

Southern Water PPPF

Quarterly Meeting 22.1.25



Agenda

1. Welcome & Intro from Nick Mills, SW Environment & Innovation Director and Chris Harris, PPPF Chair
2. HCC Flood and Water Community Toolkit and preparedness ? (Sarah Reghif, HCC Flood & Water Management/PPPF)
3. Review of the catchment and SW's outstanding issues for PPPF (Keith Herbert, SW Pathfinder Lead plus others)
 - i. Monitoring/ results and implications in the catchment for 2025
 - ii. Manor Farm / Mill Lane
 - iii. Verge repairs
 - iv. Playbook
 - v. Regular communication with SW
4. Report on AMP8 and SW's development strategy going forward in PPPF and neighbouring catchments (NM plus others)
5. Ecology sampling results (JW, Pillhill Brook Association)
6. Outstanding actions
7. AOB

Monitoring/programme Update



Protect the environment – stop the disruption

Seal Everything

Thrupton, Kimpton, Fyfield & East Cholderton

Aim: no tankering from these villages

Scope:

Seal leaky public sewers – 4.5km

Seal public manholes – 134

Seal private drains – 559 properties (~8.4km)

Scan remaining public sewers – 1.9km

Aspiration: completion by Nov '22

Expectation: Seal Thrupton and Kimpton by Nov '22, follow with Fyfield & E Cholderton by Nov '23

Seal Public Defects

Amport & Monxton

Aim: no infiltration into the public network. Learn from “seal everything” villages and monitoring.

Scope:

Seal leaky public sewers – 1.4km

Seal public manholes – 65

Scan remaining public sewers – 3.2km

Monitor impact of upstream work

Plan future private drain sealing if required

Aspiration: sealing completed by Nov '22

Expectation: TBC

Investigate Everything

Weyhill, Abbots Ann & Little Ann

Aim: understand how much infiltration can occur into the public network. Learn from monitoring and other villages.

Scope:

Scan public sewers – 10.4km

Aspiration: scans completed by Nov '22

Expectation: scans carried out between May '23 and Nov '23 (TBC)

Monitoring

All villages

Aim: Improve understanding local groundwater levels. Improve understanding on where infiltration is entering the network. Improve speed of reactive maintenance. Evidence suitability of sealing technique.

Scope: Observation boreholes and improved groundwater model
Temperature sensing
AMP cycle electro scan programme

Aspiration: Monitoring in place for Nov '22.

Programme to date

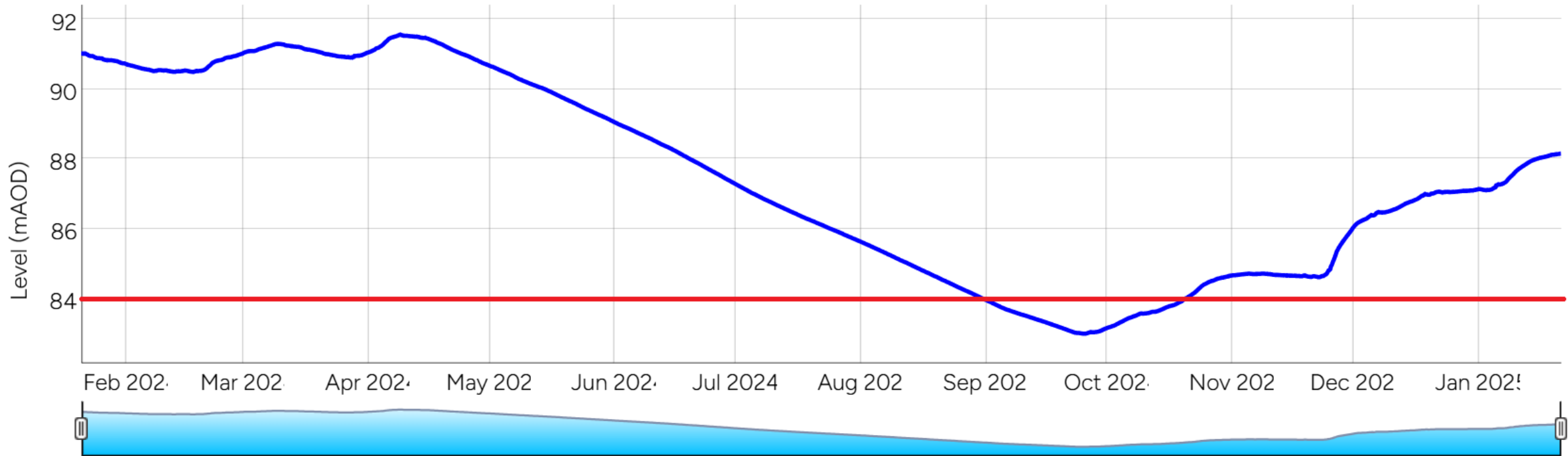
- Approximately £2.2m
- 2.5km of private network sealed
- 2.5km of public network sealed
- 76 manholes sealed

Paused in May 2024 due to no tankers at 91m GW level



Clanville Gate

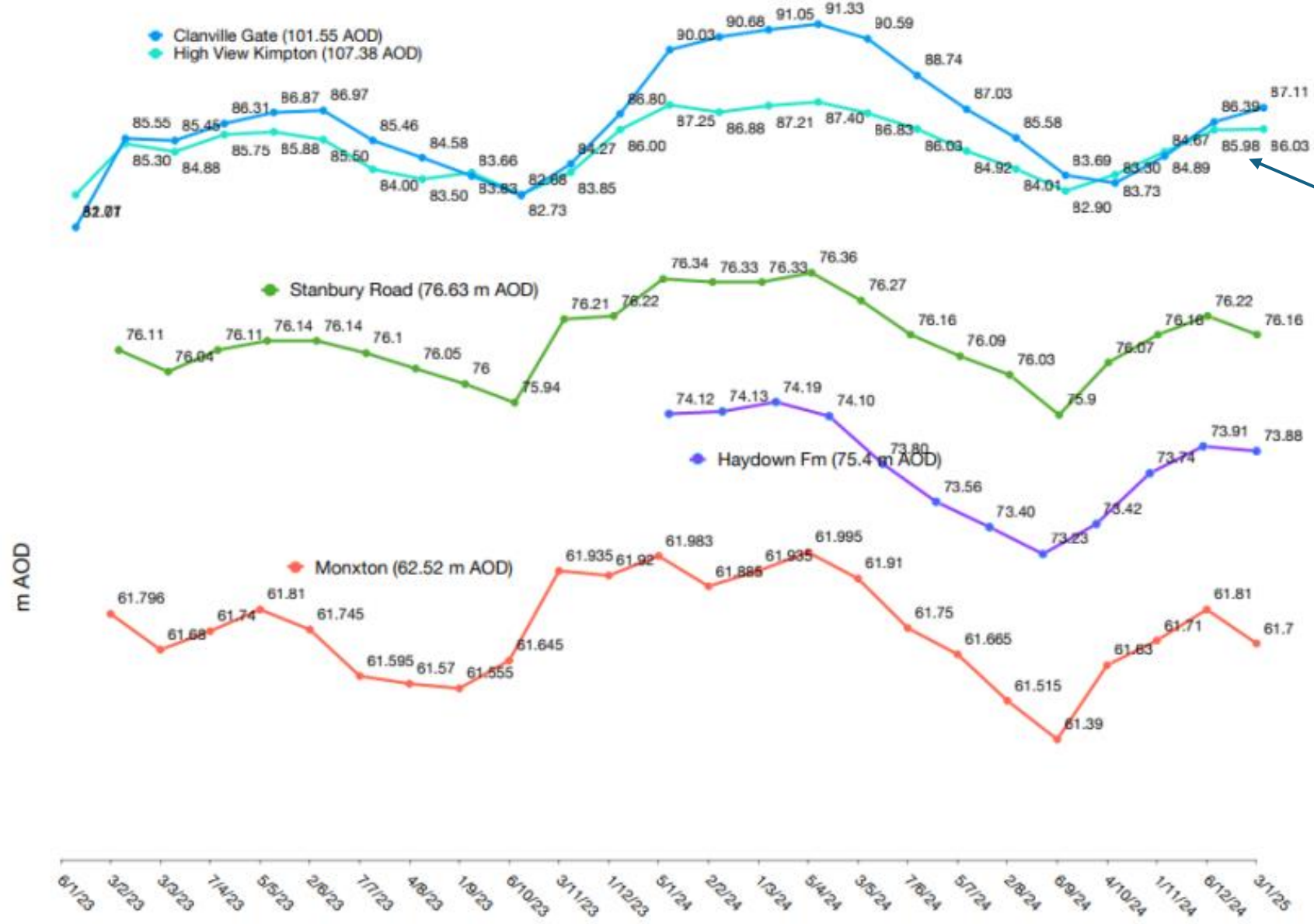
Long Term Measurements



Monthly GW levels (m AOD or Above Sea Level)

