

Our ref: R2174-R27-v1

21st October 2025

Barratt Homes Manchester

Adamson House
Towers Business Park
Wilmslow Road
Didsbury
M20 2YY

By e-mail: bradley.massey@barratthomes.co.uk

Dear Brad,

Tetrosyl, Waldmers Wood, Bury.
Remediation Phase 2G: Plots 101-104 – Ground Gas / Vapour Risk Assessment

Introduction

The Smith Grant LLP (SGP) Phase 2 Remedial Strategy (report reference: R2174-R11-v7; dated October 2025) specifies the requirement for ground gas monitoring and sampling of vapours (ref: Section 7.7 and Drawings 06 and 07). With respect to the recommendations, this includes:

Ground Gas Monitoring: will be carried out to assess the gassing regime within all areas of deep fills >3m, including existing, reworked and new fill areas. Drilled boreholes will be equipped with minimum 50mm diameter gas wells with response zones 1-4m depth (where possible over bedrock), placed on a grid spacing of 1 entry per 2,500m² (~50m grid). Testing will be for pressure and flow, methane, carbon dioxide, oxygen and VOC (by PID) concentrations. Monitoring will occur on 6 occasions over a 3-month period following completion of earthworks, with possible extension of the programme should any results indicate a change from the default assumption for building protection measures of CIRIA CS2 conditions.

Volatile organic compound (VOC) vapour monitoring: will take place across all areas where built development is proposed over VOC hotspots (identified hotspot area HS6, and any other suspect areas; the latter will include locations where existing or further site investigations identify elevated VOCs by PID testing that exceed 50 ppm¹).

The VOC monitoring will utilise shallow soil probes with response zone extending from 1m to the water table or 2m below ground level; this may require drilling to competent rock. Monitoring locations will be spaced at 1 per 25m² over the VOC hotspot area within the wider Phase 2 area (HS6) and at a wider spacing of 1 per 50m² over the remaining Phase 2 site area. VOC monitoring will take place on 3 occasions, with monitoring by PID, with one sample per probe to be collected in Silocan or equivalent container for GC-MS laboratory analysis.

The results of laboratory VOC analysis will be compared against manufacturers' specifications for VOC-resistant membranes and outdoor inhalation health criteria to provide reassurance concerning residual

¹ Others have been responsible for the production of the earthworks completion report and it is understood that no previously unexpected VOC contamination was encountered within this Phase 2 Handover area.

VOC levels. Detailed quantitative risk assessment will be carried out to determine the significance of any exceedances of the above screening levels and need for any change to the assumed house protection measures.

The Phase 2 Remedial Strategy has been submitted to both the Environment Agency (EA) and Bury Metropolitan Borough Council (BMBC). Comments from BMBC received on 15.02.24 did not object to the post-remediation gas and vapour monitoring programme, hence we assume that this has been accepted.

Scope of report

Preparatory earthworks within Remediation Phase 2G have been completed (see Figure 1.1 for area boundary and appended drawing 456/ED/05 for Remediation Phasing plan). This covers Plots 101-104, according to the most recent development layout plan provided to SGP. This report details the post-remediation gas and vapour monitoring / sampling undertaken and this information has been used to undertake a gas / vapour risk assessment. Ultimately this is to inform the developer-stage mitigation requirements which will be detailed in the forthcoming Developer-Stage Remediation Strategy for this area. This is a consistent approach which has been adopted in previous phases.

Figure 1.1. Remediation Phase 2G Area (blue boundary) overlayed on Excerpt of Site Layout Plan



Site Works

SGP carried out the intrusive investigation works on 29th August 2025 which consisted of the drilling of 3 continuous tube sample boreholes. The positions of the exploratory boreholes were identified by SGP in agreement with the developer (Barratt Homes Manchester (BHM)) and as Phase 2G was located on an area of deep fill, these consisted of semi-regular entries which were all used for gas monitoring. One of the wells was also utilised for vapour monitoring / sampling due to the presence of a potential contamination hotspot (HS8 – disused AST) and the potential for residual vapour risks following remediation. In totality, an approximate 25m grid spacing across the handover area was achieved.

The spacing was designed to satisfy that specified for gas / VOC monitoring within the Remedial Strategy. The borehole references and associated monitoring are as follows:

- GP2G01 & GP2G02: gas monitoring only
- VGP2G03: gas and vapour monitoring / sampling

The positions of the SGP exploratory holes drilled on site as part of this investigation are indicated on the SGP Monitoring Wells drawing (ref: D01), enclosed.

The continuous tube sample boreholes were drilled using an Archway Dart window sampler rig to refusal on hard ground at between 2.0-2.9m below ground level (bgl) instead of the intended depth of 4m bgl, which could not be achieved. Boreholes were advanced using a plastic lined, steel tube sampling system driven into the ground by a top drive percussive hammer. A near continuous 87–67mm diameter core sample was recovered of the sampled materials for subsequent examination.

On completion of the boring, all of the boreholes were utilised for the installation of a 50mm diameter, slotted, uPVC standpipe from the base of the boreholes up to 0.5m bgl (GP2G01), 1.2m bgl (GP2G02) and 0.9m bgl (VGP2G03). The remaining 0.5-1.2m of the boreholes were finished with a section of plain, 50mm diameter pipe with a further 0.5-1.1m of plain pipe protruding from the ground for ease of identification. The slotted sections of the standpipes were surrounded with pea gravel while expansive bentonite clay was added around the plain pipes and below the slotted sections to seal the boreholes. The standpipes were finished with a rubber bung with a gas tap which was left in the 'closed' position.

Six rounds of VOC vapour monitoring were carried out on all 3 of the boreholes using a MiniRAE 3000 photoionisation detector (PID) with a 10.6ev strength bulb on the following dates: 04.09.25, 11.09.25, 19.09.25, 01.10.25, 07.10.25 and 14.10.25. A vapour sample was also collected from borehole 'VGP2G03' with a Bottlevac vessel on 01.10.25 for VOC and hydrocarbon analysis. A ground gas monitoring programme was also completed on all of the boreholes on the dates listed above. This included a total of six rounds of ground gas monitoring using a GFM430 gas analyser with measurements of flow and well pressure also recorded.

Summary of Ground Conditions

The following information summarises the findings of the Site investigation carried out by SGP on 29th August 2025. The site investigation logs and photographs of the window sampler borehole locations / arisings are provided in Appendices A and B, respectively, and the investigation locations are indicated on Drawing D01.

All depths stated in the following sections are from ground level contemporaneous with the site investigation date.

Made Ground

Made Ground was recorded in entries GP2G01 and VGP2G03 from ground level down to depths of between 1m bgl to 1.45m bgl, respectively. Made ground was not described in GP2G02, however, no arisings were recovered in the top 1m from this entry, likely due to the presence of a cobble blocking the barrel of the window sampler rig. The ground at the site surface of GP2G02 appeared to be the same as that described in GP2G01 (0-0.6m bgl), therefore made ground is anticipated to be present within this entry but to an unknown depth up to 1m bgl. The types of made ground described were as follows:

- Fine to coarse, subangular to angular, gravel of concrete, brick, sandstone and tarmac in a brown, sandy, clayey matrix (GP2G01 – 0.0-0.6m);
- Subangular to angular gravel and cobbles of sandstone and tarmac (GP2G01 – 0.6-1.0m);
- Brown, slightly clayey, sandy, fine to coarse, subangular to angular gravel and cobbles of sandstone with occasional subangular to angular gravel of concrete and tarmac (VGP2G03 – 0.0-0.4m); and,
- Brown becoming dark, greyish-brown, gravelly, sandy, clay fill with occasional cobbles of sandstone (VGP2G03 – 0.4-1.45m).

