

PHASE 2 REPORT ON A SITE INVESTIGATION

Site

**HURST GROVE,
SANDFORD LANE,
HURST, READING,
BERKSHIRE RG10 0SQ**

Client

ANTHONY J.P. SHARP

Report Ref

25/13095/GO

Issued

APRIL 2025

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Contract	Sandford Lane, Hurst			
Client	Anthony J.P. Sharp			
Report Reference	25/13095/GO			
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The following foreword should be read in conjunction with this report. Any variations on the general procedures outlined below are indicated in the text.

FOREWORD

The recommendations made and opinions expressed in this Report are based on the strata conditions revealed by the fieldworks as indicated on the exploratory records, together with an assessment of the data from in situ and laboratory tests. No liability can be accepted for conditions which have not been revealed by the fieldworks, for example, between exploratory positions. While this Report may offer opinions on the possible configuration of strata, both between the excavations and below the maximum depth achieved by the investigation, these comments are for guidance only and no liability can be accepted for their accuracy. The data obtained relate to the conditions which are relevant at the time of the investigation.

The groundwater observations entered on exploratory records are those noted at the time of the investigation. The normal rate of progress does not usually permit the recording of any equilibrium water level for any one water strike. It should be noted that groundwater levels are prone to seasonal variation and to changes in local drainage conditions. The word 'none' indicates that groundwater was sealed off by the borehole casing or that no water was observed in the exploratory hole upon completion.

It should be appreciated that this report does not constitute a Geotechnical Design Report (GDR) as defined in Eurocode 7 and no aspect of this report constitutes a design. Specific sections of this report are generally in line with the guidance set out in Eurocode 7 for a Ground Investigation Report (GIR), as defined within BS EN 1997:-2 (2024). This provides guidance on the number and spacing of investigation positions, methods of investigation and sample quality class to be achieved which may not have been met by this investigation.

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REPORT REF: 25/13095/GO
CONTRACT: SANDFORD LANE, HURST

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EXECUTIVE SUMMARY

This investigation has demonstrated that made ground overlies granular soils indicative of the Kempton Park Gravel Member of recent or Pleistocene age. These superficial deposits have been shown to overlie the London Clay Formation of the Eocene epoch.

The ground gas monitoring undertaken has not recorded any elevated levels of the bulk ground gases carbon dioxide or methane and remedial protective measures are not required as part of the proposed change of use.

1 INTRODUCTION

1.1 Scope

The client proposes a change of use of the existing commercial premises at Hurst Grove, Sandford Lane, Hurst ("the site") to a residential dwelling. A Phase 1 Preliminary Risk Assessment was undertaken by Oakshire Environmental in March 2024, which should be read in conjunction with this report. This identified a low to moderate risk from ground gas generated from sources within the local area and recommended that ground gas monitoring be carried out to assess this risk. Accordingly, a site investigation has been undertaken in order to ascertain the nature and engineering properties of the soils underlying the existing structure and enable the installation of monitoring wells to inform a ground gas risk assessment.

The programme of this investigation comprised the construction of three boreholes using hand-held window sampling techniques. During this work samples were recovered for further examination and upon completion monitoring wells were installed to facilitate return ground gas monitoring.

This report describes the work undertaken, presents the information obtained and discusses the long-term risk from ground gases.

1.2 The Site

Photographs which give a general impression of the site at the time of the fieldworks are included below. A table prepared as part of the desk study summarising the environmental setting is also presented below for reference.



