



UK Health
Security
Agency

Health Risk Assessment of interim air quality monitoring results from 6 to 12 January 2025: Walleys Quarry Landfill Site, Silverdale Newcastle-under-Lyme

Regarding ongoing response to odours and health concerns associated with the site

Introduction

UKHSA is aware that residents living near Walleys Quarry Landfill site have experienced increased odour pollution from the site throughout December, continuing into January.

The air quality data supplied by the Environment Agency (EA), for our December risk assessment, shows that hydrogen sulphide levels over the Christmas period were substantially above the World Health Organization (WHO) odour annoyance guideline level, with continual periodic high spikes of emissions throughout this time. This is consistent with the increase in local complaints sent to the EA and local authority.

UKHSA felt it was important to carry out an interim risk assessment for the period 6 to 12 January 2025, due to increasing levels of odour pollution complaints, along with further raw data being received for early January, showing hydrogen sulphide levels periodically exceeding the WHO short-term health guideline value.

Short Term Exposure

Assessment of odour pollution impacts

UKHSA has used the WHO odour annoyance guideline level for hydrogen sulphide to identify the potential for substantial odour pollution complaints. Hydrogen sulphide concentrations exceeding $7\mu\text{g}/\text{m}^3$ over a 30-minute averaging period are likely to give rise to substantial numbers of odour pollution reports.

The interim concentrations of hydrogen sulphide for the period 6 to 12 January 2025 were above the WHO odour annoyance guideline value for a significant percentage of the time at MMF Maries Way, MMF Silverdale Pumping Station, and MMF Galingale View.

The more time spent above the guideline, the greater the likelihood of symptoms being experienced and consequently impacting on people's health and wellbeing.

Assessment of daily exposure

UKHSA has also used the WHO 24-hour air quality guideline value of 150 $\mu\text{g}/\text{m}^3$ to assess daily average exposure to hydrogen sulphide. This value is protective of eye irritation.

The weekly raw (indicative) hydrogen sulphide monitoring data for the period 6 to 12 January 2025 has been converted to 24-hour averages for each of the monitoring days. At MMF Maries Way, 24-hour average values were below the WHO 24-hour guideline value of 150 $\mu\text{g}/\text{m}^3$. However, at MMF Pumping Station and MMF Galingale, the 24-hour average guideline value was exceeded on three days during the monitoring period: 10 January at MMF Pumping Station, and both 10 and 11 January 2025 at MMF Galingale, with 24-hour average concentrations of 205 $\mu\text{g}/\text{m}^3$ and 213 $\mu\text{g}/\text{m}^3$ (10 January) and 258 $\mu\text{g}/\text{m}^3$ (11 January).

Exposure to concentrations of hydrogen sulphide above the WHO 24-hour guideline value may cause irritation of the eyes nose and throat.

Peak exposures

Short-term peaks in hydrogen sulphide concentrations have been compared against the US Environmental Protection Agency (US EPA) Acute Exposure Guideline Levels (AEGs). AEGs are expressed as specific concentrations of airborne chemicals at which health effects may occur and used to assess peaks of exposure. They are designed to protect elderly people and children, and other individuals who may be susceptible. The interim monitoring data from the three MMFs were compared with AEG-1 10-minute, 30-minute, 60-minute, 4-hour and 8-hour levels for hydrogen sulphide for the period 6 to 12 January 2025. At MMF Maries Way, all concentrations were below the AEG-1 values. However, at MMF Pumping Station, the AEG-1 10-minute, 30-minute, 60-minute, 4-hour and 8-hour levels for hydrogen sulphide was exceeded during 9 and 10 January 2025. At MMF Galingale, the AEG-1 4-hour and 8-hour levels for hydrogen sulphide was exceeded during 10 and 11 January 2025.

Exposure to concentrations above the AEG-1 values may cause notable discomfort, irritation or certain asymptomatic, non-sensory effects. However, the effects are not disabling, and are transient and reversible upon cessation of exposure.

Overall conclusions

The assessment is that while the risk to long-term health is still likely to be small, short-term transient health effects may be experienced such as irritation to the eyes, nose and throat, in addition to effects resulting from odour such as headache, nausea, dizziness, watery eyes, stuffy nose, irritated throat, cough or wheeze, sleep problems and stress. Individuals with pre-existing respiratory conditions such as asthma and chronic obstructive pulmonary disease (COPD), may be more susceptible to these effects.

UKHSA is working closely with the EA and other multiagency partners to monitor the situation and provide public health risk assessments and health advice. Anyone with health concerns or symptoms should contact NHS 111 or their local GP.

UKHSA strongly recommends that all measures be taken to reduce the off-site odour pollution from the landfill site, to reduce the health impacts experienced in the local community.