Boulder Clay

Boulder clay described as a 'brown, slightly gravelly, slightly sandy clay' (locally with cobbles of sandstone and/or pockets of slightly gravelly, slightly clayey sand) was recorded in all entries from depths of between 1.0-2.3m bgl (GP2G01), 1.0-2.0m bgl (GP2G02) and 1.45-2.2m bgl (VGP2G03).

Weathered Bedrock

Weathered bedrock recovered as sandy gravel and cobbles of sandstone were recorded in GP2G01 (2.3-2.7m bgl) and VGP2G03 (2.2-2.9m bgl) resulting in refusal of the window sampler rig. GP2G02 also refused on bedrock at 2.2m bgl (no arisings recovered from this borehole between 2.0-2.2m bgl).

Contamination Indicators

No odours or staining were reported during the drilling works, however, PID readings above the limit of detection were recorded in the following entries at the following depths:

- GP2G01: 25.7ppm @ 0.2-0.3m bgl
- VGP2G03: 2.7ppm @ 0.2m bgl / 0.6ppm @ 1.15m bgl / 58ppm @ 1.45m bgl

Groundwater

Groundwater was not encountered during the drilling works; however, groundwater was recorded at the following depths during the vapour / gas monitoring rounds:

- GP2G01: 0.67 - 2.15m bgl
- GP2G02: Dry - 0.59m bgl
- VGP2G03: Dry / damp at base

Results

Ground Gas Monitoring Results

Six rounds of ground gas monitoring have been carried out on all of the boreholes. Monitoring was completed between 04th September 2025 and 14th October 2025 with three of these undertaken following a fall in surface pressure over the previous three days, as follows:

- 04.09.25: 1001-994mb
- 11.09.25: 1014-994mb
- 01.10.25: 1005-1003mb

A summary of the gas monitoring data is presented in the Table 1 and copies of the monitoring records are provided in Appendix C.

Methane concentrations ranged from below detection limits (<0.1% v/v) to 24.5% v/v and carbon dioxide ranged from <0.1% to 5.3% v/v during the monitoring period. In both instances, the highest concentrations were recorded in VGP2G03. Steady gas flows were consistently below detection limits (<0.1l/hr).

A peak flow of 102.3l/hr was, however, reported in GP2G02, but it is noted that this round was carried out following a period of very heavy rainfall causing the water level in the borehole to rise significantly so this has been attributed to the piston effect as opposed to being indicative of active gassing. The absence of peak flows during any of the other monitoring rounds (where groundwater levels remained stable or fell when compared to the previous monitoring round) provides further evidence of this. Consequently, this has not been determined as true flow and has not been used in the gas screening value (GSV) calculations in Table 1. below.

Guidance published by CIRIA ("Assessing risk posed by hazardous ground gases to buildings", CIRIA C665, 2007), CIEH ("The Local Authority Guide to Ground Gas", CIEH, 2008) and BS 8485:2015+A1:2019 ("Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings") has been referred to in determining potential risks posed by ground gases. Screening assessment criteria of 1% methane, 5% carbon dioxide and 0.07 l/hr gas screening value have been referred to initially. The GSV has been calculated as the product of gas concentration and steady flow. A summary of the ground gas monitoring results is provided in the table below:

Table 1. Summary of Ground Gas Results

Well	No. visits	Max CH ₄ (%)	Max CO ₂ (%)	Max Steady Flow (l/hr)	CH ₄ GSV (l/hr)	CO ₂ GSV (l/hr)	CIRIA Classification
GP2G01	6	0.6	1.0	<0.1	<0.07	<0.07	CS1
GP2G02	6	1.4	0.9	<0.1	<0.07	<0.07	CS1
VGP2G03	6	24.5	5.3	<0.1	<0.07	<0.07	CS2

GSV – Gas Screening Value (=maximum concentration x maximum steady gas flow over monitoring period)

Atmospheric pressure ranged from 980mb to 1015mb during the monitoring rounds

Despite the elevated carbon dioxide and methane concentrations reported in VGP2G03, the gas screening values (GSVs), calculated as the product of concentration and steady flow, were all low (<0.07l/hr). However, as the 1% v/v screening threshold for methane and the 5% v/v threshold for carbon dioxide was exceeded in VGP2G03, a CIRIA CS2 (low risk) classification has been arrived at for this entry. In any case, a site-wide CS2 classification is applicable by default as per the requirements of the Phase 2 Strategy.

Vapour Monitoring Results

Six rounds of vapour monitoring were carried out on all of the boreholes between 04th September 2025 and 14th October 2025. Copies of the vapour monitoring records are provided in Appendix C.

During the VOC monitoring programme, positive concentrations above the limit of detection (0.1ppm) were consistently recorded in all entries, with a maximum reading of 85ppm in VGP2G03. The ranges were as follows:

- GP2G01: 0.1-4.2ppm
- GP2G02: <0.1-8.9ppm
- VGP2G03: 13.7-85.0ppm

Vapour Sampling Results

A sample was collected from VGP2G03 for vapour analysis (speciated hydrocarbons and target list VOC compounds) on 01st October 2025. The sample was collected using a 'Bottlevac' container (glass containers containing a partial vacuum and quick release coupling) with a dedicated sample train as provided by Element Materials Technology (EMT), Deeside.

Soil vapours were drawn into the Bottlevac from entry VGP2G03 until the pressure in the well and container reached equilibrium.

The methodology for deriving assessment screening criteria for health impacts from VOCs at the receptor is set out in Appendix 9 of the VOC handbook². Tolerable Daily Soil Intake values (TDSIs) or Index Doses (IDs) (for non-carcinogens and carcinogens, respectively) are multiplied by the bodyweight (13.3 kg) and divided by the inhalation rate (11.85 m³/day) of a female child receptor aged 0-6yrs (time-weighted average) as defined in the EA "Updated technical background to the CLEA model" (ref: SC050021/SR3, 2009). Most of the substances under consideration have toxicological inhalation data published in either "The LQM/CIEH S4ULs for Human Health Risk Assessment" (ref: S4UL3102, 2014 – Copyright Land Quality Management Limited reproduced with permission) or the CL:AIRE "Soil Generic Assessment Criteria for Human Health Risk Assessment" report (January 2010).

The exception to this is benzene for which a UK Air Quality Standard (AQS) is available (5 µg/m³) which has been utilised.

The assessment criteria are inherently conservative as they assume long-term, constant exposure of residents over a 24-hr period for 365 days a year, from a continuous source which does not diminish over time. However, for the most vulnerable receptors (infants and small children), significant amounts of time spent within dwellings may be anticipated.

The IDs and TDSIs (calculated as the tolerable daily intake (TDI) value minus the mean daily intake (MDI) value with respect to inhalation, or 50% of the TDI where the MDI is >50% of the TDI) used in the determination of the inhalation assessment criteria are summarised in the table below. Where TDSIs or IDs are not available for any of the tested compounds, these have not been included. Target list VOCs are also only included if reported above laboratory detection limits.