Table 3: Summary of the site's environmental setting

Environmental Factor		Details	
Hydrogeology	Aquifer Designation	Superficial	Secondary A
		Bedrock	Unproductive
	Groundwater Vulnerability	Superficial	Medium
		Bedrock	Low
	Source Protection Zones and Abstractions		Site is situated within Source Protection Zone III (total catchment) and a Drinking Water Safeguard Zone for surface water Site is not within a Drinking Water Protected Area or a Drinking Water Safeguard Zone for groundwater
Hydrology	Water Network		Land drains bordering the site to the north east and 140m north west Ponds 130m north west, 130m south west and 170m north
Geology	Artificial Ground		Worked ground at Dinton Pastures Country Park 190m south west and 280m west
	Superficial Deposits		Kempton Park Gravel Member - sand and gravel, locally with lenses of silt, clay or peat
	Bedrock Geology		London Clay Formation - silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay
	Superficial Permeability		Moderate to High
	Bedrock Permeability		Very Low
	Borehole Records		Borehole completed 250m south of the site in 1973 identified soil to 0.4m, clayey gravel to 3.4m above clay to the bottom of the borehole at 3.9m (groundwater was struck at 1.7mbgl)
Workings	Mining and Ground Workings		No evidence of mining activity in the vicinity of the site Old gravel pit 130m south shown in 1912, possibly expanded from area of rough pasture shown from 1873 and no longer labelled from 1933 (now an area of woodland) Pond 130m north west shown since 1899 Pond 130m south west developed in part of old gravel pit from around 1967 Pond 170m north developed around 2008
Radon	PHE UKradon		<1% probability of being above action level
Waste and Landfill	Historical Landfill		None within 500m of the site
	Permitted Waste Sites		Hurst Landfill Site 200m north west (>10 tonnes per day or with a total capacity >25,000 tonnes, excluding inert waste) Whistley Court Co-Disposal Landfill Site 350m north (West Berkshire Waste Local Plan (1998) shows that this landfill was operational in 1998 and accepted commercial, industrial and selected difficult waste. No longer active in 2007)

2 FIELDWORKS

2.1 Siteworks

The boreholes were constructed on 3rd March 2025 at locations as shown on the site plan, drawing no. 25/13095/1, which is presented as Figure 1. The exploratory positions were located in a triangular arrangement around the existing building, taking into account the position of potential sources of ground gases such as the landfill 200m north west and ground gases recorded at a development 200m to the south west.

The depths and descriptions of the strata encountered in the boreholes are given on the records which comprise Appendix 1 to this report. These records note the depths at which samples were taken and the groundwater observations noted at the time of the fieldworks.

2.2 Installations

Upon completion of the boreholes monitoring wells were installed in order to carry out long-term ground gas monitoring. These comprised of plain pipe between ground level and 0.50m extended to depths of 2.50m, 2.70m and 3.00m with slotted pipe.

3 GROUND CONDITIONS

3.1 Stratigraphy

Consideration of the exploratory records indicates that grass over made ground of variable composition was revealed from surface and proved to depths of 1.10m, 1.30m and 2.10m. Further possible disturbed or made ground was noted in the form of bluish grey and brown slightly gravelly sandy clay with rare fine brick fragments to 1.60m within borehole 1.

Light brown and grey sandy clay with variable amounts of flint gravel was exposed beneath the made ground within borehole 1, which was proved to 2.20m. Brown sand with varying amounts of flint gravel, indicative of the Kempton Park Gravel Member, was exposed beneath this cohesive horizon and made ground within boreholes 2 and 3. These granular soils were proved to depths of 3.30m and 2.70m within boreholes 1 and 2, with borehole 3 concluding at 3.10m.

Grey clay was exposed beneath the Kempton Park Gravel Member within boreholes 1 and 2. This cohesive soil represents the London Clay Formation and these locations were concluded within this strata at 4.10m.

3.3 Groundwater

During the construction of the exploratory positions groundwater strikes were recorded at 1.20m and 2.00m depths. Corresponding short-term standing water levels of 1.00m and 1.35m were observed upon completion of the boreholes.

3.5 Monitoring

Return visits were made on 11th and 25th March and 8th April 2025 to perform ground gas monitoring and the groundwater levels recorded are summarised in tabular form below.

