ . The average ammonium concentration was 0.044 mg/l N and the maximum ammonium concentration was 0.229 mg/l N. The average molybdate reductive phosphorus (MRP) concentration was 0.015 mg/l P and the maximum MRP concentration was 0.044 mg/l P. The average chloride concentration was 20.8 mg/l Cl and the maximum chloride concentration was 24 mg/l Cl.			
Alkalinity (mg/l HCO ₃):	Average:	Range:					
	277	206-340					
Hardness (mg/l CaCO ₃):	Average:	Range:					
	304	233-366					
Conductivity (uS/cm):	Average:	Range:					
	589	465-699					
Monitoring Record Period:	From:	To:					
	2007	2010					
RISK ASSESSMENT							
Pressure (e.g., Nitrates, Phosphates, Abstractions):	Diffuse		Typical Contaminants:	Nitrates			
Risk Category:	At risk, high confidence		GWB Status:	Good			
Impact Potential within ZOC (% area):	Extreme:	High:	Moderate:	Low:	Negligible:		
	9.51	61.63	11.64	0.00	17.22		
OTHER INFORMATION							



Pump House



Storage Tanks



Sampling Point

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).

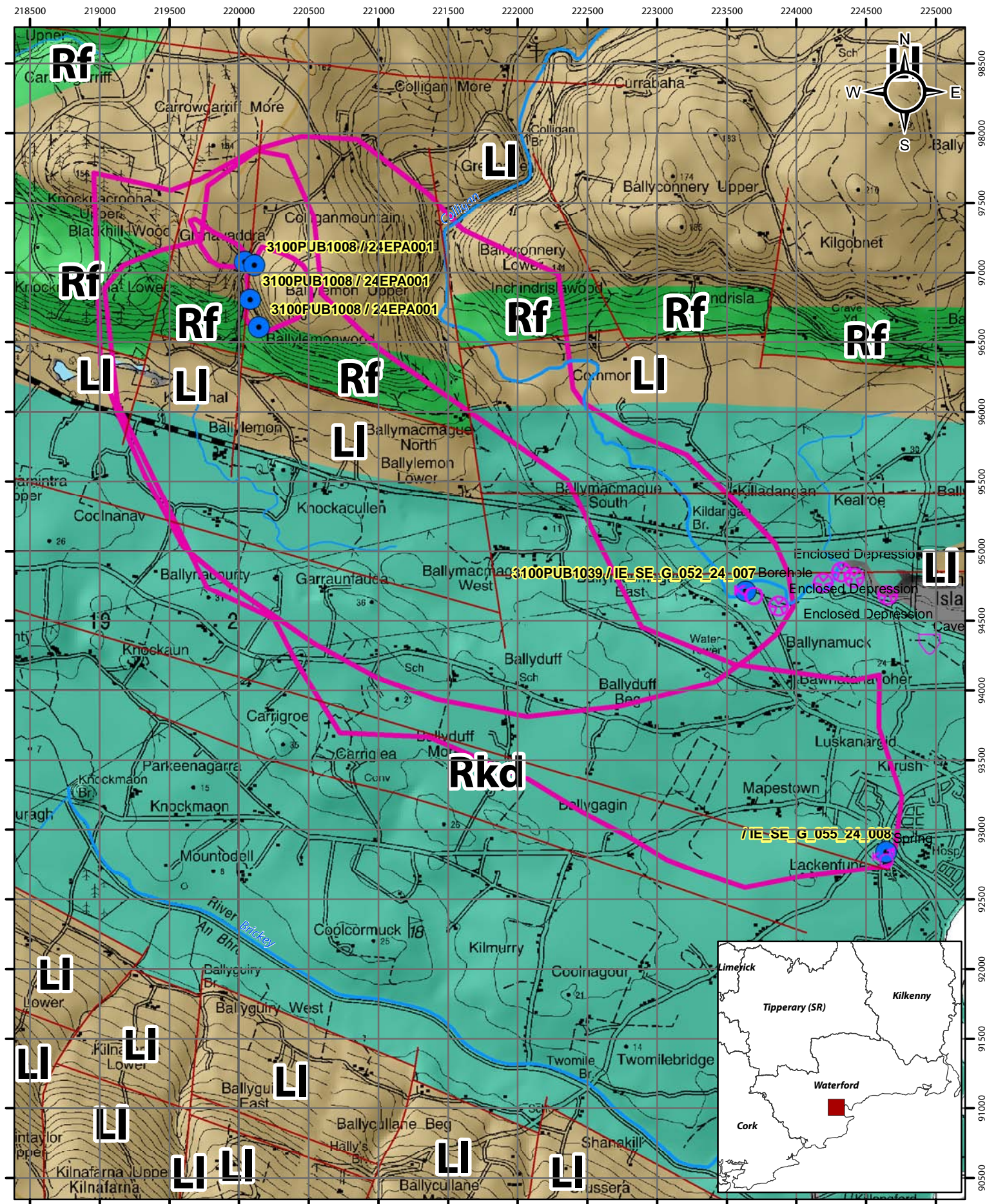
General Downgradient Distances

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

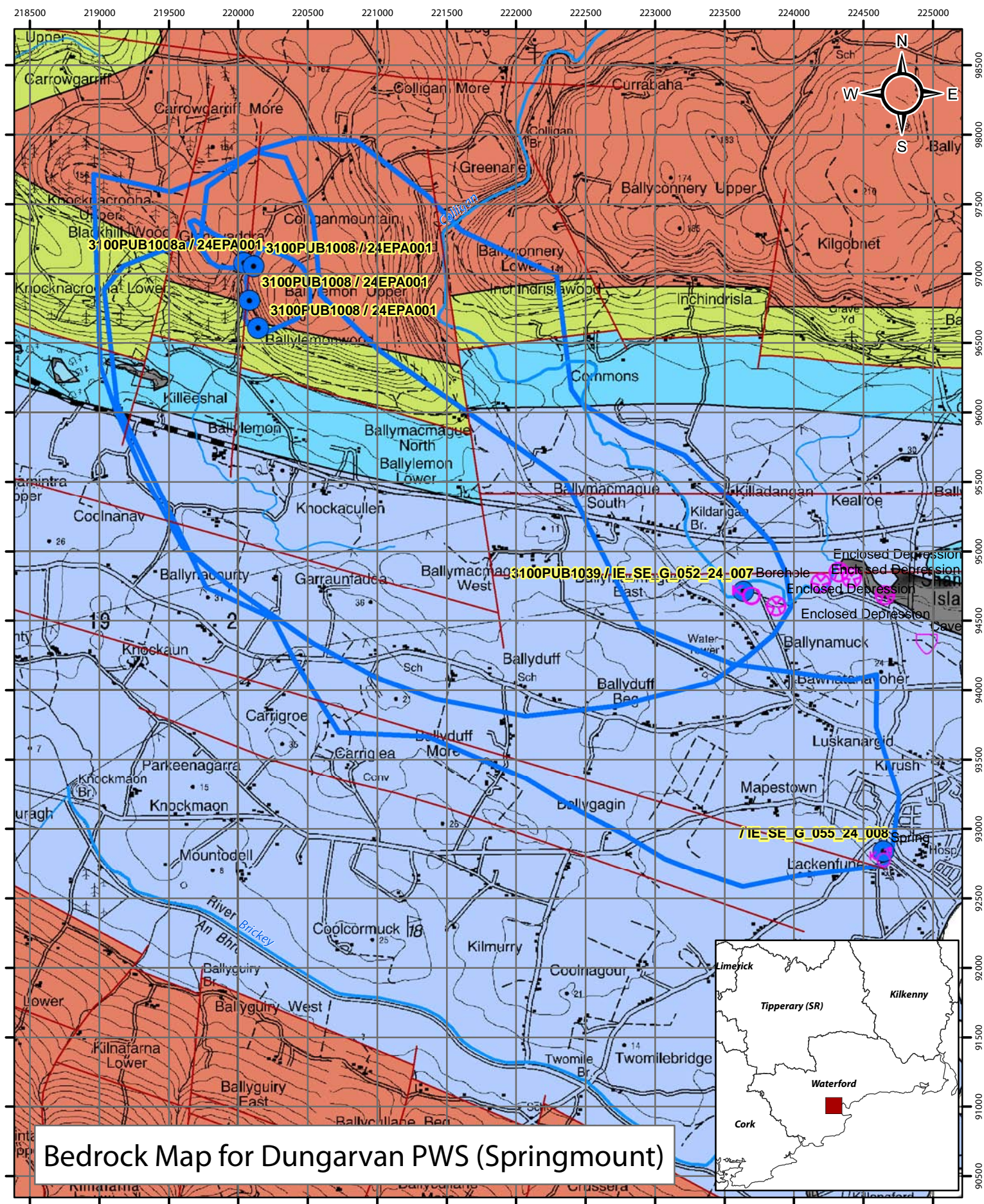


Aquifer Category Map for Dungarvan PWS (Springmount)