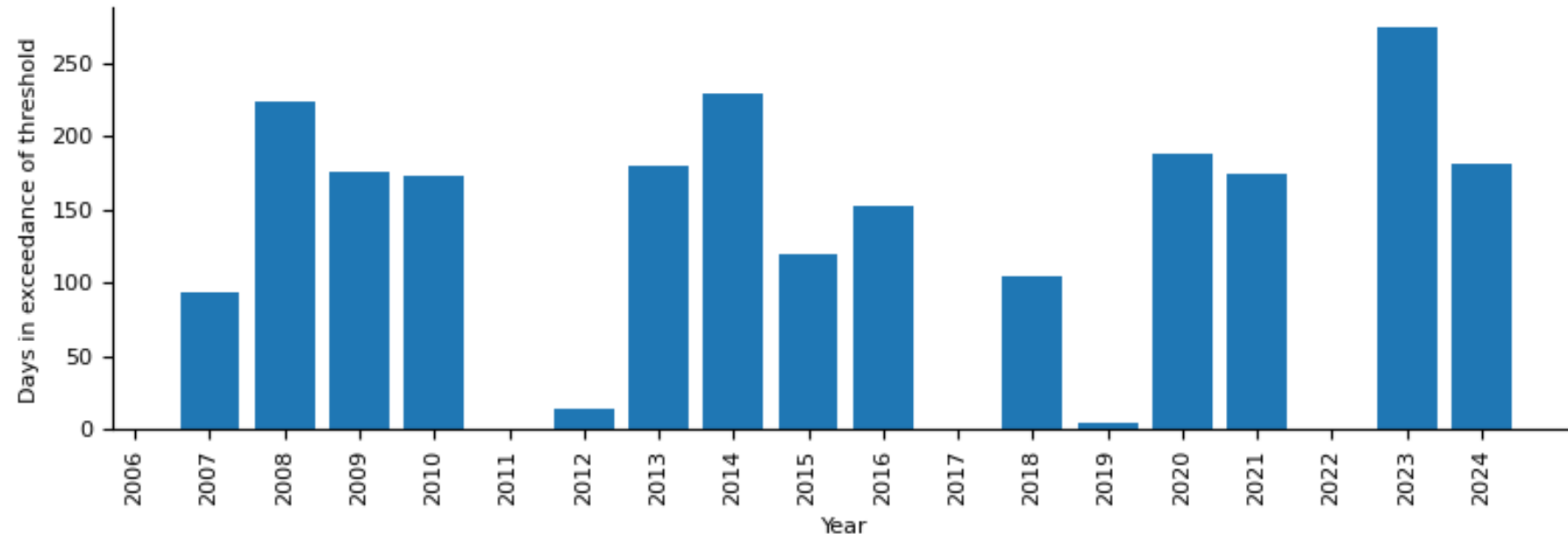
Week	Amport Rainfall (mm)	Clanville Gate* (101.55 AOD)	Change	High View Kimpton	Change	Stanbury Road (76.63 m AOD)	Change	Mullens Pond (69.35 m AOD)	Change	Monxton (62.52 m AOD)	Change
6/1/23	22.0	81.07	↑	82.71	↑	-	-	-	-	-	-
3/2/23	88	85.55	↑	85.30	↑	76.11	-	69.03	-	61.80	-
3/3/23	6.2	85.45	↓	84.88	↓	76.04	↓	68.96	↓	61.68	↓
7/4/23	97.0	86.31	↑	85.75	↑	76.11	↑	69.06	↑	61.74	↑
5/5/23	59.2	86.87	↑	85.88	↑	76.14	↑	69.07	↑	61.81	↑
2/6/23	33.0	86.97	↑	85.50	↓	76.14	=	69.02	↓	61.75	↓
7/7/23	42.3	85.46	↓	84.00	↓	76.10	↓	68.93	↓	61.60	↓
4/8/23	135	84.58	↓	83.50	↓	76.05	↓	68.89	↓	61.57	↓
1/9/23	40	83.66	↓	83.83	↑	76.00	↓	68.87	↓	61.56	↑
6/10/23	90.5	82.68	↓	82.73	↓	75.94	↓	-	-	61.65	↑
3/11/23	212.6	84.27		83.85	↑	76.21		-	-	61.94	
1/12/23	84.0	86.80	↑	86.00	↑	76.22	↑	-	-	61.92	↓
5/1/24	190	90.03	↑	87.25	↑	76.34	↑	-	-	61.98	↑
								Haydown Fm (75.4 m AOD)			
2/2/24	42	90.68	↓	86.88	↓	76.33	↑	74.12	↓	61.89	↓
1/3/23	128	91.05	↑	87.21	↑	76.33	↑	74.13	↑	61.94	↑
5/4/24	149.2	91.33	↑	87.40	↑	76.36	↑	74.19	↑	62.00	↑
3/5/24	50.5	90.59	↓	86.83	↓	76.27	↓	74.10	↓	61.91	↓
7/6/24	49.5	88.74	↓	86.03	↓	76.16	↓	73.80	↓	61.75	↓
5/7/24	16.8	87.03	↓	84.92	↓	76.09	↓	73.56	↓	61.67	↓
2/8/24	2.0	85.58	↓	84.01	↓	76.03	↓	73.40	↓	61.52	↓
6/9/24	29.0	83.69	↓	82.90	↓	75.90	↓	73.23	↓	61.39	↓
4/10/24	25.2	83.30	↑	83.73	↑	76.07	↑	73.42	↑	61.63	↑
1/11/24	4.0	84.67	↑	84.89	↑	76.16	↑	73.74	↑	61.71	↑
6/12/24	115.5	86.39	↑	85.98	↑	76.22	↑	73.91	↑	61.81	↑
3/1/25	26.2	87.11	↑	86.03	↑	76.16	↓	73.88	↓	61.70	↓
10/1/25	52.5	87.61	↑	86.36	↑	76.18	↑	73.90	↑	61.70	↑
17/1/25	2.0	88.05	↑	86.59	↑	76.19	↑	73.95	↑	61.74	↑

