

Environmental Regulation

An Overview of Irish Water's Approach to Address Pesticides in Drinking Water

TOPPS Advisor Workshops:
Teagasc, Ballyhaise College, Cavan

Andrew Boylan

Drinking Water Compliance Specialist & National Lead on Pesticides
Environmental Regulation
28th May 2019



General Info Relating to Pesticides from an IW Perspective

- Prior to the establishment of IW, LAs held combined responsibility for Drinking Water & Catchment through Water Services.
- IW does not have statutory powers in the catchment.
- Drinking Water tested for Pesticides more often and more comprehensively than catchment (APHA Monitoring of 4 Priority Catchments started in 2018, being the only recent exception).
- The regulatory standards for Pesticides in Drinking Water (not health based):
 - Pesticides (Individual) 0.10 µg/l
 - Pesticides (Total) 0.50 µg/l
 - Aldrin, dieldrin, heptachlor and heptachlor epoxide¹ 0.030 µg /l (Banned since 1981)
- The treatment option for Pesticides is very expensive to install & maintain. Issue can be ephemeral in many cases. Where possible UK Water Utilities trying to move away from treatment as the panacea for Pesticides & instead are concentrating their efforts in the catchment through collaboration with stakeholders.
 - Proactive Prevention vs Reactive Intervention.**
- IW wish to reduce risk posed by Pesticides by raising awareness and through engagement & collaboration. Primarily through involvement with the NPDWAG
- **Many ways Pesticides can enter catchment not just Agriculture!
However, it's fair to say that MCPA is directly related to Agriculture.**

Factors Influencing Pesticide Failures in DW



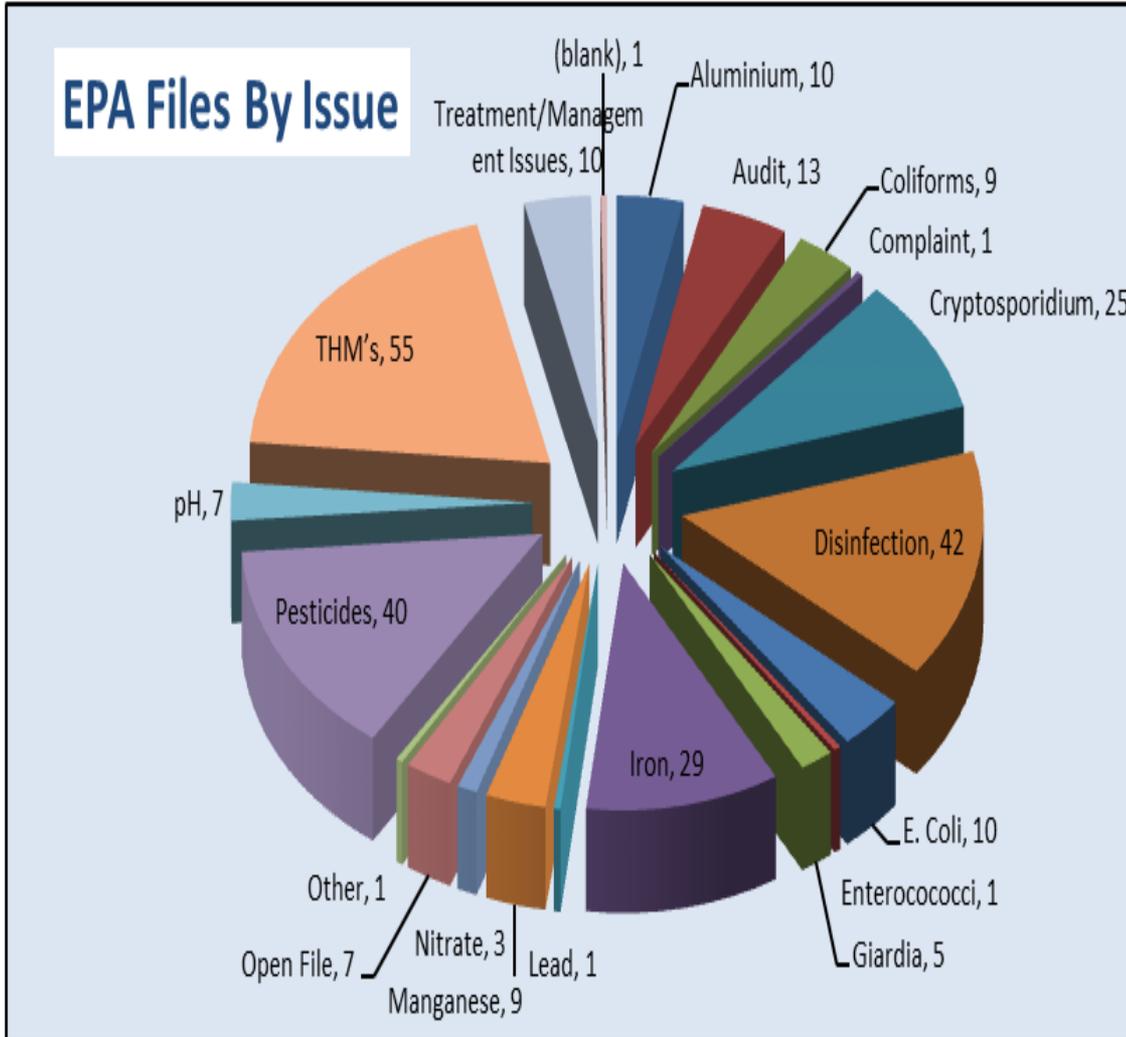
- It doesn't take a lot of pesticide to exceed the MAC for drinking water.
- The chemistry of MCPA lends itself to detection.
- Rushes and the efforts to curtail! MCPA is an issue unique to Ireland.
- Also Ireland has large no. of WTP abstractions relative to European counterparts.