- | | | | | | | | | | |
|--|----------------------|--|-----|--|----------|--|---------------------|--|-------|
| | Abstractions | | LI | | Borehole | | Enclosed Depression | | Fault |
| | River | | Rf | | Cave | | Spring | | |
| | Zone of Contribution | | Rkd | | | | | | |

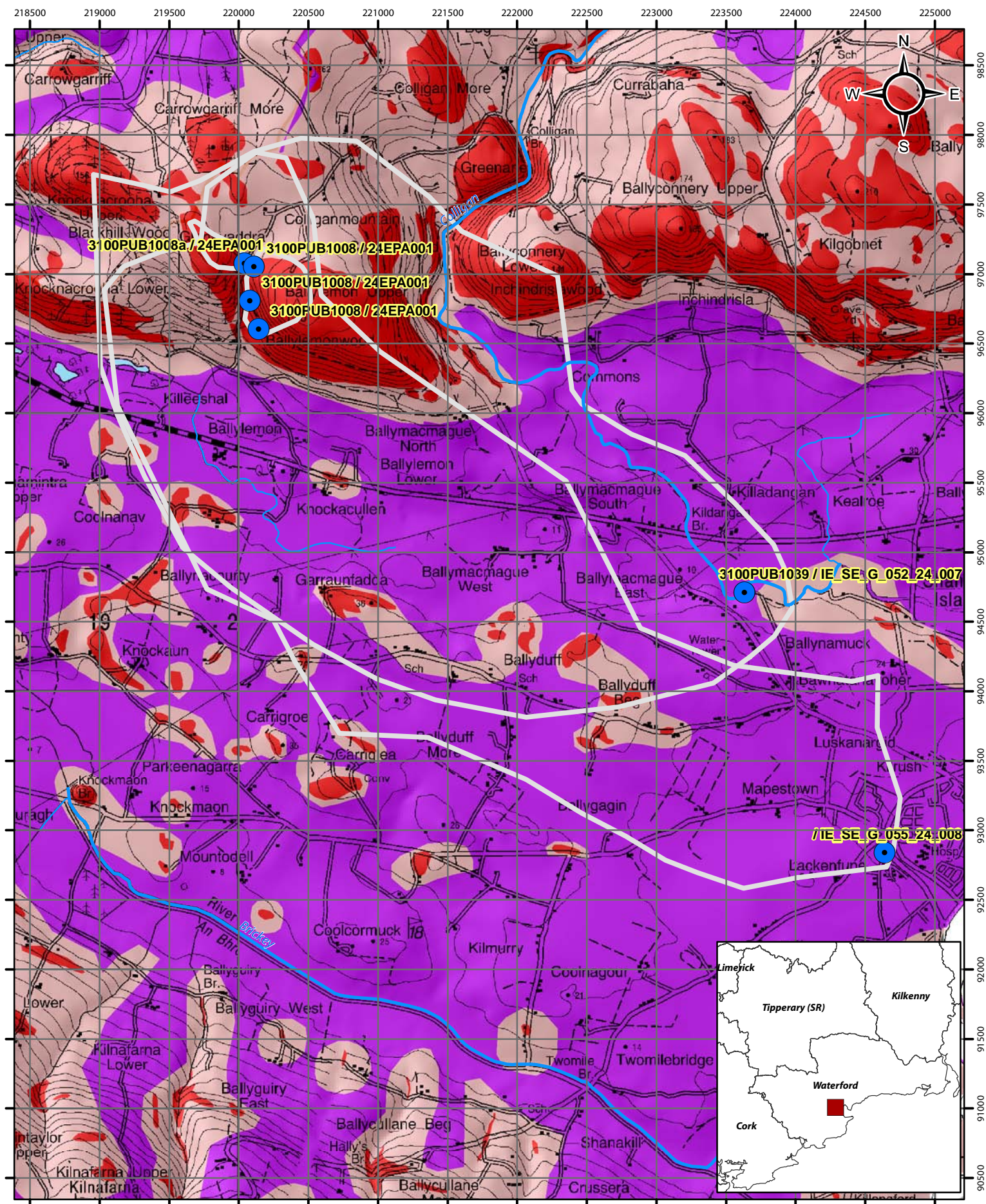
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0 0.25 0.5 1
km

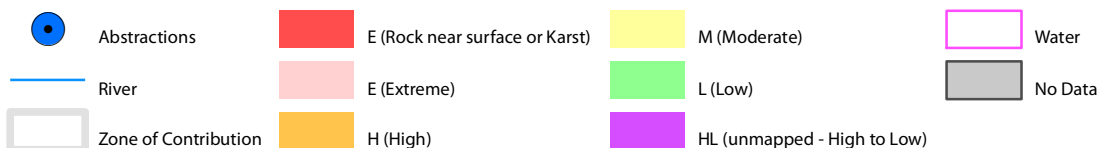


Bedrock Map for Dungarvan PWS (Springmount)

