

**Contaminated Land
Air Quality
Environmental Audit**

Partnership No: OC 300776

Our ref: R2174-R17-v2

27th August 2024

Barratt Homes Manchester

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Dear Brad,

**Tetrosyl, Waldmers Wood, Bury.
Phase 2H Ground Gas / Vapour Risk Assessment**

Introduction

The Smith Grant LLP (SGP) Phase 2 Remedial Strategy (report reference: R2174-R11-v6 dated; October 2023) 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

¹ Others have been responsible for the production of the earthworks completion report and whilst this has not been provided to SGP, it is understood that no previously unexpected VOC contamination was encountered within the Phase H area.



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 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 Remedial Strategy report 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 hence we assume this is accepted. It is important to note that this Strategy excluded development phases 2A, 2B and the reservoir (2H) as a Strategy to cover these areas is currently in production. The remedial strategy for this area is largely driven by the EA due to further information regarding groundwater and remedial targets. The requirement for post-remediation ground gas/VOC monitoring consistent with the requirements with the above will be made within this strategy.

Scope of report

Preparatory earthworks within Phase 2H (the former reservoir) have been completed following de-watering, removal of reservoir silts and replacement of site-won fills to provide a suitable development platform. This report details post-remediation gas and vapour monitoring undertaken and this information has been used to undertake post-remediation gas/vapour risk assessment to inform developer-mitigation requirements within the forthcoming Phase 2H Developer-Stage Remediation Strategy. This is a consistent approach which has been adopted in previous phases.

Site works

SGP carried out the intrusive investigation works between the 25th and 27th March 2024 which consisted of the drilling of 11 continuous tube sample boreholes.

The positions of the exploratory boreholes were identified by SGP in agreement with Barratt Homes Manchester (BHM) and Urban regen Limited (URL) and consisted of semi-regular non-targeted entries achieving an approximate 25m grid spacing across the site. The spacing was designed to satisfy that specified for VOC monitoring within the remedial strategy.

The position of the SGP exploratory holes drilled on site as part of this investigation can be seen on the URL Drilling Locations drawing (ref: 333/02/04/24), enclosed.

The continuous tube sample boreholes, VGP2H01 to VGP2H11, were drilled using a tracked dumper-mounted, ATV Competitor 130 window sampler rig to depths of between 1.5m and 6m below ground level (bgl), either to refusal or the maximal drilling capability of the rig. Boreholes were advanced using a plastic lined steel tube sampling system, driven into the ground by a top drive percussive hammer. A near continuous 87mm – 67mm diameter core sample was recovered of the sampled materials for subsequent examination.

On completion of the boring, all boreholes were utilised for the installation of a 50mm diameter slotted uPVC standpipe from the base of the boreholes up to between 0.5m (borehole VGP2H01 only) and 1m



bgl. The remainder of the borehole was finished with a section of plain 50mm diameter pipe. A 1m section of plain pipe was added to protrude from the ground at each well location for ease of identification. The slotted section of the standpipe was surrounded with pea gravel while expansive bentonite clay was added around the plain pipe and below the slotted section to seal the borehole. The standpipe was finished with a rubber bung with a gas tap which was left in the 'closed' position.

A ground gas / vapour monitoring / sampling programme has been completed between 09.04.24 to 22.05.24. This included six rounds of ground gas monitoring using a GFM430 gas analyser including flow and well pressure, two rounds of VOC monitoring using a MiniRAE 3000 photoionisation detector (PID) using a 10.6ev strength bulb (02.05.24 & 14.05.24), and the collection of vapour / bulk gas samples (26.04.24).

Summary of Ground Conditions

The following information summarises the findings of the Site investigation carried out by SGP on the 25th and 27th March 2024. The site investigation logs and photographs of the window sample locations / arisings and are provided in Appendices A and B, respectively, and the investigation locations are indicated on drawing 333/02/04/24.

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

Made Ground

Made Ground comprising fill materials of sandy, gravelly, clay fill (with/without cobbles of brick and sandstone) were recorded in all window sample locations from ground level down to depths of between 0.75mbgl (VGP2H01) and 6.0mbgl (VGP2H06).

Suspected reservoir deposits typically comprised very soft, grey / brown, sandy, gravelly silt or soft to firm, slightly sandy to sandy, gravelly clay, with occasional very loose to loose, grey, slightly gravelly sands also described (VGP2H206 between 5.0-6.0mbgl) and VGP2H08 (between 3.9 to 5.0mbgl). Within boreholes VGP2H05, 08, 09 & 10, the silts contained black/blue-grey organic pockets.

Boulder Clay

Firm to stiff, brown and/or grey, sandy gravelly clay was recorded from 1.4 to 2.25mbgl within VGP2H04 and from 5.65 to >6.0m (base of borehole) in VGP2H08. Within VGP2H04, this is followed by dense, multi-coloured, clayey, gravelly sand.

Weathered Bedrock

Weathered sandstone bedrock comprising dense to very dense, grey / brown, slightly clayey to clayey, gravel with cobbles of sandstone was recorded within boreholes within the northwestern area of the Site (including VGP2H01, 02, 03, 05, 07 & 10). Depth to bedrock ranges from 1.25mbgl (in VGP2H01) and maximal 4.4m within VGP2H10.

Contamination Indicators

A sweet chemical odour was identified within strata considered a weathered sandstone bedrock in boreholes VGP2H01 (at 1.25-1.5mbgl) and VGP2H02 (at 1.4-2.3m bgl). A petrochemical type of odour was recorded during boring of VGP2H11 at between 0.0-2.3m bgl.



Results

Ground Gas Monitoring Results

Six rounds of ground gas monitoring have been carried out within all of the installed boreholes with monitoring completed between 09th April 2024 and 22nd May 2024. Of these, four of the monitoring rounds were completed following a consistent fall in surface pressure over the previous 3 days as detailed below, with the other two rounds carried during a fall in pressure on the day of monitoring.

- 26.04.24: 1012 to 1002mb
- 02.05.24: 1008 to 990mb
- 14.05.24: 1017 to 1000mb
- 22.05.24: 1010 to 991mb

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

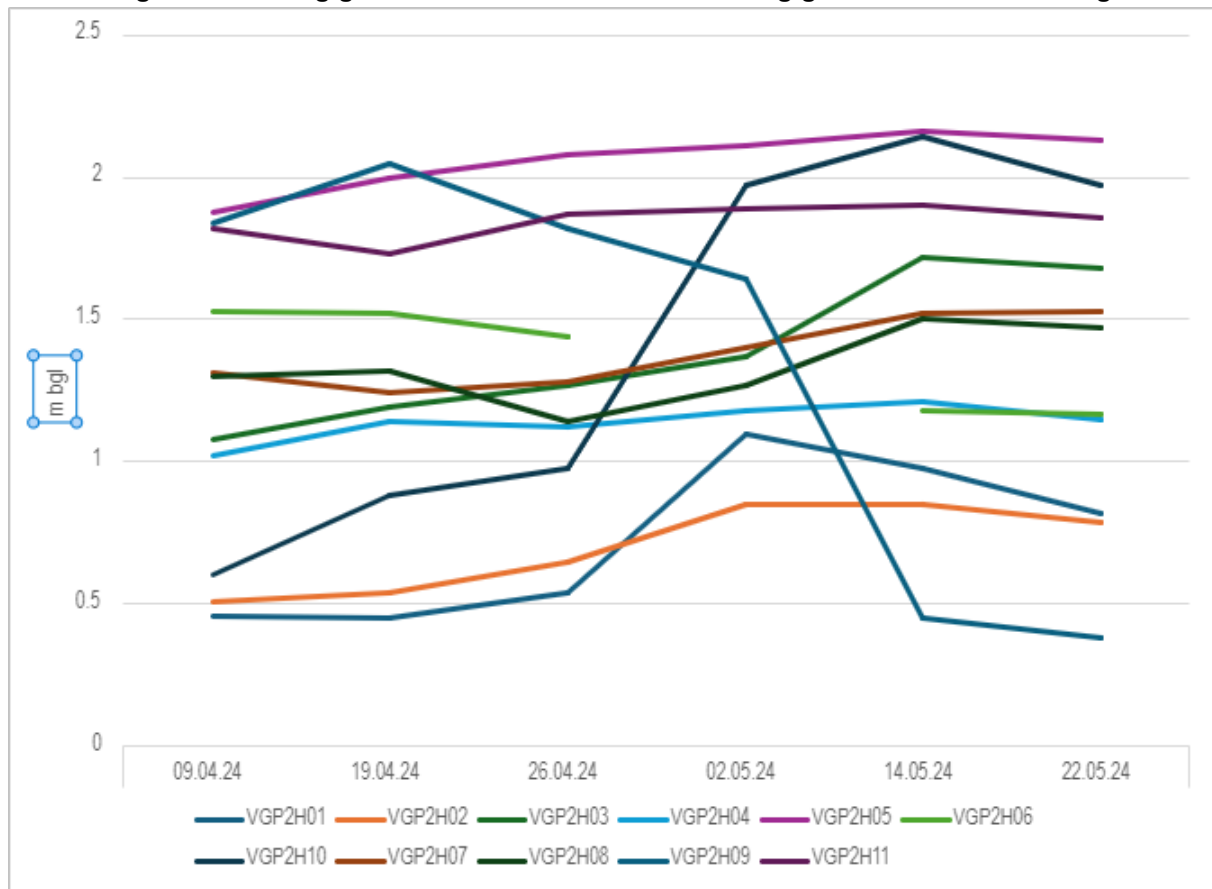
High methane concentrations have been recorded in several of the borehole locations installed as part of this investigation with a maximum value of 71.4% v/v reported in VGP2H08. Elevated methane concentrations above 1% v/v were also reported in boreholes VGP2H06 (max. 39.4%), VGP2H07 (max. 47.6%), VGP2H09 (max. 10.1%) and VGP2H11 (max. 9.8%). Carbon dioxide concentrations have been substantially lower, typically remaining below 5% v/v with the exception of entry VGP2H01 where a maximum concentration of 5.3% v/v was recorded.

During the monitoring rounds where downhole VOC concentrations were recorded with a PID (02.05.24 & 14.05.24), positive concentrations at or above the limit of detection (0.1ppm) were recorded in all entries, although concentrations were <1ppm in entries VGP2H01 and VGP2H02 on both occasions. The maximum reading of 374ppm was reported in entry VGP2H10 on the 14.05.24 and readings above >100ppm were reported in entries VGP2H04-2H11 on at least one occasion.

A maximum peak gas flow of 106.9 l/hr was recorded in well VGP2H09 during the second monitoring round (19.04.24), however this quickly settled to a steady flow of <0.1 l/hr which is consistent with all the other instances where positive flows (as well as negative flows, including in VGP2H09) were recorded.

Groundwater was not identified during drilling but was recorded between 0.45mbgl in VGP2H01 and 2.16 m bgl in VGP2H05 during monitoring. In general, groundwater levels tended to decrease as the monitoring progressed, although for VGP2H09, appeared to have risen sharply for the last two monitoring rounds.

Figure 1 showing groundwater levels recorded during gas and VOC Monitoring



It is considered likely that the maximum peak gas flows recorded are the result of changing groundwater levels and the 'piston effect' rather than being truly indicative of ground gas flow. No significant sustained flows were recorded across the monitoring rounds.

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 BS8485:2007 ("Code of Practice for the Characterisation and Remediation of Ground Gas in Affected Developments") 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 gas screening value (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
VGP2H01	6	<0.1	5.3	<0.1	<0.07	<0.07	CS2
VGP2H02	6	0.2	0.8	<0.1	<0.07	<0.07	CS1
VGP2H03	6	1.1	0.7	<0.1	<0.07	<0.07	CS2

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
VGP2H04	6	2.6	4.6	<0.1	<0.07	<0.07	CS2
VGP2H05	6	1.4	2.4	<0.1	<0.07	<0.07	CS2
VGP2H06	6	39.4	2	<0.1	<0.07	<0.07	CS2
VGP2H07	6	71.4	5	<0.1	0.0714	<0.07	CS2
VGP2H08	6	10.1	4.2	<0.1	<0.07	<0.07	CS2
VGP2H09	6	47.6	3.9	<0.1	<0.07	<0.07	CS2
VGP2H10	6	1.8	1.9	<0.1	<0.07	<0.07	CS2
VGP2H11	6	9.8	4.3	<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 986mb to 1001mb during the monitoring rounds

Despite the significantly elevated methane concentrations, the gas Screening values (GSVs), calculated as the product of concentration and steady flow, were all low. However, as the 1% v/v screening threshold for methane was exceeded, a CIRIA CS2 (low risk) classification has been adopted for all but one of the borehole entries (VGP2H02).

Bulk Gas Results

Following the recorded elevated methane concentrations, it was considered appropriate that concurrently with the collection of VOC samples, bulk gas analysis was also undertaken to confirm the concentrations recorded by the gas analysers. It is known that VOCs, where present, can result in interference with the infra-red detector of the gas analyser and so it needed to be established whether the high methane was true or a result of interference.

Bulk gas analysis was only carried out on select wells where significantly elevated methane concentrations were detected during previous ground gas monitoring rounds. This included VGP2H06, VGP2H07, VGP2H09 & VGP2H11. Samples were collected on 26.04.24 which corresponds with gas monitoring round 3. The recorded methane concentrations on the gas analyser during that monitoring round and the results of the bulk gas analysis are summarised in the table below (the bulk gas lab results are presented in Appendix D).

Table 2. Bulk Gas Analysis

Well	CH ₄ (%) recorded on 26.04.24 by gas analyser	CH ₄ recorded during laboratory analysis (%) on sampled collected on 26.04.24	Difference between bulk gas analysis and gas analyser (%)
VGP2H06	0.8	0.44	-0.36
VGP2H07	54.2	18.76	-35.44
VGP2H09	41.7	29.68	-12.02
VGP2H11	4.4	3.77	-0.63

The results of the bulk gas analysis show that elevated methane concentrations within VGP2H07 and -09 were present during this round of gas monitoring which confirms that VOC interference is not taking place. Comparison of results do, however, show that the gas analyser consistently reports higher concentrations compared to the bulk gas samples.