What IW do when Pesticides are Detected at Levels above the DW Standard?

We implement our **Pesticide Action Procedure (PAP)**.

The PAP sets out a standardised response to drinking water failures caused by the prevalence of pesticides in the catchment and outlines how IW Environmental Regulation endeavours to ensure water quality at the point of compliance, protect public health and prevent the escalation of EPA drinking water investigation file(s) by raising awareness, engaging and working collaboratively with key stakeholders.

Scale of Issue: EPA Files Open (Q1 2019)



Row Labels	Count of EPA Open File Number
Aluminium	10
Audit	13
Coliforms	9
Complaint	1
Cryptosporidium	25
Disinfection	42
E. Coli	10
Enterococci	1
Giardia	5
Iron	29
Lead	1
Manganese	9
Nitrate	3
Open File	7
Other	1
Pesticides	40
pH	7
THM's	55
Treatment/Management Issues	10
(blank)	1
Grand Total	279

Irish Water's Actions to Address Pesticides in Drinking Water

Pesticide Action Procedure Introduce consistent approach across 31 LAs

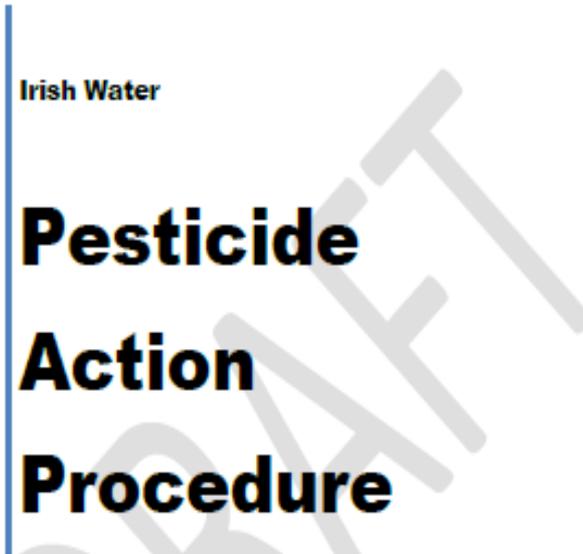
Standardised Pesticide **Monitoring Programmes**. IW began in 2014, however, standardised approach rolled first out during 2016.