- | | | | | | | | |
|--|----------------------|--|------------------------------------|--|---------------------|--|-------|
| | Abstractions | | Devonian Kiltoran-type Sandstones | | Borehole | | Fault |
| | River | | Devonian Old Red Sandstones | | Cave | | |
| | Zone of Contribution | | Dinantian Lower Impure Limestones | | Enclosed Depression | | |
| | | | Dinantian Pure Unbedded Limestones | | Spring | | |

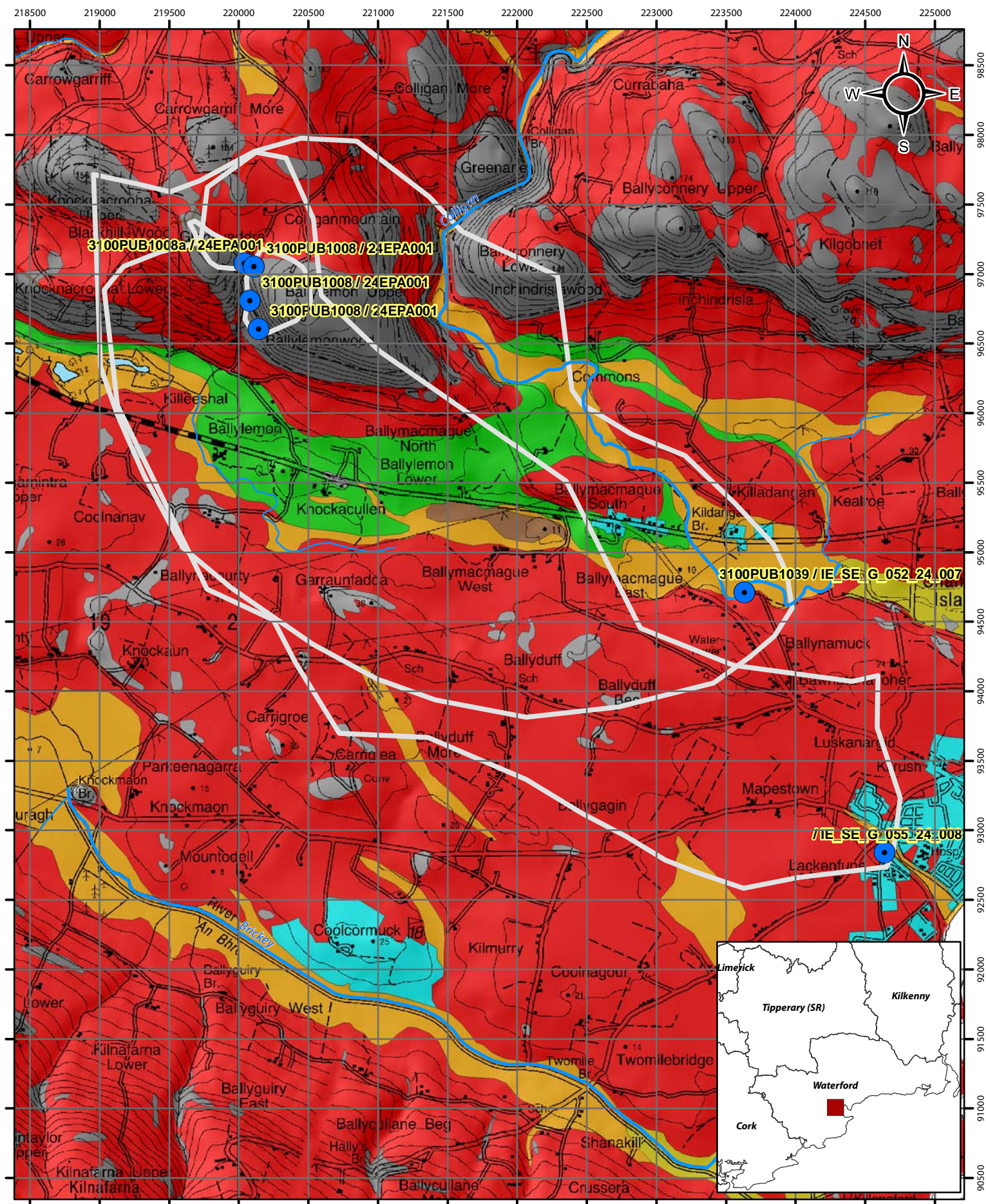


Groundwater Vulnerability for Dungarvan PWS (Springmount)



