

Water Framework Directive Groundwater Monitoring Programme

Site Information **Dromahane PWS**



Dromahane PWS is a borehole with an abstraction rate of 414m³/day.



Cork

August 2011

SITE INFORMATION					
Site Name:	Dromahane PWS		County:	Cork	
RBD:	SWRBD		EU Reporting Code:	IE_SW_G_037_04_014	
Easting:	152710		GWB Name:	Glenville	
Northing:	95297		GWB Code:	IE_SW_G_037	
Site Use:	Drinking Water (PWS)		Drinking Water Code:	0500PUB1308	
Hydrometric Area:	18		Water Level Monitoring Network:	Level	Flow
Townland:	DROMORE			N	N
Ownership:	Cork Co. Co.				
Water Quality Monitoring Network:	Surveillance		Operational (Point)		Operational (Diffuse)
	N		N		Y
Site Comments:	Dromahane PWS is a 60m deep borehole situated in Dinantian Pure Unbedded Limestones and is used as a public water supply. The borehole is included in the operational chemical network.				

SITE DIRECTIONS					
Location and Access Information:	---				
Additional Comments:	---				

WELL INFORMATION					
Monitoring Point Type:	BH	Abstraction Rate (m³/d):	414	Ground Elevation (m OD):	117
Borehole Log Available:	---	Total Drilled Depth (m bgl):	60	Depth to Bedrock (m bgl):	6.2
Top of Casing (m agl):	---	Upper Casing Diameter (mm):	300	Lower Casing Diameter (mm):	---
Final Borehole Depth (m):	Screened to Bedrock - 10m	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:	Banteer Dromohane PWSS	Number of Abstraction Points in the Scheme:	2	Source Report Available	N
Source Report Info:	---				
Scheme Summary:	Scheme consists of a spring at Banteer and a borehole at dromohane. An Augmentation borehole has been drilled and tested at Mohareen, west of Dromahane, not yet in use.				

HYDROGEOLOGY							
GEOLOGY	Soil:	Made/Built land (Made)				Subsoil Permeability:	Moderate
	Subsoil:	n.a. (Made)					
	Bedrock:	Devonian Old Red Sandstones					
HYDROGEOLOGY	Aquifer Category:	LI	Vulnerability at Monitoring site:	High to Low	Flow Regime:	Poorly productive	
ZONE OF CONTRIBUTION	Estimated ZOC Size (km ²):	0.75	ZOC Delineated By:	OCM (DC)	Recharge Estimate (mm/yr):	167	
	ZOC Delineation Comments:	ZOC based on abstraction, geology and topography. A source report has been prepared by Tobin on the nearby augmentation boreholes.					
Groundwater Vulnerability within ZOC (% area):	Extreme (X)	Extreme (E)	High	Moderate	Low	High to Low	Unclassified
	3.31	10.64	0	0	0	86.05	0
HYDROCHEMISTRY							
Hydrochemical Signature:	Mg-HCO ₃		Additional Water Chemistry Information:	During the monitoring period: The average nitrate concentration was 21 mg/l NO ₃ and the maximum nitrate concentration was 25 mg/l NO ₃ . The average ammonium concentration was 0.016 mg/l N and the maximum ammonium concentration was 0.043 mg/l N. The average molybdate reductive phosphorus (MRP) concentration was 0.063 mg/l P and the maximum MRP concentration was 0.631 mg/l P. The average chloride concentration was 21.2 mg/l Cl and the maximum chloride concentration was 35 mg/l Cl.			
Alkalinity (mg/l HCO ₃):	Average:	Range:					
	107	81-190					
Hardness (mg/l CaCO ₃):	Average:	Range:					
	120	104-131					
Conductivity (uS/cm):	Average:	Range:					
	331	222-718					
Monitoring Record Period:	From:	To:					
	2007	2010					
RISK ASSESSMENT							
Pressure (e.g., Nitrates, Phosphates, Abstractions):	Diffuse		Typical Contaminants:	Nitrate			
Risk Category:	At risk, high confidence		GWB Status:	Good			
Impact Potential within ZOC (% area):	Extreme:	High:	Moderate:	Low:	Negligible:		
	0.00	28.09	53.13	0.00	18.78		
OTHER INFORMATION							



Site Location



Pump House



Sampling Tap

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).