Pan Parish Catchment Groundwater Levels (m AOD) as of 3 January 2025

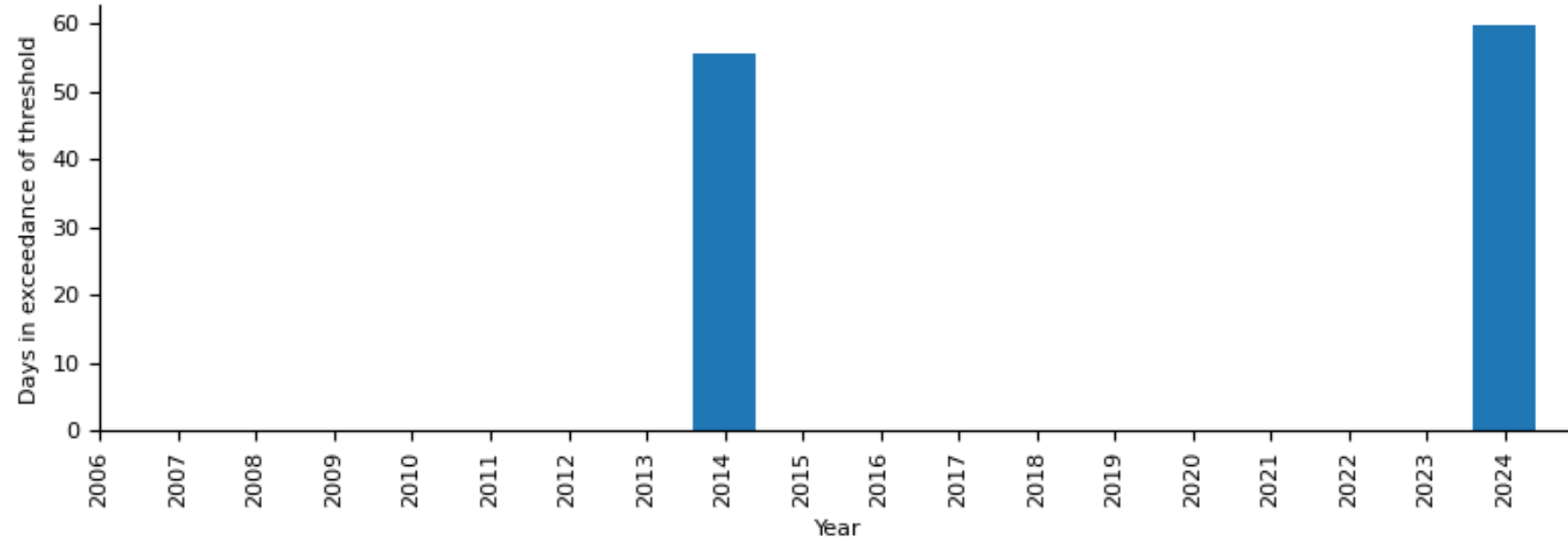


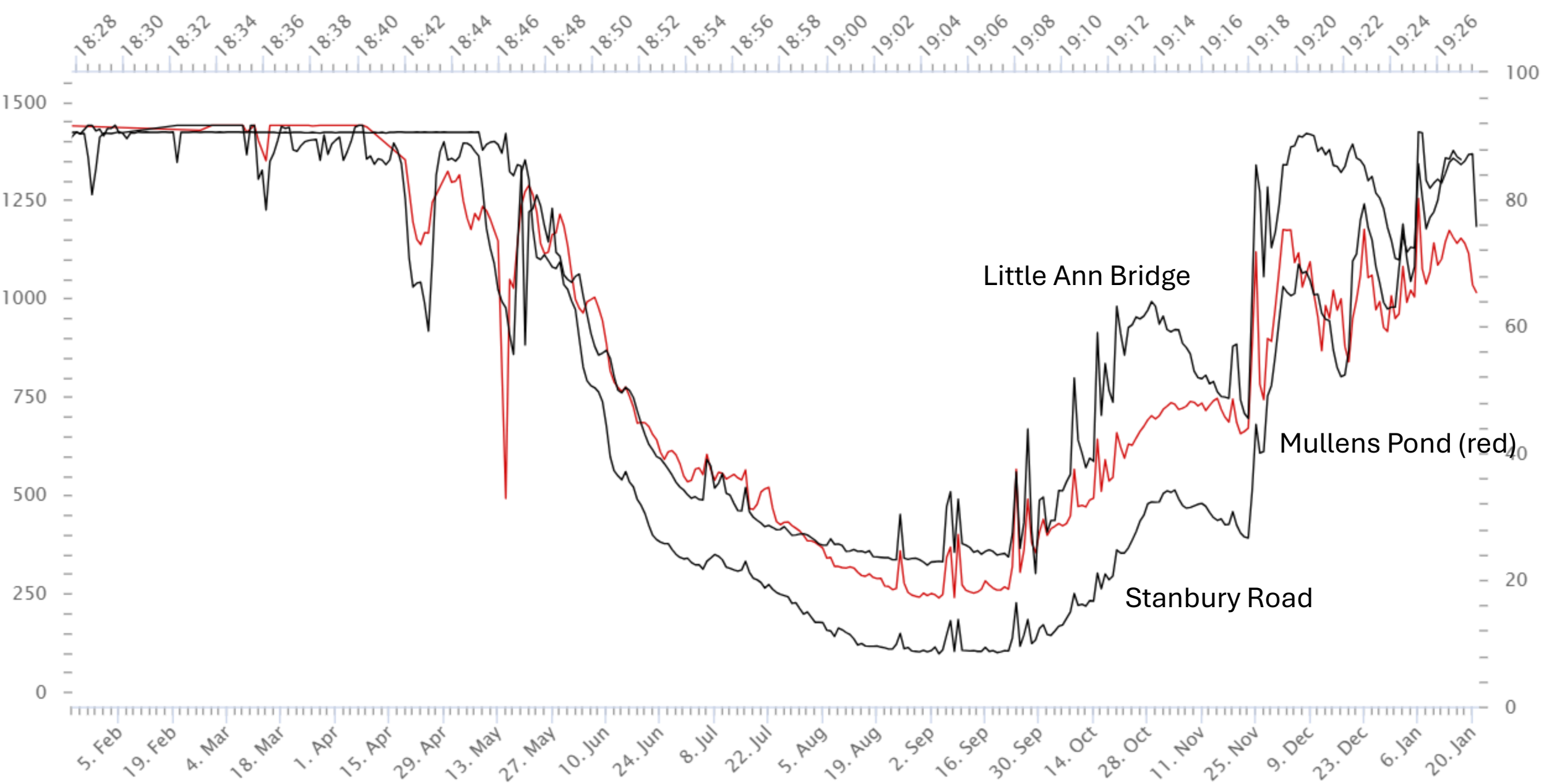
Kimpton more Relevant?

Annual duration exceeding the 84 m GWL threshold



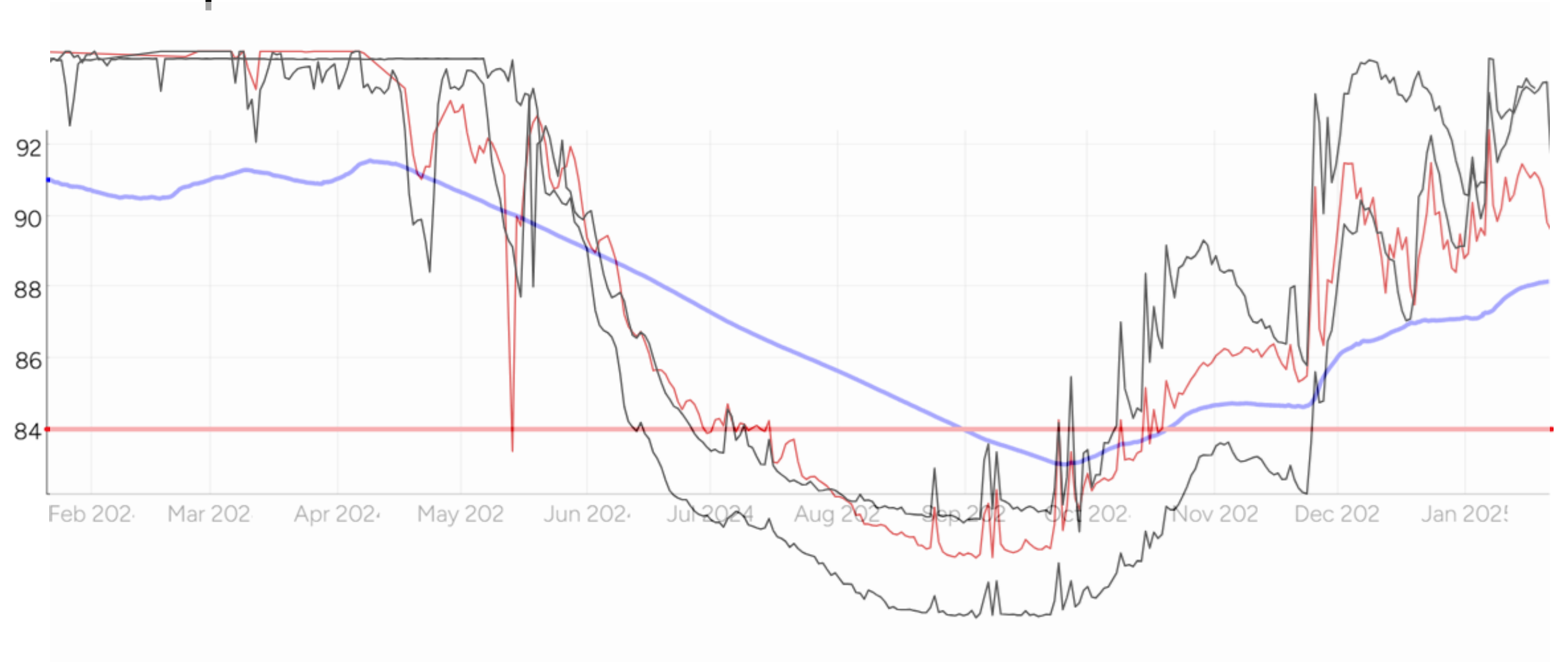
Annual duration exceeding the 91 m GWL threshold



