Environmental Public Health Service Wales

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Your Ref: P-06-1510
Our Ref: I22219

29th August 2025

SENT BY EMAIL

ear Lara Date
Ail Glerc, Pwyllgor Deisebau, Senedd Cymru / Second Clerk, Petitions Committee, Welsh Parliament

Hafod Senedd Petition. Call for evidence from PHW. Environmental Public Health Service (EPHS) Response.

Re: P-06-1510 Direct NRW to revoke the environmental permit and ensure the closure of Enovert's, Hafod Landfill Site in Wrexham

Public Health Wales (PHW) is the national public health agency in Wales and exists to protect and improve health and wellbeing and reduce health inequalities for people in Wales.

PHW recognise that local people are concerned about odours around the landfill. A public health risk assessment of the site can be informed by environmental sampling and monitoring data. PHW is reliant on other agencies taking steps to obtain these data.

The Environmental Public Health Service (EPHS) within PHW has responded to requests for advice in support of Wrexham CBC's approach to gathering and interpretation of data. We have: -

- Stated that we support the need for site to operate effectively to reduce odours.
- Stated that occupational exposure standards for hydrogen sulphide are inappropriate to assess public exposures.
- Provided standards for hydrogen sulphide to assess public exposure (table 1)

Source	***Time period***	***Guideline value***	***Note***
WHO air quality guidelines	30-minute (average)*	7 $\mu g/m^3$ (5 ppb)	Based on odour annoyance
	24-hour (average)	150 $\mu g/m^3$ (107 ppb)	Based on eye irritation in humans
ATSDR-MRL**	Intermediate (up to 1 year)	30 $\mu g/m^3$ (20 ppb)	Based on lesions of the nasal olfactory epithelium in rats.
US EPA RfC***	For assessment of lifetime exposure	2 $\mu g/m^3$ (1 ppb)	Based on lesions of the nasal olfactory epithelium in rats.
Acute Exposure Guideline Levels (AEGLs)****	10 minutes	0.75 ppm	Notable discomfort, irritation, or certain asymptomatic non-sensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure.

Table 1:- Standards against which to assess public exposure to odours

*The WHO guideline value of 7 µg/m3 (5 ppb) over a 30-minute averaging period is a short-term odour value protective of odour annoyance[1]
** An MRL is an estimate of the daily human exposure to a hazardous substance that is likely to be without appreciable risk of adverse non-cancer health effects over a specified duration of exposure. They are derived for acute (>1, ≤14 days), intermediate (>14, <364 days), and chronic (365 days and longer) exposure durations[2].
*** An estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime[3].
**** Acute Exposure Level Guidelines (AEGLs) are used by emergency planners and responders worldwide as guidance in dealing with rare, usually accidental, releases of chemicals into the air. AEGLS are expressed as specific concentrations of airborne chemicals at which health effects may occur. They are designed to protect the elderly and children, and other individuals who may be susceptible[4].
[1] E71922.pdf (who.int) and Frequently Asked Questions (FAQ) | Environmental Odors | ATSDR (cdc.gov)

[2] Minimal Risk Levels (MRLs) – For Professionals|Toxic Substances Portal|ATSDR (cdc.gov)
[3] Hydrogen sulfide CASRN 7783-06-4 | DTXSID4024149 | IRIS | US EPA, ORD
[4] About Acute Exposure Guideline Levels (AEGLs) | US EPA

- Suggested that for Total Volatile Organic Compounds (TVOC) the Air Quality Objective (AQO) for benzene is used as a conservative comparison. We recognise that it is unlikely that all/any VOCs would be benzene, but assuming that all VOC is benzene represents a worst-case scenario. However, if Wrexham CBC can make an informed estimation of what VOCs are likely to be present another standard could be used.
- Advised that the limited data that are available suggests the long-term (lifetime) health risk is low, but that the local community may be experiencing odour annoyance.

We have not had discussion around monitoring of particulate matter (PM); this is because hydrogen sulphide odour occurs as a gas.

We advised Wrexham CBC that PHW need not be informed of routine findings unless the data shows significant concerns e.g. concentrations are routinely above the exposure standards in table 1.

We have also advised that the following should be issued to the public when odours occur:-

> *Bad smells can sometimes make people feel unwell, we would expect this to be short-term and for the feeling to pass when the smell has gone. Closing windows and doors when smells are present, and opening them again when the smell has passed, can reduce exposure to smells and health effects.*

We advise that anyone concerned about their health should seek medical attention.

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