DATE	BH1	BH2	BH3
11/03/2025	1.26	1.27	1.27
25/03/2025	1.34	1.31	1.43
08/04/2025	1.44	1.31	1.55

4 GROUND GAS ASSESSMENT

A Conceptual Site Model (CSM) was formulated for this site as part of the Phase 1 Desk Study undertaken by Oakshire Environmental, which informed the current Phase 2 investigation and an extract is presented below.

Table 5: Conceptual site model					
Sources	Pathways	Receptors	Severity	Probability	Potential Level of Risk
Historical Stables	Ingestion/inhalation of contaminated soil dust Dermal contact with contaminated soil Inhalation of soil vapours Ingestion of homegrown produce Permeation into drinking water pipes	Residential end users	Mild	Low Likelihood	Low The site's previous use as stables is not likely to pose a significant contamination risk as machinery is not likely to have been used, fuel oils and chemicals are not likely to have been stored and historical photos show that asbestos containing materials were not used for the construction of the buildings. Made ground containing rubble from the demolition of these historical buildings may be present beneath the existing building, however, this will not pose a significant risk if left in-situ.
	Surface runoff Leaching through soil	Nearby land drains Underlying secondary A aquifer	Mild	Low Likelihood	Low Surface runoff from the site may have impacted the nearby land drains, however, these are not considered to be vulnerable to contamination given that they are for drainage purposes and there are no main rivers nearby. Significant contamination is also not likely to have occurred on the site. Given the high permeability of the underlying superficial deposits and the site's location within a source protection zone, shallow groundwater is considered to be at risk from contamination. Significant contamination from this source is unlikely and gravel hardstanding across site will have mitigated the risk to underlying groundwater suggesting a low risk.
Landfill	Ground gas permeation into the building	Residential end users	Medium	Low Likelihood	Low to Moderate Elevated ground gas concentrations have been identified as part of gas monitoring carried out in 2020 for a nearby development. These are likely to have originated from the nearby landfill to the north west and north of the site and/or the potentially infilled gravel pit to the south and there is considered to be a potential risk to the site, particularly due to the building's construction partly below ground.

The Desk Study highlighted elevated ground gas concentrations as part of monitoring in 2020 for a nearby development 200m to the south west and Hurst landfill 200m north west. It should also be appreciated that the existing structure has an existing basement, however the exact depth is not known. Accordingly, three monitoring wells were installed around the building and a regime of ground gas monitoring undertaken.

Three visits have been made to date to monitor the standpipes and the results of the monitoring are included in Appendix 2. The results have been reviewed in accordance with BS 8485 (2015) Code of Practice for the characterisation and remediation of ground gas in effected developments.

The hazardous gas flow rate has been determined based upon the worst case from these monitoring visits, which are a carbon dioxide of 1.5% and methane of 0.0% (zero) together with a flow of 0.0l/h (zero).

Q_{hg}	=	$(C_{hg}/100)q$
Q_{hg}	=	$(1.5/100) \times 0.0$
Q_{hg}	=	0.0l/h
where:		
Q_{hg}	=	calculated hazardous gas flow rate/gas screening value
C_{hg}	=	measured hazardous gas concentration
q	=	measured flow rate

Based upon the calculated gas screening value of 0.0 litres/hour, the hazard potential of the site can be considered very low or characteristic gas situation 1. Therefore, no remedial or specific protection measures will be required regarding ground gas.

Current guidance indicates that six monitoring rounds should be undertaken to fully classify this site in terms of its ground gas regime. However, in view of the ground conditions revealed, the low levels of ground gases recorded over the three visits and zero flow, it is considered that the site has been adequately assessed by the visits undertaken to date.