Vapour Sampling Results

Samples for vapour (speciated hydrocarbons and target list VOC compounds) and bulk gas (carbon dioxide, methane, oxygen, nitrogen, carbon monoxide and hydrogen) analysis were collected on 26.04.24. Samples were collected using 'Bottlevac' containers (glass containers containing a partial vacuum and quick release coupling) with dedicated sample trains as provided by Element Materials Technology (EMT), Deeside.

Soil vapours from each installation were drawn into the Bottlevac until the pressures in the well and container reach 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 body weight (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 used.

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 and 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.

Table 3. 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

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 (C5-C7)*	Benzene	Benzene
Aromatic Hydrocarbons (C7-C8)*	Toluene	Toluene
Aromatic Hydrocarbons (C8-C10)	30 (S4UL)	33.67
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
Dichloromethane	67.15 (CL:AIRE)	75.36
Trans-1,2-Dichloroethene	11 (CL:AIRE)	12.34
1,1,1-Trichloroethane	300 (S4UL)	336.70
Trichloroethene (TCE)	0.57 (S4UL)	0.63
Isopropylbenzene	57.15 (CL:AIRE)	64.14
Propylbenzene	203.56 (CL:AIRE)	228.46
Methyl tertiary butyl ether (MTBE)	522 (CL:AIRE)	585.87

*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.

Comparison of soil-vapour concentrations determined through Bottlevac sampling are compared to the derived inhalation assessment criteria in Table 3 (where TDIs or IDs are not available for any of the tested compounds, these have not been included). The EMT laboratory test certificate and the associated results summary table is provided in Appendix D.

Table 4. Comparison of Derived 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)	12.8-217.2	All entries
Toluene	1,468.05	49-3,768	3: VGP2H01, VGP2H02 & VGP2H03
Ethylbenzene	62.51	4.3-91.2	1: VGP2H01
m/p-xylene	33.67	13-286.6	7: VGP2H01 VGP2H02, VGP2H03, VGP2H04, VGP2H07, VGP2H09 & VGP2H11
o-xylene	33.67	4.3-60.8	1: VGP2H01
Aliphatic Hydrocarbons (C4-6)	2,805.90	<33-6215	1: VGP2H04
Aliphatic Hydrocarbons (C6-8)	2,805.90	<41-12,298	2: VGP2H09 & VGP2H11
Aliphatic Hydrocarbons (C8-10)	162.74	<53-18,662	4: VGP2H01, VGP2H04, VGP2H09 & VGP2H11
Aliphatic Hydrocarbons (C10-12)	162.74	<65-995	3: VGP2H04, VGP2H09 & VGP2H11
Aromatic Hydrocarbons (EC5-7)	Benzene	As Benzene	As Benzene
Aromatic Hydrocarbons (EC7-8)	Toluene	As Toluene	As Toluene
Aromatic Hydrocarbons (EC8-10)	33.67	<49*-574	9: VGP2H01, VGP2H02, VGP2H03, VGP2H04,

Contaminant	Assessment Criteria ($\mu\text{g}/\text{m}^3$)	Soil-Vapour Range of concentrations ($\mu\text{g}/\text{m}^3$)	Exceedances
			VGP2H07, VGP2H08, VGP2H09, VGP2H10 & VGP2H11
Aromatic Hydrocarbons (EC10-12)	33.67	<53*	None
Vinyl Chloride	0.33	<2.6*-148.3	4: VGP2H01, VGP2H02, VGP2H07 & VGP2H11
Chloromethane	2.88	<2.1-14.5	10: VGP2H01, VGP2H02, VGP2H04, VGP2H05, VGP2H06, VGP2H07, VGP2H08, VGP2H09, VGP2H10 & VGP2H11
Chloroethane	3191.43	<2.6-23.7	None
Dichloromethane	75.36	<17.4-27.8	None
Trans-1,2-Dichloroethene	12.34	<4-19.8	1: VGP2H11
1,1,1-Trichloroethane	336.70	<5.5-16.4	None
Trichloroethene (TCE)	0.63	<5.4*-16.1	2: VGP2H05 & VGP2H09
Isopropylbenzene	64.14	<4.9-29.5	None
Propylbenzene	228.46	<4.9-14.7	None
Methyl tertiary butyl ether	585.87	<3.6-245.2	None

*Limit of detection is greater than the screening value

Exceedances of the derived assessment criteria were reported for:

- Benzene at 12.8-217.2 $\mu\text{g}/\text{m}^3$ (criteria = 5 $\mu\text{g}/\text{m}^3$) – all entries
- Toluene at 1,981.9-3,768 $\mu\text{g}/\text{m}^3$ (criteria = 1468.05 $\mu\text{g}/\text{m}^3$) – VGP2H01, VGP2H02 & VGP2H03
- Ethylbenzene at 91.2 $\mu\text{g}/\text{m}^3$ (criteria = 62.51 $\mu\text{g}/\text{m}^3$) – VGP2H01
- M/P-xylene at 34.7-286.6 $\mu\text{g}/\text{m}^3$ (criteria = 33.67 $\mu\text{g}/\text{m}^3$) – VGP2H01, VGP2H02, VGP2H03, VGP2H04, VGP2H07, VGP2H09 & VGP2H11
- O-xylene at 60.8 $\mu\text{g}/\text{m}^3$ (criteria = 33.67 $\mu\text{g}/\text{m}^3$) – VGP2H01
- Aliphatic hydrocarbons C5-C6 at 6,215 $\mu\text{g}/\text{m}^3$ (criteria = 2805.90 $\mu\text{g}/\text{m}^3$) – VGP2H04
- Aliphatic hydrocarbons C6-C8 at 3,558-12,298 $\mu\text{g}/\text{m}^3$ (criteria = 2805.90 $\mu\text{g}/\text{m}^3$) – VGP2H09 & VGP2H11
- Aliphatic hydrocarbons C8-C10 at 287-18,662 $\mu\text{g}/\text{m}^3$ (criteria = 162.74 $\mu\text{g}/\text{m}^3$) – VGP2H01, VGP2H04, VGP2H09 & VGP2H11
- Aliphatic hydrocarbons C10-C12 at 170-995 $\mu\text{g}/\text{m}^3$ (criteria = 162.74 $\mu\text{g}/\text{m}^3$) – VGP2H04, VGP2H09 & VGP2H11
- Aromatic hydrocarbons EC8-EC10 at 69-574 $\mu\text{g}/\text{m}^3$ (criteria = 33.67 $\mu\text{g}/\text{m}^3$) – VGP2H01, VGP2H02, VGP2H03, VGP2H04, VGP2H07, VGP2H08, VGP2H09, VGP2H10 & VGP2H11
- Vinyl chloride at 10.2-148.3 $\mu\text{g}/\text{m}^3$ (criteria = 0.33 $\mu\text{g}/\text{m}^3$) – VGP2H01, VGP2H02, VGP2H07 & VGP2H11



- Chloromethane at 4.1-14.5 $\mu\text{g}/\text{m}^3$ (criteria = 2.88 $\mu\text{g}/\text{m}^3$) – VGP2H01, VGP2H02, VGP2H04, VGP2H05, VGP2H06, VGP2H07, VGP2H08, VGP2H09, VGP2H10 & VGP2H11
- Trans-1,2-Dichloroethene at 19.8 $\mu\text{g}/\text{m}^3$ (criteria = 12.34 $\mu\text{g}/\text{m}^3$) – VGP2H11
- TCE at 10.7-16.1 $\mu\text{g}/\text{m}^3$ (criteria = 0.86 $\mu\text{g}/\text{m}^3$) – VGP2H05 & VGP2H09

Risk Assessment

Ground Gas

The source of the high methane recorded within the ground gas monitoring and verified by bulk gas laboratory analysis is considered to primarily be a factor of significant remedial works having recently taken place within this area. This has included the draining of reservoir, removal of silts down to natural clays and replacement of fills in geotechnically constructed layers.

The presence of suspected residual reservoir silts have been identified within several boreholes (including VGP2H01 and 05 to 10) located below the fill material and above (weathered) bedrock. Borehole logs are contained in Appendix B and are shown on the 'Annotated Borehole Location Plan with Logs' drawing. The suspected reservoir deposits are typically recorded as very soft, grey / brown, sandy, gravelly silt or soft to firm, slightly sandy to sandy, gravelly clay, with occasional very loose to loose, grey, slightly gravelly sands also described. Within boreholes VGP2H05, 08, 09 & 10, the silts contained black/blue-grey organic pockets.

Degradation of such residual silts is likely to be enhanced following exposure to the atmosphere during disturbance and placement of the fills above.

The gassing potential of the limited organic pockets is low and likely to significantly reduce (i.e. it is not considered as a long-term gassing source).

The requirement for VOC protection measures (see conclusions and recommendations) would mitigate against any potential risk from ground gases in any case.

VOCs

Possible sources attributed to the elevated VOCs recorded by both the PID and the laboratory gas analysis across the Phase 2H development area has included the following:

1. **Olfactory evidence of VOC contamination within soils during drilling:** A 'sweet chemical' odour within the weathered bedrock of VGP2H01 (at 1.25m – 1.5mbgl) and VGP2H02 (at between 1.4 and 2.3m bgl). A petrochemical type of odour was also recorded during boring of VGP2H11 between 0.0-2.3m bgl. It is noted, however, that such odours were localised and not widespread as per the VOCs reported. It is of note that whilst not detailed in this report, no elevated VOCs have been reported within the groundwater sampled across this area.
2. **Residual contamination in Phase 2B migrating laterally through the unsaturated zone of the sandstone:** Such evidence of potential migration has not been demonstrated elsewhere, although monitoring is underway hence the validity of this as a potential source is uncertain.



3. **Residual silts/surface clays remaining in-situ:** These were encountered below the fill material within 7 of the 11no. boreholes drilled of a thickness of between 0.5m and 1.1m. Other than organic pockets, there was no visual nor olfactory evidence of VOC contamination during drilling through such material.

Conclusions

Ground gas monitoring undertaken within the Phase 2H development (i.e. the proposed area of residential development that will be constructed on the former reservoir) has recorded elevated methane within localised areas. Methane concentrations have been confirmed through bulk gas sampling, although results suggest the gas analyser is over-estimating the extent of the methane present.

The only plausible source of the methane is from residual silts which have been recorded within several of the borehole logs. It considered most likely that degradation rates (i.e. methane generation) has been enhanced through the remediation works which have exposed soils to the atmosphere and increased oxygenation. Whilst this is not considered to be a long-term risk, appropriate gas protection measures are required within all plots within development Phase 2H.

Elevated VOCs have been reported across Phase 2H which could be attributed from a combination of contamination within weathered bedrock, potential lateral migration through the unsaturated zone of the adjacent Phase 2B area, or from the residual silts or basal clay. VOC protection measures and high-level verification will be required within all plots in Phase 2H.

Recommendation

It is recommended that the findings of this report are used to produce a Developer-Stage Remediation Strategy which will detail the VOC/Gas protection measures to be installed within all dwellings in accordance with current CIRIA guidance. 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

A handwritten signature in black ink, appearing to read 'S D Miller', is located below the typed name.

S D Miller BSc MCIWEM
(Senior Consultant)

Enclosed:

URL Drawing: Drilling Locations (ref: 333/02/04/24)
456-ED-05_Remediation_TEN_Remediation Phasing Plan_G
Annotated Borehole Location Plan with Logs
Appendix A: Borehole Logs



Barratt Homes Manchester

12

Appendix B: Site Investigation Photographic Record

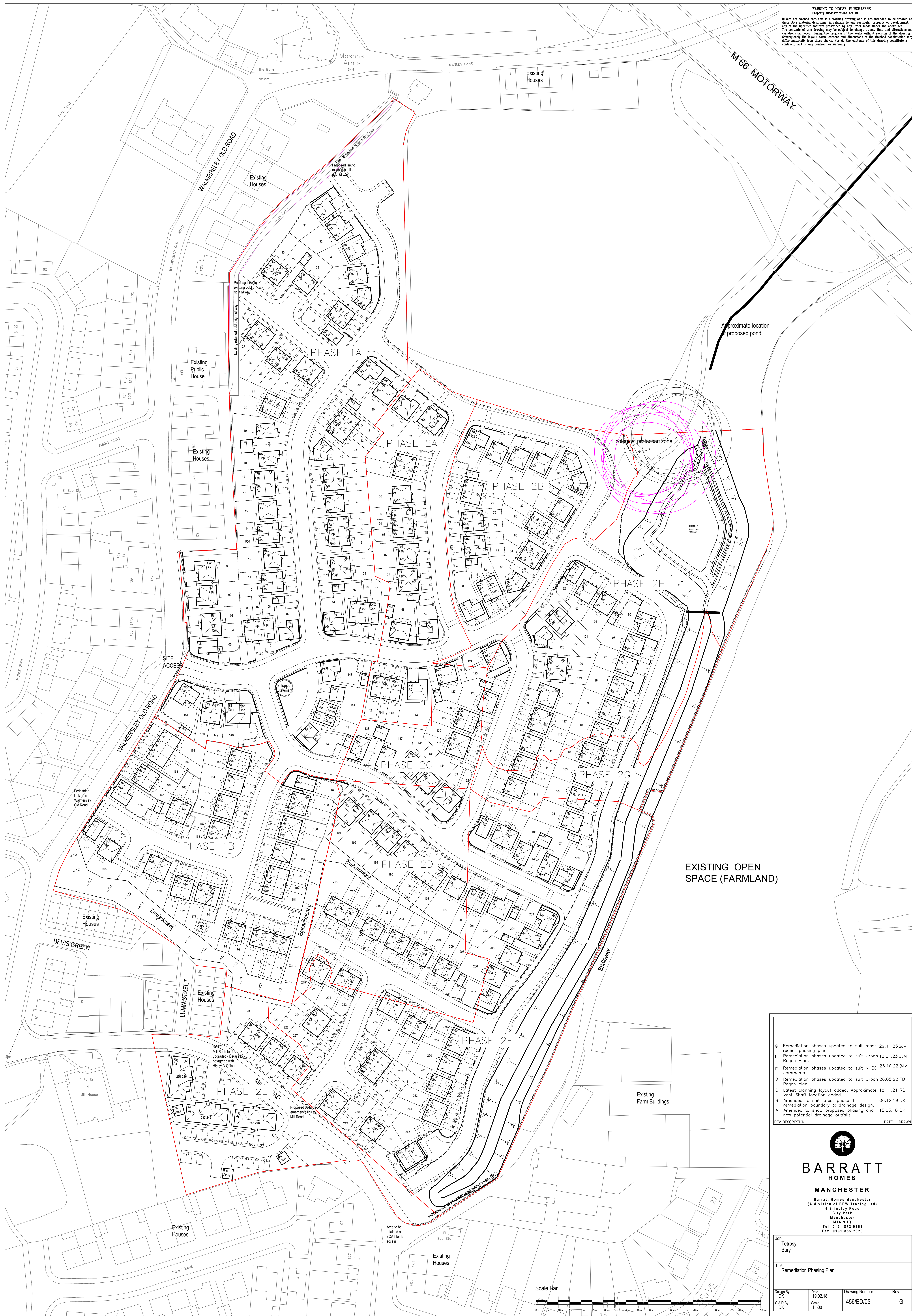
Appendix C: Ground Gas monitoring Records