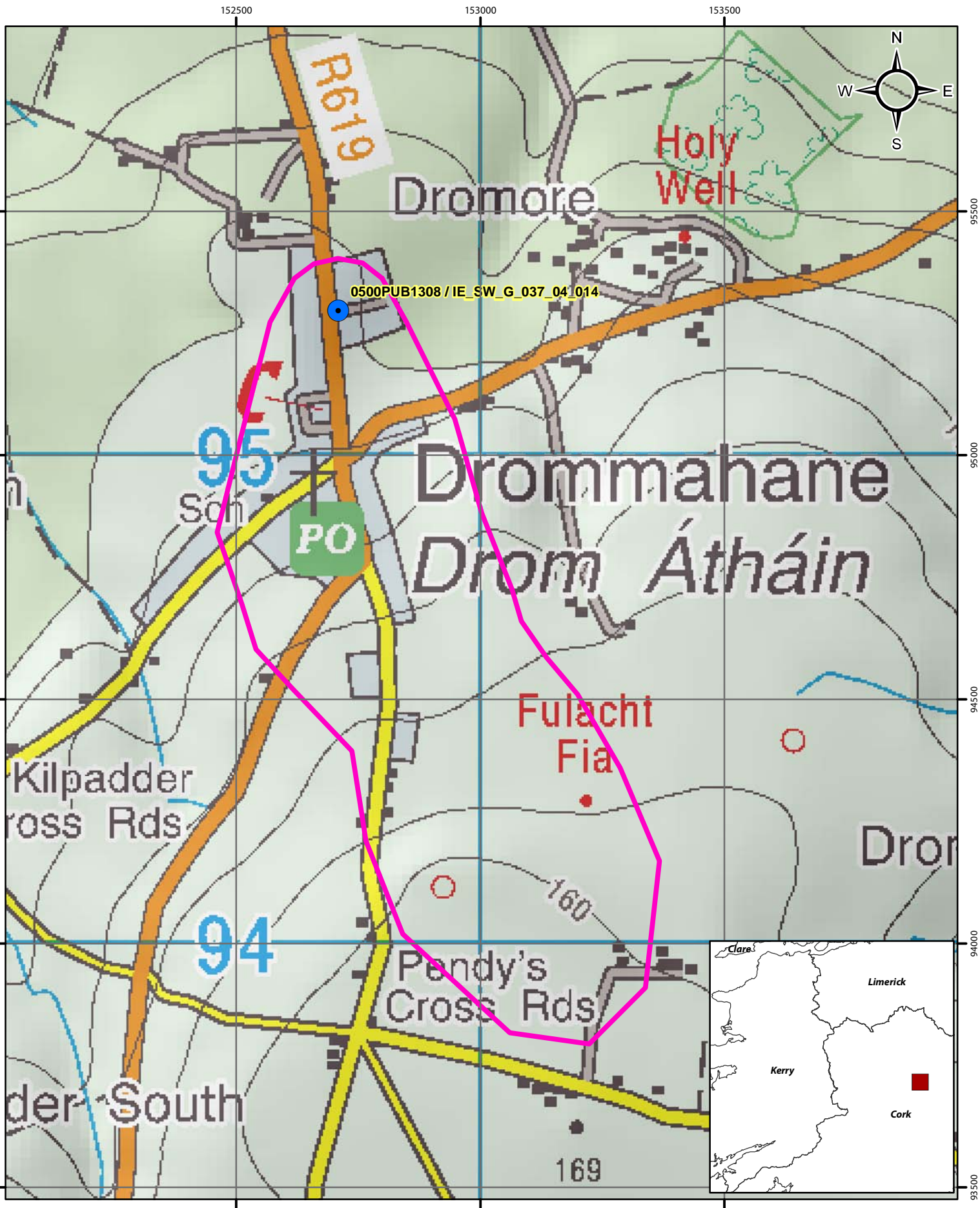
General Downgradient Distances

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.