Table 2. Derivation of Inhalation Assessment Criteria

Contaminant	Index Dose/Tolerable Daily Soil Intake Value (µg/kg.bw.day ⁻¹)	Assessment Criteria (µg.m ³)
Benzene	1.4 (S4UL)	5 (AQS)
Toluene	1,308 (S4UL)	1,468.05
Ethylbenzene	55.7 (S4UL)	62.51
m/p-xylene	30 (S4UL)	33.67
o-xylene	30 (S4UL)	33.67
Aliphatic Hydrocarbons (C4-C6)	2,500 (S4UL)	2,805.90
Aliphatic Hydrocarbons (C6-C8)	2,500 (S4UL)	2,805.90
Aliphatic Hydrocarbons (C8-C10)	145 (S4UL)	162.74
Aliphatic Hydrocarbons (C10-C12)	145 (S4UL)	162.74
Aromatic Hydrocarbons (C5-C7)*	Benzene	Benzene
Aromatic Hydrocarbons (C7-C8)*	Toluene	Toluene
Aromatic Hydrocarbons (C8-C10)	30 (S4UL)	33.67

² CIRIA C682: The VOCs Handbook: Investigating, assessing and managing risks from inhalation of VOCs at land affected by contamination 2009

Contaminant	Index Dose/Tolerable Daily Soil Intake Value ($\mu\text{g}/\text{kg}\cdot\text{bw}\cdot\text{day}^{-1}$)	Assessment Criteria ($\mu\text{g}/\text{m}^3$)
Aromatic Hydrocarbons (C10-C12)	30 (S4UL)	33.67
Vinyl Chloride	0.3 (S4UL)	0.33
Chloromethane	2.57 (CL:AIRE)	2.88
Chloroethane	2843.5 (CL:AIRE)	3191.43
1,1-Dichloroethene	56.6 (CL:AIRE)	63.52
Dichloromethane	67.15 (CL:AIRE)	75.36
1,1,1-Trichloroethane	300 (S4ULs)	336.7
Trans-1,2-Dichloroethene	11 (CL:AIRE)	12.34
Trichloroethene (TCE)	0.57 (S4UL)	0.63

**Aromatic C5-C7 and C7-C8 correspond to benzene and toluene. As BTEX analysis has been undertaken, repetition of these results in the aromatic fraction have not been reported.*

Soil-vapour concentrations determined through Bottlevac sampling have been compared to the derived inhalation assessment criteria (where applicable) as summarised in Table 3 below. The EMT laboratory test certificate (ref: 25-16293) and the associated results summary table is provided in Appendix D.

Table 3. Comparison of Assessment Criteria to Soil-Vapour Concentrations

Contaminant	Assessment Criteria ($\mu\text{g}/\text{m}^3$)	Soil-Vapour Range of concentrations ($\mu\text{g}/\text{m}^3$)	Exceedances
Benzene	5 (AQS)	127.8	1: VGP2G03
Toluene	1,468.05	64.1	None
Ethylbenzene	62.51	13	None
m/p-xylene	33.67	17.4	None
o-xylene	33.67	13	None
Aliphatic Hydrocarbons (C4-6)	2,805.90	2,9672	1: VGP2G03
Aliphatic Hydrocarbons (C6-8)	2,805.90	19,0811	1: VGP2G03
Aliphatic Hydrocarbons (C8-10)	162.74	98,658	1: VGP2G03
Aliphatic Hydrocarbons (C10-12)	162.74	6,426	1: VGP2G03
Aromatic Hydrocarbons (C5-7)	As Benzene	126.8	1: VGP2G03
Aromatic Hydrocarbons (C7-8)	As Toluene	62.9	None
Aromatic Hydrocarbons (C8-10)	33.67	49	1: VGP2G03
Aromatic Hydrocarbons (C10-12)	33.67	<53*	None
Vinyl Chloride	0.33	196.8	1: VGP2G03
Chloromethane	2.88	4.1	1: VGP2G03
Chloroethane	3191.43	139.9	None
1,1-Dichloroethene	63.52	15.9	None
Dichloromethane	75.36	545.3	1: VGP2G03
1,1,1-Trichloroethane	336.7	49.1	None
Trans-1,2-Dichloroethene	12.34	47.6	1: VGP2G03
Trichloroethene (TCE)	0.63	123.6	1: VGP2G03

**Limit of detection is greater than the screening value*

Exceedances of the derived assessment criteria in VGP2G03 were reported for:

- **Benzene** at 127.8 $\mu\text{g}/\text{m}^3$ (criteria = 5 $\mu\text{g}/\text{m}^3$)
- **Aliphatic Hydrocarbons (C4-6)** at 29,672 $\mu\text{g}/\text{m}^3$ (criteria = 2,805.9 $\mu\text{g}/\text{m}^3$)
- **Aliphatic Hydrocarbons (C6-8)** at 190,811 $\mu\text{g}/\text{m}^3$ (criteria = 2,805.9 $\mu\text{g}/\text{m}^3$)

- **Aliphatic Hydrocarbons (C8-10)** at 98,658 $\mu\text{g}/\text{m}^3$ (criteria = 162.74 $\mu\text{g}/\text{m}^3$)
- **Aliphatic Hydrocarbons (C10-12)** at 6,426 $\mu\text{g}/\text{m}^3$ (criteria = 162.74 $\mu\text{g}/\text{m}^3$)
- **Aromatic Hydrocarbons (C5-7)** at 126.8 $\mu\text{g}/\text{m}^3$ (criteria = 5 $\mu\text{g}/\text{m}^3$)
- **Aromatic Hydrocarbons (C8-10)** at 49 $\mu\text{g}/\text{m}^3$ (criteria = 33.67 $\mu\text{g}/\text{m}^3$)
- **Vinyl Chloride** at 196.8 $\mu\text{g}/\text{m}^3$ (criteria = 0.33 $\mu\text{g}/\text{m}^3$)
- **Chloromethane** at 4.1 $\mu\text{g}/\text{m}^3$ (criteria = 2.88 $\mu\text{g}/\text{m}^3$)
- **Dichloromethane** at 545.3 $\mu\text{g}/\text{m}^3$ (criteria = 75.36 $\mu\text{g}/\text{m}^3$)
- **Trans-1,2-Dichloroethene** at 47.6 $\mu\text{g}/\text{m}^3$ (criteria = 12.34 $\mu\text{g}/\text{m}^3$)
- **Trichloroethene (TCE)** at 123.6 $\mu\text{g}/\text{m}^3$ (criteria = 0.63 $\mu\text{g}/\text{m}^3$)

Given the limited VOC contamination indicators recorded during the intrusive investigation works, it is considered likely that the source of the elevated VOCs identified in entry VGP2G03 is associated with residual impacted bedrock following remediation of this area. It is considered that the most practical option to mitigate risks from these residual contaminants can be undertaken at the construction phase of the development, as detailed in the recommendations section below.

Conclusions

Gas monitoring undertaken within the Phase 2G area reported elevated methane and slightly elevated carbon dioxide in VGP2G03 indicating the requirement for ground gas protection measures compliant to a CIRIA CS2 classification (which is the default requirement across the site in any case).

Elevated VOCs have been reported in Phase 2G (VGP2G03) which has been attributed to residual contamination following remediation of this part of the Site. Based on the current information, VOC protection measures and high-level verification will be required in this area.