Appendix D: EMT Laboratory Report (24-7226) and Vapour Results Summary

DRAWING

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 or variations can 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.	29.11.23BJM
	F	Remediation phases updated to suit Urban Remediation Plan.	10.12.23BJM
	E	Remediation phases updated to suit NHBC comments.	26.10.22BJM
	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 cut-offs.	15.03.16 DR
REV	DESCRIPTION	DATE	DRAWN



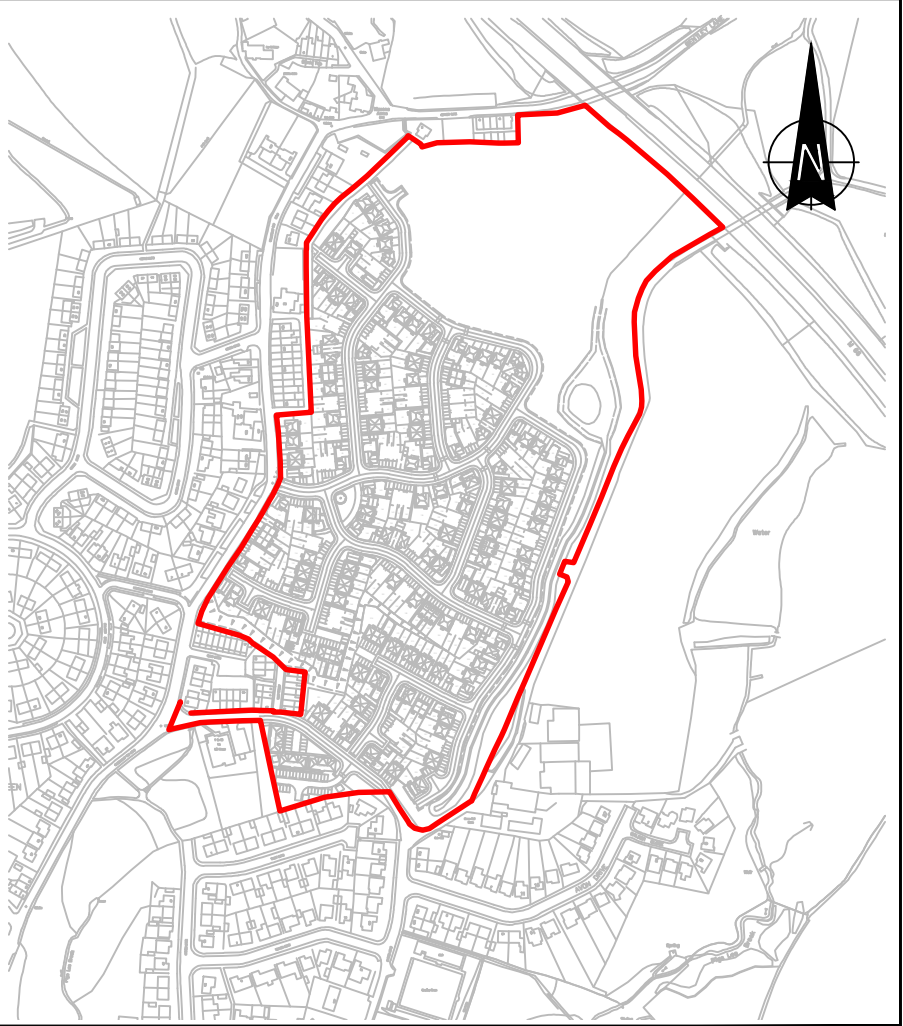
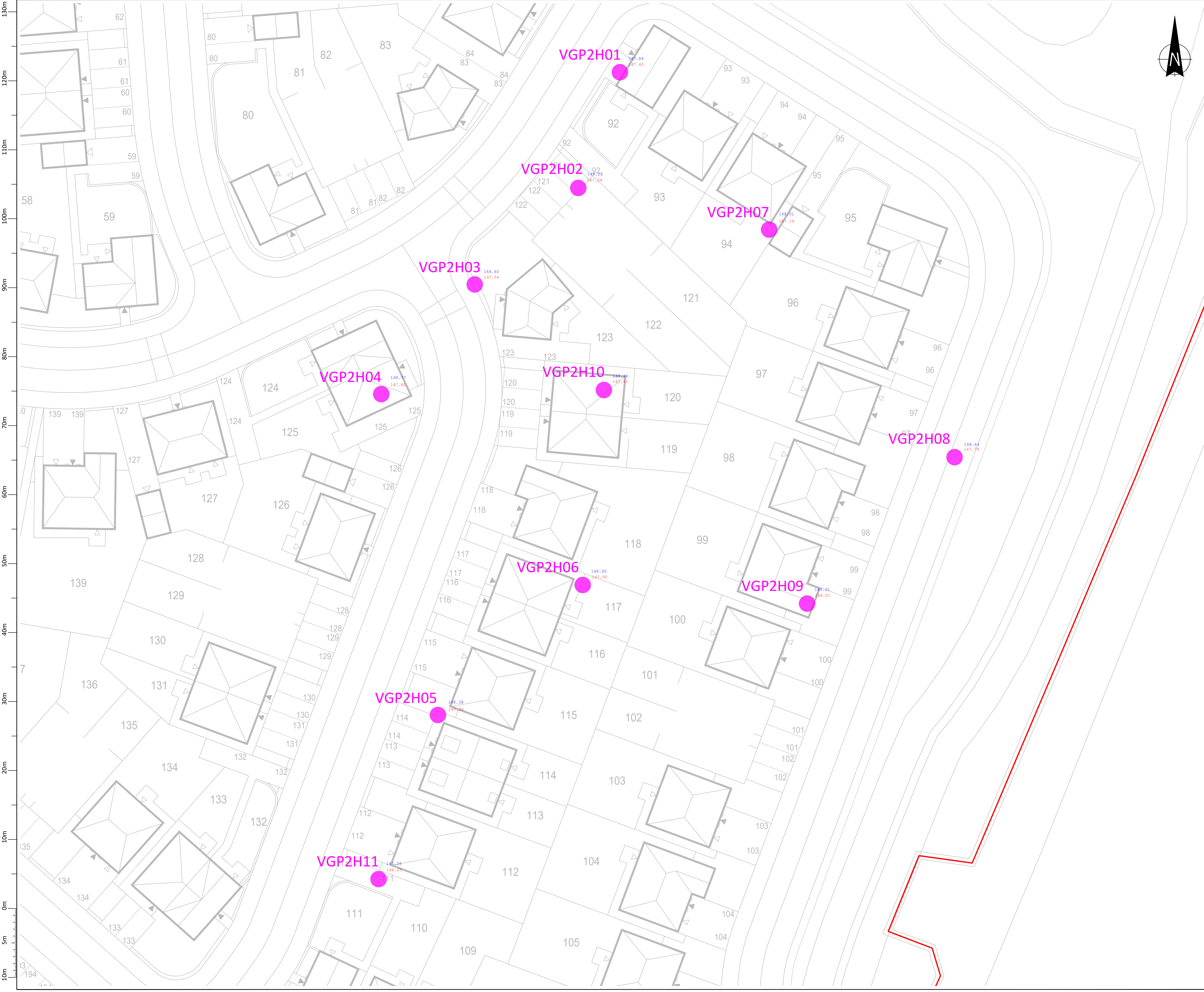
BARRATT
HOMES

MANCHESTER
Barratt Homes Manchester
(A division of BDW Trading Ltd)
4 Brindley Road
City Park
Manchester
M16 9HQ
Tel: 0161 872 0161
Fax: 0161 855 2828

Job
Tetrosyl
Bury

Title	Remediation Phasing Plan
-------	--------------------------

Design By DK	Date 19.02.18	Drawing Number 456/ED/05	Rev G
C.A.D By DK	Scale 1:500		



Location Plan

Scale 1:5000

Notes:

Site boundary

Drilling Location

Bottom Of Drilling

Top Of Drilling

33.48

33.48

Coordinates

VGP2H01 - E: 381001.322 - N: 413949.521
VGP2H02 - E: 380996.172 - N: 413935.243
VGP2H03 - E: 380983.559 - N: 413923.553
VGP2H04 - E: 380972.044 - N: 413910.203
VGP2H05 - E: 380978.995 - N: 413870.905
VGP2H06 - E: 380996.675 - N: 413886.672
VGP2H07 - E: 381019.556 - N: 413930.171
VGP2H08 - E: 381042.265 - N: 413902.416
VGP2H09 - E: 381024.207 - N: 413884.479
VGP2H10 - E: 380999.272 - N: 413910.464
VGP2H11 - E: 380971.756 - N: 413850.771

Survey Information:

Co-ord System:

OS(15)

Co-ord Type:

Grid

Primary Survey Control:

Leica SmartNet

Secondary Survey Control:

Site

Rev

Date

Amendment

Drawn

Checked

 **Urban Regen**
ESTABLISHED 2001

Client:

Barratt Homes
Manchester

Project:

Waldmers Wood
Former Tetrosyl Works

Title:

Drilling Locations

Scale:

1:200

First Issue:

02/04/2024

Drawn:

R.Corrigan

Checked:

R.Parry

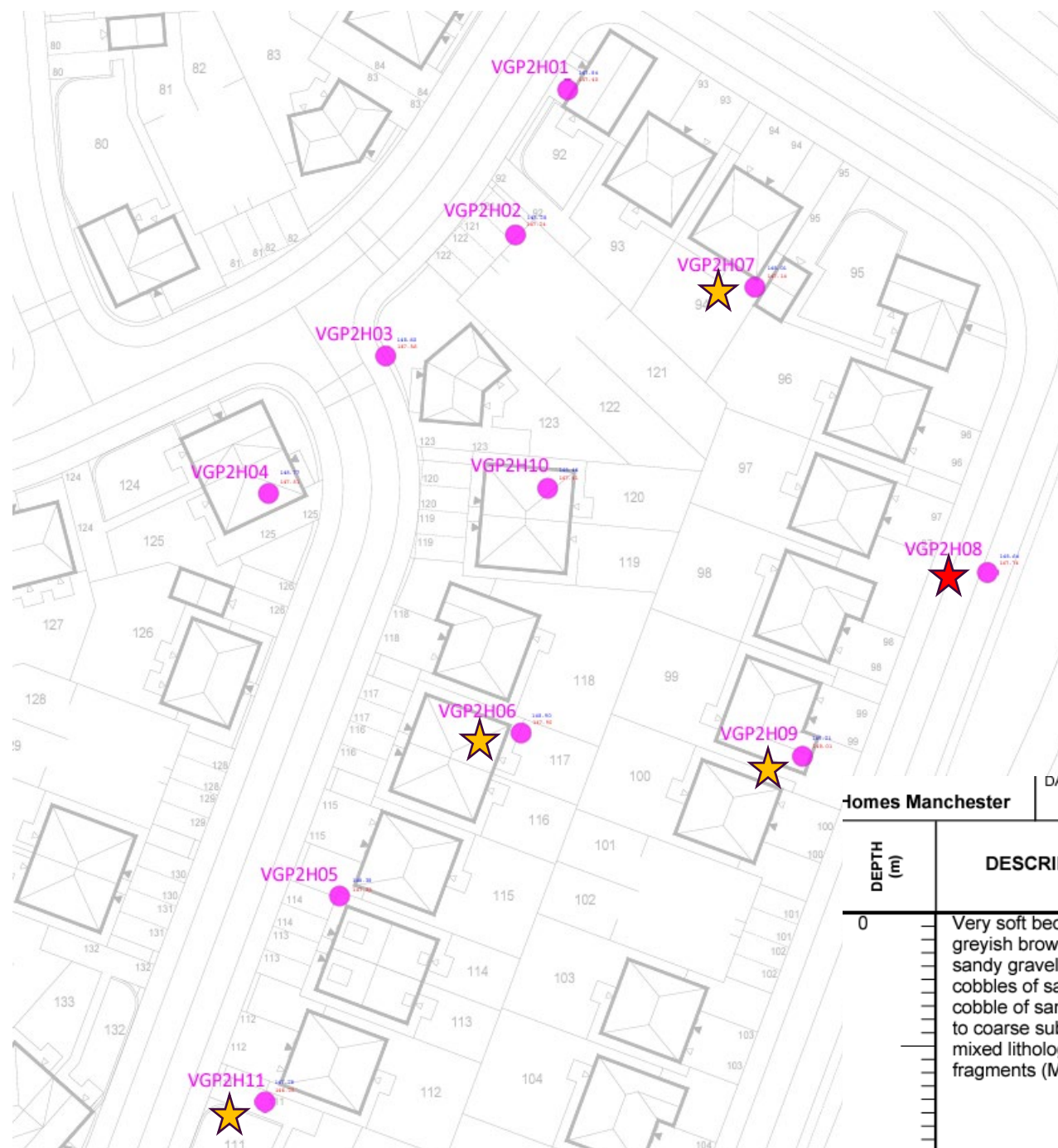
Drawing No:

333/02/04/24

Revision:

Homes Manchester			JOB NO. R2174	WINDOW SAMPLE NO. VGP2H01	Homes Manchester			JOB NO. R2174	WINDOW SAMPLE NO. VGP2H02	Homes Manchester			JOB NO. R2174	WINDOW SAMPLE NO. VGP2H03	Homes Manchester			JOB NO. R2174	WINDOW SAMPLE NO. VGP2H04
			DATE: 25.03.24					DATE: 25.03.24					DATE: 25.03.24					DATE: 25.03.24	
DEPTH (m)	DESCRIPTION OF STRATA		LEGEND		DEPTH (m)	DESCRIPTION OF STRATA		LEGEND		DEPTH (m)	DESCRIPTION OF STRATA		LEGEND		DEPTH (m)	DESCRIPTION OF STRATA		LEGEND	
0	Very soft becoming soft greyish-brown gravelly sandy clay with relict rootlets; gravel is fine to medium sub-angular to angular sandstone coal and red brick fragments (reworked natural)				0	Soft to firm brown very gravelly sandy clay fill with frequent cobbles of red brick and sandstone; gravel is fine to coarse sub-rounded to angular of mixed lithology including red brick fragments coal and sandstone (MADE GROUND)				0	Soft to firm brown very gravelly sandy clay fill with frequent cobbles of red brick and concrete in the top 0.3m and rare wood; gravel is fine to coarse sub-angular to angular of mixed lithology including coal sandstone concrete and red brick fragments (MADE GROUND)				0	Soft to firm brown gravelly sandy clay fill with occasional rounded to angular cobbles of sandstone and tarmac and occasional wood; gravel is fine to coarse sub-angular to angular of mixed lithology including coal and red brick fragments (MADE GROUND)			
0.75	Very soft greyish-brown gravelly sandy SILT; gravel is fine to coarse sub-angular to angular sandstone (suspected reservoir deposits)				1.4	Greyish-brown and grey CLAYEY SANDY GRAVEL of SANDSTONE with moderately strong sweet chemical odour (WEATHERED BEDROCK)				1.25	Soft to firm greyish-brown very gravelly sandy clay with occasional cobbles of sandstone; gravel is fine to coarse sub-angular to angular sandstone (reworked natural)				1.4	Firm to stiff brown and grey gravelly SANDY CLAY; gravel is fine to coarse sub-angular to angular sandstone			
1.25	Grey and light brown CLAYEY SANDY GRAVEL and cobbles of SANDSTONE with slight sweet chemical odour (WEATHERED BEDROCK)					Borehole terminated @ 2m bgl due to CPT refusal on bedrock @ 2.3m bal				1.9	Grey and light brown slightly clayey SANDY GRAVEL of SANDSTONE with occasional cobbles of SANDSTONE (WEATHERED BEDROCK)				2.25	Dense multicoloured clayey gravelly SAND; gravel is fine to coarse sub-angular to angular sandstone			
	Borehole terminated @ 1.5m bgl due to refusal on bedrock										Borehole terminated @ 2.6m bgl due to refusal on bedrock					Borehole terminated @ 3m bgl due to CPT refusal on bedrock @ 3.2m bgl			

Homes Manchester			JOB NO. R2174	WINDOW SAMPLE NO. VGP2H05	Homes Manchester			DATE: 26.03.24	NO. VGP2H06	Homes Manchester			DATE: 26.03.24	NO. VGP2H07	Homes Manchester			DATE: 26.03.24	NO. VGP2H08
			DATE: 25.03.24																
DEPTH (m)	DESCRIPTION OF STRATA		LEGEND		DEPTH (m)	DESCRIPTION OF STRATA		LEGEND		DEPTH (m)	DESCRIPTION OF STRATA		LEGEND		DEPTH (m)	DESCRIPTION OF STRATA		LEGEND	
0	Very soft to soft brown / greyish brown slightly sandy to sandy gravelly clay fill with occasional cobbles of sandstone and rare wood (twigs); gravel is fine to coarse sub-rounded to angular of mixed lithology including red brick fragments (MADE GROUND)				0	Very soft to firm brown / greyish brown slightly sandy to sandy gravelly clay fill with occasional cobbles of sandstone; gravel is fine to coarse sub-rounded to angular of mixed lithology including red brick fragments (MADE GROUND)				0	Soft becoming firm greyish-brown and brown slightly sandy to sandy gravelly clay fill with frequent cobbles of sandstone red brick and concrete; gravel is fine to coarse sub-rounded to angular of mixed lithology including red brick fragments (MADE GROUND)				0	Very soft greyish-brown and dark grey slightly sandy gravelly clay fill; gravel is fine to coarse sub-rounded to angular sandstone (MADE GROUND)			
3.4	Very soft to soft greyish-brown and grey slightly sandy gravelly SILT with dark grey and black organic pockets; gravel is fine to medium sub-rounded to sub-angular sandstone (suspected reservoir deposits)				3	Very soft to firm greyish-brown slightly sandy to sandy gravelly clay fill with occasional cobbles of sandstone and dark grey / black organic pockets; gravel is fine to coarse of mixed lithology including red brick fragments				2.55	Soft grey slightly sandy to sandy slightly gravelly becoming gravelly CLAY with pocket of grey slightly gravelly medium coarse clayey SAND from 2.7-2.8m; gravel is fine to medium sub-angular to angular sandstone (suspected reservoir deposits)				1.2	Pale grey and light brown slightly sandy gravel and cobbles of sandstone (likely boulder broken up during drilling) (MADE GROUND)			
4.3	Dense becoming very dense grey and light brown CLAYEY SANDY GRAVEL of SANDSTONE with cobbles of SANDSTONE from 4.75-5m				5	Very loose grey slightly gravelly medium coarse SILTY SAND (suspected reservoir deposits)				3.35	Grey clayey CLAYEY SANDY GRAVEL and cobbles of SANDSTONE (WEATHERED BEDROCK)				3.9	Loose greyish-brown slightly gravelly slightly clayey medium coarse SAND (suspected reservoir deposits)			
	Borehole terminated in natural soils @ 6m bgl (extent of drilling rig)				5.3	Very loose grey slightly gravelly medium coarse SAND (suspected reservoir deposits)					Borehole terminated @ 4m bgl due to CPT refusal on bedrock @ 4.1m bgl				4.2	Soft dark grey slightly gravelly slightly sandy SILT with dark grey / black organic pockets (suspected reservoir deposits)			
					5.5	Soft grey slightly gravelly sandy SILT (suspected reservoir deposits)									5	Dense greyish-brown slightly gravelly slightly clayey medium coarse SAND			
						Borehole terminated in natural soils @ 6m bgl (extent of drilling rig)									5.65	Stiff brown gravelly SANDY CLAY; gravel is fine to medium sub-angular to angular of mixed lithology including coal			
																Borehole terminated in natural soils @ 6m bal (extent of drilling rig)			



- ★ Highest methane % v/v recorded
- ★ High methane % v/v recorded
- Reservoir silts recorded (with black organic pockets in: VGP205, 208, 209 & 210)
- Petrochemical odour recorded
- Weathered bedrock with sweet chemical odour

Homes Manchester		DATE: 26.03.24	VGP2H10
DEPTH (m)	DESCRIPTION OF STRATA	LEGEND	
0	Very soft becoming firm brown and greyish brown slightly sandy to sandy gravelly clay fill with frequent cobbles of sandstone and rare cobble of sandstone; gravel is fine to coarse sub-rounded to angular of mixed lithology including red brick fragments (MADE GROUND)		
3.4	Very soft to soft greyish-brown and grey slightly sandy to sandy gravelly SILT with dark grey and black organic pockets; gravel is fine to medium sub-rounded to sub-angular sandstone (suspected reservoir deposits)		
4.4	Grey and brown slightly sandy GRAVEL of SANDSTONE (WEATHERED BEDROCK)		
	Borehole terminated @ 4.5m bgl due to refusal on bedrock		

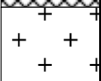
Homes Manchester		DATE: 27.03.24	VGP2H09
DEPTH (m)	DESCRIPTION OF STRATA	LEGEND	
0	Very soft grey slightly sandy gravelly clay fill; gravel is fine to coarse sub-rounded to angular sandstone and red brick fragments (MADE GROUND)		
0.55	Pale grey and light brown slightly sandy gravel and cobbles of sandstone (MADE GROUND)		
0.8	Firm greyish-brown and brown slightly sandy to sandy gravelly clay fill with frequent cobbles of sandstone; gravel is fine to coarse sub-rounded to angular of mixed lithology including red brick fragments and coal (MADE GROUND)		
3.2	Dense greyish-brown clayey sandy gravel fill with frequent cobbles of sandstone and red brick (MADE GROUND)		
4.4	Very soft dark grey slightly gravelly slightly sandy SILT with dark grey / black organic pockets (suspected reservoir deposits)		
	Borehole terminated @ 5m bgl due to refusal on bedrock		

Homes Manchester		JOB NO. R2174	WINDOW SAMPLE NO. VGP2H11
DATE: 27.03.24			
DEPTH (m)	DESCRIPTION OF STRATA	LEGEND	
0	Soft becoming firm brown slightly sandy gravelly CLAY with moderatley strong petrochemical odour; gravel is fine to coarse sub-rounded to angular of mixed lithology including coal		
1.1	Medium dense multicoloured slightly clayey gravelly medium coarse SAND with moderatley strong petrochemical odour; gravel is fine to coarse sub-rounded to sub-angular sandstone		
	Borehole terminated @ 2m bgl due to CPT refusal on bedrock @ 2.2m bgl		

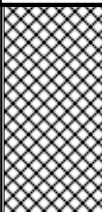
APPENDIX A

Borehole Logs

SHEET: 1 of 1	LOCATION: Bury	PROJECT: Tetrosyl (Phase 2H)	ENGINEER: SM	JOB NO. R2174	WINDOW SAMPLE NO. VGP2H01
		EXCAVATED BY: ATV Competitor 130	CLIENT: Barratt Homes Manchester	DATE: 25.03.24	

PHYSICAL TESTING	DEPTH (m)	SAMPLES/ TESTING	FIELD RECORDS	DEPTH (m)	DESCRIPTION OF STRATA	LEGEND
CPT <u>Blows/150mm</u> CPT = 1 1 / 1 1 1 1 / N = 4				0	Very soft becoming soft greyish-brown gravelly sandy clay with relict rootlets; gravel is fine to medium sub-angular to angular sandstone coal and red brick fragments (reworked natural)	
	0.9	GS1		0.75	Very soft greyish-brown gravelly sandy SILT; gravel is fine to coarse sub-angular to angular sandstone (suspected reservoir deposits)	
				1.25	Grey and light brown CLAYEY SANDY GRAVEL and cobbles of SANDSTONE with slight sweet chemical odour (WEATHERED BEDROCK)	
					Borehole terminated @ 1.5m bgl due to refusal on bedrock	

 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: Monitoring standpipe installed to 1.5m bgl (plain pipe from 0-0.5m bgl, slotted from 0.5-1.5m bgl)		
	SCALE: 1:500	LOGGED BY: SM	FIGURE NO. 1

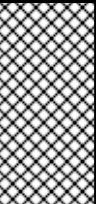
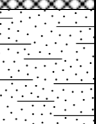
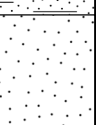
SHEET: 1 of 1	LOCATION: Bury	PROJECT: Tetrosyl (Phase 2H)	ENGINEER: SM	JOB NO. R2174	WINDOW SAMPLE NO. VGP2H02		
		EXCAVATED BY: ATV Competitor 130	CLIENT: Barratt Homes Manchester	DATE: 25.03.24			
PHYSICAL TESTING		DEPTH (m)	SAMPLES/ TESTING	FIELD RECORDS	DEPTH (m)	DESCRIPTION OF STRATA	LEGEND
CPT <u>Blows/150mm</u> CPT = 1 1 / 1 1 2 2 / N = 6 CPT = >50 (refusal)					0	Soft to firm brown very gravelly sandy clay fill with frequent cobbles of red brick and sandstone; gravel is fine to coarse sub-rounded to angular of mixed lithology including red brick fragments coal and sandstone (MADE GROUND)	
					1.4	Greyish-brown and grey CLAYEY SANDY GRAVEL of SANDSTONE with moderately strong sweet chemical odour (WEATHERED BEDROCK)	
						Borehole terminated @ 2m bgl due to CPT refusal on bedrock @ 2.3m bgl	
		GROUND WATER: Groundwater not encountered					
		REMARKS: Monitoring standpipe installed to 2m bgl (plain pipe from 0-1m bgl, slotted from 1-2m bgl)					
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		SCALE: 1:500	LOGGED BY: SM		FIGURE NO. 1		

SHEET: 1 of 1	LOCATION: Bury	PROJECT: Tetrosyl (Phase 2H)	ENGINEER: SM	JOB NO. R2174	WINDOW SAMPLE NO. VGP2H03
		EXCAVATED BY: ATV Competitor 130	CLIENT: Barratt Homes Manchester	DATE: 25.03.24	

PHYSICAL TESTING	DEPTH (m)	SAMPLES/ TESTING	FIELD RECORDS	DEPTH (m)	DESCRIPTION OF STRATA	LEGEND
CPT <u>Blows/150mm</u> CPT = 1 1 / 1 2 2 2 / N = 7 CPT = 6 8 / 8 10 13 12 / N = 43				0	Soft to firm brown very gravelly sandy clay fill with frequent cobbles of red brick and concrete in the top 0.3m and rare wood; gravel is fine to coarse sub-angular to angular of mixed lithology including coal sandstone concrete and red brick fragments (MADE GROUND)	
				1.25	Soft to firm greyish-brown very gravelly sandy clay with occasional cobbles of sandstone; gravel is fine to coarse sub-angular to angular sandstone (reworked natural)	
				1.9	Grey and light brown slightly clayey SANDY GRAVEL of SANDSTONE with occasional cobbles of SANDSTONE (WEATHERED BEDROCK)	
						Borehole terminated @ 2.6m bgl due to refusal on bedrock

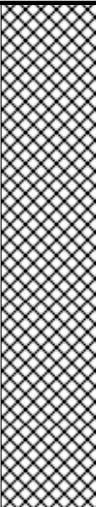
 Smith Grant LLP Bryn Estyn Business Centre (Suite 16) Bryn Estyn Road, Wrexham, LL13 9TY Tel: 01978 822367 www.smithgrant.co.uk email: consult@smithgrant.co.uk	GROUND WATER: Groundwater not encountered		
	REMARKS: Monitoring standpipe installed to 2.6m bgl (plain pipe from 0-1m bgl, slotted from 1-2.6m bgl)		
	SCALE: 1:500	LOGGED BY: SM	FIGURE NO. 1

