

Your ref:

Our ref: ADJ/DJM/11504

Date: 11th November 2025

Mr. H. Gray
Jones Homes (Yorkshire) Limited
Green Bank House
Cleckheaton
West Yorkshire
BD19 5LQ

By Email Only

Dear Howard

White Lee Gardens, Batley - Ground Gas Risk Assessment Report No. 4488

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 4488, 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 0.4% to 1.9% 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.

Contin....



Registered Office: 531 Denby Dale Road West, Calder Grove, Wakefield, West Yorkshire, WF4 3ND (Reg No. OC 302905)

T +44(0)1924 360458 **E** mdja@geoenvironmental.co.uk **W** www.geoenvironmental.co.uk

Partners: Anthony D Joyce BSc MSc ARSM CEng CGeol CEnv MICE FGS SiLC

Lucie A M Joyce BSc (Hons) Edward L H Joyce BSc (Hons)

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 1.9% v/v. No methane was detected and no flows were recorded. The GSV is therefore less than 0.07 litres per hour, and the site falls within Characteristic Gas Situation CS1.

Conclusion

The site falls within Characteristic Gas Situation (CS1), with respect to methane and carbon dioxide.

An up-to-date Radon report has been obtained. The site lies in an area where 3% to 5% of homes are estimated to be at or above the action level. As such, **basic radon protection measures are required**. Full details of the protection measures necessary are given in Building Research Establishment report BR211: Radon - Guidance on Protection Measures for new buildings (2023 Edition).

Yours sincerely

A D Joyce

Enc



Michael D Joyce Associates LLP Geotechnical and Geoenvironmental Consultants				GAS MEASUREMENTS		
				Date: 6 th August 2025		
Client Jones Homes (Yorkshire) Limited				Report No: 4488		
Site White Lee Gardens						
Location Batley						
Barometric Pressure 1022 mB falling				Air Temperature: 20°C		
Weather Sunny						
Instrument Gas Data GFM436						
Borehole No.	Methane (% gas)	Carbon Dioxide (% gas)	Oxygen (% gas)	PID (ppm)	Carbon Monoxide (ppm)	Flow (l/h)
WS22	0	1.3	19.0	0	0	0
WS23	0	0.9	19.4	0	0	0
WS24	0	1.9	18.3	0	0	0
WS25	0	0.7	20.0	0	0	0
WS26	0	1.2	18.9	0	0	0
WS27	0	1.3	18.9	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:	26 th August 2025	
Client Jones Homes (Yorkshire) Limited				Report No: 4488		
Site White Lee Gardens						
Location Batley						
Barometric Pressure 1003 mB rising				Air Temperature: 21°C		
Weather Sunny						
Instrument Gas Data GFM436						
Borehole No.	Methane (% gas)	Carbon Dioxide (% gas)	Oxygen (% gas)	PID (ppm)	Carbon Monoxide (ppm)	Flow (l/h)
WS22	0	1.0	19.5	0	0	0
WS23	0	0.6	20.0	0	0	0
WS24	0	1.3	19.2	0	0	0
WS25	0	0.3	20.1	0	0	0
WS26	0	0.9	19.6	0	0	0
WS27	0	0.9	19.7	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: 5 th September 2025		
Client Jones Homes (Yorkshire) Limited				Report No: 4488		
Site White Lee Gardens						
Location Batley						
Barometric Pressure 1020mB falling				Air Temperature: 17°C		
Weather Sunny periods with cloud						
Instrument Gas Data GFM436						
Borehole No.	Methane (% gas)	Carbon Dioxide (% gas)	Oxygen (% gas)	PID (ppm)	Carbon Monoxide (ppm)	Flow (l/h)
WS22	0	1.0	19.6	0	0	0
WS23	0	0.7	20.0	0	0	0
WS24	0	0.4	19.9	0	0	0
WS25	0	1.3	19.3	0	0	0
WS26	0	0.6	19.8	0	0	0
WS27	0	1.0	19.4	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:	25 th September 2025	
Client Jones Homes (Yorkshire) Limited				Report No: 4488		
Site White Lee Gardens						
Location Batley						
Barometric Pressure 1028 mB rising				Air Temperature: 13°C		
Weather Sunny						
Instrument Gas Data GFM436						
Borehole No.	Methane (% gas)	Carbon Dioxide (% gas)	Oxygen (% gas)	PID (ppm)	Carbon Monoxide (ppm)	Flow (l/h)
WS22	0	1.2	19.2	0	0	0
WS23	0	1.0	19.4	0	0	0
WS24	0	1.5	18.8	0	0	0
WS25	0	0.5	20.0	0	0	0
WS26	0	1.0	19.2	0	0	0
WS27	0	1.0	19.3	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: 3 rd October 2025		
Client Jones Homes (Yorkshire) Limited				Report No: 4488		
Site White Lee Gardens						
Location Batley						
Barometric Pressure 985 mB falling				Air Temperature: 15°C		
Weather Overcast with occasional rain						
Instrument Gas Data GFM436						
Borehole No.	Methane (% gas)	Carbon Dioxide (% gas)	Oxygen (% gas)	PID (ppm)	Carbon Monoxide (ppm)	Flow (l/h)
WS22	0	1.1	19.2	0	0	0
WS23	0	1.4	19.0	0	0	0
WS24	0	1.7	18.4	0	0	0
WS25	0	0.5	20.1	0	0	0
WS26	0	1.1	19.4	0	0	0
WS27	0	1.1	19.5	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:	10 th November 2025	
Client Jones Homes (Yorkshire) Limited				Report No: 4488		
Site White Lee Gardens						
Location Batley						
Barometric Pressure 1006 mB rising				Air Temperature: 18°C		
Weather Sunny						
Instrument Gas Data GFM436						
Borehole No.	Methane (% gas)	Carbon Dioxide (% gas)	Oxygen (% gas)	PID (ppm)	Carbon Monoxide (ppm)	Flow (l/h)
WS22	0	1.0	19.6	0	0	0
WS23	0	1.0	19.7	0	0	0
WS24	0	1.7	18.6	0	0	0
WS25	0	0.6	20.0	0	0	0
WS26	0	1.5	18.6	0	0	0
WS27	0	1.3	18.8	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**