A soil cover system in gardens and areas of soft landscaping will also be required to protect future receptors from potential exposure to soils impacted by residual contamination.

Recommendations

It is recommended that the findings of this report are used to produce a Developer-Stage Remediation Strategy which will detail the VOC protection measures to be installed within all dwellings in accordance with current CIRIA guidance (as well as the soil cover system with basal geotextile to be installed in gardens / landscaped areas). The Strategy should also detail a verification plan on how the protection measures will be suitably verified, again following current guidance.

Yours sincerely
for: Smith Grant LLP



S D Miller BSc MCIWEM
(Senior Consultant)

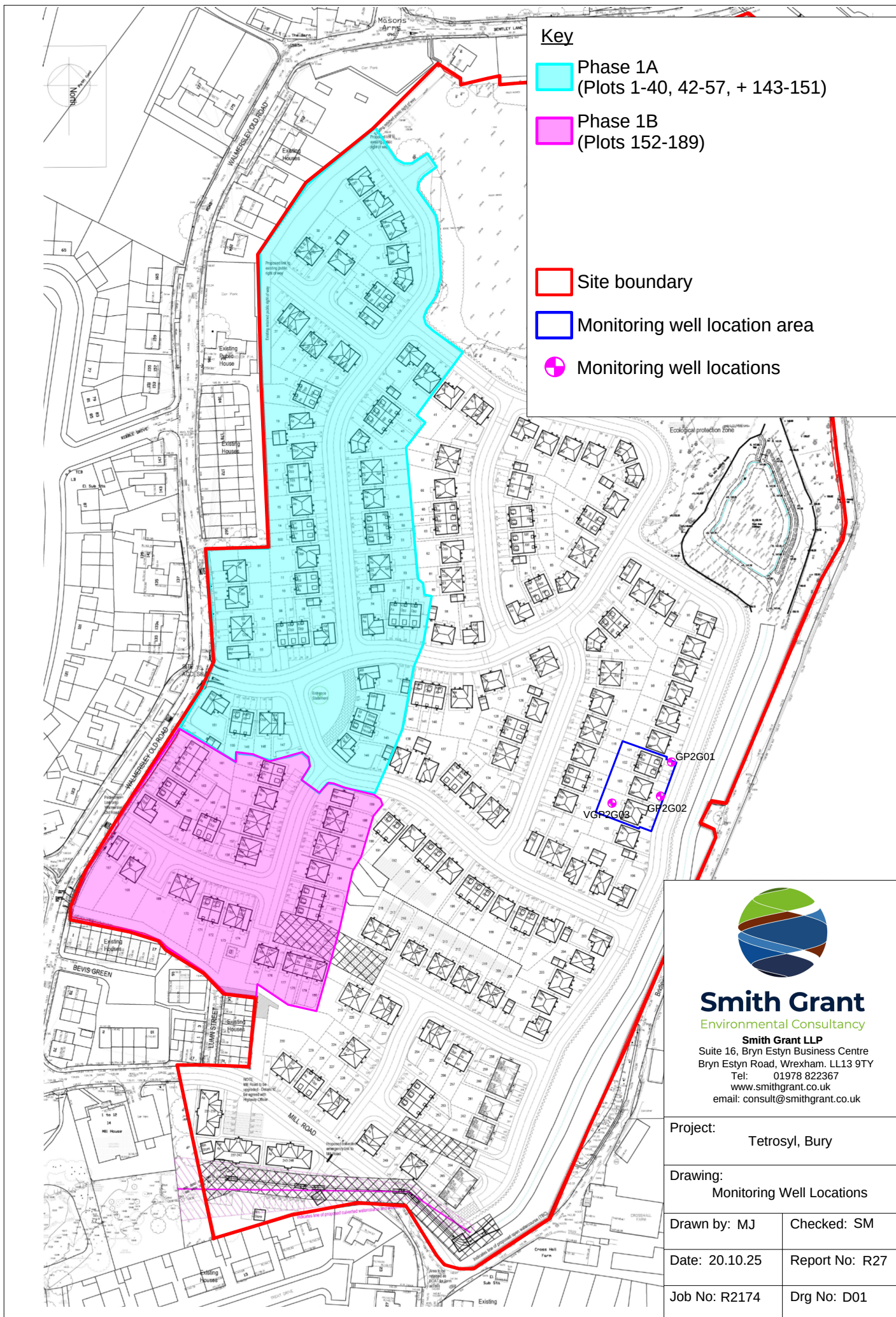
Enclosed:
D01: Monitoring Well Locations
456-ED-05_Remediation_TEN_Remediation Phasing Plan_G
Appendix A: Borehole Logs

Appendix B: Site Investigation Photographic Record

Appendix C: Gas / Vapour monitoring Records

Appendix D: EMT Laboratory Report (25-16293) and Vapour Results Summary

DRAWINGS



Key

 Phase 1A
(Plots 1-40, 42-57, + 143-151)

 Phase 1B
(Plots 152-189)