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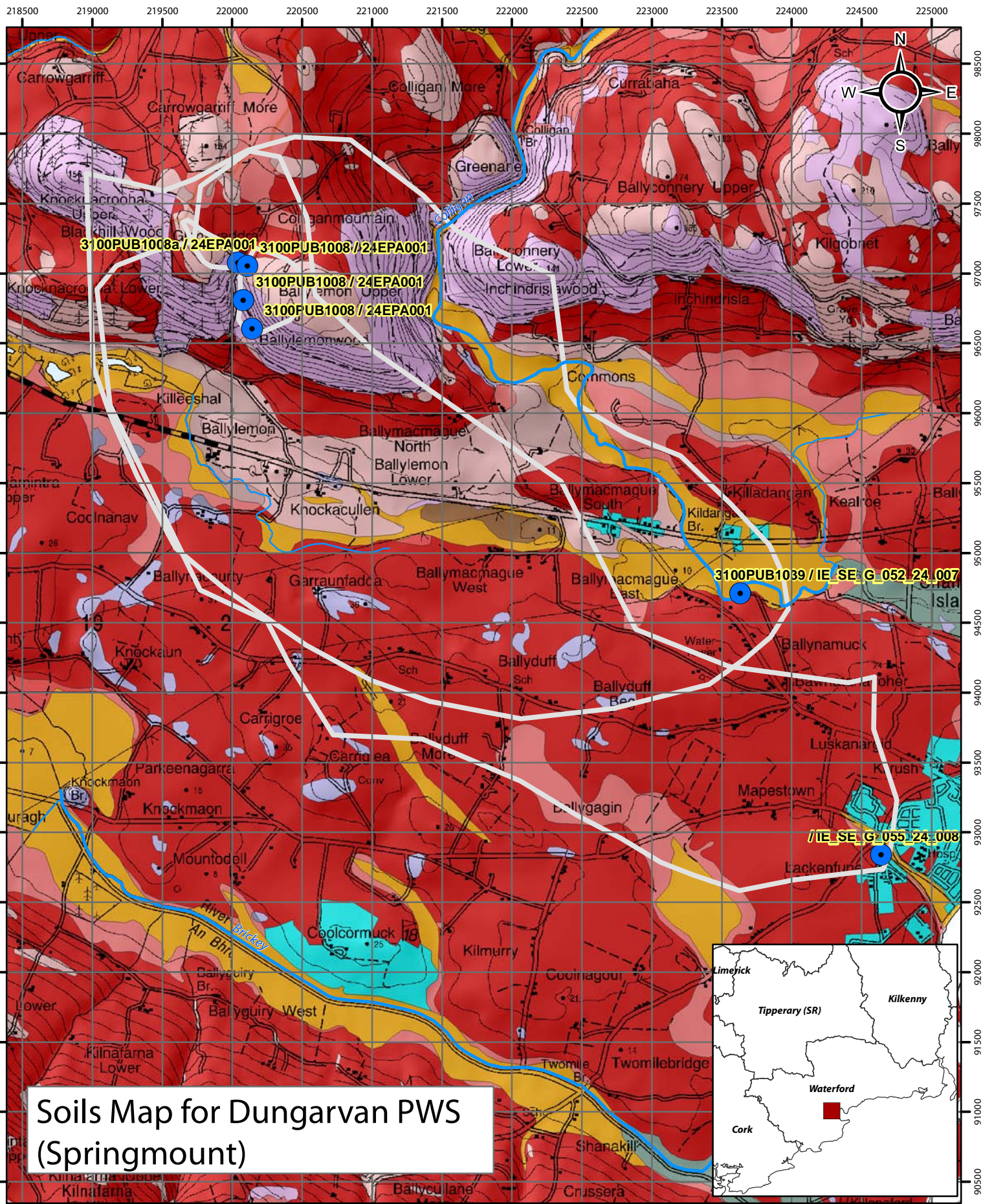
0 0.25 0.5 1
km



Subsoils Map for Dungarvan PWS (Springmount)

- | | | | |
|----------------------|--|---------------------------------------|---------------------------|
| Abstractions | Alluvium | Bedrock outcrop or subcrop | Estuarine silts and clays |
| River | Fen peat | Karstified bedrock outcrop or subcrop | Made ground |
| Zone of Contribution | Gravels derived from Devonian sandstones | Till derived from Devonian sandstones | Water |

0 0.25 0.5 1 km



Soils Map for Dungarvan PWS (Springmount)