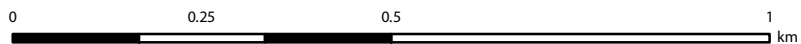
Version 0:	Prepared by		Date:	
Version 1:	Prepared by	OCM (DC)	Date:	Feb 2011
Version 2:	Prepared by		Date:	
Version 3:	Prepared by		Date:	
Version 4:	Prepared by		Date:	

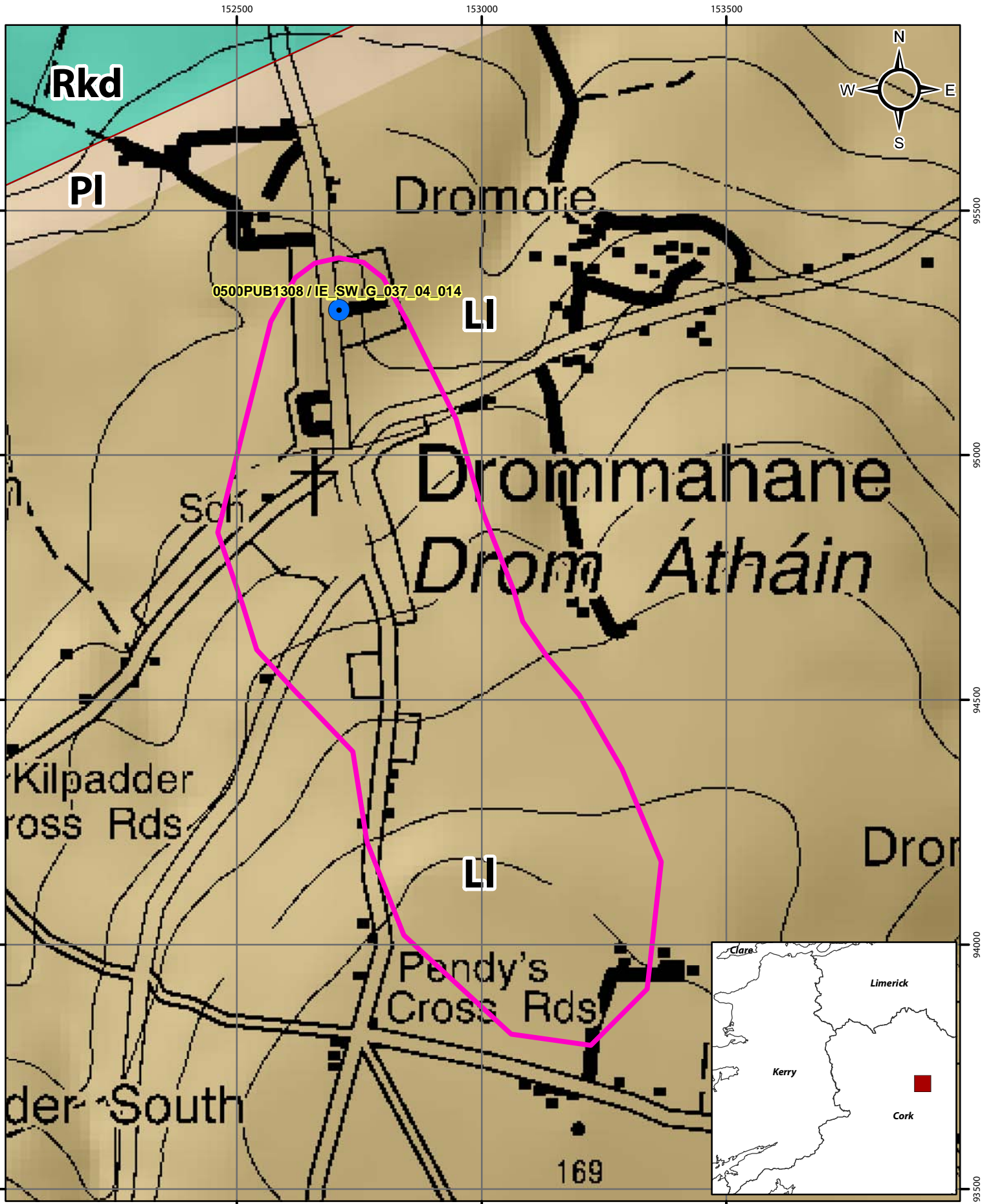


Location Map for Drommahane PWS

-  Abstractions
-  River
-  Zone of Contribution

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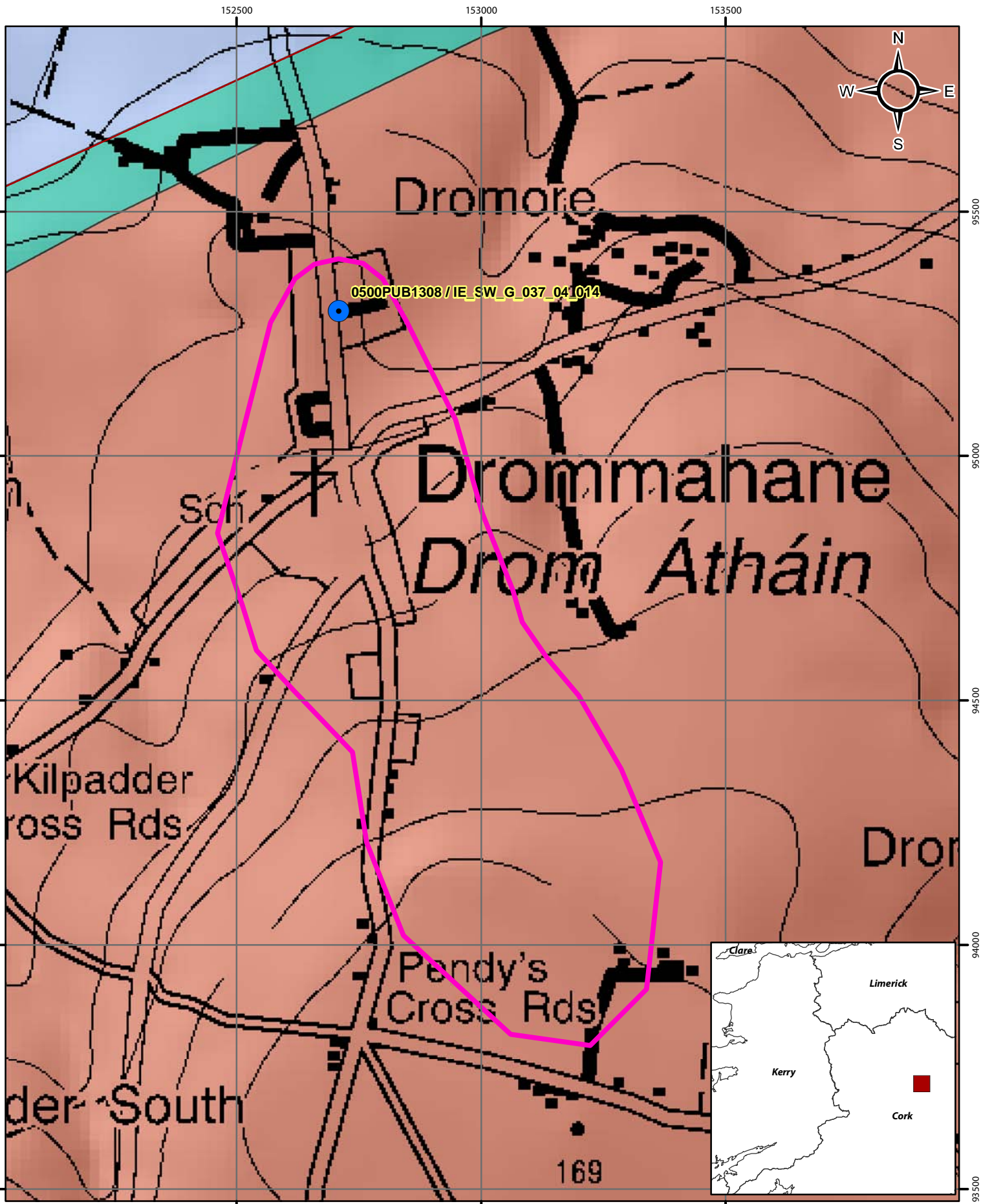


