

Your ref:

Our ref: ADJ/DJM/11429

Date: 13th August 2024

Mr. R. Lewis
Martin Walsh Architectural

By Email Only

Dear Ryan

Naylor Concrete Products, Whaley Road, Barnsley Report No. 4387

The risks associated with ground gases have been considered in accordance with British Standard BS 8485:2015 "Code of Practice for the Characterisation and Remediation from Ground Gas in Affected Developments", CIRIA report C665, "Assessing Risks Posed by Hazardous Ground Gases to Buildings" and NHBC Report No. 4 "Guidance on Evaluation of Development Proposals on Sites Where Methane and Carbon Dioxide are Present".

Following the provision of Michael D Joyce Associates LLP's report number 4387, the geological and Geoenvironmental setting has been reviewed, together with the results from six subsequent site monitoring visits.

In-situ Gas Monitoring

The in-situ gas testing was with a portable meter, which measures the methane content as its percentage volume in air. The corresponding oxygen, carbon dioxide and Volatile Organic Compounds (VOC) concentrations are also measured. No methane, hydrogen sulphide or VOC gases were detected. Carbon dioxide ranged from 0% to 0.4% by volume. No flows were recorded.

Methane is the dominant constituent of landfill gas, and can form an explosive mixture in air at concentrations of between 5% and 15%. Thus 5% methane in air is known as the Lower Explosive Limit (LEL). Concentrations less than this do not normally ignite. Carbon dioxide can also be a potential problem, where it occurs in concentrations greater than 5%.

The full results are attached.

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Calculated Gas Screening Value (GSV)

Due to the ground gas concentrations recorded, the below Ground Gas Risk Assessment is regarded as adequate for appraising risk to the above site. The GSV is calculated on the basis of the worst case scenario in order to establish appropriate gas protection measures.

The worst-case ground gas regime identified on the site during the monitoring period was a maximum steady carbon dioxide concentration of 0.3% v/v. No methane was detected and no flows were recorded.

Consequently, the GSV for carbon dioxide is calculated accordingly. $GSV \text{ (litres of gas per hour)} = 0.1 \text{ l/hr} \times 0.003\% = <0.001 \text{ l/hr}$. It should be noted that a flow of 0.1 l/hr has been assumed, to allow for any variation in the accuracy of the monitor.

Conclusion

No elevated levels of methane, carbon dioxide, hydrogen sulphide or (S)VOCs gases have been detected, and no flows recorded.

The recommendations made in the original ground investigation report (no. 4387) continue to apply.

Yours sincerely

A D Joyce

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Michael D Joyce Associates LLP Geotechnical and Geoenvironmental Consultants				GAS MEASUREMENTS		
				Date: 31 st May 2024		
Client		Naylor Concrete Products		Report No: 4387		
Site		Whaley Road				
Location		Barnsley				
Barometric Pressure 1010 mB rising				Air Temperature: 15°C		
Weather Dry with sunny periods						
Instrument Gas Data GFM436						
Borehole No.	Methane (% gas)	Carbon Dioxide (% gas)	Oxygen (% gas)	PID (ppm)	Carbon Monoxide (ppm)	Flow (l/h)
WS1	0	0.1	20.6	0	0	0
WS2	0	0.2	20.4	0	0	0
WS3	0	0.1	20.5	0	0	0
WS4	0	0.2	20.5	0	0	0
L.E.L. = Lower Explosive Limit, equivalent to 5% methane in air, i.e. 20% LEL is 1% gas Normal Oxygen concentration is 20.9% of air						

*NR = NOT RECORDED

Michael D Joyce Associates LLP Geotechnical and Geoenvironmental Consultants				GAS MEASUREMENTS		
				Date: 14 th June 2024		
Client Naylor Concrete Products				Report No: 4387		
Site Whaley Road						
Location Barnsley						
Barometric Pressure 1007 mB falling				Air Temperature: 16°C		
Weather Dry with sunny periods						
Instrument Gas Data GFM436						
Borehole No.	Methane (% gas)	Carbon Dioxide (% gas)	Oxygen (% gas)	PID (ppm)	Carbon Monoxide (ppm)	Flow (l/h)
WS1	0	0.2	20.4	0	0	0
WS2	0	0.2	20.4	0	0	0
WS3	0.1	0.1	20.4	0	0	0
WS4	0	0.3	20.4	0	0	0
L.E.L. = Lower Explosive Limit, equivalent to 5% methane in air, i.e. 20% LEL is 1% gas Normal Oxygen concentration is 20.9% of air						

