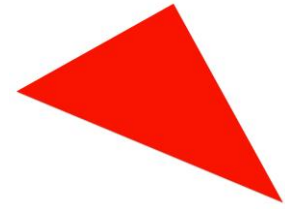


BL9 9FY

TYSON CONSTRUCTION LTD

VAT Number: **285 0439 91**



SUPPLEMENTARY REPORT ON GROUND GAS MONITORING, PROPOSED DEVELOPMENT SITE AT FLETCHER FOLD ROAD, BURY BL9 9FY

INTRODUCTION AND OBJECTIVES

For full details, reference should be made to the Geo-Environmental Report by Hamson Barron Smith dated February 2024, Reference 23-12-115972/GIR Rev A.

This supplementary report deals strictly with ground gas monitoring issues, together with recommendations for the mitigation thereof, in respect of the proposed development.

A full set of ground gas monitoring results were not available at the time of writing the primary report.

GROUND GAS MONITORING

Ground gas monitoring was undertaken at the site with 3 boreholes converted to gas monitoring wells.

Ground gas measurements were undertaken on 6 occasions between 12th July 2024 and 23 September 2024. A full set of results are included in Appendix A.

The concentration by volume of methane (CH₄) varied with a maximum concentration of 0.5%.

The concentration by volume of carbon dioxide (CO₂) was also found to vary, with a maximum concentration of 21.7%.

Peak gas flow was recorded at 2.8 litres/hr.

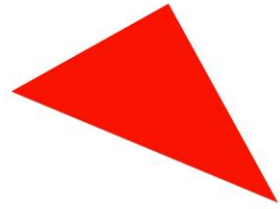
Measurements were undertaken in a variety of atmospheric pressure conditions varying between 995 and 1020 bars. Significant variance was found in the flow rates ranging from 0.1 to 2.8 litres/hr.

Equipment used was a GA5000 infra red gas analyser, complete with flow pod.

CONCLUSIONS

Reference should be made to the table included in Appendix B. This is based upon Table 6.4 – NHBC Classification for Low Rise Housing (Boyle & Witherington, 2007; CIRIA, 2006), contained in Ground Gas Handbook by Wilson, Card & Haines. This is referred to as the NHBC Traffic Light classification.

Gas monitoring for methane indicated a maximum value of 0.5%. Combining this with a maximum flow of 2.8 litres/hr gives a GSV of 0.014., falling within the “Green” category.



Gas monitoring for carbon dioxide indicated a maximum concentration of 21.7% and when combined with a maximum recorded flow of 2.8 litres/hr gives a GSV of 0.61. This is considered to fall into the "Amber 2" category as the concentration of 21.7% exceeds the 10% upper limit of the "Amber 1" category.

The HBS Geo-Environmental Report indicated the site as being in an area unaffected by Radon.

RECOMMENDATIONS

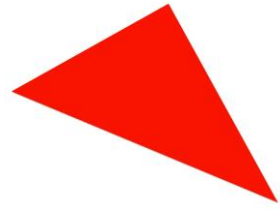
Gas protection measures are recommended to new properties to an "Amber 2" level.

This is considered to be a very conservative assessment.

SIGNED

A handwritten signature in blue ink, appearing to read 'D.J. Middleton', with a horizontal line underneath.

D.J. MIDDLETON
CARLEY DAINES & PARTNERS LIMITED



APPENDIX A
GAS MONITORING RESULTS



GAS MONITORING RESULTS

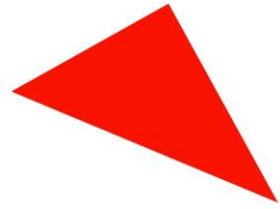
13947 - Fletcher Fold Road, Bury

July to September 2024

Date	Water Level (BGL)	BH	CH4%	CO2%	O2%	Pressure	Flow l/h	Weather / Temp
12/07/24		2	0.0	11.7	11.2	1011	0.9	14deg Overcast
26/07/24		2	0.0	14.2	9.3	1002	0.5	16deg Overcast
09/08/24		2	0.0	15.6	10.2	1006	0.6	17deg Rain
23/08/24		2	0.0	16.8	13.2	995	0.6	16deg Windy
06/09/24		2	0.0	16.5	11.1	1020	0.7	11deg Sunny
23/09/24		2	0.0	15.5	10.3	997	0.6	13deg Showers

Date	Water Level (BGL)	BH	CH4%	CO2%	O2%	Pressure	Flow l/h	Weather / Temp
12/07/24		3	0.2	0.0	2.8	1011	0.3	14deg Overcast
26/07/24		3	0.5	0.0	0.9	1002	0.1	16deg Overcast
09/08/24		3	0.2	0.0	0.8	1006	0.2	17deg Rain
23/08/24		3	0.2	0.0	8.5	996	0.6	16deg Windy
06/09/24		3	0.1	0.0	0.5	1020	0.1	11deg Sunny
23/09/24		3	0.2	0.0	0.3	998	2.8	13deg Showers

Date	Water Level (BGL)	BH	CH4%	CO2%	O2%	Pressure	Flow l/h	Weather / Temp
12/07/24		6	0.0	17.1	5.4	1012	0.5	14deg Overcast
26/07/24		6	0.0	7.6	15.0	1003	0.5	16deg Overcast
09/08/24		6	0.0	7.0	15.1	1007	0.5	17deg Rain
23/08/24		6	0.0	3.7	17.1	996	0.5	16deg Windy
06/09/24		6	0.0	21.7	7.6	1020	0.6	11deg Sunny
23/09/24		6	0.0	10.2	14.6	998	0.6	13deg Showers

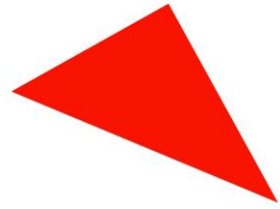


A P P E N D I X B

NHBC CLASSIFICATION TABLE

Principal: **D.J. Middleton BEng(Hons) CEng MStructE**
Company Number: **11006567**
Address **11 Bridgewater Road, Walkden, Worsley, Manchester M28 3JE**
VAT Number: **285 0439 91**

NHBC classification for low rise housing (150 mm void) (Boyle & Witherington, 2007; CIRIA, 2006)				
Traffic Light Classification	Methane		Carbon dioxide	
	Typical maximum concentration (%v/v)	Gas screening value (l/h)	Typical maximum concentration (%v/v)	Gas screening value (l/h)
Green				
	1	0.16	5	0.78
Amber 1				
	5	0.63	10	1.56
Amber 2				
	20	1.56	30	3.10
Red				



A P P E N D I X C

S U M M A R Y O F G A S M O N I T O R I N G

Summary of gas monitoring					
Methane			Carbon dioxide		
Typical maximum concentration (%v/v)	Flow (l/h)	Gas screening value	Typical maximum concentration (%v/v)	Flow (l/h)	Gas screening value
0.5	2.8	0.014	21.7	2.8	0.61