EPA Pesticide File classification system
Watch Category
Action Category

National Pesticide in Drinking Water Action Group

Support NPDWAG members – **APHA Monitoring Programme, Teagasc Events**

Significant regional and national **Comms & Media** activity

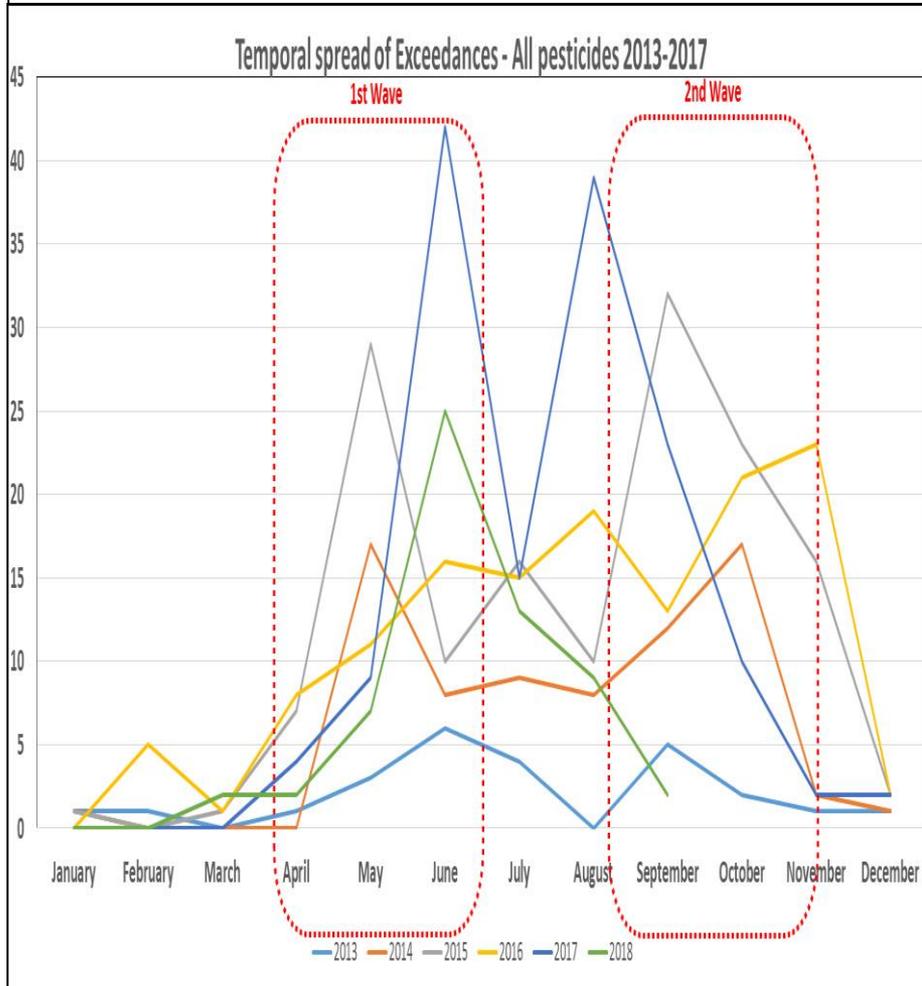


Revision History

Revision Number	Description of Change	Author(s)	Approved by	Date of approval
V1	Draft version for review/comment	Sarah Casey Andrew Boylan	Micheal O'Leary Niall Horgan	15/06/2017
V2	Draft version for review/comment	Andrew Boylan	Michael O'Leary	20/12/2017
V3	Draft version for review/comment	Andrew Boylan		02/02/2018
[Revision Number]	[Text]	[Name]	[Name]	Click here to enter a date.

IW Standardised Pesticide Monitoring Programme: A Risk Based Approach

IW monitor for 33 different Pesticides. Baseline (21) and Additional (12)
 Typical spraying season and meteorological factors considered.