Aquifer Category Map for Drommahane PWS








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

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0 0.25 0.5 1 km



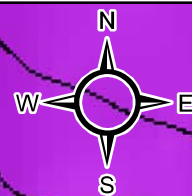
Bedrock Map for Drommahane PWS

-  Abstractions
-  River
-  Zone of Contribution
-  Devonian Old Red Sandstones
-  Dinantian (early) Sandstones, Shales and Limestones
-  Dinantian Pure Unbedded Limestones
-  Fault

152500

153000

153500



Dromore

0500PUB1308 / IE_SW_G_037_04_1014

Drommahane
Drom Átháin

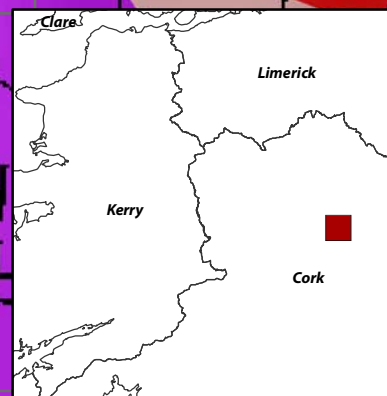
Scho

Kilpadder
Cross RdsPaddy's
Cross Rds

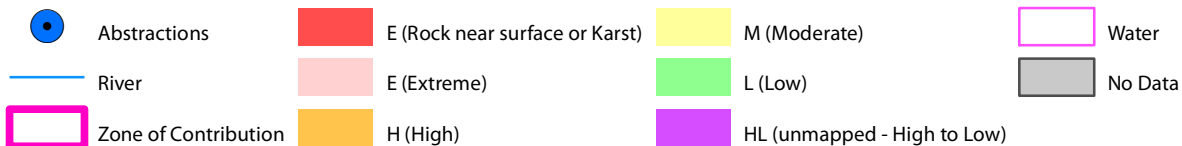
der-South

Drom

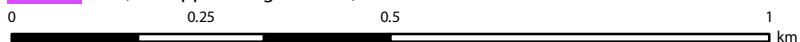
169

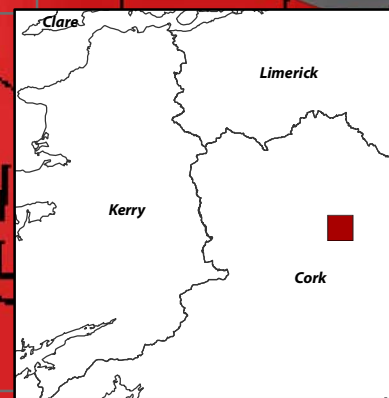
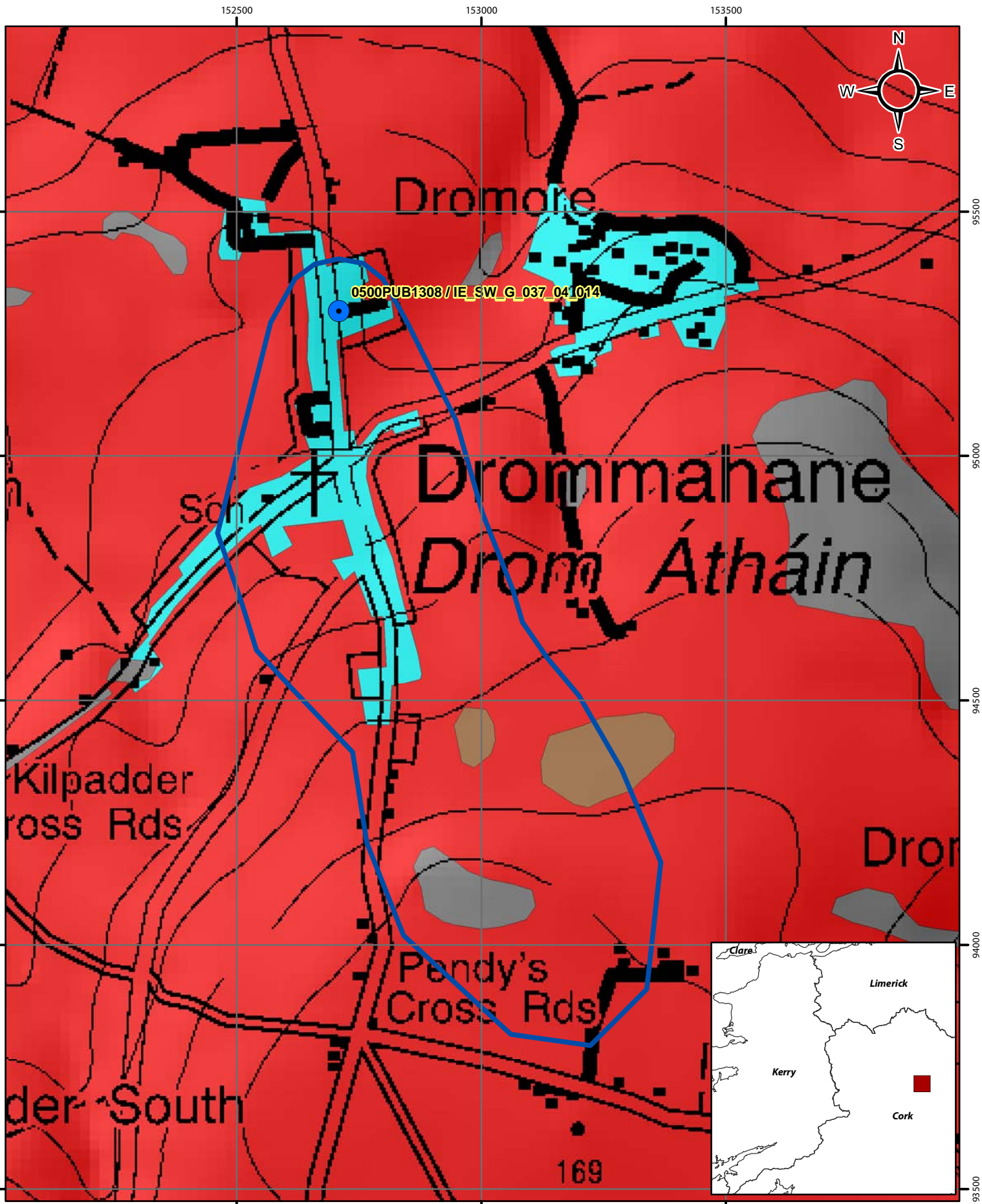


Groundwater Vulnerability Map for Drommahane PWS



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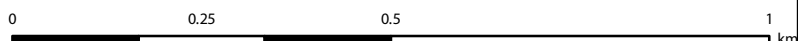