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LIST OF ABBREVIATIONS

AOD	-	Above Ordnance Datum
ACM	-	Asbestos-containing Material
AST	-	Above-ground Storage Tank
BGS	-	British Geological Survey
BH	-	Borehole
BRE	-	Building Research Establishment
BSI	-	British Standards Institution
BS	-	British Standard
C4SL	-	Category Four Screening Level
CIRIA	-	Construction Industry Research and Information Association
CP	-	Cable Percussive
DPH	-	Dynamic Probing Heavy
DPSH	-	Dynamic Probing Super Heavy
EA	-	Environment Agency
GAC	-	Generic Assessment Criteria
LL	-	Liquid Limit
mAOD	-	Metres Above Ordnance Datum
mBGL	-	Metres Below Ground Level
mOD	-	Metres Ordnance Datum
OS	-	Ordnance Survey
PAH	-	Polycyclic Aromatic Hydrocarbons
PCB	-	Polychlorinated Biphenyl
PID	-	Photo Ionisation Detector
PL	-	Plastic Limit
PSD	-	Particle Size Distribution
SGV	-	Soil Guideline Value
SOM	-	Soil Organic Matter
SPT	-	Standard Penetration Test
SPZ	-	Source Protection Zone
SVOC	-	Semi-volatile Organic Compounds
TPH	-	Total Petroleum Hydrocarbon
UST	-	Underground Storage Tank
UXB	-	Unexploded Bombs
UXO	-	Unexploded Ordnance
VOC	-	Volatile Organic Compound

FIGURE 1

SITE PLAN



Legend:



Borehole Location



Site Boundary

Title: Site Plan

Dwg No: 25/13095/1

Drawn by: GO

Client: Anthony J.P. Sharp

Contract: Sandford Lane,
Hurst

Job Ref: 25/13095/GO

Scale: NTS

Revision: 0

Issue Date: 22/04/2025

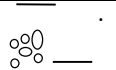
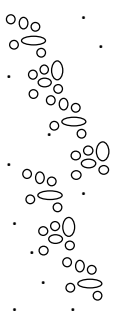


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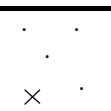
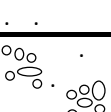
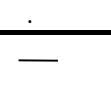
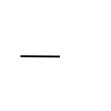
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APPENDIX 1

EXPLORATORY RECORDS

 ALBURY S.I. LTD Miltons Yard, Petworth Road, Witley, Surrey GU8 5LH				BOREHOLE		1					
Contract		Sandford Lane, Hurst				Report Ref		25/13095/GO			
Client		Anthony JP Sharp				Date		03/03/2025			
Site Address		Hurst Grove, Sandford Lane, Hurst, Reading RG10 0SQ				Ground Level					
Type of excavator		Window Sampler		Water level after completion, m		1.35					
Water strikes, m		Dimensions, m		Ease of excavation, m							
1 2.00		Diameter 0.06		Very easy		Difficult		2.70-4.10			
2				Moderate GL-2.00		Very hard		2.00-2.70			
Remarks Standpipe installed to 2.50m.											
Samples or tests		Shear Strength kPa	Depth		Legend	Strata Description					
Type	Depth, m										
D	0.10					Grass over MADE GROUND (dark brown slightly gravelly clayey SAND. Gravel is of flint with traces of brick)					
D	0.30										
D	0.50										
						0.45		MADE GROUND (brown silty SAND and GRAVEL of flint with some brick fragments)			
						0.80					
D	1.00					1.10		MADE GROUND (greyish brown slightly gravelly clayey SAND. Gravel is of flint and occasional brick fragments)			
D	1.20										
D	1.50					1.60		Bluish grey and brown slightly gravelly sandy CLAY. Gravel is of flint with rare fine brick fragments - probable disturbed or MADE GROUND			
D	1.70										
D	2.00					2.20		Light grey and brown gravelly sandy CLAY. Gravel is of flint			
D	2.50	3.30		Brown SAND and flint GRAVEL							
D	3.00										
D	3.50	4.10		Grey CLAY							
D	4.00										
				END OF BOREHOLE							

