

Launders Lane Arnolds Field Health Risk Assessment

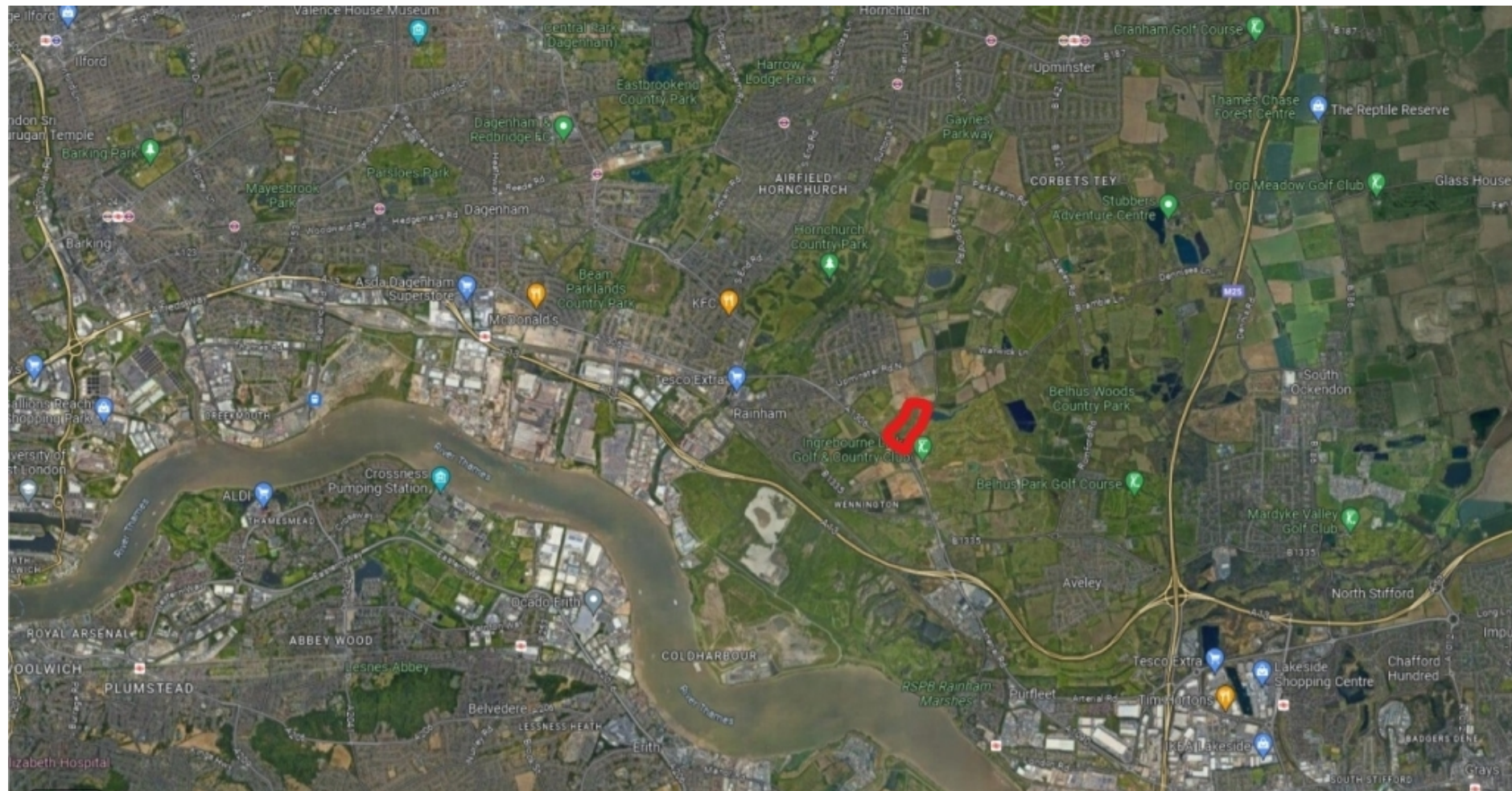
Mark Ansell

(Director of Public Health)