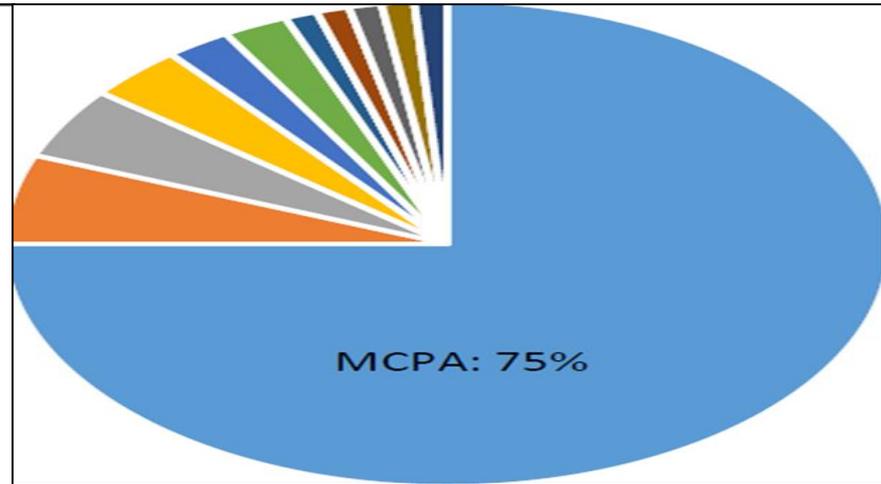
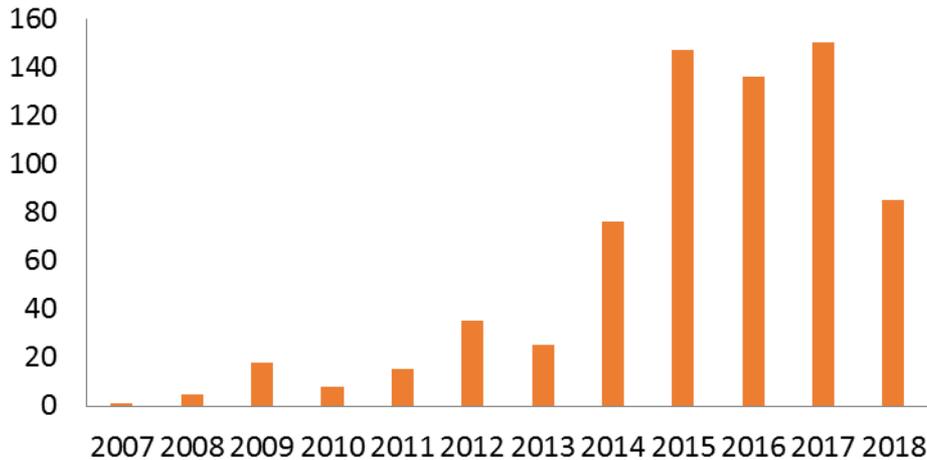


Irish Water
 Eastern Midlands Region: 2016 Pesticide Sampling Programme

Level of Risk	Low	Med	Med to High	High	High	High	Med	Med to High	High	High	High	Low	Comments:
No. of Audit Samples	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
1				← Sole Audit →									Sole Audit sample is collected either in March, April, June or July – with preference for the months with the highest risk.
2				← 1 st Audit →				← 2 nd Audit →					1 st Audit sample is collected either in March, April, June or July and the 2 nd Audit sample collected in August, September or October – with preference for the months with the highest risk.
3				X		X				X			The three Audit samples required collected during months marked by an X.
4				X		X			X		X		The four Audit samples required collected during months marked by an X.
5				← 1 st Audit →		X	X	← 4 th Audit →		X			1 st Audit sample collected either in February, March or April and the 4 th Audit sample collected either in July, August or September. The remaining three Audit samples collected during months marked by an X.
6				← 1 st Audit →		X	X	← 4 th Audit →		X	X		1 st Audit sample collected either in February, March or April and the 4 th Audit sample collected either in July, August or September. The remaining four Audit samples collected during months marked by an X.
7				X	X	X	X		X	X	X		The seven Audit samples required collected during months marked by an X.
8				X	X	X	X		X	X	X	X	The eight Audit samples required collected during months marked by an X.
9				X	X	X	X	X	X	X	X	X	The nine Audit samples required collected during months marked by an X.
10				X	X	X	X	X	X	X	X	X	The ten Audit samples required collected during months marked by an X.
11				X	X	X	X	X	X	X	X	X	The eleven Audit samples required collected during months marked by an X.