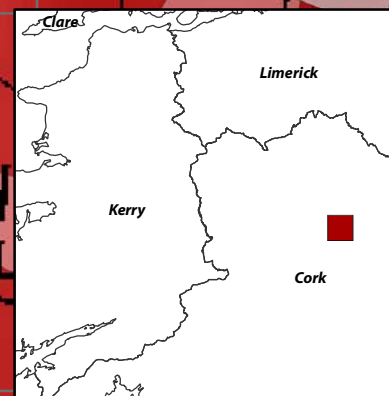
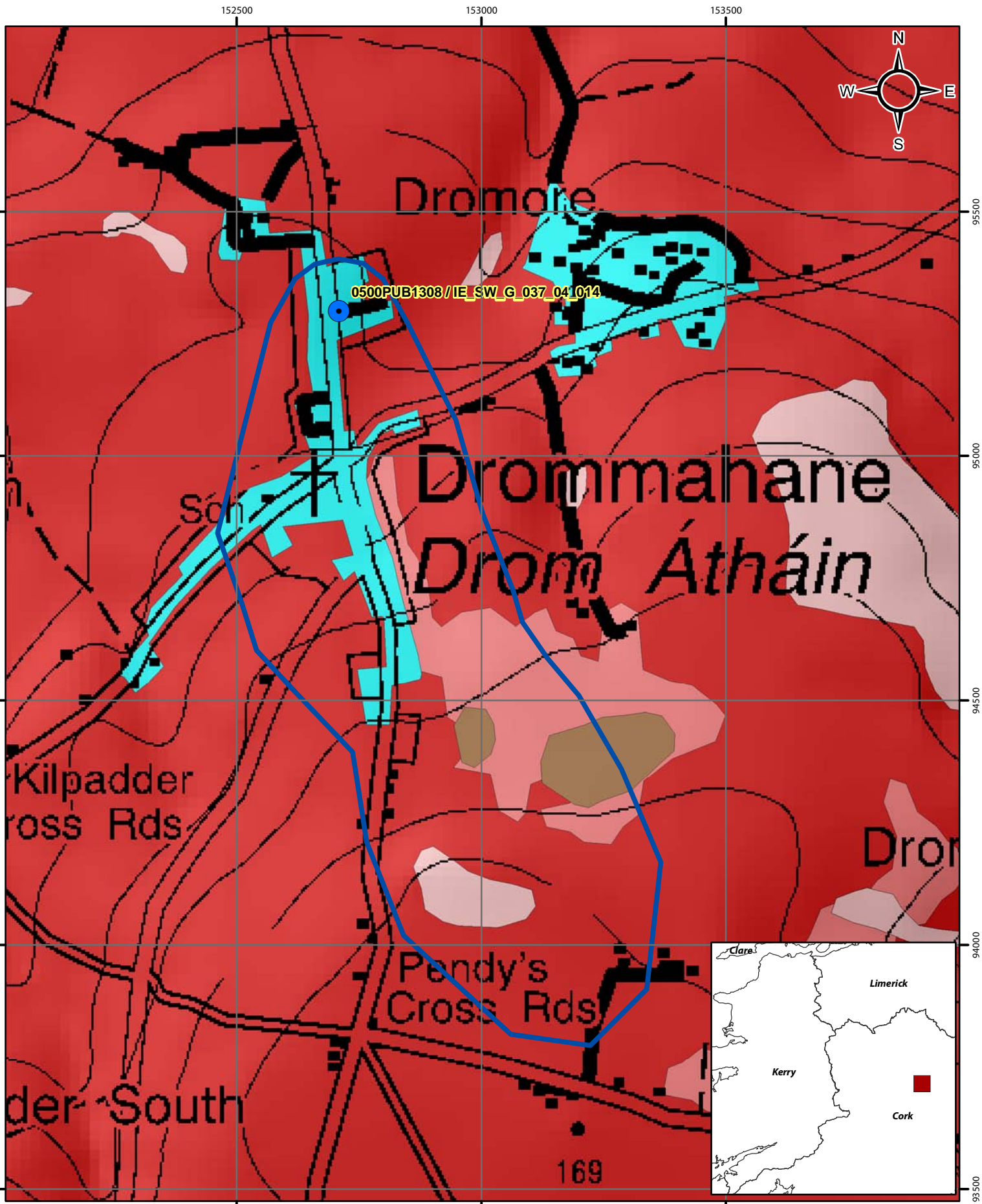


Subsoils Map for Drommahane PWS

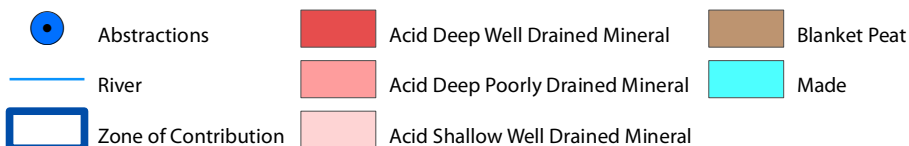
- Abstractions
- Blanket peat
- Made ground
- River
- Bedrock outcrop or subcrop
- Till derived from Devonian sandstones
- Zone of Contribution

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Soils Map for Drommahane PWS



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