Luke Squires

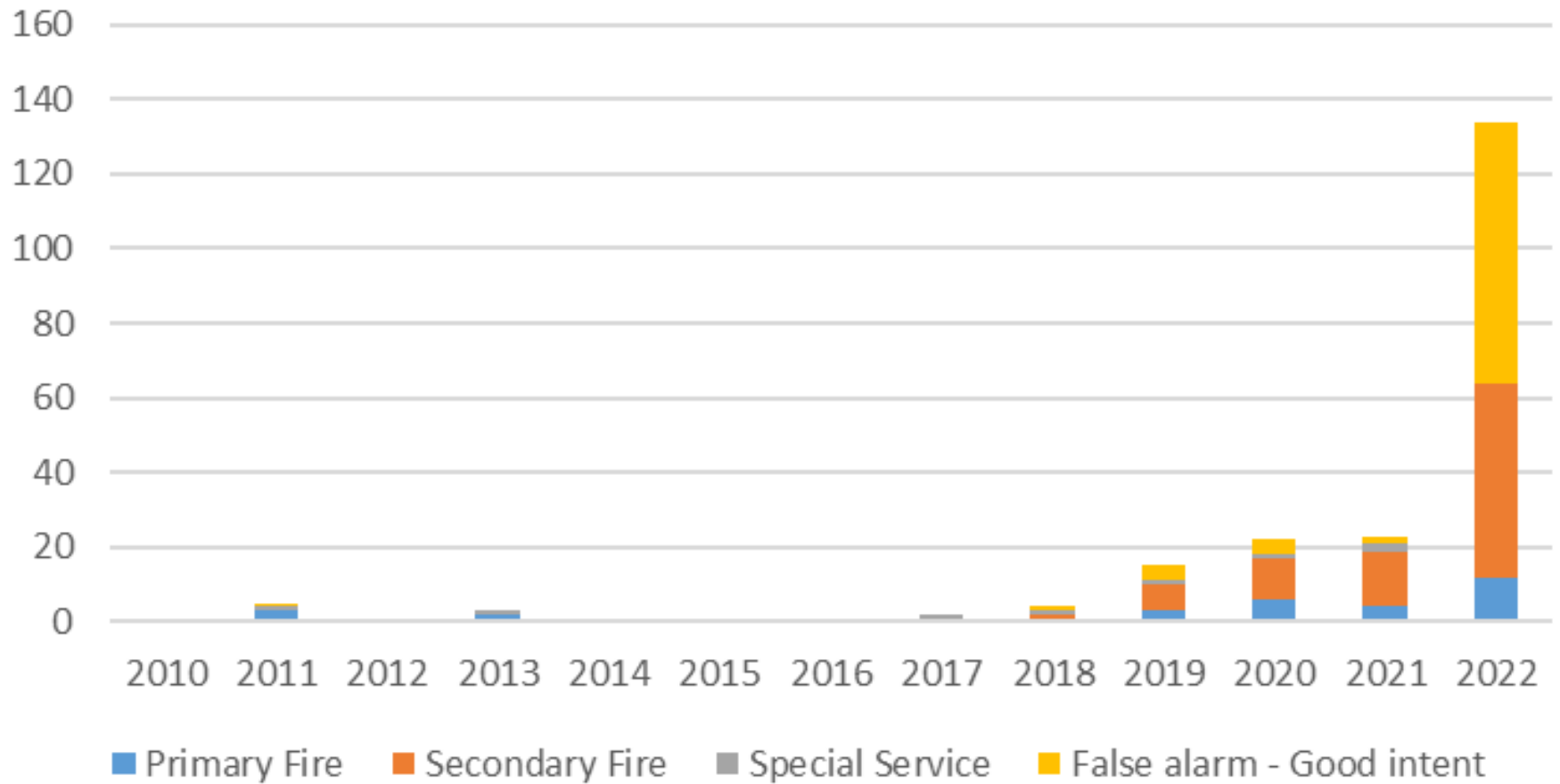
(Public Health Practitioner)