SHEET: 1 of 1	LOCATION: Bury	PROJECT: Tetrosyl (Phase 2H)	ENGINEER: SM	JOB NO. R2174	WINDOW SAMPLE NO. VGP2H04
		EXCAVATED BY: ATV Competitor 130	CLIENT: Barratt Homes Manchester	DATE: 25.03.24	

PHYSICAL TESTING	DEPTH (m)	SAMPLES/ TESTING	FIELD RECORDS	DEPTH (m)	DESCRIPTION OF STRATA	LEGEND
CPT <u>Blows/150mm</u> CPT = 1 1 / 2 2 2 3 / N = 9 CPT = 4 5 / 6 8 10 12 / N = 36 CPT = >50 (refusal)				0	Soft to firm brown gravelly sandy clay fill with occasional rounded to angular cobbles of sandstone and tarmac and occasional wood; gravel is fine to coarse sub-angular to angular of mixed lithology including coal and red brick fragments (MADE GROUND)	
	1	GS1				
	1.75	GS2		1.4	Firm to stiff brown and grey gravelly SANDY CLAY; gravel is fine to coarse sub-angular to angular sandstone	
				2.25	Dense multicoloured clayey gravelly SAND; gravel is fine to coarse sub-angular to angular sandstone	
					Borehole terminated @ 3m bgl due to CPT refusal on bedrock @ 3.2m bgl	

 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: Monitoring standpipe installed to 3m bgl (plain pipe from 0-1m bgl, slotted from 1-3m bgl) 250mm undisturbed samples collected for Urban Regen from 1.75-2.00m bgl and 2.75-3.00m bgl		
	SCALE: 1:500	LOGGED BY: SM	FIGURE NO. 1

SHEET: 1 of 1	LOCATION: Bury	PROJECT: Tetrosyl (Phase 2H)	ENGINEER: SM	JOB NO. R2174	WINDOW SAMPLE NO. VGP2H05
		EXCAVATED BY: ATV Competitor 130	CLIENT: Barratt Homes Manchester	DATE: 25.03.24	

PHYSICAL TESTING	DEPTH (m)	SAMPLES/ TESTING	FIELD RECORDS	DEPTH (m)	DESCRIPTION OF STRATA	LEGEND	
CPT <u>Blows/150mm</u> CPT = 0 0 / 0 0 1 1 / N = 2 CPT = 0 0 / 0 1 1 1 / N = 3 CPT = 0 0 / 0 0 0 0 / N = 0 CPT = 2 2 / 2 3 8 6 / N = 19 CPT = >50 (refusal) CPT = >50 (refusal)		GS1		0	Very soft to soft brown / greyish brown slightly sandy to sandy gravelly clay fill with occasional cobbles of sandstone and rare wood (twigs); gravel is fine to coarse sub-rounded to angular of mixed lithology including red brick fragments (MADE GROUND)		
	1.2						
					3.4	Very soft to soft greyish-brown and grey slightly sandy gravelly SILT with dark grey and black organic pockets; gravel is fine to medium sub-rounded to sub-angular sandstone (suspected reservoir deposits)	
					4.3	Dense becoming very dense grey and light brown CLAYEY SANDY GRAVEL of SANDSTONE with cobbles of SANDSTONE from 4.75-5m	
						Borehole terminated in natural soils @ 6m bgl (extent of drilling rig)	

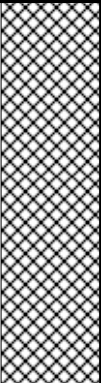
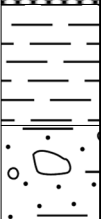
 Smith Grant LLP Bryn Estyn Business Centre (Suite 16) Bryn Estyn Road, Wrexham, LL13 9TY Tel: 01978 822367 www.smithgrant.co.uk email: consult@smithgrant.co.uk	GROUND WATER: Groundwater encountered at 4m bgl		
	REMARKS: Monitoring standpipe installed to 6m bgl (plain pipe from 0-1m bgl, slotted from 1-6m bgl) 250mm undisturbed sample collected for Urban Regen from 5.75-6.00m bgl		
	SCALE: 1:500	LOGGED BY: SM	FIGURE NO. 1

SHEET: 1 of 1	LOCATION: Bury	PROJECT: Tetrosyl (Phase 2H)	ENGINEER: SM	JOB NO. R2174	WINDOW SAMPLE NO. VGP2H06
		EXCAVATED BY: ATV Competitor 130	CLIENT: Barratt Homes Manchester	DATE: 26.03.24	

PHYSICAL TESTING	DEPTH (m)	SAMPLES/ TESTING	FIELD RECORDS	DEPTH (m)	DESCRIPTION OF STRATA	LEGEND	
CPT <u>Blows/150mm</u> CPT = 1 0 / 0 1 0 0 / N = 1 CPT = 1 1 / 1 1 1 2 / N = 5 CPT = 0 0 / 0 0 0 0 / N = 0 CPT = 1 0 / 1 5 2 1 / N = 9 CPT = 1 0 / 0 0 0 0 / N = 0 CPT = >50 (refusal)				0	Very soft to firm brown / greyish brown slightly sandy to sandy gravelly clay fill with occasional cobbles of sandstone; gravel is fine to coarse sub-rounded to angular of mixed lithology including red brick fragments (MADE GROUND)		
				3	Very soft to firm greyish-brown slightly sandy to sandy gravelly clay fill with occasional cobbles of sandstone and dark grey / black organic pockets; gravel is fine to coarse of mixed lithology including red brick fragments		
			Limited core recovery between 4-5m bgl	5	Very loose grey slightly gravelly medium coarse SILTY SAND (suspected reservoir deposits)		
				5.3	Very loose grey slightly gravelly medium coarse SAND (suspected reservoir deposits)		
		5.75		GS1	5.5	Soft grey slightly gravelly sandy SILT (suspected reservoir deposits)	
						Borehole terminated in natural soils @ 6m bgl (extent of drilling rig)	

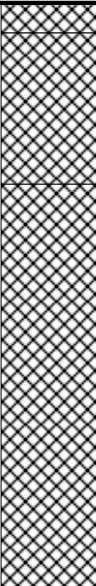
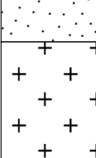
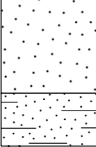
 Smith Grant LLP Bryn Estyn Business Centre (Suite 16) Bryn Estyn Road, Wrexham, LL13 9TY Tel: 01978 822367 www.smithgrant.co.uk email: consult@smithgrant.co.uk	GROUND WATER: Groundwater encountered at 5.1m bgl		
	REMARKS: Monitoring standpipe installed to 6m bgl (plain pipe from 0-1m bgl, slotted from 1-6m bgl) 250mm undisturbed samples collected for Urban Regen from 3.75-4.00m bgl and 5.75-6.00m bgl		
	SCALE: 1:500	LOGGED BY: SM	FIGURE NO. 1

SHEET: 1 of 1	LOCATION: Bury	PROJECT: Tetrosyl (Phase 2H)	ENGINEER: SM	JOB NO. R2174	WINDOW SAMPLE NO. VGP2H07
		EXCAVATED BY: ATV Competitor 130	CLIENT: Barratt Homes Manchester	DATE: 26.03.24	

PHYSICAL TESTING	DEPTH (m)	SAMPLES/ TESTING	FIELD RECORDS	DEPTH (m)	DESCRIPTION OF STRATA	LEGEND	
CPT <u>Blows/150mm</u> CPT = 4 3 / 1 1 2 2 / N = 6 CPT = 2 2 / 2 1 1 2 / N = 6 CPT = 0 0 / 0 1 1 1 / N = 3 CPT = >50 (refusal)		GS1	Limited core recovery between 1-2m bgl	0	Soft becoming firm greyish-brown and brown slightly sandy to sandy gravelly clay fill with frequent cobbles of sandstone red brick and concrete; gravel is fine to coarse sub-rounded to angular of mixed lithology including red brick fragments (MADE GROUND)		
	1						
	2.55			GS2	3.35	Soft grey slightly sandy to sandy slightly gravelly becoming gravelly CLAY with pocket of grey slightly gravelly medium coarse clayey SAND from 2.7-2.8m; gravel is fine to medium sub-angular to angular sandstone (suspected reservoir deposits) Grey clayey CLAYEY SANDY GRAVEL and cobbles of SANDSTONE (WEATHERED BEDROCK)	
	3.8				Borehole terminated @ 4m bgl due to CPT refusal on bedrock @ 4.1m bgl		

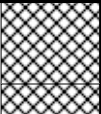
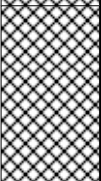
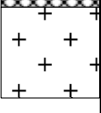
 Smith Grant LLP Bryn Estyn Business Centre (Suite 16) Bryn Estyn Road, Wrexham, LL13 9TY Tel: 01978 822367 www.smithgrant.co.uk email: consult@smithgrant.co.uk	GROUND WATER: Groundwater not encountered		
	REMARKS: Monitoring standpipe installed to 4m bgl (plain pipe from 0-1m bgl, slotted from 1-4m bgl) 250mm undisturbed sample collected for Urban Regen from 3.00-3.25m bgl		
	SCALE: 1:500	LOGGED BY: SM	FIGURE NO. 1

SHEET: 1 of 1	LOCATION: Bury	PROJECT: Tetrosyl (Phase 2H)	ENGINEER: SM	JOB NO. R2174	WINDOW SAMPLE NO. VGP2H08
		EXCAVATED BY: ATV Competitor 130	CLIENT: Barratt Homes Manchester	DATE: 26.03.24	

PHYSICAL TESTING	DEPTH (m)	SAMPLES/ TESTING	FIELD RECORDS	DEPTH (m)	DESCRIPTION OF STRATA	LEGEND	
CPT <u>Blows/150mm</u> CPT = 3 2 / 1 1 2 1 / N = 5 CPT = 1 1 / 1 1 2 2 / N = 6 CPT = 1 2 / 2 1 2 1 / N = 6 CPT = 1 1 / 1 1 1 1 / N = 4 CPT = 2 2 / 2 5 10 13 / N = 30 CPT = >50 (refusal)			Limited core recovery between 1-2m bgl	0	Very soft greyish-brown and dark grey slightly sandy gravelly clay fill; gravel is fine to coarse sub-rounded to angular sandstone (MADE GROUND) Pale grey and light brown slightly sandy gravel and cobbles of sandstone (likely boulder broken up during drilling) (MADE GROUND) Firm greyish-brown and brown slightly sandy to sandy gravelly clay fill with frequent cobbles of sandstone; gravel is fine to coarse sub-rounded to angular of mixed lithology including red brick fragments and coal (MADE GROUND)		
				0.2			
				1.2			
				3.9	Loose greyish-brown slightly gravelly slightly clayey medium coarse SAND (suspected reservoir deposits) Soft dark grey slightly gravelly slightly sandy SILT with dark grey / black organic pockets (suspected reservoir deposits)		
				4.2			
				5	Dense greyish-brown slightly gravelly slightly clayey medium coarse SAND Stiff brown gravelly SANDY CLAY; gravel is fine to medium sub-angular to angular of mixed lithology including coal Borehole terminated in natural soils @ 6m bgl (extent of drilling rig)		
				5.65			
	6	GS1					

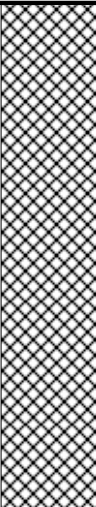
 Smith Grant LLP Bryn Estyn Business Centre (Suite 16) Bryn Estyn Road, Wrexham, LL13 9TY Tel: 01978 822367 www.smithgrant.co.uk email: consult@smithgrant.co.uk	GROUND WATER: Groundwater encountered at 3.5m bgl		
	REMARKS: Monitoring standpipe installed to 6m bgl (plain pipe from 0-1m bgl, slotted from 1-6m bgl)		
	SCALE: 1:500	LOGGED BY: SM	FIGURE NO. 1

SHEET: 1 of 1	LOCATION: Bury	PROJECT: Tetrosyl (Phase 2H)	ENGINEER: SM	JOB NO. R2174	WINDOW SAMPLE NO. VGP2H09
		EXCAVATED BY: ATV Competitor 130	CLIENT: Barratt Homes Manchester	DATE: 27.03.24	

PHYSICAL TESTING	DEPTH (m)	SAMPLES/ TESTING	FIELD RECORDS	DEPTH (m)	DESCRIPTION OF STRATA	LEGEND		
CPT <u>Blows/150mm</u> CPT = 2 2 / 2 2 2 2 / N = 8 CPT = 2 2 / 2 2 2 2 / N = 8 CPT = 2 2 / 6 10 9 7 / N = 32 CPT = 1 2 / 2 3 3 3 / N = 11 CPT = >50 (refusal)		GS1		0	Very soft grey slightly sandy gravelly clay fill; gravel is fine to coarse sub-rounded to angular sandstone and red brick fragments (MADE GROUND)			
			0.55					
			0.8					
			2.3					
				3.2	Dense greyish-brown clayey sandy gravel fill with frequent cobbles of sandstone and red brick (MADE GROUND)			
				4.4	Very soft dark grey slightly gravelly slightly sandy SILT with dark grey / black organic pockets (suspected reservoir deposits)			
					Borehole terminated @ 5m bgl due to refusal on bedrock			

 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 encountered at 3.5m bgl		
	REMARKS: Monitoring standpipe installed to 5m bgl (plain pipe from 0-1m bgl, slotted from 1-5m bgl)		
	SCALE: 1:500	LOGGED BY: SM	FIGURE NO. 1

SHEET: 1 of 1	LOCATION: Bury	PROJECT: Tetrosyl (Phase 2H)	ENGINEER: SM	JOB NO. R2174	WINDOW SAMPLE NO. VGP2H10
		EXCAVATED BY: ATV Competitor 130	CLIENT: Barratt Homes Manchester	DATE: 26.03.24	