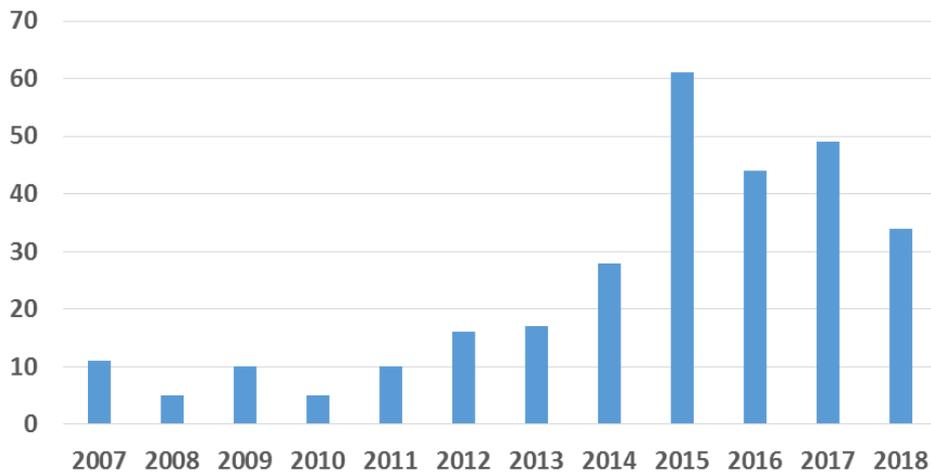
What Happened?

No. of Pesticide Exceedances 2007-2018



2018 % Breakdown of Pesticides

No. of Public Supplies with Reported Pesticide Failures



Pesticide	No. of Exceedances
MCPA	63
2,4-D	5
Bentazone	4
Glyphosate	3
Fluroxypyr	2
Mecoprop	2
Clopyralid	1
Metaldehyde	1
Picloram	1
Triclopyr	1
Pesticides Total	1

What is a persistent/serious Pesticide failure?

Serious: Agreed following consultation with HSE
Persistent: EPA Pesticide File Classification System

EPA adopt a two tier classification system that separates DW investigation files for pesticides into **Watching** (30) or **Action** (7) category.

Classification	Classification Criteria	File Update Requirements
Watching	Supplies with pesticide failures in 1, 2 or 3 calendar months during the spraying season (from months April to November inclusive).	File updates to identify proactive/preventative initiatives undertaken to prevent failures across four or more calendar months.
Action	Supplies with pesticide exceedances spanning 4 or more calendar months during the spraying season (from months April to November inclusive).	File updates must provide information on engagement and awareness raising activities with stakeholders in the catchment.

PWS Classified as “Action” based on four our more failing months in a year

EPA File Classification	Status	Region	Local Authority	Water Supply Zone	Number of Compliant Months	Number of Failing Months	Year
ACTION	Open	East & Midlands	Longford County Council	Longford Central	2	6	2017
ACTION	Open	East & Midlands	Longford County Council	Longford Central	7	1	2018
ACTION	Open	Southern	Kilkenny County Council	Kilkenny City (Troyswood)	7	4	2017
ACTION	Open	Southern	Kilkenny County Council	Kilkenny City (Troyswood)	11	0	2018
ACTION	Open	Southern	Limerick County Council	Abbeyfeale PWS	7	5	2017
ACTION	Open	Southern	Limerick County Council	Abbeyfeale PWS	6	5	2018
ACTION	Open	Southern	Limerick County Council	Newcastle West PWS	8	4	2017
ACTION	Open	Southern	Limerick County Council	Newcastle West PWS	10	1	2018
ACTION	Open	Southern	Wexford County Council	Clonroche	5	4	2018
ACTION	Open	Northwest	Cavan County Council	Belturbet PWS	7	4	2018
ACTION	Open	Northwest	Cavan County Council	Cavan RWSS	6	5	2018

7 Action files nationally. 4 based on 2017 results & 3 recently added in Wexford and Cavan based on 2018 results.

All PWS now placed on the RAL and under Direction from the EPA to ensure compliance within 2 years.

Letters issued advising all households that elevated levels of pesticides in DW with HSE advice. Done for 4 original files & to be done for 3 recent files.

IW’s efforts focusing on abatement in the catchment rather than treatment.