Launders Lane is close to Rainham



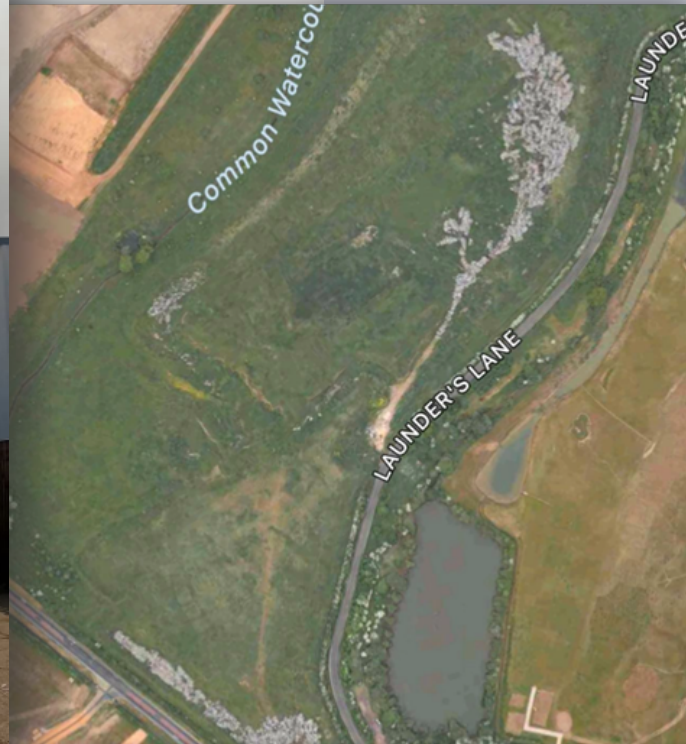


LFB call outs to Launderers Lane





facebook



Launders Lane 'CRISIS', Rainham & Surrounding Areas Residents Group

Public group · 1.6K members

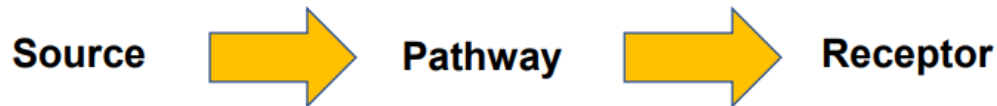


Council response

- BAU
 - Public Protection
 - Planning
- Steering group

Key principle for risk assessment

- To understand potential public health risks need to undertake risk assessment



- **Source** - chemical
- **Pathway** - route by which the chemical can affect the receptor
- **Receptor** - the public
- All three have to be present for there to be a risk to the health of the public
- Applies to both acute and chronic chemical/environmental events

Function

Advises the DPH about how best to assess the risks to health associated with repeated fires at Launderers Lane including :

- suggested approach to health risk assessment
- How to select a suitable contractor

Review the insight generated to identify:

- Any exceedances from short/long term recommended levels
- evidence of direct impacts on health of residents

Outputs to be shared with

- the Leadership Group to inform the approach of partners to the remediation of the site and
- local residents

Working with academic partners and government bodies demonstrates the robustness of the health risk assessment

Membership

- Imperial
- UCL
- UKHSA
- EA
- LFB
- TRL
- Public protection
- Comms
- PH

Health risk assessment two work streams:

AQ monitoring

- TRL measuring landfill specific pollutants
- Imperial college ERG measuring PM_{2.5}, NO₂, wind speed, wind direction