PHYSICAL TESTING	DEPTH (m)	SAMPLES/ TESTING	FIELD RECORDS	DEPTH (m)	DESCRIPTION OF STRATA	LEGEND	
CPT <u>Blows/150mm</u> CPT = 0 0 / 0 0 0 1 / N = 1 CPT = 1 1 / 2 1 2 1 / N = 6 CPT = 1 1 / 1 2 2 1 / N = 6 CPT = 1 1 / 1 6 6 7 / N = 20				0	Very soft becoming firm brown and greyish brown slightly sandy to sandy gravelly clay fill with frequent cobbles of sandstone and rare cobble of sandstone; gravel is fine to coarse sub-rounded to angular of mixed lithology including red brick fragments (MADE GROUND)		
				3.4	Very soft to soft greyish-brown and grey slightly sandy to sandy gravelly SILT with dark grey and black organic pockets; gravel is fine to medium sub-rounded to sub-angular sandstone (suspected reservoir deposits)		+ + + + + + + + + +
				4.4	Grey and brown slightly sandy GRAVEL of SANDSTONE (WEATHERED BEDROCK) Borehole terminated @ 4.5m bgl due to refusal on bedrock		0 0

 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: Monitoring standpipe installed to 4.5m bgl (plain pipe from 0-1m bgl, slotted from 1-4.5m bgl)		
	SCALE: 1:500	LOGGED BY: SM	FIGURE NO. 1

SHEET: 1 of 1	LOCATION: Bury	PROJECT: Tetrosyl (Phase 2H)	ENGINEER: SM	JOB NO. R2174	WINDOW SAMPLE NO. VGP2H11
		EXCAVATED BY: ATV Competitor 130	CLIENT: Barratt Homes Manchester	DATE: 27.03.24	

PHYSICAL TESTING	DEPTH (m)	SAMPLES/ TESTING	FIELD RECORDS	DEPTH (m)	DESCRIPTION OF STRATA	LEGEND
CPT <u>Blows/150mm</u> CPT = 2 3 / 6 8 7 7 / N = 28 CPT = >50 (refusal)		GS1		0	Soft becoming firm brown slightly sandy gravelly CLAY with moderatley strong petrochemical odour; gravel is fine to coarse sub-rounded to angular of mixed lithology including coal	
	1			1.1	Medium dense multicoloured slightly clayey gravelly medium coarse SAND with moderatley strong petrochemical odour; gravel is fine to coarse sub-rounded to sub-angular sandstone	
					Borehole terminated @ 2m bgl due to CPT refusal on bedrock @ 2.2m bgl	
						

 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: Monitoring standpipe installed to 2m bgl (plain pipe from 0-1m bgl, slotted from 1-2m bgl) 250mm undisturbed sample collected for Urban Regen from 1.75-2.00m bgl		
	SCALE: 1:500	LOGGED BY: SM	FIGURE NO. 1

APPENDIX B

Site Investigation Photographic Record

Window Sampler Drilling Investigation Photolog

1.



25.03.24: VGP2H01 Location

2.



25.03.24: VGP2H01 Arisings

3.



25.03.24: VGP2H02 Location

4.



25.03.24: VGP2H02 Arisings

5.



25.03.24: VGP2H03 Location

6.



25.03.24: VGP2H03 Arisings

7.



25.03.24: VGP2H04 Location

8.



25.03.24: VGP2H04 Arisings

9.



25.03.24: VGP2H05 Location

10.



25.03.24: VGP2H05 Arisings

11.



26.03.24: VGP2H06 Location

12.



26.03.24: VGP2H06 Arisings

13.



26.03.24: VGP2H07 Location

14.



26.03.24: VGP2H07 Arisings

15.



26.03.24: VGP2H08 Location

16.



26.03.24: VGP2H08 Arisings

17.



27.03.24: VGP2H09 Location

18.



27.03.24: VGP2H09 Arisings

19.



26.03.24: VGP2H10 Location

20.



26.03.24: VGP2H10 Arisings

21.



27.03.24: VGP2H11 Location

22.



27.03.24: VGP2H11 Arisings

APPENDIX C

Ground Gas monitoring Records

Site name:	Tetrosyl		Job number:	R2174		Barometric pressure at:	start:	988	mb	finish:	989	mb
Time at:	start	14.40	Date:	09.04.24		Pressure trend:	1000-994-1002mb (fall then rise / fall day of monitoring)					(previous 3 days)
	finish	16.10	Staff:	SM		Instruments:	GFM430					
Record code:	G01		Weather conditions:	Very windy, intermittent heavy rain				Ground conditions:	Wet / standing water			

Well No.	Methane %vol		Carbon dioxide %vol		Oxygen %vol		Carbon monoxide ppm	Hydrogen sulphide ppm	VOCs max ppm	Gas flow l/hr		Well pressure mb	Depth to water m bgl	Depth to base m bgl	Depth to water m bTOS	Depth to base m bTOS	Notes
	Peak	steady	peak	steady	min	steady				peak	steady						
VGP2H01	<0.1	<0.1	1.8	1.8	14.4	14.4	<1	<1	NR	<0.1	<0.1	<0.01	0.46	1.44	0.96	1.94	-
VGP2H02	0.2	0.2	0.6	0.6	19.4	19.4	15	<1	NR	NR	<0.1	<0.01	0.51	1.97	1.5	2.96	-
VGP2H03	1.1	1.1	0.1	0.1	16.4	16.4	2	<1	NR	NR	<0.1	<0.01	1.08	2.5	2.04	3.46	-
VGP2H04	2	2	0.2	0.2	17.4	17.4	2	<1	NR	-57.7	<0.1	<0.01	1.02	2.92	1.94	3.84	-
VGP2H05	1.4	1.4	0.8	0.8	18	18	<1	<1	NR	-10.8	<0.1	<0.01	1.88	4.8	2.88	5.8	Silty base
VGP2H06	32.9	32.9	1.4	1.4	0.5	0.5	<1	<1	NR	28.4	<0.1	<0.01	1.53	5.06	2.53	6.06	Silty base
VGP2H10	<0.1	<0.1	<0.1	<0.1	20.2	20.2	<1	<1	NR	0.3	<0.1	<0.01	0.6	4.09	1.7	5.19	Tap open
VGP2H07	58.9	58.9	2.2	2.2	0.2	0.2	<1	<1	NR	94.3	<0.1	<0.01	1.31	4.03	2.09	4.81	-
VGP2H08	<0.1	<0.1	<0.1	<0.1	20.2	20.2	<1	<1	NR	<0.1	<0.1	<0.01	1.3	5.49	2.14	6.33	Tap open / silty base
VGP2H09	33.6	33.6	<0.1	<0.1	2.4	2.4	<1	<1	NR	-46.8	<0.1	<0.01	1.84	4.47	2.94	5.57	Silty base
VGP2H11	9.8	9.8	4	4	6.1	6.1	<1	<1	NR	<0.1	<0.1	<0.01	1.82	1.95	2.82	2.95	-
Limit of Detection	0.1%		0.1%		0.1%		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%								

NR = not recorded

bgl = below ground level

bTOS = below top of standpipe

Site name:	Tetrosyl		Job number:	R2174		Barometric pressure at:	start:	1001	mb	finish:	998		mb
Time at:	start	10.28	Date:	19.04.24		Pressure trend:	1008-1016-1022 (increasing / fall day of monitoring)					(previous 3 days)	
	finish	12.05	Staff:	CM		Instruments:	GFM430						
Record code:	G02		Weather conditions:	Very windy, intermittent rain mostly dry					Ground conditions:	Wet / standing water			

Well No.	Methane %vol		Carbon dioxide %vol		Oxygen %vol		Carbon monoxide ppm	Hydrogen sulphide ppm	VOCs max ppm	Gas flow l/hr		Well pressure mb	Depth to water m bgl	Depth to base m bgl	Depth to water m bTOS	Depth to base m bTOS	Notes
	Peak	steady	peak	steady	min	steady				peak	steady						
VGP2H01	<0.1	<0.1	1.4	1.4	16.3	16.3	<1	<1	NR	-11.4	<0.1	<0.01	0.45	1.44	0.95	1.94	-
VGP2H02	<0.1	<0.1	0.7	0.7	19.2	19.2	8	<1	NR	<0.1	<0.1	<0.01	0.54	1.97	1.53	2.96	-
VGP2H03	<0.1	<0.1	0.7	0.7	19.3	19.3	1	<1	NR	0.1	<0.1	<0.01	1.19	2.51	2.15	3.47	-
VGP2H04	2.6	2.6	0.6	0.6	15.7	15.7	1	<1	NR	-9.5	<0.1	<0.01	1.14	2.93	2.06	3.85	-
VGP2H05	1.3	<0.1	1.4	1.4	17	17	<1	<1	NR	<0.1	<0.1	<0.1	2	4.62	3	5.62	Silty base
VGP2H06	38.4	34.5	1.4	1.4	2.1	2.1	<1	<1	NR	<0.1	<0.1	<0.1	1.52	5.06	2.52	6.06	Silty base
VGP2H10	<0.1	<0.1	<0.1	<0.1	20.4	20.4	<1	<1	NR	<0.1	<0.1	<0.1	0.88	4.12	1.98	5.22	-
VGP2H07	49.5	49.3	3	3	1.2	0.4	<1	<1	NR	<0.1	<0.1	<0.1	1.24	4.04	2.02	4.82	-
VGP2H08	2.7	0.2	0.4	0.4	14.2	14.3	<1	<1	NR	<0.1	<0.1	<0.1	1.32	5.41	2.16	6.25	Silty base
VGP2H09	45.7	43.7	2.1	<0.1	0.4	0.4	<1	<1	NR	106.9	<0.1	<0.01	2.05	4.38	3.15	5.48	Silty base
VGP2H11	9.6	9.6	4.3	4.3	7.1	7.1	<1	<1	NR	<0.1	<0.1	<0.1	1.73	1.96	2.73	2.96	-
Limit of Detection	0.1%		0.1%		0.1%		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%								

NR = not recorded

bgl = below ground level

bTOS = below top of standpipe

Site name:	Tetrosyl		Job number:	R2174		Barometric pressure at:	start:	990	mb	finish:	998 mb	
Time at:	start	11.15	Date:	26.04.24		Pressure trend	1012-1004-1002 (falling pressure)				(previous 3 days)	
	finish	12.45	Staff:	CM		Instruments:	GFM430					
Record code:	G03		Weather conditions:	Dry, with sunshine and a light breeze.				Ground conditions:	Wet / standing water			

Well No.	Methane %vol		Carbon dioxide %vol		Oxygen %vol		Carbon monoxide ppm	Hydrogen sulphide ppm	VOCs max ppm	Gas flow l/hr		Well pressure mb	Depth to water m bgl	Depth to base m bgl	Depth to water m bTOS	Depth to base m bTOS	Notes
	Peak	steady	peak	steady	min	steady				peak	steady						
VGP2H01	<0.1	<0.1	0.9	0.9	18.1	18.1	<1	<1	NR	-54.1	<0.1	<0.01	0.54	1.56	0.91	1.94	-
VGP2H02	<0.1	<0.1	0.5	0.5	19.3	19.3	<1	<1	NR	-56.81	<0.1	<0.01	0.65	1.96	1.65	2.96	-
VGP2H03	<0.1	<0.1	<0.1	<0.1	20.2	20	<1	<1	NR	<0.1	<0.1	<0.01	1.27	2.48	2.28	3.46	-
VGP2H04	2.1	2.1	1.3	1.3	15.3	15.3	<1	<1	NR	-38.9	<0.1	<0.01	1.12	2.95	2.01	3.84	-
VGP2H05	<0.1	<0.1	0.7	0.7	19.1	19.1	<1	<1	NR	<0.1	<0.1	<0.01	2.08	4.65	3.08	5.65	Silty base
VGP2H06	0.8	0.8	0.6	0.1	19.8	19.8	<1	<1	NR	<0.1	<0.1	<0.01	1.44	5.04	2.44	6.04	Silty base
VGP2H10	<0.1	<0.1	0.2	0.2	20	20	<1	<1	NR	0.3	<0.1	<0.01	0.98	4.15	1.98	5.22	-
VGP2H07	54.2	54.2	4.6	4.5	2.7	2.7	<1	<1	NR	<0.1	<0.1	<0.01	1.28	4.02	2.09	4.82	-
VGP2H08	2.9	0.2	0.4	0.4	19.3	19.3	<1	<1	NR	<0.1	<0.1	<0.01	1.14	6.34	1.97	6.99	-
VGP2H09	41.7	41.7	<0.1	<0.1	<0.1	<0.1	<1	<1	NR	79	<0.1	<0.01	1.82	4.34	2.94	5.5	-
VGP2H11	4.4	4.4	3.5	3.5	13.4	13.4	<1	<1	NR	<0.1	<0.1	<0.01	1.87	1.95	2.87	2.95	-
Limit of Detection	0.1%		0.1%		0.1%		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%								

NR = not recorded

bgl = below ground level

bTOS = below top of standpipe

Site name:	Tetrosyl		Job number:	R2174	Barometric pressure at:	start:	988	mb	finish:	986	mb	
Time at:	start	10.06	Date:	02.05.24	Pressure trend	1008-1008-990 (falling pressure)					(previous 3 days)	
	finish	11.35	Staff:	CM	Instruments:	GFM430						
Record code:	G04		Weather conditions:	Dry, with sunshine and a light breeze.					Ground conditions:	Mainly dry		