Sample Code: B - Large Disturbed D - Small Disturbed W - Water Sample R - Root Sample T - Tube Liner

 ALBURY S.I. LTD Miltons Yard, Petworth Road, Witley, Surrey GU8 5LH				BOREHOLE		2					
Contract		Sandford Lane, Hurst				Report Ref		25/13095/GO			
Client		Anthony JP Sharp				Date		03/03/2025			
Site Address		Hurst Grove, Sandford Lane, Hurst, Reading RG10 0SQ				Ground Level					
Type of excavator		Window Sampler		Water level after completion, m		1.35					
Water strikes, m		Dimensions, m		Ease of excavation, m							
1 2.00		Diameter 0.06		Very easy		Difficult		GL-2.70			
2				Moderate 2.70-4.10		Very hard					
Remarks Standpipe installed to 3.00m.											
Samples or tests		Shear Strength kPa	Depth		Legend	Strata Description					
Type	Depth, m										
D	0.10		0.40			MADE GROUND (grass over dark brown slightly gravelly clayey SAND with occasional roots. Gravel is of flint and some brick fragments)					
D	0.30										
D	0.50										
D	1.00					1.30		MADE GROUND (dark greyish brown silty gravelly SAND. Gravel is of flint, concrete and brick fragments)			
D	1.50										
D	2.00										
D	2.50					2.70		Orangish brown silty gravelly SAND. Gravel is of flint			
D	3.00										
D	3.50										
D	4.00					4.10		Grey and brown silty SAND			
D	3.50										
D	4.00										
D	4.00	4.10		Grey sandy flint GRAVEL							
D	3.50										
D	4.00										
D	4.00	4.10		Grey CLAY							
D	3.50										
D	4.00										
D	4.00	4.10		END OF BOREHOLE							
D	3.50										
D	4.00										

 ALBURY S.I. LTD Miltons Yard, Petworth Road, Witley, Surrey GU8 5LH				BOREHOLE		3			
Contract		Sandford Lane, Hurst				Report Ref		25/13095/GO	
Client		Anthony JP Sharp				Date		03/03/2025	
Site Address		Hurst Grove, Sandford Lane, Hurst, Reading RG10 0SQ				Ground Level			
Type of excavator		Window Sampler		Water level after completion, m		1.00			
Water strikes, m		Dimensions, m		Ease of excavation, m					
1 1.20		Diameter 0.06		Very easy		Difficult			
2				Moderate GL-2.00		Very hard		2.00-3.10	
Remarks Standpipe installed to 2.70m.									
Samples or tests		Shear Strength kPa		Depth		Legend		Strata Description	
Type	Depth, m								
D	0.10							MADE GROUND (grass over dark brown silty gravelly SAND with rootlets, becoming clayey with depth. Gravel is of flint and concrete fragments)	
D	0.30								
D	0.50								
				0.70				MADE GROUND (greyish brown slightly clayey SAND and flint GRAVEL with traces of brick)	
D	1.00								
				1.30					
D	1.50							MADE GROUND (greyish brown clayey gravelly SAND. Gravel is of flint with rare brick fragments in the upper levels)	
				2.10					
D	2.00								
								Yellowish brown SAND and flint GRAVEL	
D	2.50								
				3.10					
D	3.00							END OF BOREHOLE	