Catchment Actions Might Include

- **Pesticide Monitoring Programmes** in the Catchment. Isolate/Focus Efforts (APHA)
- **Awareness Raising** At Local Farm Meetings, through various media, locally and nationally Information pamphlets, Local Radio, Print and Digital Media.
- **Influencing Best Practice** – Teagasc Advisory Newsletters, **TOPPS Workshop**, Training Professional Users (FETAC, Lantra awards, City & Guilds etc.), Inspection of Equipment, Rush Control Video. **Farm Hazardous Waste Collections.**
- **Supporting Research** – Young Scientist of the Year, InterReg Project & EIP Rush Control Project
- **Stakeholder Engagement/Collaboration**
 - **Communities** through LAWPRO (Public Consultation on RBMP, Tidy Towns Initiatives), LEADER (Nore Vision), Farming Events (Ploughing Championship), Marts & Food Festivals etc.
 - **Organisations** that play a statutory or key role through the NPDWAG, RBMPs, Teagasc Training/Events. ASAP Farm visits
- **Enforcement/Legislation** DAFM Cross Compliance Inspections, Hard Measures

The National Pesticide and Drinking Water Action Group

- The National Pesticide and Drinking Water Action Group (NPDWAG) is chaired by the Department of Agriculture, Food and the Marine (DAFM) and was formed to provide a coordinated and collaborative approach to prevent the ongoing prevalence of pesticides in catchments used for the abstraction of drinking water.

Who Are National Pesticide DW Action Group?

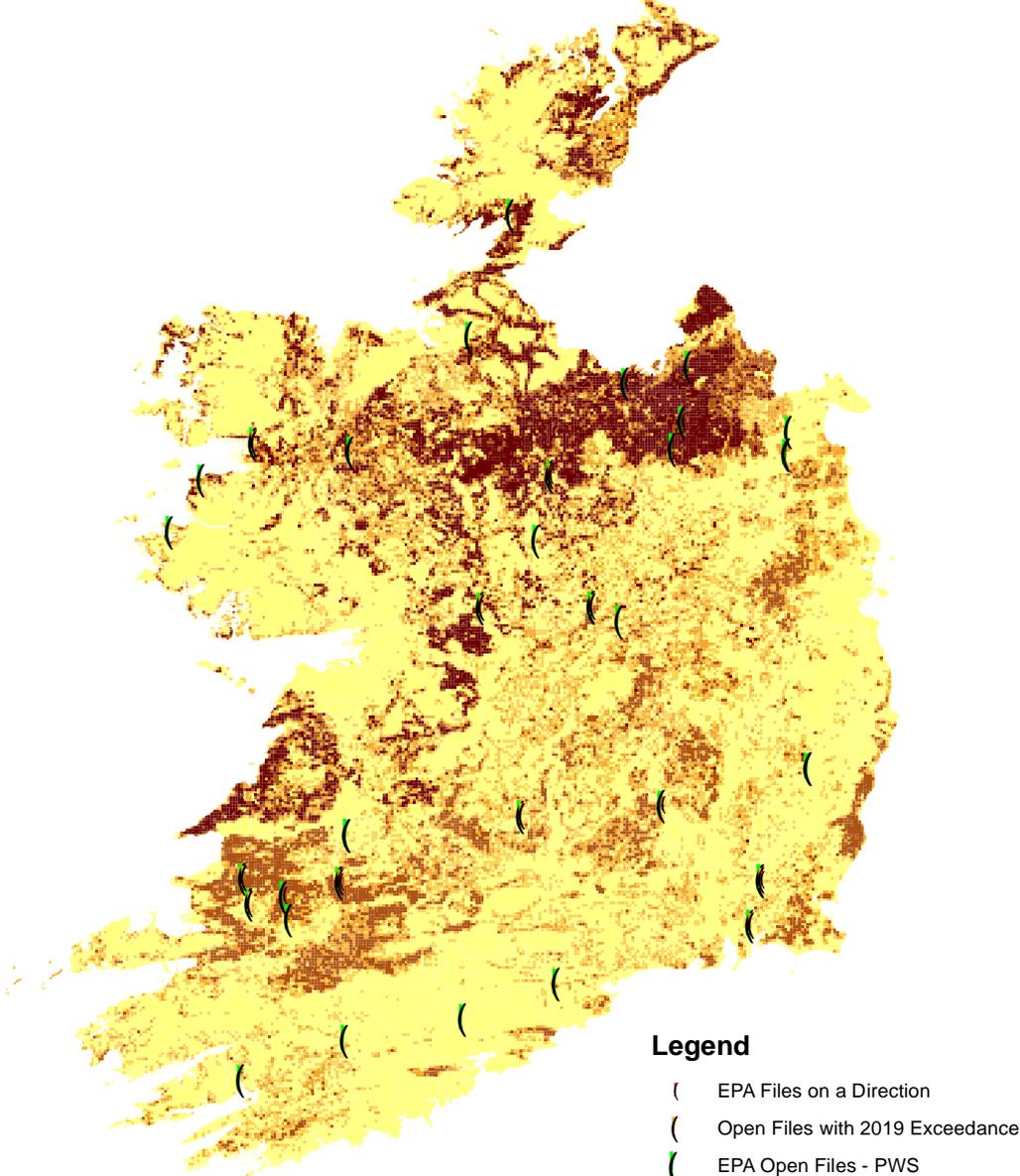
- **CHAIR:** Department of Agriculture, Food and the Marine (DAFM)
- Environmental Protection Agency (EPA). Both OEE & OEA
- City and County Manager' s Association (CCMA)
- Irish Water (IW).
- LAWPRO
- Teagasc
- Irish Farmers Association (IFA)
- Animal and Plant Health Association (APHA)
- Irish Creamery and Milk Suppliers Association (ICMSA)
- Federation of Agrochemical Retail Merchants (FARM)
- National Federation of Group Water Schemes
- Golfing Union of Ireland (GUI)
- Golf Course Superintendents Association of Ireland (GCSAI)
- Association of Landscape Contractors of Ireland (ALCI)