 Site boundary

 Monitoring well location area

 Monitoring well locations

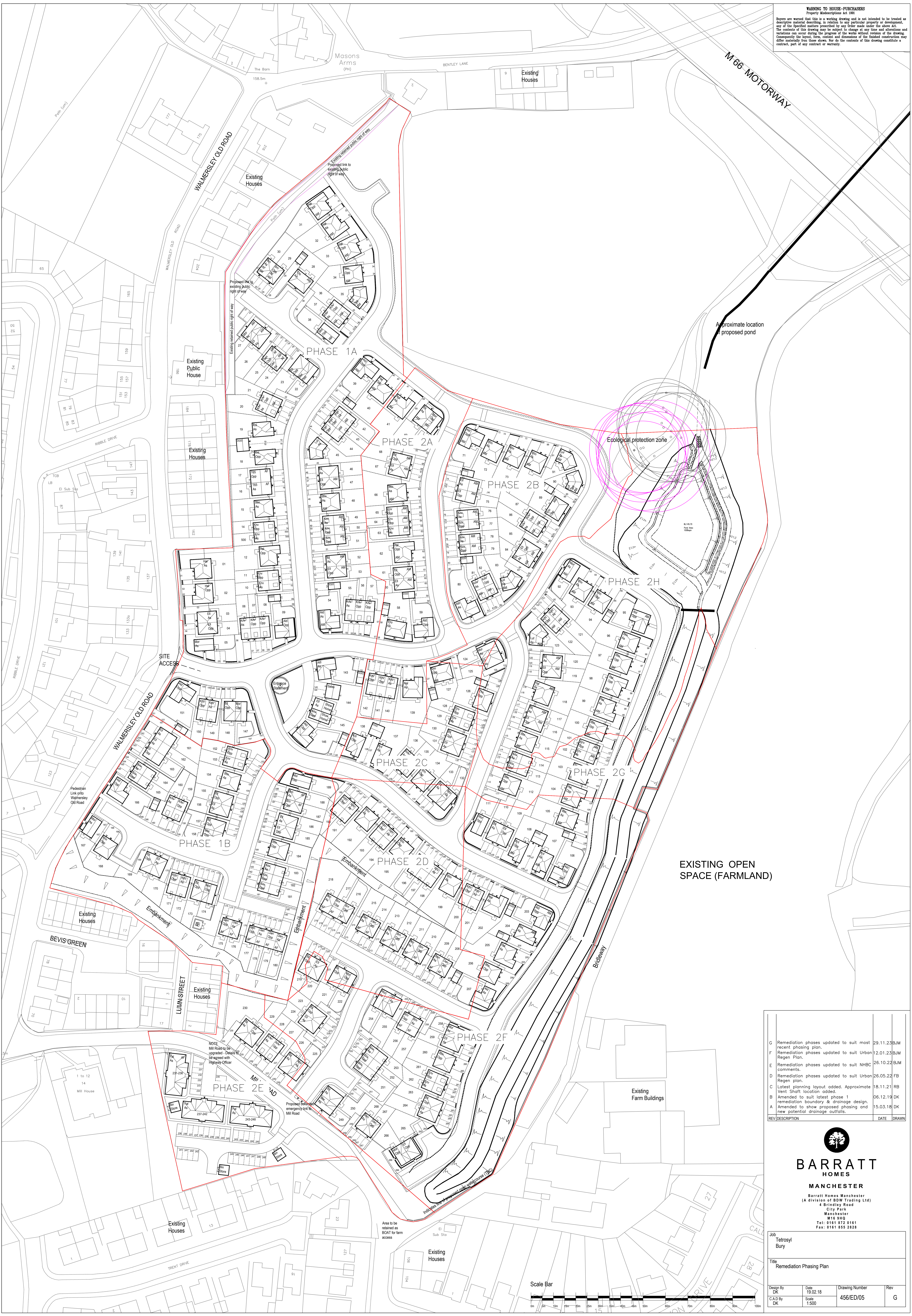


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Project: Tetrosyl, Bury	
Drawing: Monitoring Well Locations	
Drawn by: MJ	Checked: SM
Date: 20.10.25	Report No: R27
Job No: R2174	Drg No: D01

WARNING TO HOUSE-PURCHASERS
Property Misdescriptions Act 1991
Buyers are warned that this is a working drawing and is not intended to be treated as descriptive material describing, in relation to any particular property or development, any of the specified matters prescribed by any Order made under the above Act. The contents of this drawing may be subject to change at any time and alterations and variations may occur during the progress of the works without revision of the drawing. Consequently the layout, form, content and dimensions of the finished construction may differ materially from those shown. Nor do the contents of this drawing constitute a contract, part of any contract or warranty.



G	Remediation phases updated to suit most recent phasing plan.	29.11.23	BUM
F	Remediation phases updated to suit Urban Regen Plan.	12.01.23	BUM
E	Remediation phases updated to suit NHBC comments.	26.10.22	BUM
D	Remediation phases updated to suit Urban Regen plan.	26.05.22	FB
C	Latest planning layout added. Approximate Vent Shaft location added.	18.11.21	RB
B	Amended to suit latest phase 1 remediation boundary & drainage design.	06.12.19	DK
A	Amended to show proposed phasing and new potential drainage outfalls.	15.03.18	DK
REV	DESCRIPTION	DATE	DRAWN



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HOMES**

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Job
Tetrosyl
Bury

Title
Remediation Phasing Plan

Design By DK	Date 19.02.18	Drawing Number 456/ED/05	Rev G
CAD By DK	Scale 1:500		

APPENDIX A

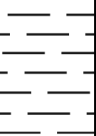
Borehole Logs

SHEET: 1 of 1	LOCATION: Bury	PROJECT: Tetrosyl (Phase 2G)	ENGINEER: SM	JOB NO. R2174	WINDOW SAMPLE NO. GP2G01
		EXCAVATED BY: Archway Dart Window Sampler	CLIENT: Barratt Homes	DATE: 29.08.25	

PHYSICAL TESTING	DEPTH (m)	SAMPLES/ TESTING	FIELD RECORDS	Installation	DEPTH (m)	DESCRIPTION OF STRATA	LEGEND
CPT <u>Blows/150mm</u>			PID = 25.7ppm (0.2-0.3m) - no associated odour	Plain	0	Fine to coarse subangular to angular gravel of concrete brick sandstone and tarmac in a brown sandy clayey matrix (MADE GROUND)	
					0.6	Subangular to angular gravel and cobbles of sandstone and tarmac (MADE GROUND)	
				Slotted	1	Firm becoming soft (1.55m) becoming stiff (2.15m) brown slightly gravelly slightly sandy CLAY with rare cobble of sandstone (1.95-2.00m) and pocket of brown slightly clayey slightly gravelly sand (2.00-2.15m)	
					2.3	Orangish-brown and light grey weathered SANDSTONE recovered as cobbles and gravel	
						Borehole terminated @ 2.7m bgl due to refusal on bedrock (SANDSTONE); window sampler unable to advance borehole	

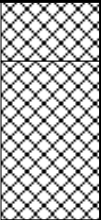
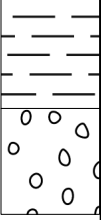
 Smith Grant Environmental Consultancy Smith Grant LLP Bryn Estyn Business Centre (Suite 16) Bryn Estyn Road, Wrexham, LL13 9TY Tel: 01978 822367 www.smithgrant.co.uk email: consult@smithgrant.co.uk	GROUND WATER: Groundwater not encountered		
	REMARKS:		
	SCALE: 1:50	LOGGED BY: SM	FIGURE NO. 1

SHEET: 1 of 1	LOCATION: Bury	PROJECT: Tetrosyl (Phase 2G)	ENGINEER: SM		JOB NO. R2174	WINDOW SAMPLE NO. GP2G02
		EXCAVATED BY: Archway Dart Window Sampler	CLIENT: Barratt Homes		DATE: 29.08.25	

PHYSICAL TESTING	DEPTH (m)	SAMPLES/ TESTING	FIELD RECORDS	Installation	DEPTH (m)	DESCRIPTION OF STRATA	LEGEND
CPT <u>Blows/150mm</u>				Plain	0	NO RECOVERY (likely due to cobble being pressed down by rig - soil as per GP2G01 (0.0-0.6m) at site surface)	
					1	Firm brown slightly gravelly slightly sandy CLAY (limited recovery)	
				Slotted	2	NO RECOVERY	
						Borehole terminated @ 2.2m bgl due to refusal on bedrock (SANDSTONE); window sampler unable to advance borehole	

 Smith Grant Environmental Consultancy Smith Grant LLP Bryn Estyn Business Centre (Suite 16) Bryn Estyn Road, Wrexham, LL13 9TY Tel: 01978 822367 www.smithgrant.co.uk email: consult@smithgrant.co.uk	GROUND WATER: Groundwater not encountered		
	REMARKS: No contamination indicators throughout strata, although limited recovery		
	SCALE: 1:50	LOGGED BY: SM	FIGURE NO. 1

SHEET: 1 of 1	LOCATION: Bury	PROJECT: Tetrosyl (Phase 2G)	ENGINEER: SM	JOB NO. R2174	WINDOW SAMPLE NO. VGP2G03
		EXCAVATED BY: Archway Dart Window Sampler	CLIENT: Barratt Homes	DATE: 29.08.25	