APPENDIX 2

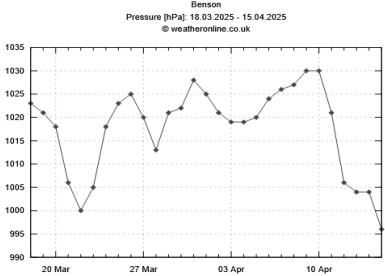
GROUND GAS MONITORING DATA

GROUND GAS AND GROUNDWATER MONITORING

Contract	Sandford Lane, Hurst	Report Ref	25/13095/GO									
Date	11/03/2025	Visit	1									
Engineer	GO	Check	GO									
Weather	Sunny intervals	Page	1									
Atmospheric Pressure		Before	1002									
		After	1001									
Published Pressure Trend		Falling low pressure preceding 2 days										
Remarks		Benson Pressure (hPa): 18.02.2025 - 18.03.2025 © weatheronline.co.uk										
Position	Flow (l/hr)		Common Gases (%)				H ₂ S	Hexane	VOC (ppm)	Groundwater (m)		Remarks
	High	Low	Time	CO ₂	CH ₄	O ₂				Water	Base	
Calibration Check	0.0	0.0	15s	0.1	0	20.7						Calibration check passed
			30s	0.1	0	20.7						
			60s	0.1	0	20.6						
1	0	0	15s	0.5	0	20.4	0	0	-	1.25	2.45	
			30s	0.8	0	20.0						
			45s	0.9	0	19.8						
			1m	0.9	0	19.8						
			1m 15s	0.9	0	19.8						
			1m 30s	0.9	0	19.8						
			1m 45s	0.9	0	19.8						
			2m	0.9	0	19.8						
			2m 15s	0.8	0	19.9						
			2m 30s	0.8	0	19.9						
			2m 45s	0.8	0	20.0						
			3m	0.8	0	20.0						
			2	0	0	15s						
30s	0.1	0				20.6						
45s	0.1	0				20.6						
1m	0.2	0				20.5						
1m 15s	0.2	0				20.5						
1m 30s	0.2	0				20.5						
1m 45s	0.2	0				20.5						
2m	0.2	0				20.5						
2m 15s	0.2	0				20.5						
2m 30s	0.2	0				20.5						
2m 45s	0.2	0				20.5						
3m	0.2	0				20.5						
3	0	0				15s	0.9	0	19.3	0	0	-
			30s	1.1	0	18.7						
			45s	1.2	0	18.6						
			1m	1.2	0	18.6						
			1m 15s	1.2	0	18.5						
			1m 30s	1.2	0	18.5						
			1m 45s	1.2	0	18.5						
			2m	1.2	0	18.6						
			2m 15s	1.2	0	18.5						
			2m 30s	1.2	0	18.5						
			2m 45s	1.2	0	18.6						
			3m	1.2	0	18.6						
			Calibration Check	0.0	0.0	15s	0.1	0	20.5			
30s	0.1	0				20.6						
60s	0.1	0				20.5						



GROUND GAS AND GROUNDWATER MONITORING

Contract	Sandford Lane, Hurst	Report Ref	25/13095/GO									
Date	25/03/2025	Visit	2									
Engineer	HF	Check	GO									
Weather	Sunny intervals	Page	1									
Atmospheric Pressure		Before	1023									
		After	1023									
Published Pressure Trend		High										
Remarks												
Position	Flow (l/hr)		Common Gases (%)				H ₂ S	Hexane	VOC (ppm)	Groundwater (m)		Remarks
	High	Low	Time	CO ₂	CH ₄	O ₂				Water	Base	
Calibration Check	0.0	0.0	15s	0.1	0	20.7						Calibration check passed
			30s	0.1	0	20.6						
			60s	0.1	0	20.5						
1	0	0	15s	0.6	0	20.3	0	0	-	1.34	2.45	
			30s	1.2	0	19.4						
			45s	1.4	0	19.0						
			1m	1.4	0	19.0						
			1m 15s	1.4	0	19.0						
			1m 30s	1.4	0	19.1						
			1m 45s	1.3	0	19.1						
			2m	1.3	0	19.2						
			2m 15s	1.2	0	19.2						
			2m 30s	1.1	0	19.3						
			2m 45s	1.0	0	19.4						
			3m	1.0	0	19.4						
			2	0	0	15s						
30s	0.1	0				20.5						
45s	0.1	0				20.5						
1m	0.1	0				20.5						
1m 15s	0.1	0				20.5						
1m 30s	0.2	0				20.5						
1m 45s	0.2	0				20.4						
2m	0.3	0				20.3						
2m 15s	0.3	0				20.3						
2m 30s	0.3	0				20.3						
2m 45s	0.3	0				20.3						
3m	0.2	0				20.4						
3	0	0				15s	0.6	0	20.3	0	0	-
			30s	0.7	0	20.0						
			45s	0.8	0	19.8						
			1m	0.9	0	19.7						
			1m 15s	0.9	0	19.6						
			1m 30s	0.9	0	19.6						
			1m 45s	0.9	0	19.6						
			2m	0.9	0	19.6						
			2m 15s	0.9	0	19.6						
			2m 30s	0.9	0	19.6						
			2m 45s	0.9	0	19.7						
			3m	0.9	0	19.6						
			Calibration Check	0.0	0.0	15s	0.1	0	20.6			
30s	0.1	0				20.6						
60s	0.1	0				20.6						



