

Assessing risks to health associated with repeated fires at Arnolds Field, Lauanders Lane,

1. Introduction

Arnolds Field is privately owned land, approximately 15 hectares in area, which sits adjacent to the A1306 New Road and off Lauanders Lane (see attached site location plan).

The site was formerly a gravel extraction site, excavated between 1965 and 1967. Landfilling operations were undertaken from 1967 to 1971, but the site was poorly restored. In 2000, planning permission was granted by the Council to restore the land for use as community woodland by importation of further material. From then and until approximately 2016 significant volumes of waste were deposited without appropriate authorisation.

There is limited information on the amount, depth and types of waste which have been deposited, but it is understood that there is a wide range of waste, including household, commercial / industrial (including wood, paper, glass, plastic, mattresses, furniture, cables and fabric materials) and construction waste deposits, several metres deep and up to 5 metres in places. The most recent waste tipping appears to have occurred along the eastern boundary of the site. A limited site investigation, which was carried out in 2012, did not identify substantial contamination, however elevated levels of lead and benzo(a)pyrene were found in the soil in places.

Due to the combustible nature of some types of waste (e.g. plastic) and uncontrolled decomposition of organic waste, in combination with overgrown grass, the site catches fire, especially during hot weather. Since 2018, the London Fire Brigade has responded to over 70 fires at the site.

Regular complaints from residents about smoke, dust and odour from the fires has more recently become more organised community action driven in part by concerns about the impact that the fires may have on their health, due to the inhalation of smoke and substances present in it. The nearest residential properties, located to the north-west of the site, are approximately 400m from its boundaries. Resident complaints have been received from up to 1km away from the site boundaries. Upon appointment, the contractor(s) will be provided with a full log of complaints received by the Council and a list of potentially particularly sensitive receptors in the vicinity.

To address the residents' health concerns, the London Borough of Havering (The Council) has decided to carry out an investigation and assessment of the health risks associated with the fires at Arnolds Field. You are therefore invited to submit a proposal and associated costing for the works or part of the works listed in Section 2.2 of this document, in order to obtain sufficient and appropriate evidence, which will inform the aforementioned health risk assessment.

2. Approach to health risk assessment

An expert technical group¹ has been established to design and oversee the risk assessment, chaired by the Director of Public Health.

Having considered published best practice², the initial agreed approach is as follows:-

2.1 Commissioning Environmental Research Group (ERG), Imperial College³ to:-

- retrospectively model smoke plumes produced by fires at Launders Lane, based on the known history of fires at the site, meteorological information and air quality data from pre-existing monitoring stations, to identify communities most at risk and estimate the extent to which fires have increased their exposure to common pollutants (particulates and Nitrogen dioxide, NO₂)
- install further air quality monitors measuring particulate matter and NO₂ for an agreed period of time. The number and location of the monitors will be agreed, taking into account residential areas and other sensitive receptors (e.g. schools, care homes) closest to the landfill site, as well as sites that modelling suggests are most often exposed to smoke plumes. The resulting data will be publically available via [Breathe London](#) and ERG will support the Council to maximise public awareness and understanding.
- produce a report, comprising of the modelling and monitoring results, conclusions and recommendations; present the insight generated to the expert technical group and assist the group to reach a consensus as to the likely health impacts of exposures e.g. the significance of any exceedances of statutory and / or health related short and long term recommended limits.
- repeat the modelling at an agreed interval using the enhanced air quality data set.

2.2 Commissioning an appropriate provider⁴ to:-

- monitor ambient air between and during one or more fires, at one or more locations where residents are most likely to be affected by the smoke plume, to identify and quantify the precise products of combustion (in addition to NO₂, PM₁₀ and PM_{2.5}) produced by fires at Launders Lane. The provider should detail in their proposal the substances that are considered appropriate to monitor, in order to ensure that all important smoke components, relating to toxicity are identified and assessed, as part of the health risk assessment. The number and location of the monitoring sites, and duration and number of repetitions should also be justified in the proposal.

¹ Draft Terms of Reference are provided as Appendix 1.

² Stewart-Evans, J., Kibble, A. and Mitchem, L. (2016) 'An evidence-based approach to protect public health during prolonged fires', Int. J. Emergency Management, Vol. 12, No. 1, pp.1–21.

³ ERG is an existing trusted partner working with local authorities across London with the aim of 'understanding the sources of air pollution, to what extent people are exposed, the impact this has on their health and to provide the public with the necessary information to make choices regarding their exposure' <https://www.imperial.ac.uk/school-public-health/environmental-research-group/research/measurement/>

⁴ Approach to selecting an appropriate provider is outlined in Appendix 2.

- to produce a report, comprising of the monitoring results, conclusions and recommendations; present the insight generated to the expert technical group and assist the group reach a consensus as to the likely health impacts of exposures e.g. the significance of any exceedances detected of statutory and / or health related short and long term limits.

2.3 With NHS partners, LB Havering Public Health will analyse presentations to the health care system (e.g. to general practice, NHS111, A&E etc) with respiratory problems for evidence that rates are significantly higher in areas most affected by smoke plumes and during fires.

The insight generated by the three workstreams will be collated and reviewed by the expert technical group to identify:-

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

Appendix 1: Draft Terms of Reference of Expert Advisory Group

Function

To advise the Director of Public Health regarding the assessment of risks to health associated with repeated fires at Arnolds Field, Launders Lane: -

- To inform the suggested approach to the risk assessment
- To advise about the suitability of potential contractors of environmental monitoring e.g. professional accreditation; reputation for undertaking similar investigations, the appropriateness of the suggested approaches e.g. consistency with relevant technical guidance, quality control procedures
- To advise about the analysis and interpretation of information produced by the investigation
- To comment on any reports shared with the Leadership Group coordinating the multiagency response to fires at Launders Lane.

Membership

- Core

LBH Public Health and Public Protection

North East and North Central London Health Protection Team and Radiation,
Chemical and Environmental Hazards Division, UK Health Security Agency (UKHSA)

Environment Agency

Environmental Research Group, Imperial College London

NEL ICB / South Havering Primary Care Network

London Fire Brigade

- As required

Specialist air quality contractor

Accountability

DPH will share outputs from expert advisory group with the Leadership Group, chaired by Leader / CEO of LB Havering, and comprising elected representatives and relevant senior officers from LBH, LFB, Environment Agency to inform its recommendations regarding the management of fires and / or approaches to the remediation of the site and engagement with local residents.

Appendix 2: Approach to selecting an appropriate provider to monitor ambient air quality.

- Expert Advisory Group to identify list of potential providers
- Invite identified providers to submit bids within 1 month of date of letter in response to information contained in this paper
- Expert Advisory Group to advise DPH as to strength of bids based on
 - o The appropriateness of the proposed approach to characterise products of combustion and concentrations experienced by residents including consistency with relevant guidance
 - o Confidence in ability of provider to implement proposed approach based on evidence of conducting similar investigations, the expertise of staff, use of appropriate equipment and robust quality control procedures etc.

DPH to award contract to provider able to meet expectations of expert advisory group. Where a number of suitable bids are received, they will be ranked based on cost and timeliness.