PHYSICAL TESTING	DEPTH (m)	SAMPLES/ TESTING	FIELD RECORDS	Installation	DEPTH (m)	DESCRIPTION OF STRATA	LEGEND
CPT <u>Blows/150mm</u>			PID = 2.7ppm (0.2m) - no associated odour	Plain	0	Brown slightly clayey sandy fine to coarse subangular to angular gravel and cobbles of sandstone with occasional subangular to angular gravel of concrete and tarmac (MADE GROUND)	
					0.4		
			PID = 0.6ppm (1.15m) - no associated odour PID = 58ppm (1.45m) - no associated odour	Slotted	1.45	Brown becoming dark greyish-brown gravelly sandy clay fill with occasional cobbles of sandstone (MADE GROUND)	
					2.2	Firm brown slightly gravelly slightly sandy CLAY with rare cobble of sandstone (1.95-2.00m) - possible reworked	
						Borehole terminated @ 2.9m bgl due to refusal on bedrock (SANDSTONE); window sampler unable to advance borehole	

 Smith Grant Environmental Consultancy Smith Grant LLP Bryn Estyn Business Centre (Suite 16) Bryn Estyn Road, Wrexham, LL13 9TY Tel: 01978 822367 www.smithgrant.co.uk email: consult@smithgrant.co.uk	GROUND WATER: Groundwater not encountered		
	REMARKS:		
	SCALE: 1:50	LOGGED BY: SM	FIGURE NO. 1

APPENDIX B

Site Investigation Photographic Record

Phases 2C, 2D & 2F Window Sampler Drilling Investigation Photolog

1.



29.08.25: GP2G01 Location

2.



29.08.25: GP2G01 Arisings

3.



29.08.25: GP2G02 Location

4.



29.08.25: GP2G02 Arisings

5.



29.08.25: VGP2G03 Location

6.



29.08.25: VGP2G03 Arisings

APPENDIX C

Gas / Vapour monitoring Records

Site name:	Tetrosyl, Bury		Job number:	R2174		Barometric pressure at:	start:	985	mb	finish:	985	mb	
Time at:	start	10:10	Date:	04.09.25		Pressure trend	1001-998-994mb (falling)					(previous 3 days)	
	finish	10:40	Staff:	SM		Instruments:	GFM430 / PID MiniRae 3000						
Record code:	G01		Weather conditions:	8/8 cloud, overcast, mild					Ground conditions:	Damp			

Well No.	Methane %vol		Carbon dioxide %vol		Oxygen %vol		Carbon monoxide ppm	Hydrogen sulphide ppm	VOCs ppm	Gas flow l/hr		Well pressure mb	Depth to water m bgl	Depth to base m bgl	Notes
	Peak	steady	peak	steady	min	steady				peak	steady				
GP2G01	0.1	0.1	0.2	0.2	0.2	0.2	1	1	4.2	0.1	0.1	0.01	2.15	2.5	-
GP2G02	0.7	0.7	0.2	0.2	13.4	13.4	1	1	8.9	0.1	0.1	0.01	Dry	2.12	-
VGP2G03	17.1	17.1	4.8	4.8	0.3	0.3	1	1	13.7	0.1	0.1	0.01	Dry	2.85	-
Limit of Detection	0.10%		0.10%		0.10%		1ppm	1ppm	0.1ppm	0.1l/hr (-60/+100)	0.1l/hr (-60/+100)	1Pa_0.01mb (-800/+1500)			
Accuracy (% of reading)	±3.0%		±3.0%		±0.5%		±5%	±5%	±5%						

Site name:	Tetrosyl, Bury		Job number:	R2174		Barometric pressure at:	start:	981	mb	finish:	980	mb	
Time at:	start	10.20	Date:	11.09.25		Pressure trend	1014-1008-994mb (falling)					(previous 3 days)	
	finish	10.45	Staff:	SM		Instruments:	GFM430 / PID MiniRae 3000						
Record code:	G02		Weather conditions:	6/8 cloud, overcast, breezy, mild					Ground conditions:	Damp			

Well No.	Methane %vol		Carbon dioxide %vol		Oxygen %vol		Carbon monoxide ppm	Hydrogen sulphide ppm	VOCs ppm	Gas flow l/hr		Well pressure mb	Depth to water m bgl	Depth to gas m bgl	Notes
	Peak	steady	peak	steady	min	steady				peak	steady				
GP2G01	0.1	0.1	0.4	0.4	0.1	0.1	1	1	1.6	0.1	0.1	0.01	2.03	2.5	-
GP2G02	1.4	1.4	0.8	0.8	11.4	11.4	1	1	0.4	0.1	0.1	0.01	Dry	2.12	-
VGP2G03	18.4	18.4	5.3	5.3	0.1	0.1	1	1	65.2	0.1	0.1	0.01	Dry	2.85	-
Limit of Detection	0.10%		0.10%		0.10%		1ppm	1ppm	0.1ppm	0.1l/hr (-60/+100)	0.1l/hr (-60/+100)	1Pa_0.01mb (-800/+1500)			
Accuracy (% of reading)	±3.0%		±3.0%		±0.5%		±5%	±5%	±5%						

Site name:	Tetrosyl, Bury		Job number:	R2174		Barometric pressure at:	start:	998	mb	finish:	995	mb	
Time at:	start	10.00	Date:	19.09.25		Pressure trend	1016-1011-1014mb (fall then rise)						(previous 3 days)
	finish	10.40	Staff:	SM		Instruments:	GFM430 / PID MiniRae 3000						
Record code:	G03		Weather conditions:	8/8 cloud, overcast, warm, breezy					Ground conditions:	Damp			

Well No.	Methane %vol		Carbon dioxide %vol		Oxygen %vol		Carbon monoxide ppm	Hydrogen sulphide ppm	VOCs ppm	Gas flow l/hr		Well pressure mb	Depth to water m bgl	Depth to base m bgl	Notes
	Peak	steady	peak	steady	min	steady				peak	steady				
GP2G01	0.6	0.6	0.1	0.1	1.9	1.9	1	1	3.1	0.1	0.1	0.01	0.67	2.5	GW level significantly higher due to high rainfall
GP2G02	0.9	0.9	0.9	0.9	11.9	11.9	1	1	0.4	102.3	0.1	>>>>	0.59	2.12	GW level significantly higher due to high rainfall likely increasing well pressure
VGP2G03	24.5	24.5	2.6	2.6	0.1	0.1	1	1	34.3	0.1	0.1	0.01	DAB*	2.82	-
Limit of Detection	0.10%		0.10%		0.10%		1ppm	1ppm	0.1ppm	0.1l/hr (-60/+100)	0.1l/hr (-60/+100)	1Pa_0.01mb (-800/+1500)			
Accuracy (% of reading)	±3.0%		±3.0%		±0.5%		±5%	±5%	±5%						

*DAB = damp at base

Site name:	Tetrosyl, Bury		Job number:	R2174		Barometric pressure at:	start:	1003	mb	finish:	1002	mb	
Time at:	start	10:15	Date:	01.10.25		Pressure trend	1005-1005-1003 (slight fall)					(previous 3 days)	
	finish	11:05	Staff:	CM		Instruments:	GFM430						
Record code:	G04		Weather conditions:	Slight drizzle, mostly dry with 10/10 cloud cover					Ground conditions:	Wet / damp			