Epidemiology

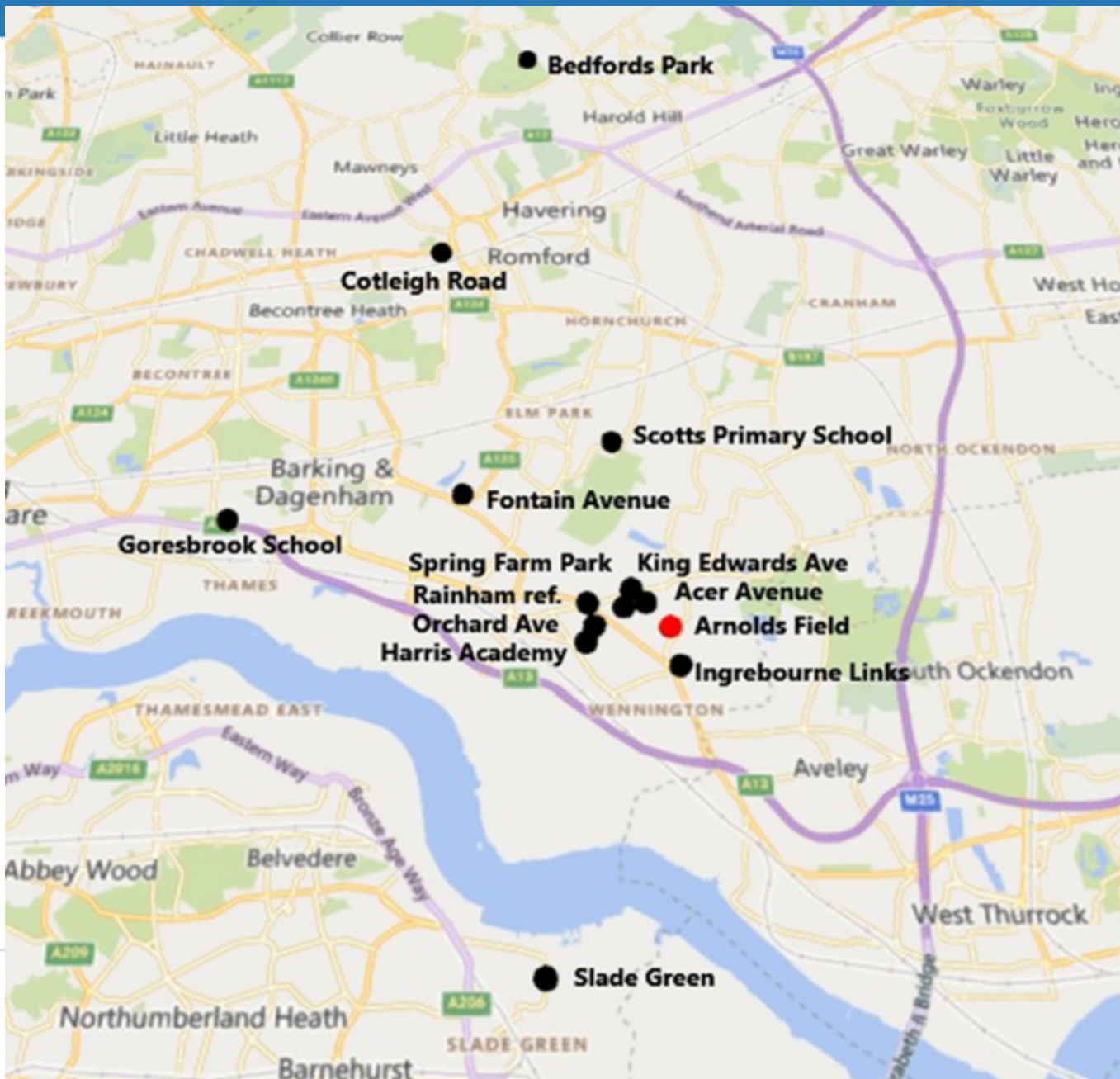
- Association between presentations to the NHS with respiratory problems and timing and distance from fires.

- Procurement for a contractor to monitor for specific pollutants expected to be produced by landfill fire.
- Proposals received from 3 of 5 contractors requested to bid.
- Evaluation completed by officers from Public Protection and Public Health, with advice from colleagues in UKHSA and EA.
- Contract awarded to TRL.

TRL approach

- Monitoring equipment measuring PCBs, PAHs, Dioxins, Furans and Metals (pollutants expected to see emitted from a landfill fire) at the Spring Farm park and Golf course
- 10 B-tex tubes measuring Volatile Organic Compounds (VOCs) locations dotted around the Launderers Lane site
- Monitor for up to 12 months to quantify annual exposure
- Interim AQ reports (exact format TBD)
- Compare against relevant UK national limits / WHO.
- Combine with NO₂ and PM_{2.5} data collected by Imperial College London (ERG)

- All London boroughs have existing relationship with Environmental Research Group (ERG) from Imperial College London who maintain network of reference monitoring sites plus AQ nodes measuring particulates and NO₂.
- Data are presented in more or less real time on [Breathe London](#) website.
- Council agreed to put further nodes around Arnolds Field



Additional ERG AQ nodes measuring NO₂ and particulates installed in residential areas closest to Arnolds Field

Daily air quality index - designed to assist UK residents to understand how AQ might impact on short term health so we can make decisions about day to day life.