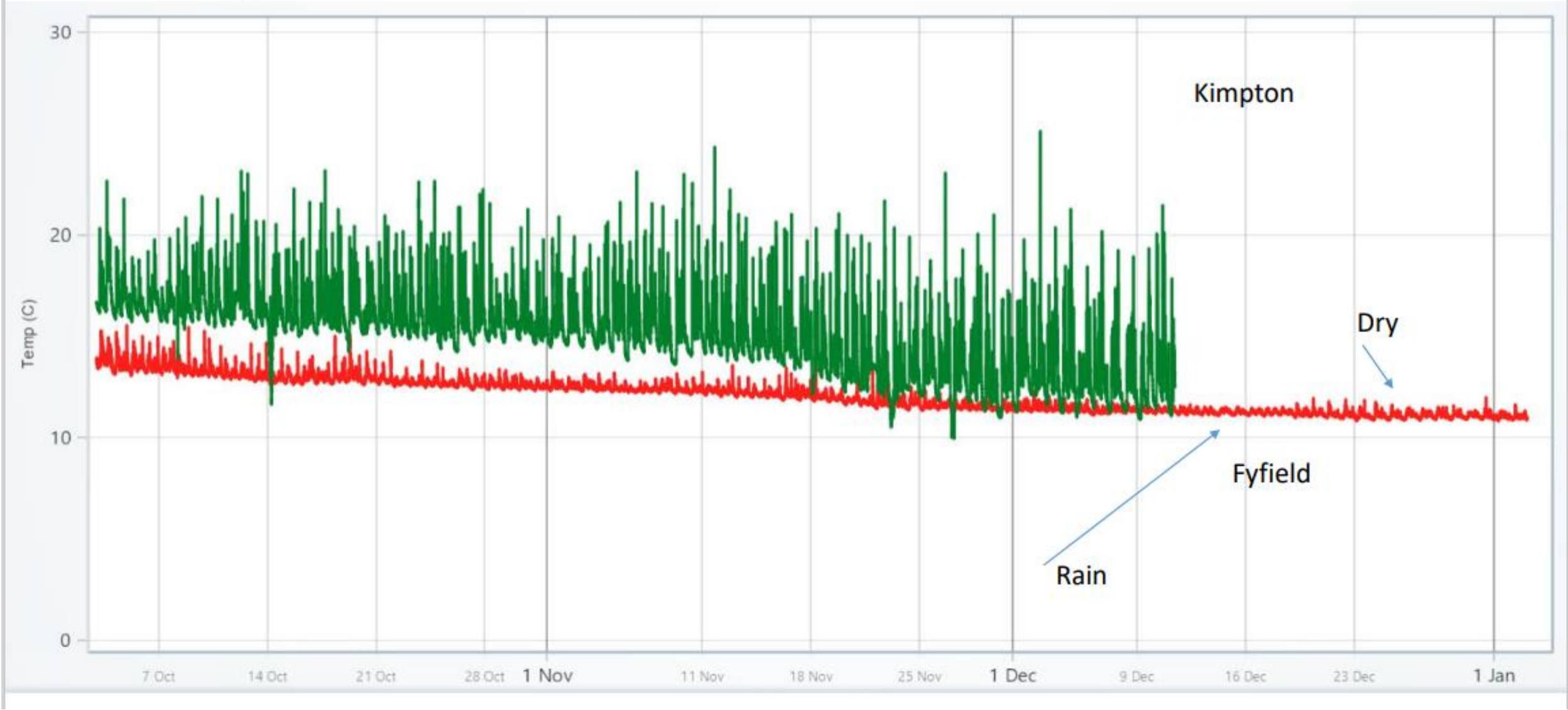


Tue Jan 23 2024

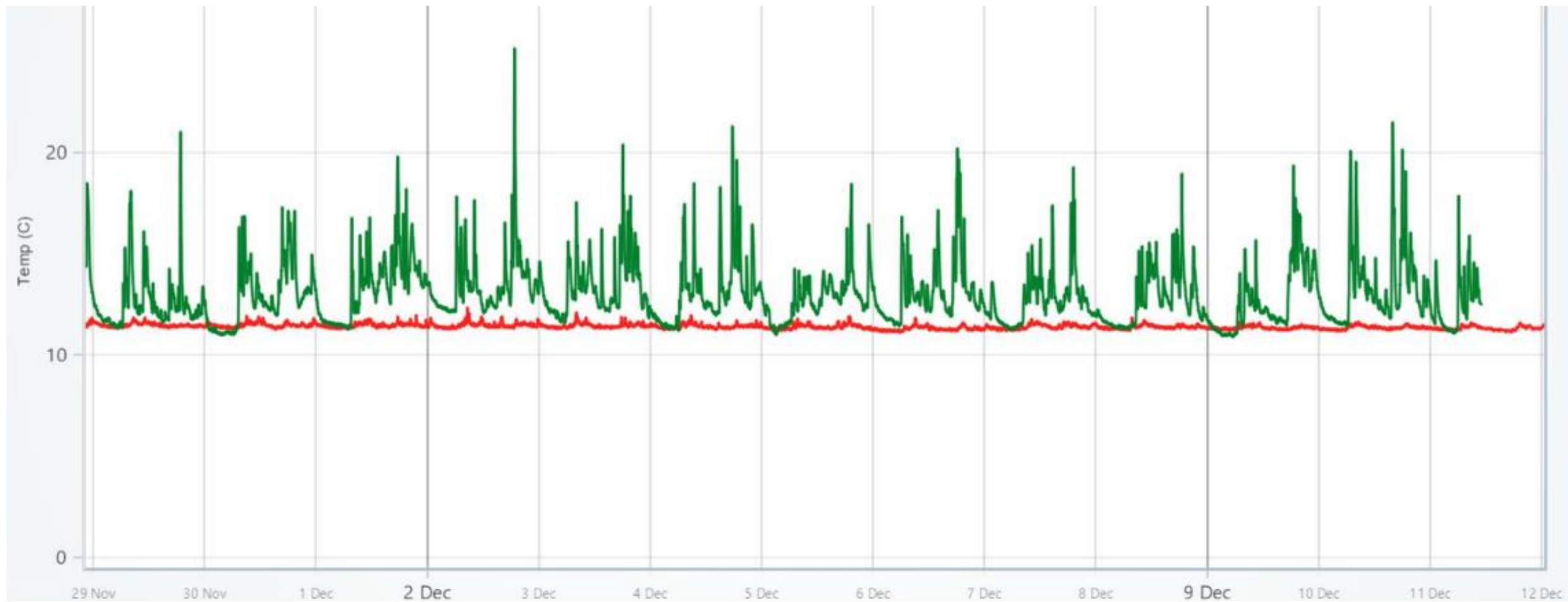
Pump run Vs GW level



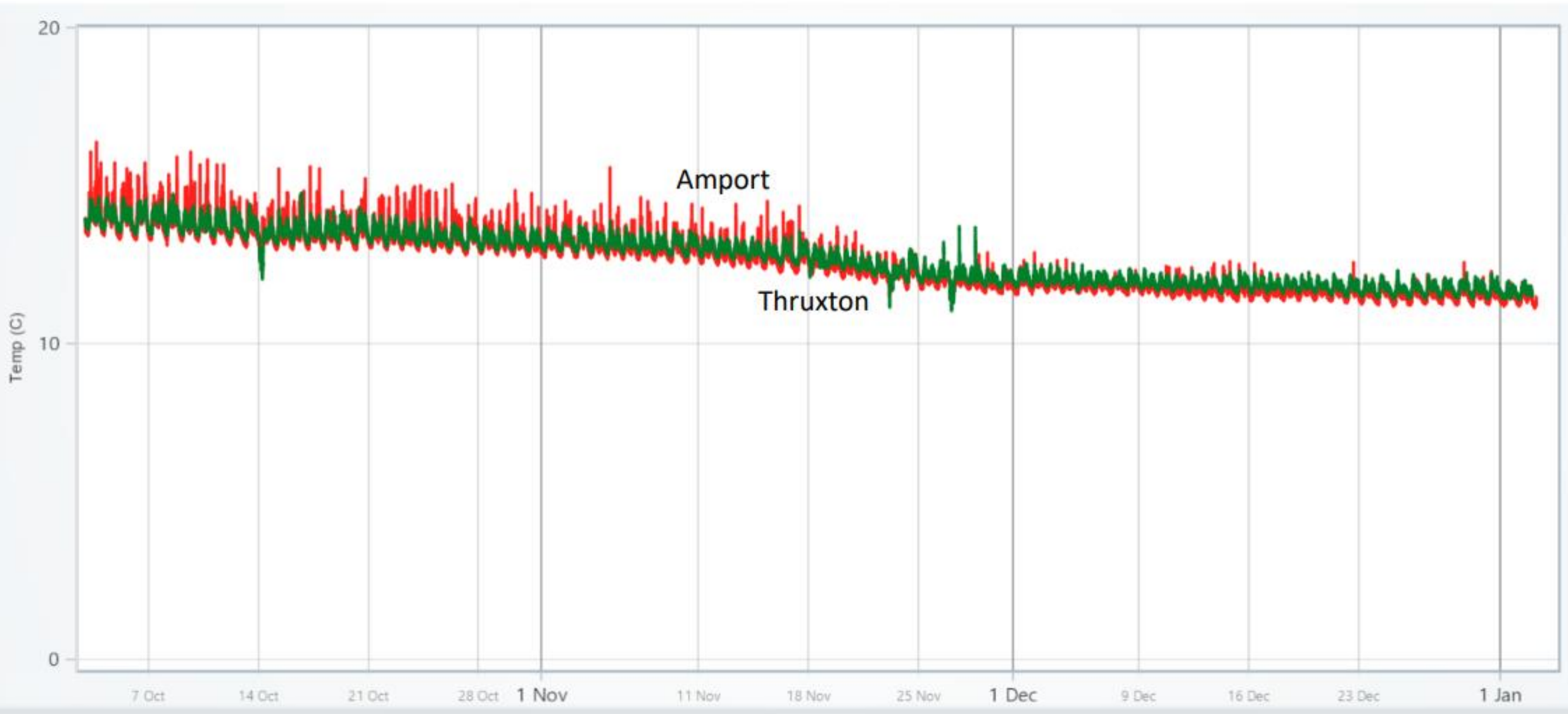
Temperature sensors

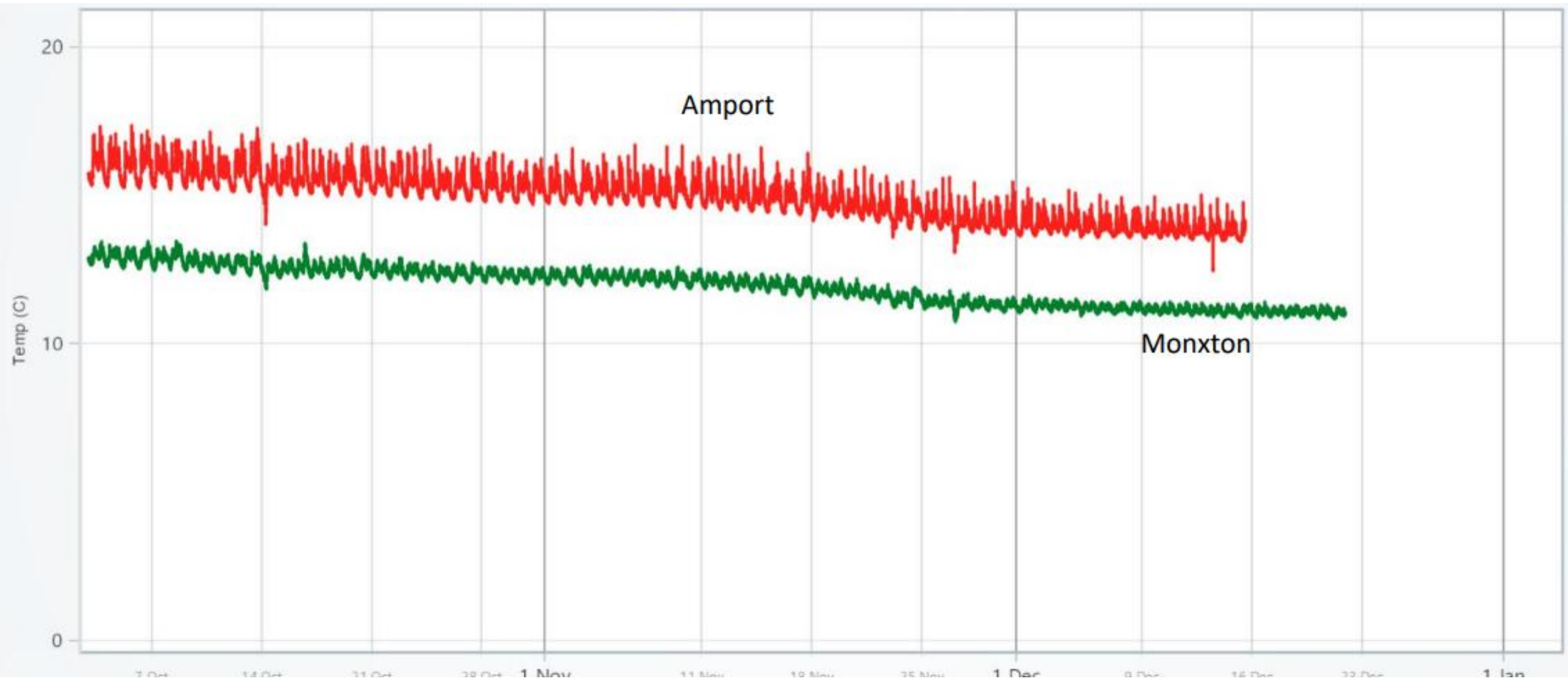


Zoomed in

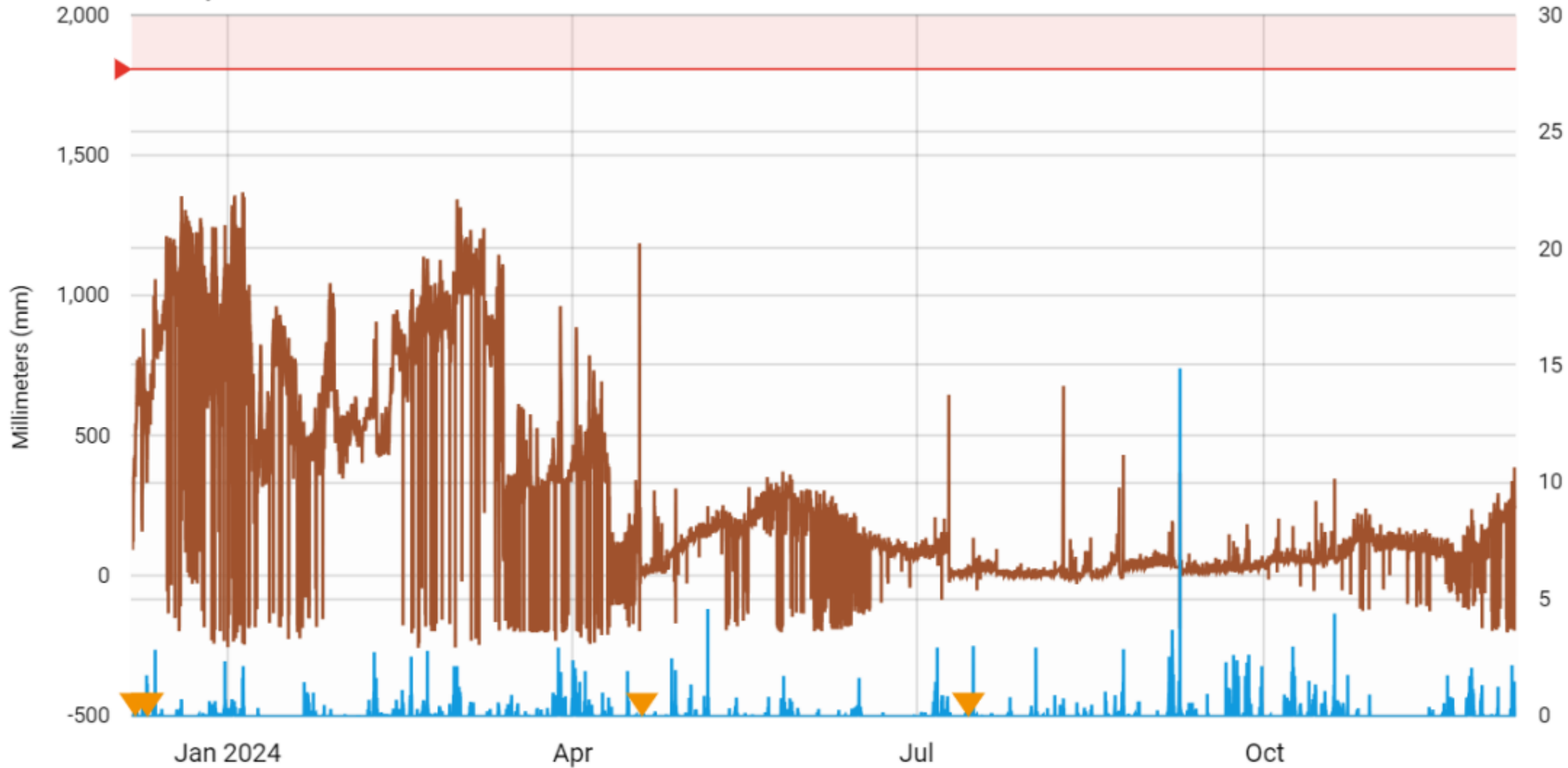


Temperature sensors





SLM Fyfield



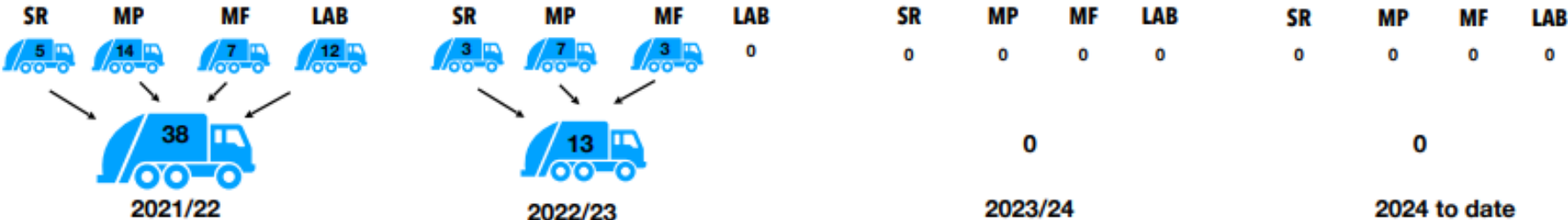
Kimpton



Thruxton



Pan Parish 4 yr Reduction in Tanker Deployment



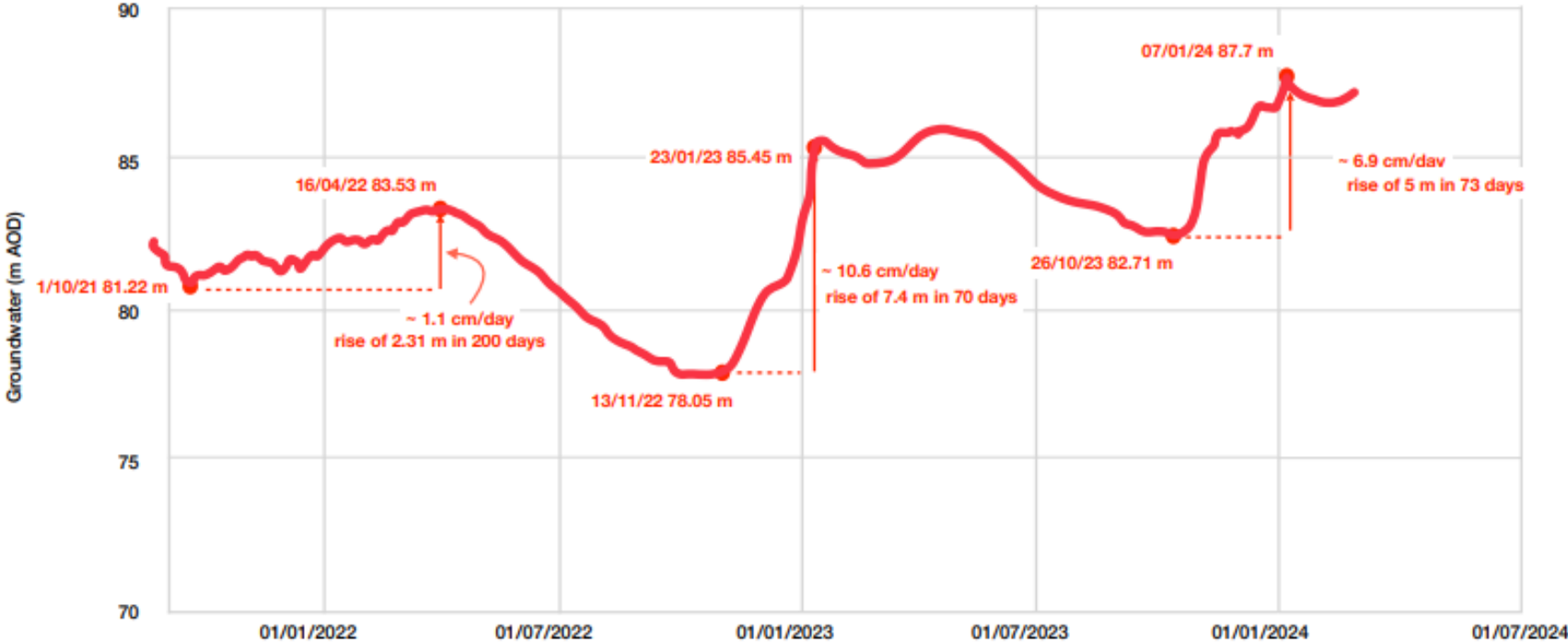
Tankering Sites

SR - Stanbury Road WPS

MP - Mullens Pond WPS

MF - Manor Farm Bell Valve

LAB - Little Ann Bridge WPS



Groundwater levels at High View, Kimpton (107.38 m AOD)

What happens next? Predictions

- We are >4m over the trigger level of 84m. No tankers
- Tankers were stopped at 90m in April/May 2024.
- Levels dependent on rainfall.

Operational Updates

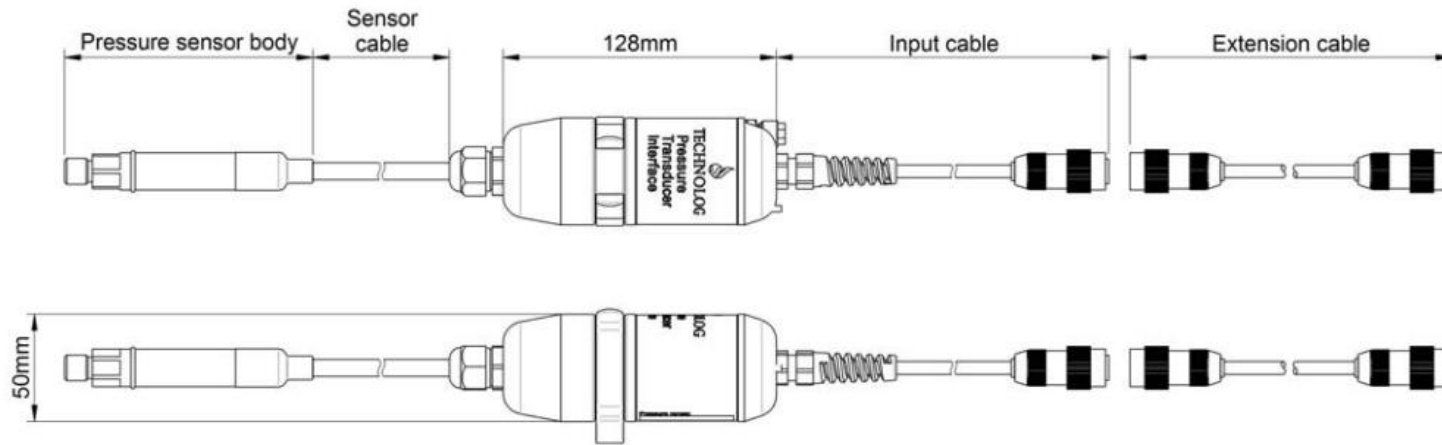
January 2025

Ongoing maintenance