Well No.	Methane %vol		Carbon dioxide %vol		Oxygen %vol		Carbon monoxide ppm	Hydrogen sulphide ppm	VOCs ppm	Gas flow l/hr		Well pressure mb	Depth to water m bgl	Depth to gas m bgl	Notes
	Peak	steady	peak	steady	min	steady				peak	steady				
GP2G01	0.1	0.1	0.1	0.1	1.5	1.5	1	1	1.5	0.1	0.1	0.01	1.24	2.52	-
GP2G02	0.4	0.4	0.8	0.8	13.1	13.1	1	1	2.1	0.1	0.1	0.01	0.86	2.15	-
VGP2G03	20.3	20.3	3.1	3.1	0.1	0.1	1	1	85	0.1	0.1	0.01	Dry/DAB*	2.79	-
Limit of Detection	0.10%		0.10%		0.10%		1ppm	1ppm	0.1ppm	0.1l/hr (-60/+100)	0.1l/hr (-60/+100)	1Pa 0.01mb (-800/+1500)			
Accuracy (% of reading)	±3.0%		±3.0%		±0.5%		±5%	±5%	±5%						

*DAB = damp at base

Site name:	Tetrosyl, Bury		Job number:	R2174		Barometric pressure at:	start:	1005	mb	finish:	1005	mb	
Time at:	start	11:00	Date:	07.10.25		Pressure trend	1002-1018-1020mb (rising)					(previous 3 days)	
	finish	11:45	Staff:	CM		Instruments:	GFM430						
Record code:	G05		Weather conditions:	Dry, windy, 10/10 cloud cover					Ground conditions:	Dry			

Well No.	Methane %vol		Carbon dioxide %vol		Oxygen %vol		Carbon monoxide ppm	Hydrogen sulphide ppm	VOCs ppm	Gas flow l/hr		Well pressure mb	Depth to water m bgl	Depth to gas m bgl	Notes
	Peak	steady	peak	steady	min	steady				peak	steady				
GP2G01	0.1	0.1	0.1	0.1	1.3	1.3	1	1	0.1	0.1	0.1	0.01	1.27	2.5	-
GP2G02	0.3	0.3	0.8	0.8	13.4	13.4	1	1	1.7	0.1	0.1	0.01	0.91	2.14	-
VGP2G03	16.7	16.7	3.5	3.5	1	1	1	1	67.8	0.1	0.1	0.01	Dry/DAB*	2.8	-
Limit of Detection	0.10%		0.10%		0.10%		1ppm	1ppm	0.1ppm	0.1l/hr (-60/+100)	0.1l/hr (-60/+100)	1Pa_0.01mb (-800/+1500)			
Accuracy (% of reading)	±3.0%		±3.0%		±0.5%		±5%	±5%	±5%						

*DAB = damp at base

Site name:	Tetrosyl, Bury		Job number:	R2174		Barometric pressure at:	start:	1015	mb	finish:	1014	mb	
Time at:	start	12:00	Date:	14.10.25		Pressure trend	1013-1015-1014mb (steady)					(previous 3 days)	
	finish	13:00	Staff:	CM		Instruments:	GFM430						
Record code:	G06		Weather conditions:	Dry, mostly cloudy with sunny spells					Ground conditions:	Dry			

Well No.	Methane %vol		Carbon dioxide %vol		Oxygen %vol		Carbon monoxide ppm	Hydrogen sulphide ppm	VOCs ppm	Gas flow l/hr		Well pressure mb	Depth to water m bgl	Depth to gas m bgl	Notes
	Peak	steady	peak	steady	min	steady				peak	steady				
GP2G01	0.1	0.1	0.2	0.2	8.6	8.6	1	1	0.3	0.1	0.1	0.01	2.09	2.47	-
GP2G02	0.1	0.1	0.1	0.1	15.5	15.5	1	1	0.1	0.1	0.1	1.01	0.62	2.17	-
VGP2G03	3.5	3.5	1.4	1.4	7.8	7.8	1	1	20.3	0.1	0.1	2.01	Dry	2.87	-
Limit of Detection	0.10%		0.10%		0.10%		1ppm	1ppm	0.1ppm	0.1l/hr (-60/+100)	0.1l/hr (-60/+100)	1Pa_0.01mb (-800/+1500)			
Accuracy (% of reading)	±3.0%		±3.0%		±0.5%		±5%	±5%	±5%						

APPENDIX D

EMT Laboratory Report (25-16293) and Vapour Results Summary

Smith Grant LLP
Suite 16 - Bryn Estyn Business Centre
Bryn Estyn Road
Wrexham
United Kingdom
LL13 9TY



4225



Attention : Scott Miller
Date : 13th October, 2025
Your reference : R2174
Our reference : Test Report 25/16293 Batch 1
Location : Tetrosyl
Date samples received : 2nd October, 2025
Status : Final Report
Issue : 202510131242

One sample was received for analysis on 2nd October, 2025 and was scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

The greenhouse gas emissions generated (in Carbon – Co2e) to obtain the results in this report are estimated as:

Scope 1&2 emissions - 0.362 kg of CO2

Scope 1&2&3 emissions - 0.856 kg of CO2

Authorised By:



Phil Sommerton BSc

Senior Technical Account Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Smith Grant LLP
Reference: R2174
Location: Tetrosyl
Contact: Scott Miller

Sample Date: 1 Oct 2025
Date of Receipt: 2 Oct 2025
Date Analysed: 8 Oct 2025

Sample ID: VGP2G03
Depth:
EMT Job No: 25/16293
EMT Sample No: 1
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 20273 0.55
Sample Train Serial number: ST-170

Q* - Qualifiers

B Indicates analyte found in associated method blank
>> Indicates value exceeds calibration range