*NR = NOT RECORDED

Michael D Joyce Associates LLP Geotechnical and Geoenvironmental Consultants				GAS MEASUREMENTS		
				Date: 27 th June 2024		
Client		Naylor Concrete Products		Report No: 4387		
Site		Whaley Road				
Location		Barnsley				
Barometric Pressure 1004 mB falling				Air Temperature: 16°C		
Weather		Dry with sunny periods				
Instrument		Gas Data GFM436				
Borehole No.	Methane (% gas)	Carbon Dioxide (% gas)	Oxygen (% gas)	PID (ppm)	Carbon Monoxide (ppm)	Flow (l/h)
WS1	0	0.1	20.6	0	0	0
WS2	0.1	0.3	20.4	0	0	0
WS3	0	0.3	20.3	0	0	0
WS4	0	0.2	20.6	0	0	0
L.E.L. = Lower Explosive Limit, equivalent to 5% methane in air, i.e. 20% LEL is 1% gas Normal Oxygen concentration is 20.9% of air						

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Michael D Joyce Associates LLP Geotechnical and Geoenvironmental Consultants				GAS MEASUREMENTS		
				Date: 16 th July 2024		
Client		Naylor Concrete Products		Report No: 4387		
Site		Whaley Road				
Location		Barnsley				
Barometric Pressure 1009 mB rising				Air Temperature: 18°C		
Weather Dry with sunny periods						
Instrument Gas Data GFM436						
Borehole No.	Methane (% gas)	Carbon Dioxide (% gas)	Oxygen (% gas)	PID (ppm)	Carbon Monoxide (ppm)	Flow (l/h)
WS1	0	0.1	20.6	0	0	0
WS2	0	0.0	20.7	0	0	0
WS3	0	0.0	20.7	0	0	0
WS4	0	0.1	20.5	0	0	0
L.E.L. = Lower Explosive Limit, equivalent to 5% methane in air, i.e. 20% LEL is 1% gas Normal Oxygen concentration is 20.9% of air						

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Michael D Joyce Associates LLP Geotechnical and Geoenvironmental Consultants				GAS MEASUREMENTS		
				Date: 30 th July 2024		
Client		Naylor Concrete Products		Report No: 4387		
Site		Whaley Road				
Location		Barnsley				
Barometric Pressure 1018 mB falling				Air Temperature: 27°C		
Weather Dry and sunny						
Instrument Gas Data GFM436						
Borehole No.	Methane (% gas)	Carbon Dioxide (% gas)	Oxygen (% gas)	PID (ppm)	Carbon Monoxide (ppm)	Flow (l/h)
WS1	0	0.2	20.4	0	0	0
WS2	0	0.0	20.7	0	0	0
WS3	0	0.0	20.7	0	0	0
WS4	0	0.2	20.4	0	0	0
L.E.L. = Lower Explosive Limit, equivalent to 5% methane in air, i.e. 20% LEL is 1% gas Normal Oxygen concentration is 20.9% of air						

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Michael D Joyce Associates LLP Geotechnical and Geoenvironmental Consultants				GAS MEASUREMENTS		
				Date: 12 th August 2024		
Client		Naylor Concrete Products		Report No: 4387		
Site		Whaley Road				
Location		Barnsley				
Barometric Pressure 999 mB rising				Air Temperature: 27°C		
Weather		Dry and sunny				
Instrument		Gas Data GFM436				
Borehole No.	Methane (% gas)	Carbon Dioxide (% gas)	Oxygen (% gas)	PID (ppm)	Carbon Monoxide (ppm)	Flow (l/h)
WS1	0	0.3	20.3	0	0	0
WS2	0	0.0	20.7	0	0	0
WS3	0	0.0	20.6	0	0	0
WS4	0	0.2	20.4	0	0	0
L.E.L. = Lower Explosive Limit, equivalent to 5% methane in air, i.e. 20% LEL is 1% gas Normal Oxygen concentration is 20.9% of air						

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