- 2 x weekly jetting Kimpton to Fyfield
- 2 x weekly jetting Little Ann
- 2 x daily exercising of the Little Ann valve
- Daily catchment checks
- Daily SLM monitoring
- No regular tanker requirement



Pressure Sensor - Manor Farm/ Little Ann Valve Automation (prototype)



Manor Farm – Operational Continuity Plan update

In the event of site failure at Monxton WPS, please organise for 2 x tankers to be sent to MH 0800 at Manor Farm, Abbots Ann, SP11 7DB (/// falls.clashes.microchip). When Monxton is brought back to operation it is likely that the continuous pump run will temporarily overwhelm the rising main discharge chamber 0800 and cause it to spill. For the full tanker plan see the Operational Playbook for the Pan Parish catchment at [Pan Parish](#). We have use of hardstanding in a field adjacent to MH 0800, but on a temporary basis as an initial response while waiting for pumps to arrive and be set up, it may be possible to position a tanker right next to MH 0800 through negotiation with the owners of the business units



Inbound calls – ‘Groundwater’

- **1st of February**

Completion of training for customer centre call handling team – Temporary work around with manual system to notify the Flow Management Solutions Team via their inbox

**Please encourage resident to quote ‘Groundwater’ when calling in from Feb 1st*

- **AMP 8**

Development team for new Waterworx system, this amendment request will be reviewed and prioritised along with other requests for the 2.0 development improvements.





Monitoring Results

So far we have 4 sources of data:

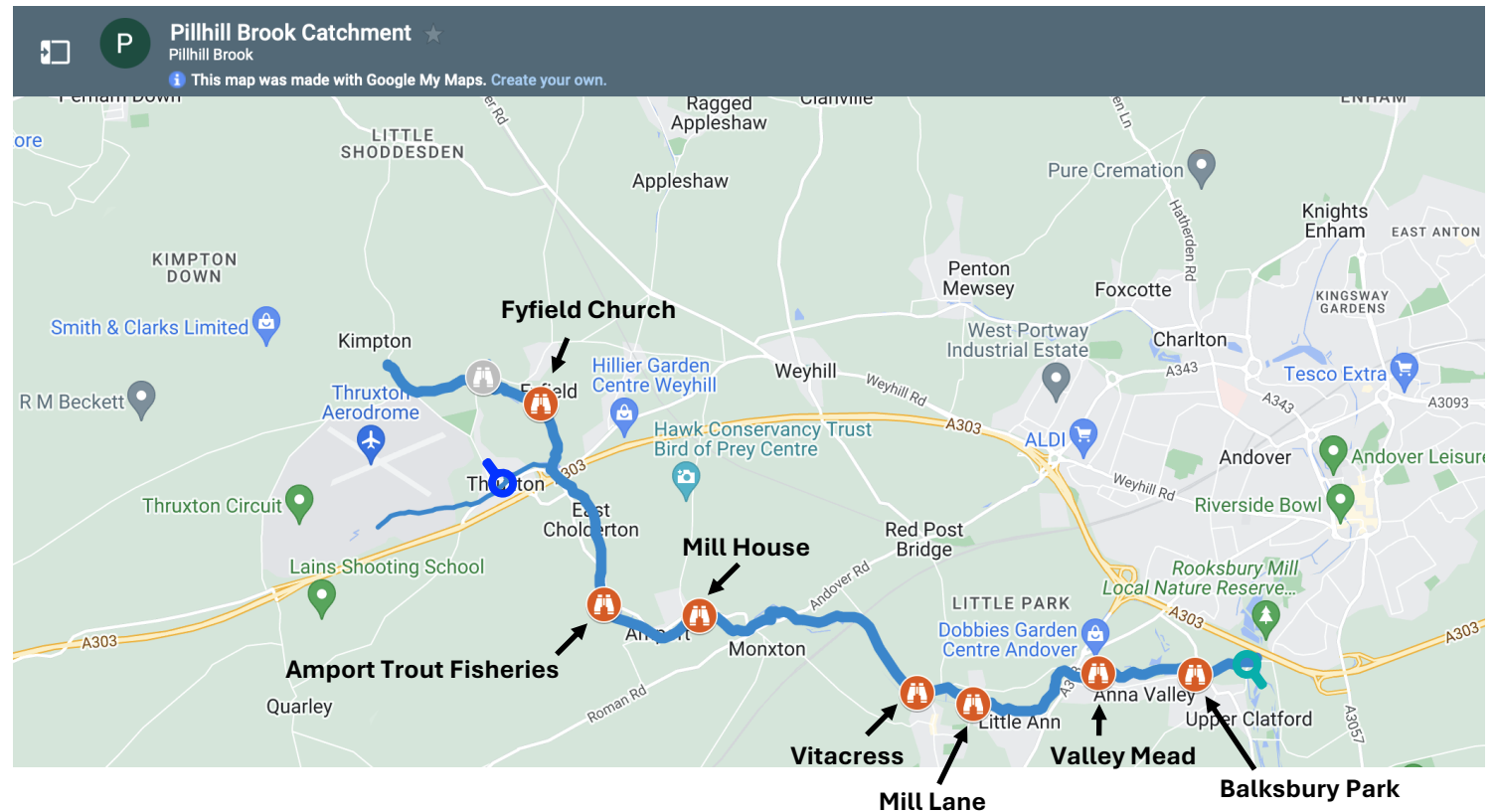
1. **Our own monthly monitoring**
Thanks to you for making this possible
2. **WildFish supported by Watercress & Winterbournes**
SmartRivers deep dive on 61 UK rivers
3. **Southern Water**
Ecology results at 2/3 northern catchment sites
4. **EA**
Water body classification