Key

MDL Method Detection Limit
RL Reporting Limit
ISO 17025 (UKAS) accredited

Cas No	Molecular Weight	Compound	Q*	RESULT	RESULT	RL	MDL	RL	MDL
				ppbv	ug/m ³	ppbv	ppbv	ug/m ³	ug/m ³
75-01-4	62.5	# Vinyl Chloride		77	196.8	<1	<1	<2.6	<2.6
75-71-8	120.91	Dichlorodifluoromethane (F-12)		2034	10058.2	<1	<1	<4.9	<4.9
74-87-3	50.49	Chloromethane		2	4.1	<1	<1	<2.1	<2.1
74-83-9	94.95	# Bromomethane		<1	<3.9	<1	<1	<3.9	<3.9
75-00-3	64.52	# Chloroethane		53	139.9	<1	<1	<2.6	<2.6
75-69-4	137.36	# Trichlorofluoromethane (F-11)		7632	42875.0	<1	<1	<5.6	<5.6
75-35-4	96.95	# 1,1-Dichloroethene (1,1 DCE)		4	15.9	<1	<1	<4.0	<4.0
75-09-2	84.93	# Dichloromethane (DCM)		157	545.3	<5	<5	<17.4	<17.4
156-60-5	96.94	Trans-1,2-Dichloroethene		12	47.6	<1	<1	<4.0	<4.0
75-34-3	98.97	# 1,1-Dichloroethane		193	781.2	<1	<1	<4.0	<4.0
156-59-2	96.94	# cis-1,2-Dichloroethene		57	226.0	<1	<1	<4.0	<4.0
594-20-7	112.99	2,2-Dichloropropane		<1.5	<6.9	<1.5	<1.5	<6.9	<6.9
74-97-5	129.38	Bromochloromethane (Int Std)		NA	NA	<1.5	<1.5	<7.9	<7.9
67-66-3	119.39	# Chloroform		<1	<4.9	<1	<1	<4.9	<4.9
71-55-6	133.42	# 1,1,1-Trichloroethane		9	49.1	<1	<1	<5.5	<5.5
563-58-6	110.97	1,1-Dichloropropene		<1	<4.5	<1	<1	<4.5	<4.5
56-23-5	153.84	# Carbon Tetrachloride		<1	<6.3	<1	<1	<6.3	<6.3
107-06-2	98.96	# 1,2-Dichloroethane		<1	<4.0	<1	<1	<4.0	<4.0
71-43-2	78.11	# Benzene		40	127.8	<1	<1	<3.2	<3.2
79-01-6	131.4	# Trichloroethene (TCE)		23	123.6	<1	<1	<5.4	<5.4
78-87-5	112.99	# 1,2-Dichloropropane		<1	<4.6	<1	<1	<4.6	<4.6
74-95-3	173.83	Dibromomethane		<1.5	<10.7	<1.5	<1.5	<10.7	<10.7
75-27-4	163.83	Bromodichloromethane		<1	<6.7	<1	<1	<6.7	<6.7
10061-01-5	110.97	cis-1,3-Dichloropropene		<1	<4.5	<1	<1	<4.5	<4.5
108-88-3	92.13	# Toluene		17	64.1	<1	<1	<3.8	<3.8
10061-02-6	110.97	trans-1,3-Dichloropropene		<1	<4.5	<1	<1	<4.5	<4.5
79-00-5	133.4	# 1,1,2-Trichloroethane		<1	<5.5	<1	<1	<5.5	<5.5
127-18-4	165.85	# Tetrachloroethene (PCE)		1	<6.8	<1	<1	<6.8	<6.8
142-28-9	112.99	1,3-Dichloropropane		<1	<4.6	<1	<1	<4.6	<4.6
124-48-1	208.28	Dibromochloromethane		<1	<8.5	<1	<1	<8.5	<8.5
106-93-4	187.86	# 1,2-Dibromoethane		<1	<7.7	<1	<1	<7.7	<7.7
108-90-7	112.56	# Chlorobenzene		<1	<4.6	<1	<1	<4.6	<4.6
630-20-6	167.85	1,1,1,2-Tetrachloroethane		<1	<6.9	<1	<1	<6.9	<6.9
100-41-4	106.16	# Ethylbenzene		3	13.0	<1	<1	<4.3	<4.3
179601-23-1	106.17	# m/p-Xylene		4	17.4	<2	<2	<8.7	<8.7
95-47-6	106.17	# o-Xylene		3	13.0	<1	<1	<4.3	<4.3
100-42-5	104.14	# Styrene		<1.5	<6.4	<1.5	<1.5	<6.4	<6.4
75-25-2	252.77	Bromoform		<1.5	<15.5	<1.5	<1.5	<15.5	<15.5
98-82-8	120.19	Isopropylbenzene		<1	<4.9	<1	<1	<4.9	<4.9

Element Materials Technology

Client Name:	Smith Grant LLP
Reference:	R2174
Location:	Tetrosyl
Contact:	Scott Miller

Sample Date: 1 Oct 2025
Date of Receipt: 2 Oct 2025
Date Analysed: 8 Oct 2025

Sample ID: VGP2G03
Depth:
EMT Job No: 25/16293
EMT Sample No: 1
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 20273 0.55

Sample Train Serial number: ST-170

Q* - Qualifiers

B Indicates analyte found in associated method blank

>> Indicates value exceeds calibration range

Key

MDL Method Detection Limit

RL Reporting Limit

ISO 17025 (UKAS) accredited

[illegible]

Element Materials Technology **Notification of Deviating Samples**

Notification of Deviating Samples

Client Name: Smith Grant LLP

Reference: R2174

Location: Tetrosyl

Contact: Scott Miller

[illegible]

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

It is a requirement under ISO 17025 that we inform clients if samples are deviating i.e. outside what is expected. A deviating sample indicates that the sample 'may' be compromised but not necessarily will be compromised. The result is still accredited and our analytical reports will still show accreditation on the relevant analytes.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 25/16293

SOILS and ASH

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 35°C ±5°C.

Where Mineral Oil is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overestimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil is quoted, this refers to Total Aliphatics C10-C40.

STACK EMISSIONS

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a requirement of our Accreditation Body for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

Age of Diesel

The age of release estimation is based on the nC17/pristane ratio only as prescribed by Christensen and Larsen (1993) and Kaplan, Galperin, Alimi et al., (1996).

Age estimation should be treated with caution as it can be influenced by site specific factors of which the laboratory are not aware.

Tentatively Identified Compounds (TICs)

Where Tentatively Identified Compounds (TICs) are reported, up to 10 Tentatively Identified Compounds will be listed where there is found to be a greater than 80% match with the NIST library. The reported concentration is determined semi-quantitatively, with a matrix specific limit of detection.

Note, other compounds may be present but are not reported.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

EMT Job No: 25/16293

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM68	Modified TO-15 method. Volatile Organic Compounds (VOCs) sampled using Gas Canisters, BottleVacs or Tedlar bags and analysed using Entech GC-MS.	PM0	No preparation is required.				
TM68	Modified TO-15 method. Volatile Organic Compounds (VOCs) sampled using Gas Canisters, BottleVacs or Tedlar bags and analysed using Entech GC-MS.	PM0	No preparation is required.	Yes			

VOC	Unit	VP2C01
Vinyl Chloride [#]	ug.m3	196.8
Dichlorodifluoromethane (F-12)	ug.m3	10058.2
Chloromethane	ug.m3	4.1
Chloroethane	ug.m3	139.9
Trichlorofluoromethane (F-11) [#]	ug.m3	42875
1,1-Dichloroethene (1,1 DCE) [#]	ug.m3	15.9
Dichloromethane (DCM) [#]	ug.m3	545.3
1,1,1-Trichloroethane [#]	ug.m3	49.1
Trans-1,2-Dichloroethene	ug.m3	47.6
1,1-Dichloroethane [#]	ug.m3	781.2
cis-1,2-Dichloroethene [#]	ug.m3	226
Benzene [#]	ug.m3	127.8
Trichloroethene (TCE) [#]	ug.m3	123.6
Toluene [#]	ug.m3	64.1
Ethylbenzene [#]	ug.m3	13
m/p-Xylene [#]	ug.m3	17.4
o-Xylene [#]	ug.m3	13
Volatile Hydrocarbons	Unit	VP2C01
Aliphatic >C4-C6	ug.m3	29672
Aliphatic >C6-C8	ug.m3	190811
Aliphatic >C8-C10	ug.m3	98658
Aliphatic >C10-C12	ug.m3	6426
Aromatic >C5-EC7 (Benzene)	ug.m3	126.8
Aromatic >EC7-EC8 (Toluene)	ug.m3	62.9
Aromatic >EC8-EC10	ug.m3	49
Aromatic >EC10-EC12	ug.m3	53

Min	Max	SV
196.8	196.8	0.33
10058.2	10058.2	-
4.1	4.1	2.88
139.9	139.9	3191.43
42875	42875	-
15.9	15.9	63.52
545.3	545.3	27.8
49.1	49.1	336.7
47.6	47.6	12.34
781.2	781.2	-
226	226	-
127.8	127.8	5
123.6	123.6	0.63
64.1	64.1	1,468.05
13	13	62.51
17.4	17.4	33.67
13	13	33.67
Min	Max	SV
29672	29672	2,805.90
190811	190811	2,805.90
98658	98658	162.74
6426	6426	162.74
126.8	126.8	5
62.9	62.9	2115.91
49	49	33.67
53	53	33.67