Longford Central PWS – Population of 15,427 Community is Key – wealth and health.



MCPA – Preliminary Source Map

1. Corine data
2. Wet soil layer
3. Pesticide Usage Areas
 1. MCPA
 2. Weights per region
4. Kg km^{-2}



Legend

- (EPA Files on a Direction
- (Open Files with 2019 Exceedance
- (EPA Open Files - PWS

MCPA kgkm2

- 0.000000 - 33.451900
- 33.451901 - 62.998001
- 62.998002 - 96.046997
- 96.046998 - 137.393997
- 137.393998 - 186.535995

0 15 30 60 Kilometers

Current Status on Pesticide Files – Update

- 37 Public Water Supplies with an EPA File open for Pesticides.
- 7 Action files, IW issued Directions for each PWS by EPA to ensure compliance to Pesticide Parametric Value of 0.1ug/l within a 2yr timeframe from issue date. 3 PWS under Direction have already had at least one failing month for 2019;
 - Longford Central – Lough Forbes (1) April - MCPA
 - Newcastle West PWS (1) April - MCPA
 - Clonroche (2) – Jan & Feb – BentazoneThe remaining 4 Action files haven't had a Pesticide exceedance to date.
- After only one month into 2019, 10/37 (*27%) PWSs have already had at least one Pesticide exceedances.
 - 7 PWS with 1 failing month and 2 PWSs
 - 3 failing PWS with 2 months (Longford Central, Ballinasloe & Clonroche)
- **Cannot close out these 10 files until April 2020, at very best!**

Emerging Trends? The Rise of 2, 4 D

- Has MCPA received singularly all the attention/bad press?
- Is there a shift from MCPA to products with different active ingredients? In particular, 2,4 D but also those on LHS table.
- Users should be reminded of precautionary principal and advised IW is monitoring for wide range of pesticides currently and previously supplied on the market.

2018 Exceedances

Pesticide	No. of Exceedances	
MCPA	63	
2,4-D	5	
Bentazone	4	
Glyphosate	3	
Fluroxypyr	2	
Mecoprop	2	
Clopyralid	1	
Metaldehyde	1	
Picloram	1	
Triclopyr	1	
Pesticides Total	1	

Thank you for you attention

? ? ? ?

Any Questions

anboylan@water.ie

ervia

Aurora
TELECOM



Gas
Networks
Ireland

UISCE
EIREANN | IRISH
WATER