PBA Monitoring Results

We monitor monthly -

- invertebrate abundance and water quality at 7 sites
- plus water quality on the Thruxton winterbourne

and plan to adopt another site courtesy of TARCA*



* The Anton River Conservation Association

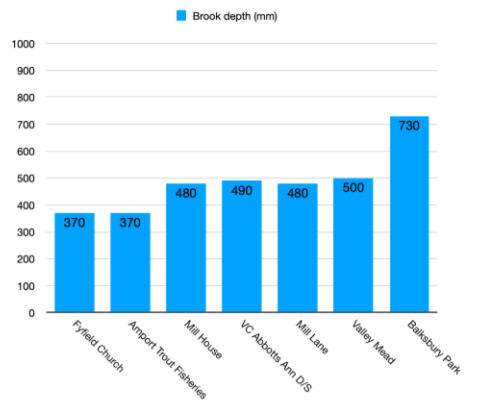
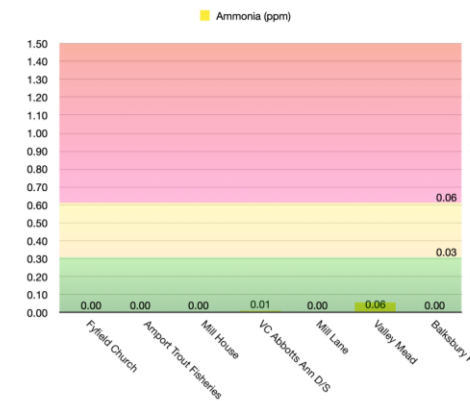
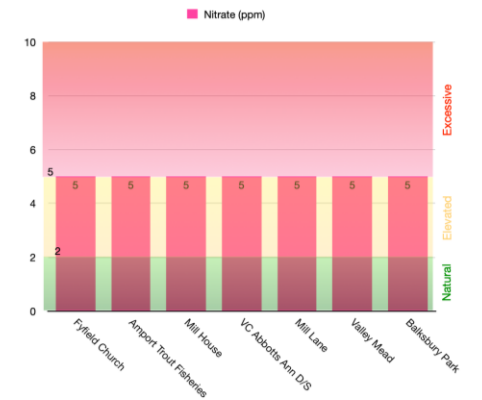
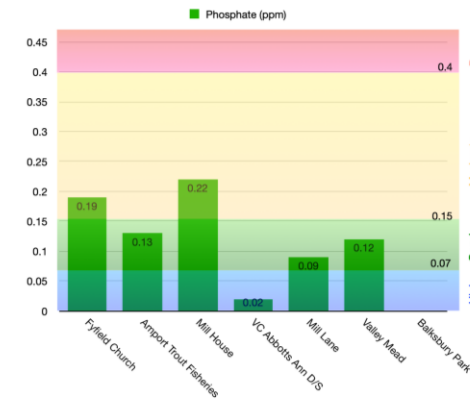
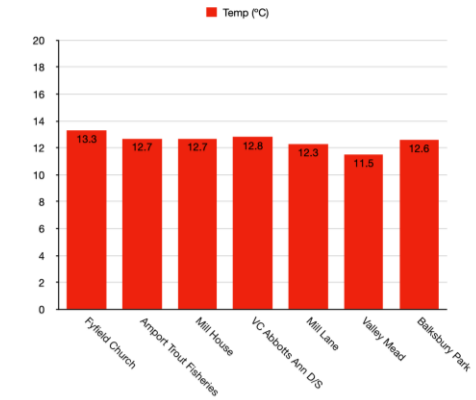
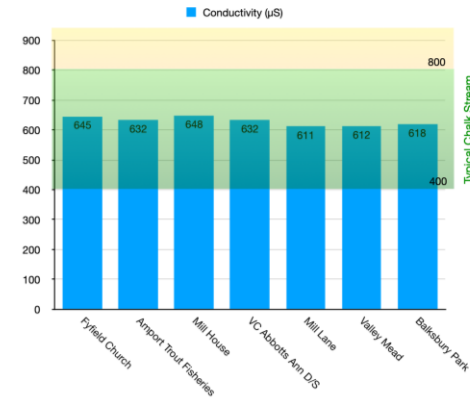
Water Quality

Water Quality Results for October 2024

Site	Conductivity (µS)	Temp (°C)	Phosphate (ppm)	Nitrate (ppm)	Ammonia (ppm)	Brook depth (mm)
Fyfield Church	645	13.3	0.19	5	0.00	370
Amport Trout Fisheries	632	12.7	0.13	5	0.00	370
Mill House	648	12.7	0.22	5	0.00	480
VC Abbotts Ann D/S	632	12.8	0.02	5	0.01	490
Mill Lane	611	12.3	0.09	5	0.00	480
Valley Mead	612	11.5	0.12	5	0.06	500
Balksbury Park	618	12.6	0.00	5	0.00	730

- **Phosphate** is the most bio-available form of Phosphorus found in dissolved in brook water
- **Nitrate** is the oxidised form of Nitrogen found in brook water
- Elevated levels of **Ammonia** suggest pollution from fertiliser, animal or human or industrial waste - it is toxic to aquatic life
- Water Quality Results consistently indicate these chemicals sit within acceptable parameters

indicating a healthy brook



Invertebrate Counts

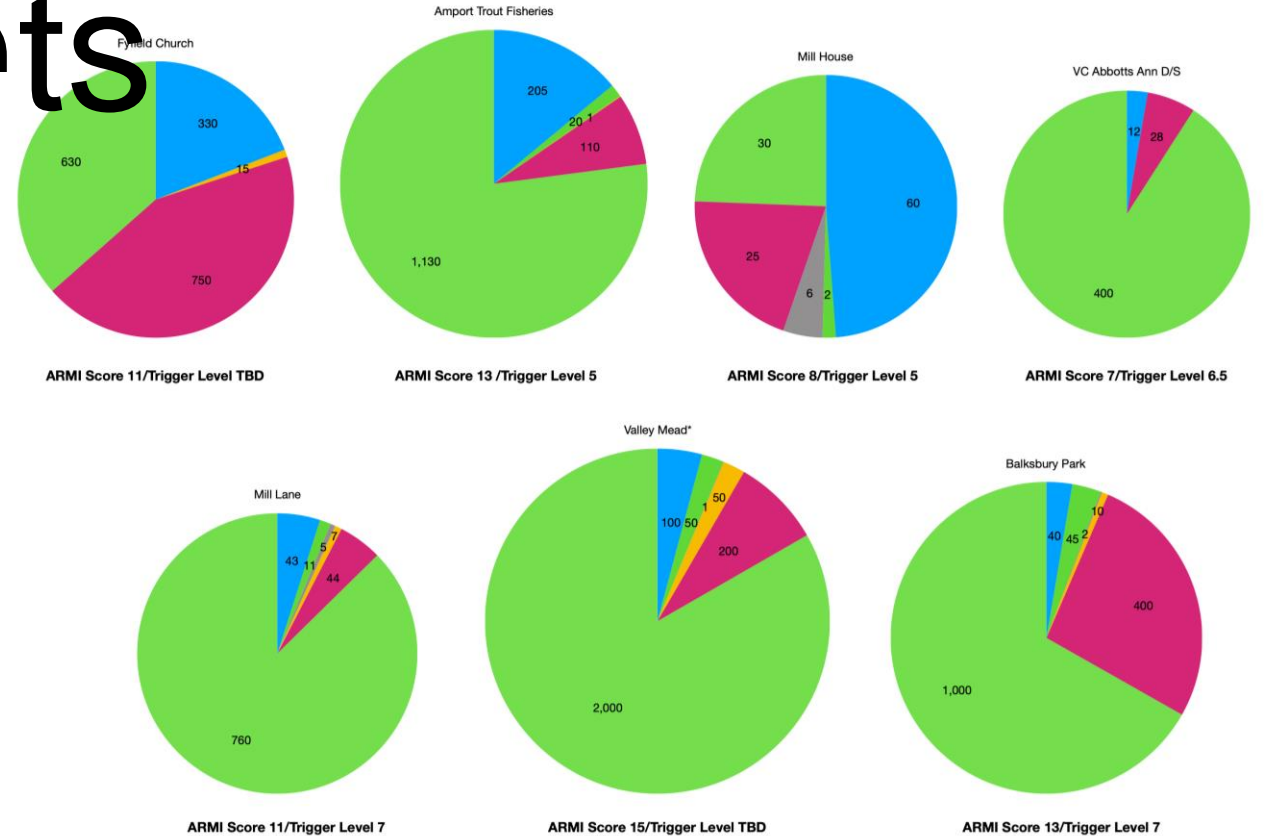
Invertebrate Counts for October 2024

Invertebrate Score	Fyfield Church	Amport Trout Fisheries	Mill House	VC Abbotts Ann D/S	Mill Lane	Valley Mead	Balksbury Park
Cased Caddis	330	205	60	12	43	100	40
Caseless Caddis	0	20	2	0	11	50	45
Mayfly (Ephemeroidea)	0	0	6	0	5	1	2
Blue-winged Olive (Ephemereillidae)	15	1	0	0	7	50	10
Flat-bodied Stone clinger (Heptageniidae)	0	0	0	0	0	0	0
Olive (Baetidae)	750	110	25	28	44	200	400
Stoneflies (Plecoptera)	0	0	0	0	0	0	0
Freshwater shrimp (Gammaridae)	630	1130	30	400	760	2000	1000