Band	Index	PM2.5 (24 hour mean mg/m3)	Nitrogen dioxide (1 hour mean mg/m3)
Low	1	0-11	0-66
	2	12-23	67-133
	3	24-35	134-200
Moderate	4	36-41	201-267
	5	42-46	268-334
	6	47-53	335-400
High	7	54-58	401-467
	8	59-64	468-534
	9	65-70	535-600
Very High	10	>71	>601

June 2023 - PM2.5 Particles Level (Index) by Node Site (Daily)

Approx. distance from Arnolds Field	Site Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
0.5 km N	Acer Avenue	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1
1 km N	King Edwards Ave	1	1	1	1	1	1	1	1	2	2	2	3	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1
1.2 km NW	Rainham ref.	1	1	1	1	1	1	1	1	1	2	2	3	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1
3 km N	Scotts Primary	1	1	1	1	1	1	1	1	2	2	2	3	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	1	1
3 km SW	Slade Green	1	1	1	1	1	1	1	1	2	2	3	3	2	2	2	2	3	2	1	2	1	2	2	1	1	1	1	1	2	1
3.6 km W	Fontain Avenue	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1
6.5 km W	Goresbrook School	1	1	1	1	1	1	1	1	2	2	2	3	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1
7 km N	Cotleigh Road	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1
10 km N	Bedfords Park	1	1	1	1	1	1	1	1	2	2	2	2	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1

Based on the daily mean concentration for historical data, latest 24 hour running mean of current day

August 2023 - PM2.5 Particles Level (Index) by Node Site (Daily)

Approx. distance from Arnolds Field	Site Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0.5 km N	Acer Avenue	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	1	2
1 km N	King Edwards Ave	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	1	1
1.1km W	Orchard Avenue									1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	1	1
1.2 km NW	Rainham (reference site)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	1	1
1.2 km	Spring Farm Park	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	3	1	2
1.3km W	Harris Academy	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	2	1	1
1.8 km	Ingrebourne Golf	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1	1	1	1	3	2	10	1
3 km N	Scotts Primary	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1
3.6 km	Fontain Avenue	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7 km N	Cotleigh Road	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1
10 km N	Bedfords Park	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1

Based on the daily mean concentration for historical data, latest 24 hour running mean of current day

August 2023 PM2.5 Particles Level (Index) by Node Site (Hourly)

Legend					PM2.5 - 1 hour mean (mg/m3)																											
0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300		

Approx. distance from Arnolds Field	Site Name	01-Sep	02-Sep	03-Sep	04-Sep	05-Sep	06-Sep	07-Sep	08-Sep	09-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep	28-Sep	29-Sep	30-Sep				
		0.5 km N	Acer Avenue																																
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1.2 km	Spring Farm Park																																		
1.3km W	Harris Academy																																		
1.8 km	Ingrebourne Golf																																		
3 km N	Scotts Primary																																		
3 km	Slade Green																																		
3.6 km	Fontain Avenue																																		
6.5km W	Goresbrook Schoo																																		
7 km N	Cotleigh Road																																		
10 km N	Bedfords Park																																		

Dirty air affects 97% of UK homes, data shows

Slough, London and Leeds among worst locations on map showing air pollution above WHO limits

- **Check the pollution levels at your address on addresspollution.org**

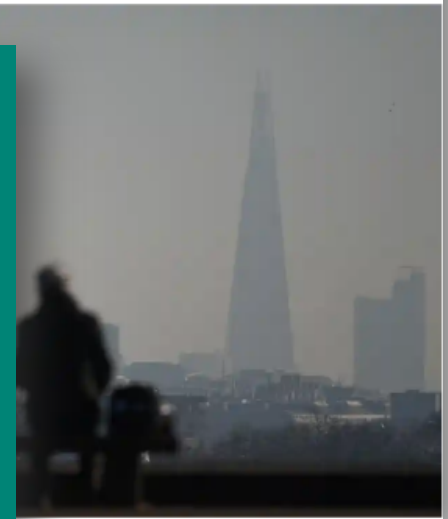
World Health Organisation guidelines

Around the world, nations set their own air quality targets and objectives. However, the World Health Organisation (WHO) also takes a role in setting [global air quality guidelines](#) to provide policymakers and governments with targets based on the latest scientific understanding and health research.