Well No.	Methane %vol		Carbon dioxide %vol		Oxygen %vol		Carbon monoxide ppm	Hydrogen sulphide ppm	VOCs max ppm	Gas flow l/hr		Well pressure mb	Depth to water m bgl	Depth to base m bgl	Depth to water m bTOS	Depth to base m bTOS	Notes
	Peak	steady	peak	steady	min	steady				peak	steady						
VGP2H01	<0.1	<0.1	5.3	5.3	11.2	11	<1	<1	0.1	0.1	<0.1	<0.01	1.1	1.59	1.47	1.95	-
VGP2H02	<0.1	<0.1	0.7	0.7	19.3	19.3	<1	<1	0.3	-68.2	<0.1	<0.01	0.85	1.97	1.84	2.96	-
VGP2H03	<0.1	<0.1	0.5	0.5	12.9	12.9	<1	<1	0.1	<0.1	<0.1	<0.01	1.37	2.46	2.37	3.46	-
VGP2H04	1	1	2.3	2.3	11.9	11.9	<1	<1	3.9	-56.4	<0.1	<0.01	1.18	2.96	2.07	3.85	-
VGP2H05	<0.1	<0.1	1.3	1.3	18.9	18.9	<1	<1	86.3	<0.1	<0.1	<0.01	2.11	4.63	3.12	5.63	Silty base
VGP2H06	30.8	30.8	1.8	1.8	3.3	3.3	<1	<1	13.2	<0.1	<0.1	<0.01	NR	5.03	NR	6.03	Silty base
VGP2H10	0.1	0.1	1.2	1.2	19.7	19.7	<1	<1	102.5	<0.1	<0.1	<0.01	1.97	4.17	2.06	5.2	-
VGP2H07	69.5	69.3	4.8	4.8	<0.1	<0.1	<1	<1	74.6	<0.1	<0.1	<0.01	1.4	4.07	2.2	4.85	-
VGP2H08	10.1	10	0.9	0.9	13.9	13.9	<1	<1	225.4	<0.1	<0.1	<0.01	1.27	5.62	2.31	6.24	Surrounding ground level raised by placed soils
VGP2H09	47.6	47.6	3.9	3.9	1.5	1.5	<1	<1	11.9	<0.1	<0.1	<0.01	1.64	4.21	2.8	5.35	-
VGP2H11	1.2	1.2	2.1	2.1	17.6	17.6	<1	<1	120.5	<0.1	<0.1	<0.01	1.89	1.97	2.9	2.98	-
Limit of Detection	0.1%		0.1%		0.1%		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%								

NR = not recorded

bgl = below ground level

bTOS = below top of standpipe

Site name:	Tetrosyl		Job number:	R2174		Barometric pressure at:	start:	989	mb	finish:	986 mb	
Time at:	start	10.15	Date:	14.05.24		Pressure trend	1017, 1009, 1000 (falling pressure)					(previous 3 days)
	finish	12.00	Staff:	CM		Instruments:	GFM430					
Record code:	G05		Weather conditions:	Dry, with mild /strong wind					Ground conditions:	Mainly dry		

Well No.	Methane %vol		Carbon dioxide %vol		Oxygen %vol		Carbon monoxide ppm	Hydrogen sulphide ppm	VOCs max ppm	Gas flow l/hr		Well pressure mb	Depth to water m bgl	Depth to base m bgl	Depth to water m bTOS	Depth to base m bTOS	Notes
	Peak	steady	peak	steady	min	steady				peak	steady						
VGP2H01	<0.1	<0.1	3.2	2.1	15.8	15.8	<1	<1	0.1	<0.1	<0.1	<0.01	0.98	1.56	1.35	1.93	-
VGP2H02	<0.1	<0.1	0.7	0.7	18.7	18.7	<1	<1	0.3	<0.1	<0.1	<0.01	0.85	1.96	1.84	2.95	-
VGP2H03	<0.1	<0.1	0.6	0.6	12.6	12.6	<1	<1	10	<0.1	<0.1	<0.01	1.72	2.48	2.72	3.48	-
VGP2H04	2.3	2.3	1.5	1.5	11.6	11	<1	<1	112	51.3	<0.1	<0.01	1.21	2.95	2.1	3.84	-
VGP2H05	1	1	0.9	0.9	18	18	<1	<1	223	<0.1	<0.1	<0.01	2.16	4.61	3.17	5.62	Silty base
VGP2H06	19	19	0.7	0.7	11.1	11.1	<1	<1	330	18.6	<0.1	<0.01	1.18	5.1	2.18	6.1	Silty base
VGP2H10	0.2	0.2	1.1	1.1	19.4	19.4	<1	<1	374	21.3	<0.1	<0.01	2.14	4.18	3.17	5.21	-
VGP2H07	70.5	70.5	4.1	4.1	0.2	0.2	<1	<1	240	45.1	<0.1	<0.01	1.52	4.06	2.3	4.84	-
VGP2H08	0.4	<0.1	0.6	0.6	13.7	13.7	<1	<1	118	10.13	<0.1	<0.01	1.5	5.64	2.12	6.26	-
VGP2H09	3.5	3.5	<0.1	<0.1	13.3	13.3	<1	<1	178.9	<0.1	<0.1	<0.01	0.45	4.18	1.59	5.32	Silty base
VGP2H11	1.3	<0.1	1.2	1.2	18.9	18.9	<1	<1	124.5	0.3	<0.1	<0.01	1.9	1.94	1.14	2.95	Silty base
Limit of Detection	0.1%		0.1%		0.1%		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%								

BGL = Below ground level

TOS = Top of standpipe

Site name:	Tetrosyl	Job number:	R2174	Barometric pressure at:	start:	988	mb	finish:	987	mb
Time at:	start	9.15	Date:	22.05.24	Pressure trend	1010, 1009, 991 (falling pressure)				(previous 3 days)
	finish	10.36	Staff:	CM	Instruments:	GFM430				
Record code:	G06	Weather conditions:	Heavy rain, 10/10 cloud, slightly windy				Ground conditions:	Saturated		

Well No.	Methane %vol		Carbon dioxide %vol		Oxygen %vol		Carbon monoxide ppm	Hydrogen sulphide ppm	VOCs max ppm	Gas flow l/hr		Well pressure mb	Depth to water m bgl	Depth to base m bgl	Depth to water m bTOS	Depth to base m bTOS	Notes
	Peak	steady	peak	steady	min	steady				peak	steady						
VGP2H01	<0.1	<0.1	4.8	4.8	4.2	4.2	<1	<1	NR	0.1	<0.1	<0.01	0.82	1.56	1.19	1.93	-
VGP2H02	<0.1	<0.1	0.8	0.8	18.4	18.4	<1	<1	NR	-56	<0.1	<0.01	0.79	1.99	1.74	2.94	-
VGP2H03	<0.1	<0.1	0.7	0.7	13	13	<1	<1	NR	<0.1	<0.1	<0.01	1.68	2.47	2.68	3.47	-
VGP2H04	<0.1	<0.1	4.6	4.6	2.2	2.2	<1	<1	NR	53.2	<0.1	<0.01	1.15	2.95	2.05	3.85	Silty base
VGP2H05	<0.1	<0.1	2.4	2.4	15.2	15.2	<1	<1	NR	<0.1	<0.1	<0.01	2.13	4.62	3.15	5.64	Silty base
VGP2H06	39.4	39.4	2	2	4.5	4.5	<1	<1	NR	60.6	<0.1	<0.01	1.17	5	2.17	6	Silty base
VGP2H10	1.8	1.8	1.9	1.9	17.2	17.2	<1	<1	NR	84.5	<0.1	<0.01	1.97	4.18	3.01	5.22	-
VGP2H07	71.4	71.3	5	5	0.5	0.5	<1	<1	NR	96.1	<0.1	<0.01	1.53	4.03	2.32	4.82	-
VGP2H08	0.9	0.9	4.2	4.2	18.1	18.1	<1	<1	NR	28.1	<0.1	<0.01	1.47	5.7	2.02	6.25	Silty base
VGP2H09	1.1	1.1	<0.1	<0.1	14.7	14.7	<1	<1	NR	65.1	<0.1	<0.01	0.38	4.27	1.43	5.32	Silty base
VGP2H11	<0.1	<0.1	1.7	1.7	18.1	18.1	<1	<1	NR	<0.1	<0.1	<0.01	1.86	1.97	2.86	2.97	Silty base
Limit of Detection	0.1%		0.1%		0.1%		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%								

BGL = Below ground level

TOS = Top of standpipe

APPENDIX D

EMT Laboratory Report (24-7226) 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 : 10th May, 2024
Your reference : R2174
Our reference : Test Report 24/7226 Batch 1
Location : Tetrosyl
Date samples received : 29th April, 2024
Status : Final Report
Issue : 202405101014

Eleven samples were received for analysis on 29th April, 2024 of which eleven were 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 - 3.403 kg of CO2

Scope 1&2&3 emissions - 8.042 kg of CO2

Authorised By:



Darcey Bower MESci

Project Co-ordinator

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
EMT Job No: 24/7226

Report : Gas

[illegible]

Element Materials Technology

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

Sample Date: 26 Apr 2024
Date of Receipt: 29 Apr 2024
Date Analysed: 9 May 2024

Sample ID: VGP2H01
Depth:
EMT Job No: 24/7226
EMT Sample No: 1
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 20256 0.55

Sample Train Serial number: ST-205

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		10	25.6	<1	<1	<2.6	<2.6
75-71-8	120.91	Dichlorodifluoromethane (F-12)		87	430.2	<1	<1	<4.9	<4.9
74-87-3	50.49	Chloromethane		3	6.2	<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		1	2.6	<1	<1	<2.6	<2.6
75-69-4	137.36	# Trichlorofluoromethane (F-11)		<1	<5.6	<1	<1	<5.6	<5.6
75-35-4	96.95	# 1,1-Dichloroethene (1,1 DCE)		<1	<4.0	<1	<1	<4.0	<4.0
75-09-2	84.93	# Dichloromethane (DCM)		<5	<17.4	<5	<5	<17.4	<17.4
156-60-5	96.94	Trans-1,2-Dichloroethene		<1	<4.0	<1	<1	<4.0	<4.0
75-34-3	98.97	# 1,1-Dichloroethane		5	20.2	<1	<1	<4.0	<4.0
156-59-2	96.94	# cis-1,2-Dichloroethene		15	59.5	<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		<1	<5.5	<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		68	217.2	<1	<1	<3.2	<3.2
79-01-6	131.4	# Trichloroethene (TCE)		<1	<5.4	<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		1000	3768.0	<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		21	91.2	<1	<1	<4.3	<4.3
179601-23-1	106.17	# m/p-Xylene		66	286.6	<2	<2	<8.7	<8.7
95-47-6	106.17	# o-Xylene		14	60.8	<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: 26 Apr 2024

Date of Receipt: 29 Apr 2024

Date Analysed: 9 May 2024

Sample ID: VGP2H01
Depth:
EMT Job No: 24/7226
EMT Sample No: 1
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 20256 0.55

Sample Train Serial number: ST-205

Q* - Qualifiers

B Indicates analyte found in associated method blank

>> Indicates value exceeds calibration range

Key	Value
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
45	45
46	46
47	47
48	48
49	49
50	50
51	51
52	52
53	53
54	54
55	55
56	56
57	57
58	58
59	59
60	60
61	61
62	62
63	63
64	64
65	65
66	66
67	67
68	68
69	69
70	70
71	71
72	72
73	73
74	74
75	75
76	76
77	77
78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

MDL Method Detection Limit

RL Reporting Limit

ISO 17025 (UKAS) accredited

[illegible]

Element Materials Technology

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

Sample Date: 26 Apr 2024
Date of Receipt: 29 Apr 2024
Date Analysed: 9 May 2024

Sample ID: VGP2H02
Depth:
EMT Job No: 24/7226
EMT Sample No: 2
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 264 0.55
Sample Train Serial number: ST-224

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		58	148.3	<1	<1	<2.6	<2.6
75-71-8	120.91	Dichlorodifluoromethane (F-12)		198	979.1	<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		<1	<2.6	<1	<1	<2.6	<2.6
75-69-4	137.36	# Trichlorofluoromethane (F-11)		<1	<5.6	<1	<1	<5.6	<5.6
75-35-4	96.95	# 1,1-Dichloroethene (1,1 DCE)		<1	<4.0	<1	<1	<4.0	<4.0
75-09-2	84.93	# Dichloromethane (DCM)		<5	<17.4	<5	<5	<17.4	<17.4
156-60-5	96.94	Trans-1,2-Dichloroethene		<1	<4.0	<1	<1	<4.0	<4.0
75-34-3	98.97	# 1,1-Dichloroethane		7	28.3	<1	<1	<4.0	<4.0
156-59-2	96.94	# cis-1,2-Dichloroethene		7	27.8	<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		<1	<5.5	<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		66	210.8	<1	<1	<3.2	<3.2
79-01-6	131.4	# Trichloroethene (TCE)		<1	<5.4	<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		961	3621.0	<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		4	17.4	<1	<1	<4.3	<4.3
179601-23-1	106.17	# m/p-Xylene		8	34.7	<2	<2	<8.7	<8.7
95-47-6	106.17	# o-Xylene		2	8.7	<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: 26 Apr 2024
Date of Receipt: 29 Apr 2024
Date Analysed: 9 May 2024

Sample ID: VGP2H03
Depth:
EMT Job No: 24/7226
EMT Sample No: 3
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 1030 0.55

Sample Train Serial number: ST-203

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		<1	<2.6	<1	<1	<2.6	<2.6
75-71-8	120.91	Dichlorodifluoromethane (F-12)		625	3090.6	<1	<1	<4.9	<4.9
74-87-3	50.49	Chloromethane		<1	<2.1	<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		2	5.3	<1	<1	<2.6	<2.6
75-69-4	137.36	# Trichlorofluoromethane (F-11)		<1	<5.6	<1	<1	<5.6	<5.6
75-35-4	96.95	# 1,1-Dichloroethene (1,1 DCE)		<1	<4.0	<1	<1	<4.0	<4.0
75-09-2	84.93	# Dichloromethane (DCM)		<5	<17.4	<5	<5	<17.4	<17.4
156-60-5	96.94	Trans-1,2-Dichloroethene		<1	<4.0	<1	<1	<4.0	<4.0
75-34-3	98.97	# 1,1-Dichloroethane		3	12.1	<1	<1	<4.0	<4.0
156-59-2	96.94	# cis-1,2-Dichloroethene		<1	<4.0	<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		<1	<5.5	<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		13	41.5	<1	<1	<3.2	<3.2
79-01-6	131.4	# Trichloroethene (TCE)		<1	<5.4	<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		526	1981.9	<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		4	17.4	<1	<1	<4.3	<4.3
179601-23-1	106.17	# m/p-Xylene		10	43.4	<2	<2	<8.7	<8.7
95-47-6	106.17	# o-Xylene		2	8.7	<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: 26 Apr 2024
Date of Receipt: 29 Apr 2024
Date Analysed: 9 May 2024

Sample ID: VGP2H04
Depth:
EMT Job No: 24/7226
EMT Sample No: 4
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 20295 0.55