- an **ARMI score** is generated from these & compared against a **trigger level** decided by the EA (Matt Owen Farmer)
- the trigger level is the minimum score each site should have if the river is in acceptable ecological health
- If the ARMI score is breached a second sample is taken to confirm the breach
- Once the breach is confirmed Matt is informed & he will visit to decide on what needs to happen next

We are still building a picture of how the ecology at each site changes throughout the seasons




We have not had a trigger breach

indicating a healthy brook



SW v PBA data

 Spring 2022			2022153	2022175
			Stanbury Road, Fyfield	Mullens Pond, East Cholderton
			5/31/22	5/31/22
Family	Common Name	Taxa Name	Abundance	Abundance
Glossosomatidae	Cased Caddis (Tiny Grey Sedge)	Anaplectus fasciatus		21
Lymnaeidae	Wondering Snail	Ampullaceana balthica	1	
Planorbidae	River Limpet	Ancylus fluviatilis		9
Apataniidae	Cased Caddis	Apatania muliebris		2
Asellidae	Hog-Louse	Asellidae	3	1
Asellidae	Hog-Louse	Asellus aquaticus	3	1
Leptoceridae	Cased Caddis (Brown Silverhorn)	Niphosia albifrons		4
Baetidae	Olive	Baetidae		2
Planorbidae	Ramshorn Snail	Bathymphalus contortus	8	
Ceratopogonidae	Biting Midge	Ceratopogonidae	28	
Chironomidae	Non-Biting Midge	Chironomini		407
Chrysomelidae	Heather Beetle	Chrysomelidae	1	
Corixidae	Lessor Water Boatman	Corixidae	1	
Pediciidae	Hairy-Eyed Cranefly	Dicranota sp.		7
Limnephilidae	Cased Caddis	Limnephila amabilis		1
Dytiscidae	Diving Beetle	Dytiscidae	2	
Elmidae	Riffle Beetle	Elmis aenea		10
Gammaridae	Freshwater Shrimp	Gammarus pulex/basatum sp.	106	180
Gammaridae	Freshwater Shrimp	Gammarus sp.	12	
Glossiphoniidae	Snail Leech	Glossiphonia complanata		1
Halipidae	Tiny Beetles	Halipus sp.	4	
Helophoridae	Beetle	Helophorus brevipalpis	6	
Hydracarina	Water Mite	Hydracarina		3
Leptophlebiidae	Prong gilled Mayfly (Not Olives)	Leptophlebiidae (image is just an example)		1
Limnephilidae	Cased Caddis (Cinnamon Sedge)	Limnephila lurida	1	1
Leptoceridae	Cased Caddis (Black Silverhorn)	Niphosia aurora		1
Oligochaeta	Earth Worm	Oligochaeta	2	41
Planariidae	Flatworm	Polycelis felina	2	
Sericostomatidae	Cased Caddis (Welshman's Button)	Niphosia persimilis		12
Ephemerelellidae	Blue-Winged Olive	Serratia nitida	3	46
Sphaeriidae	Freshwater bivalve	Sphaeriidae	25	
Chironomidae	Non-Biting Midge	Tanytarsinae	16	
Chironomidae	Non-Biting Midge	Tanytarsini		67
- Riverfly target groups			Riverfly ARMI Score	5 9

We can generate and compare ARMI scores



Riverfly abundance scoring

Abundance	Score	Estimated number*
1-9	1	Quick count
10-99	2	Nearest 10
100-999	3	Nearest 100
Over 1000	4	Nearest 1000

Thanks to Matt Owen Farmer for assisting in identifying common names for Taxa listed and association links



SW v PBA Results

Counts for Month of May

Invertebrate Score	SW Stanbury Road 2022	PBA Littleton Manor 2024
Cased Caddis	1	124
Caseless Caddis	0	0
Mayfly (Ephemeroidea)	0	1
Blue-winged Olive (Ephemeroidea)	3	25
Flat-bodied Stone clinger (Heptageniidae)	0	1
Olive (Baetidae)	0	18
Stoneflies (Plecoptera)	0	4
Freshwater shrimp (Gammaridae)	118	0

2022 → 2024

- Gammarus have disappeared - they don't like silty habitat
- greater variety and abundance of species

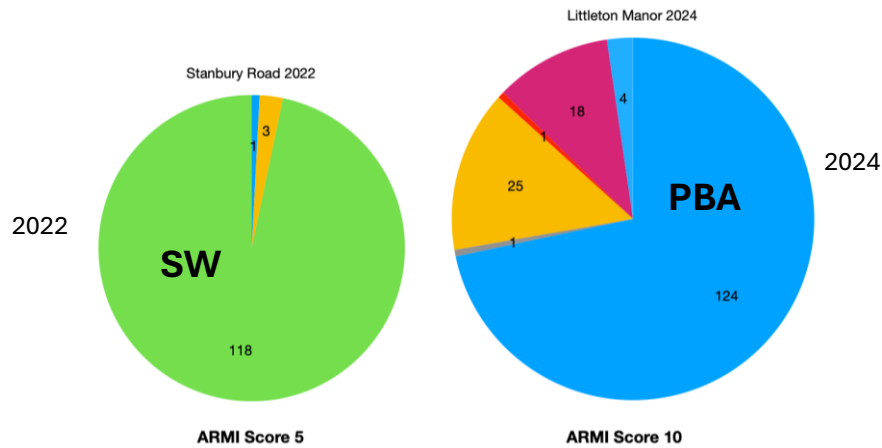
Counts for Month of September

Invertebrate Score	SW Stanbury Road 2023	PBA Fyfield Church 2024
Cased Caddis	38	180
Caseless Caddis	0	0
Mayfly (Ephemeroidea)	0	0
Blue-winged Olive (Ephemeroidea)	0	35
Flat-bodied Stone clinger (Heptageniidae)	0	0
Olive (Baetidae)	6	120
Stoneflies (Plecoptera)	0	1
Freshwater shrimp (Gammaridae)	0	1100

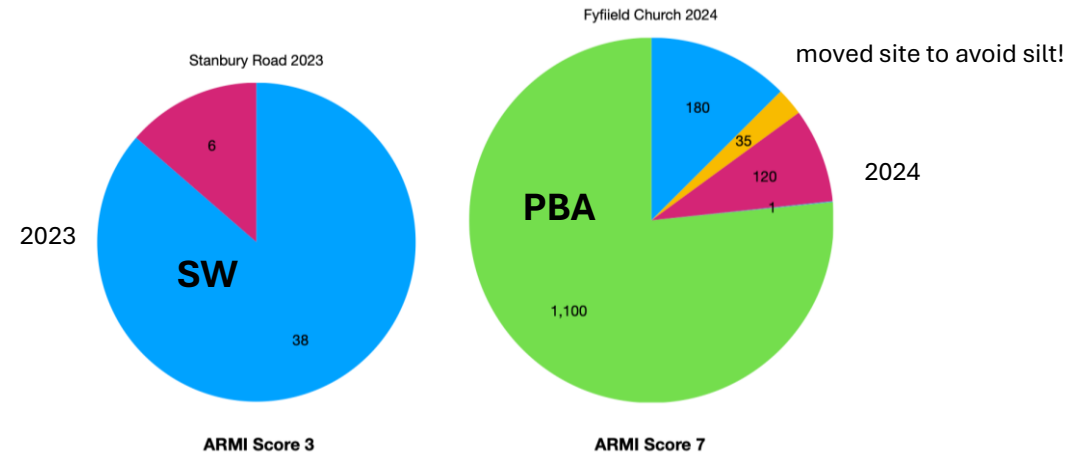
2023 → 2024

- Gammarus abundance is evidence that they really don't like silt!
- greater variety and abundance of species

Different site name but same location



Not the same site but only 500 m apart?





In Summary

- the Pillhill Brook seems to be behaving as expected
 - ▶ ecology improves with flow in a stable, diverse habitat
- we need more data to understand what's 'normal'