GROUND GAS AND GROUNDWATER MONITORING

Contract	Sandford Lane, Hurst					Report Ref	25/13095/GO				
Date	08/04/2025					Visit	3				
Engineer	HF					Check	GO				
Weather	Sunny					Page	1				
Atmospheric Pressure			Before			1027					
			After			1027					
Published Pressure Trend											
Remarks											

Benson
Pressure (hPa): 18.03.2025 - 15.04.2025
© weatheronline.co.uk

Position	Flow (l/hr)		Common Gases (%)				H ₂ S	Hexane	VOC (ppm)	Groundwater (m)		Remarks
	High	Low	Time	CO ₂	CH ₄	O ₂				Water	Base	
Calibration Check	0.0	0.0	15s	0.1	0	20.9						Calibration check passed
			30s	0.1	0	20.8						
			60s	0.1	0	20.8						
1	0	0	15s	0.7	0	20.6	0	0	-	1.44	2.45	
			30s	1.2	0	20.1						
			45s	1.5	0	19.8						
			1m	1.5	0	19.7						
			1m 15s	1.5	0	19.7						
			1m 30s	1.5	0	19.7						
			1m 45s	1.4	0	19.8						
			2m	1.4	0	19.8						
			2m 15s	1.3	0	19.9						
			2m 30s	1.2	0	19.9						
			2m 45s	1.1	0	20.0						
			3m	1.0	0	20.0						
			2	0	0	15s						
30s	0.2	0				20.7						
45s	0.2	0				20.7						
1m	0.2	0				20.7						
1m 15s	0.2	0				20.6						
1m 30s	0.2	0				20.6						
1m 45s	0.2	0				20.6						
2m	0.3	0				20.6						
2m 15s	0.3	0				20.6						
2m 30s	0.3	0				20.5						
2m 45s	0.3	0				20.5						
3m	0.3	0				20.5						
3	0	0				15s	0.8	0	20.2	0	0	-
			30s	1.0	0	19.8						
			45s	1.2	0	19.7						
			1m	1.3	0	19.5						
			1m 15s	1.5	0	19.3						
			1m 30s	1.5	0	19.3						
			1m 45s	1.5	0	19.3						
			2m	1.4	0	19.3						
			2m 15s	1.4	0	19.3						
			2m 30s	1.4	0	19.3						
			2m 45s	1.4	0	19.3						
			3m	1.4	0	19.3						
			Calibration Check	0.0	0.0	15s	0.1	0	20.8			
30s	0.1	0				20.8						
60s	0.0	0				20.8						

TEST DATE AND CONDITIONS			
Date		21/10/2024	
Atmospheric Pressure Ambient Temperature EnviroNics Serial No.		999	mB
		22.2	°C
		5089	

**GFM436 Final Inspection & Calibration
Check Certificate**

GAS DATA LTD

Unit D

Earlplace Business Park

Fletchamstead Highway

Coventry

CV4 9XL

Tel 02476303311

Fax 02476307711



GAS DATA
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Customer	Albury S.I. Ltd
Certificate Number	125618
Order Number	339923