In September 2021 WHO updated their guidelines for the first time since 2005. Guidelines for PM10, PM2.5, and nitrogen dioxide were substantially reduced from their previous levels. The table below shows the current UK limits against the WHO guidelines.

Pollutant	UK limit value ($\mu\text{g}/\text{m}^3$)	WHO guideline ($\mu\text{g}/\text{m}^3$)	Averaging period
PM ₁₀ particulates	40	15	Annual
PM _{2.5} particulates	25	5	Annual
Nitrogen Dioxide	40	10	Annual
Ozone	100	100	8 hour mean




On annual graphs and statistics, reference to these WHO guidelines is also provided for reference.



With NHS partners, Public Health aim to analyse presentations to the NHS (GP, A&E, admissions, NHS111) and whether presentations increased with respiratory problems during/immediately after visible fires and with increasing proximity to Arnold’s Field.

- **Individual level data difficult to get access to due to NHS having GDPR concerns.**
- The closest residential areas are to the west and north west (c. 400m) of the site and to the south east
- Communities to the south east are in Thurrock. We’ve made no attempt to access health data re Thurrock residents.
- There are 8 LSOAs in Havering close to Arnolds Field so approx. 12,000 residents.

Legend

-  Arnolds Field
-  GP Practice
-  2 Miles Radius from Arnolds Field
-  OS Open Built Up Areas
-  River Thames
-  Surface Water Area
-  Havering LSOA
-  Havering LA boundary

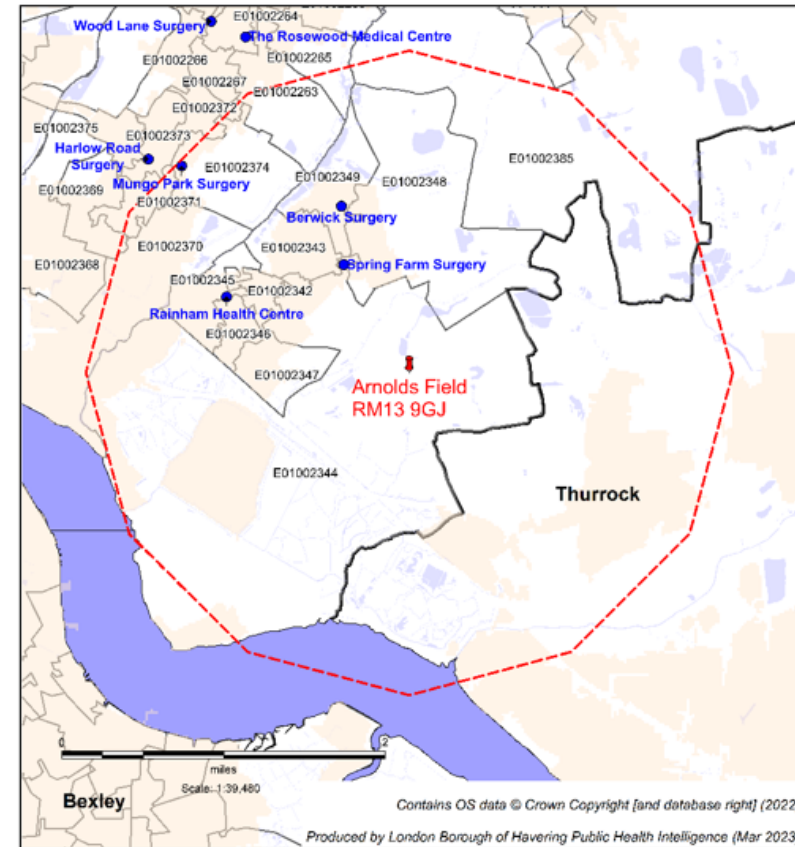


Figure. 4 map of LSOAs, built up areas, GP practices and neighbouring local authorities 2 miles around Launders Lane site