Serial Number	12733
Software Version	G436-00.0027/0010

Recalibration DUE Date
21/10/25

Instrument Checks					
Keyboard	✓		Display Contrast	✓	
Pump Flow In	500	Accept > 200 cc/min	Pump Flow @ -200mB	300	Accept > 200 cc/min
Clock Set / Running	✓		Labels Fitted	✓	

Gas Checks						
Sensor	CH ₄		CO ₂		O ₂	
	Instrument Gas	True Gas Value %	Instrument Gas	True Gas Value %	Instrument Gas	True Gas Value %
	Readings %		Readings %		Readings %	
	59.8	60	39.8	40	20.9	20.9
	Accept ±3.0		Accept ±3.0		Accept ±0.5	
	5.0	5	5.0	5	6.0	6
	Accept ±0.3		Accept ±0.3		Accept ±0.3	
Zero Reading 100% N ₂	0.0	0	0.0	0	0.0	0
	Accept ±0.0		Accept ±0.0		Accept ±0.1	

Optional Gas Checks						
Applied Gas & Range		Concentration Tested @ (ppm)	Instrument Readings (ppm)			
Gas Type	Range (ppm)		Zero Reading		Instrument Gas Reading	
H ₂ S	5000	1500	0	Accept ±0.0	1500	Accept ±5.0%
CO	2000	1000	0	Accept ±0.0	1001	Accept ±5.0%
Hexane	2.0%	2.0%	0	Accept ±0.0	1.99	Accept ±10.0%

Cross Gas Effects									
Applied Gas (ppm)		Instrument Readings (ppm)							
Gas Type	Concentration	Toxic 1:	H2S	Toxic 2:	CO	Toxic 3:	HEX		
H2S	1500	1500		0		0			
CO	1000	80		1001		0			
Hexane	2.0%	0		0		1.99			

Pressure Checks			
Atmospheric Pressure [AP] (mB)			
Current Atmospheric Pressure (mB)		Instrument Atmospheric Pressure Reading (mB)	
AP Open Ports		999	Accept ± 2.0
AP Port (Internal)	+800 mB	800	Accept ± 5.0
	+1200mb	1200	Accept ± 5.0

Flow Checks					
Borehole Flow			Differential Pressure		
Applied Reading (l/h)	Instrument Reading (l/h)		Applied Pressure (Pa)	Instrument Reading (Pa)	
-30	-30.2	Accept ± 3.0	-415	-422	Accept ± 50
-3	-3.0	Accept ± 1.0	-17	-17	Accept ± 6.0
0	0.0	Accept ± 0.0	0	0	Accept ± 0.5
3	3.1	Accept ± 0.5	14	14	Accept ± 3.0
30	30.0	Accept ± 3.0	321	320	Accept ± 50
60	60.0	Accept ± 6.0	969	970	Accept ± 130
90	90.7	Accept ± 9.0	1903	1941	Accept ± 250

Temperature Checks		
Calibration Temperature	Instrument Temperature Reading $^{\circ}\text{C}$	
Applied Temperature $^{\circ}\text{C}$		
-10	-10.0	Accept ± 2.0
0	0.0	Accept ± 1.0
30	30.0	Accept ± 1.0
60	60.0	Accept ± 1.0
100	100.0	Accept ± 1.0

Technician:

Date Tested:
21/10/2024

The instrument identified by the serial number stated above has been tested by Gas Data personnel for calibration accuracy on the date and under the ambient conditions stated. Gas Data Ltd internal BS EN ISO9001:2015, BS EN ISO14001:2015, BS EN ISO45001:2018 compliant workshop procedures were followed to apply known calibration test gases, gas flow rates, pressures and temperatures of the values stated. The results displayed on the instrument at each stage are recorded above.