Sample Train Serial number: ST-279

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		<1	<2.6	<1	<1	<2.6	<2.6
75-71-8	120.91	Dichlorodifluoromethane (F-12)		148	731.9	<1	<1	<4.9	<4.9
74-87-3	50.49	Chloromethane		3	6.2	<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		9	23.7	<1	<1	<2.6	<2.6
75-69-4	137.36	# Trichlorofluoromethane (F-11)		<1	<5.6	<1	<1	<5.6	<5.6
75-35-4	96.95	# 1,1-Dichloroethene (1,1 DCE)		<1	<4.0	<1	<1	<4.0	<4.0
75-09-2	84.93	# Dichloromethane (DCM)		<5	<17.4	<5	<5	<17.4	<17.4
156-60-5	96.94	Trans-1,2-Dichloroethene		<1	<4.0	<1	<1	<4.0	<4.0
75-34-3	98.97	# 1,1-Dichloroethane		3	12.1	<1	<1	<4.0	<4.0
156-59-2	96.94	# cis-1,2-Dichloroethene		<1	<4.0	<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		<1	<5.5	<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		17	54.3	<1	<1	<3.2	<3.2
79-01-6	131.4	# Trichloroethene (TCE)		<1	<5.4	<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		56	211.0	<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		5	21.7	<1	<1	<4.3	<4.3
179601-23-1	106.17	# m/p-Xylene		14	60.8	<2	<2	<8.7	<8.7
95-47-6	106.17	# o-Xylene		4	17.4	<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: 26 Apr 2024
Date of Receipt: 29 Apr 2024
Date Analysed: 9 May 2024

Sample ID: VGP2H05
Depth:
EMT Job No: 24/7226
EMT Sample No: 5
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 20263 0.55

Sample Train Serial number: ST-239

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		<1	<2.6	<1	<1	<2.6	<2.6
75-71-8	120.91	Dichlorodifluoromethane (F-12)		37	183.0	<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		<1	<2.6	<1	<1	<2.6	<2.6
75-69-4	137.36	# Trichlorofluoromethane (F-11)		<1	<5.6	<1	<1	<5.6	<5.6
75-35-4	96.95	# 1,1-Dichloroethene (1,1 DCE)		<1	<4.0	<1	<1	<4.0	<4.0
75-09-2	84.93	# Dichloromethane (DCM)		<5	<17.4	<5	<5	<17.4	<17.4
156-60-5	96.94	Trans-1,2-Dichloroethene		<1	<4.0	<1	<1	<4.0	<4.0
75-34-3	98.97	# 1,1-Dichloroethane		<1	<4.0	<1	<1	<4.0	<4.0
156-59-2	96.94	# cis-1,2-Dichloroethene		<1	<4.0	<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		<1	<5.5	<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		8	25.6	<1	<1	<3.2	<3.2
79-01-6	131.4	# Trichloroethene (TCE)		2	10.7	<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		18	67.8	<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		1	4.3	<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		1	4.3	<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

Sample Date: 26 Apr 2024
Date of Receipt: 29 Apr 2024
Date Analysed: 9 May 2024

Canister Serial number: V 20263 0.55
Sample Train Serial number: ST-239

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

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

QF-PM 3.1.13 v6 Please include all sections of this report if it is reproduced 12 of 29

Element Materials Technology

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

Sample Date: 26 Apr 2024
Date of Receipt: 29 Apr 2024
Date Analysed: 9 May 2024

Sample ID: VGP2H06
Depth:
EMT Job No: 24/7226
EMT Sample No: 6
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 1242 0.55

Sample Train Serial number: ST-246

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		<1	<2.6	<1	<1	<2.6	<2.6
75-71-8	120.91	Dichlorodifluoromethane (F-12)		81	400.5	<1	<1	<4.9	<4.9
74-87-3	50.49	Chloromethane		6	12.4	<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		<1	<2.6	<1	<1	<2.6	<2.6
75-69-4	137.36	# Trichlorofluoromethane (F-11)		<1	<5.6	<1	<1	<5.6	<5.6
75-35-4	96.95	# 1,1-Dichloroethene (1,1 DCE)		<1	<4.0	<1	<1	<4.0	<4.0
75-09-2	84.93	# Dichloromethane (DCM)		<5	<17.4	<5	<5	<17.4	<17.4
156-60-5	96.94	Trans-1,2-Dichloroethene		<1	<4.0	<1	<1	<4.0	<4.0
75-34-3	98.97	# 1,1-Dichloroethane		<1	<4.0	<1	<1	<4.0	<4.0
156-59-2	96.94	# cis-1,2-Dichloroethene		<1	<4.0	<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		<1	<5.5	<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		10	31.9	<1	<1	<3.2	<3.2
79-01-6	131.4	# Trichloroethene (TCE)		1	<5.4	<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		13	49.0	<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		1	4.3	<1	<1	<4.3	<4.3
179601-23-1	106.17	# m/p-Xylene		3	13.0	<2	<2	<8.7	<8.7
95-47-6	106.17	# o-Xylene		1	4.3	<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

Sample Date: 26 Apr 2024
Date of Receipt: 29 Apr 2024
Date Analysed: 9 May 2024

Canister Serial number: V 1242 0.55
Sample Train Serial number: ST-246

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

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

QF-PM 3.1.13 v6

Element Materials Technology

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

Sample Date: 26 Apr 2024
Date of Receipt: 29 Apr 2024
Date Analysed: 9 May 2024

Sample ID: VGP2H07
Depth:
EMT Job No: 24/7226
EMT Sample No: 7
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 1015 0.55

Sample Train Serial number: ST-229

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		4	10.2	<1	<1	<2.6	<2.6
75-71-8	120.91	Dichlorodifluoromethane (F-12)		10311 _{AA}	50988.0 _{AA}	<100	<1	<490.0	<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		1	2.6	<1	<1	<2.6	<2.6
75-69-4	137.36	# Trichlorofluoromethane (F-11)		<1	<5.6	<1	<1	<5.6	<5.6
75-35-4	96.95	# 1,1-Dichloroethene (1,1 DCE)		<1	<4.0	<1	<1	<4.0	<4.0
75-09-2	84.93	# Dichloromethane (DCM)		<5	<17.4	<5	<5	<17.4	<17.4
156-60-5	96.94	Trans-1,2-Dichloroethene		<1	<4.0	<1	<1	<4.0	<4.0
75-34-3	98.97	# 1,1-Dichloroethane		1	4.0	<1	<1	<4.0	<4.0
156-59-2	96.94	# cis-1,2-Dichloroethene		<1	<4.0	<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		<1	<5.5	<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		8	25.6	<1	<1	<3.2	<3.2
79-01-6	131.4	# Trichloroethene (TCE)		<1	<5.4	<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		29	109.3	<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		4	17.4	<1	<1	<4.3	<4.3
179601-23-1	106.17	# m/p-Xylene		9	39.1	<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: 26 Apr 2024
Date of Receipt: 29 Apr 2024
Date Analysed: 9 May 2024

Sample ID: VGP2H08
Depth:
EMT Job No: 24/7226
EMT Sample No: 8
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 1173 0.55

Sample Train Serial number: ST-265

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		<1	<2.6	<1	<1	<2.6	<2.6
75-71-8	120.91	Dichlorodifluoromethane (F-12)		93	459.9	<1	<1	<4.9	<4.9
74-87-3	50.49	Chloromethane		7	14.5	<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		<1	<2.6	<1	<1	<2.6	<2.6
75-69-4	137.36	# Trichlorofluoromethane (F-11)		27	151.7	<1	<1	<5.6	<5.6
75-35-4	96.95	# 1,1-Dichloroethene (1,1 DCE)		<1	<4.0	<1	<1	<4.0	<4.0
75-09-2	84.93	# Dichloromethane (DCM)		<5	<17.4	<5	<5	<17.4	<17.4
156-60-5	96.94	Trans-1,2-Dichloroethene		<1	<4.0	<1	<1	<4.0	<4.0
75-34-3	98.97	# 1,1-Dichloroethane		<1	<4.0	<1	<1	<4.0	<4.0
156-59-2	96.94	# cis-1,2-Dichloroethene		<1	<4.0	<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		<1	<5.5	<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		32	102.2	<1	<1	<3.2	<3.2
79-01-6	131.4	# Trichloroethene (TCE)		<1	<5.4	<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		26	98.0	<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		2	8.7	<1	<1	<4.3	<4.3
179601-23-1	106.17	# m/p-Xylene		6	26.1	<2	<2	<8.7	<8.7
95-47-6	106.17	# o-Xylene		4	17.4	<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: 26 Apr 2024
Date of Receipt: 29 Apr 2024
Date Analysed: 9 May 2024

Sample ID: VGP2H09
Depth:
EMT Job No: 24/7226
EMT Sample No: 9
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 20203 0.55

Sample Train Serial number: ST-227

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	>>	1	<2.6	<1	<1	<2.6	<2.6
75-71-8	120.91	Dichlorodifluoromethane (F-12)		1328	6567.0	<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		<1	<2.6	<1	<1	<2.6	<2.6
75-69-4	137.36	# Trichlorofluoromethane (F-11)		137	769.6	<1	<1	<5.6	<5.6
75-35-4	96.95	# 1,1-Dichloroethene (1,1 DCE)		<1	<4.0	<1	<1	<4.0	<4.0
75-09-2	84.93	# Dichloromethane (DCM)		8	27.8	<5	<5	<17.4	<17.4
156-60-5	96.94	Trans-1,2-Dichloroethene		<1	<4.0	<1	<1	<4.0	<4.0
75-34-3	98.97	# 1,1-Dichloroethane		<1	<4.0	<1	<1	<4.0	<4.0
156-59-2	96.94	# cis-1,2-Dichloroethene		<1	<4.0	<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		3	16.4	<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		13	41.5	<1	<1	<3.2	<3.2
79-01-6	131.4	# Trichloroethene (TCE)		3	16.1	<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		126	474.8	<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		13	56.4	<1	<1	<4.3	<4.3
179601-23-1	106.17	# m/p-Xylene		16	69.5	<2	<2	<8.7	<8.7
95-47-6	106.17	# o-Xylene		6	26.1	<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

Sample Date: 26 Apr 2024
Date of Receipt: 29 Apr 2024
Date Analysed: 9 May 2024

Canister Serial number: V 20203 0.55
Sample Train Serial number: ST-227

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

[illegible]

Element Materials Technology

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

Sample Date: 26 Apr 2024
Date of Receipt: 29 Apr 2024
Date Analysed: 9 May 2024

Sample ID: VGP2H10
Depth:
EMT Job No: 24/7226
EMT Sample No: 10
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 1016 0.55
Sample Train Serial number: ST-228

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		<1	<2.6	<1	<1	<2.6	<2.6
75-71-8	120.91	Dichlorodifluoromethane (F-12)		48	237.4	<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		<1	<2.6	<1	<1	<2.6	<2.6
75-69-4	137.36	# Trichlorofluoromethane (F-11)		<1	<5.6	<1	<1	<5.6	<5.6
75-35-4	96.95	# 1,1-Dichloroethene (1,1 DCE)		<1	<4.0	<1	<1	<4.0	<4.0
75-09-2	84.93	# Dichloromethane (DCM)		<5	<17.4	<5	<5	<17.4	<17.4
156-60-5	96.94	Trans-1,2-Dichloroethene		<1	<4.0	<1	<1	<4.0	<4.0
75-34-3	98.97	# 1,1-Dichloroethane		<1	<4.0	<1	<1	<4.0	<4.0
156-59-2	96.94	# cis-1,2-Dichloroethene		<1	<4.0	<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		<1	<5.5	<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		4	12.8	<1	<1	<3.2	<3.2
79-01-6	131.4	# Trichloroethene (TCE)		<1	<5.4	<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		24	90.4	<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		2	8.7	<1	<1	<4.3	<4.3
179601-23-1	106.17	# m/p-Xylene		6	26.1	<2	<2	<8.7	<8.7
95-47-6	106.17	# o-Xylene		2	8.7	<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

Sample Date: 26 Apr 2024
Date of Receipt: 29 Apr 2024
Date Analysed: 9 May 2024

Canister Serial number: V 1016 0.55
Sample Train Serial number: ST-228

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

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

QF-PM 3.1.13 v6 Please include all sections of this report if it is reproduced 22 of 29

Element Materials Technology

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

Sample Date: 26 Apr 2024
Date of Receipt: 29 Apr 2024
Date Analysed: 9 May 2024

Sample ID: VGP2H11
Depth:
EMT Job No: 24/7226
EMT Sample No: 11
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 20181 0.55

Sample Train Serial number: ST-258

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		7	17.9	<1	<1	<2.6	<2.6
75-71-8	120.91	Dichlorodifluoromethane (F-12)		2	9.9	<1	<1	<4.9	<4.9
74-87-3	50.49	Chloromethane		6	12.4	<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		<1	<2.6	<1	<1	<2.6	<2.6
75-69-4	137.36	# Trichlorofluoromethane (F-11)		<1	<5.6	<1	<1	<5.6	<5.6
75-35-4	96.95	# 1,1-Dichloroethene (1,1 DCE)		<1	<4.0	<1	<1	<4.0	<4.0
75-09-2	84.93	# Dichloromethane (DCM)		<5	<17.4	<5	<5	<17.4	<17.4
156-60-5	96.94	Trans-1,2-Dichloroethene		5	19.8	<1	<1	<4.0	<4.0
75-34-3	98.97	# 1,1-Dichloroethane		<1	<4.0	<1	<1	<4.0	<4.0
156-59-2	96.94	# cis-1,2-Dichloroethene		6	23.8	<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		<1	<5.5	<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		18	57.5	<1	<1	<3.2	<3.2
79-01-6	131.4	# Trichloroethene (TCE)		<1	<5.4	<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		33	124.3	<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		8	34.7	<1	<1	<4.3	<4.3
179601-23-1	106.17	# m/p-Xylene		12	52.1	<2	<2	<8.7	<8.7
95-47-6	106.17	# o-Xylene		5	21.7	<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		6	29.5	<1	<1	<4.9	<4.9

Sample Date: 26 Apr 2024
Date of Receipt: 29 Apr 2024
Date Analysed: 9 May 2024

Canister Serial number: V 20181 0.55
Sample Train Serial number: ST-258

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

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

QF-PM 3.1.13 v6

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.: 24/7226

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
AA	x100 Dilution

EMT Job No: 24/7226

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			
TM69	Analysis of gas samples by direct injection onto a Gas Chromatography (GC) column and analysed using a Flame Ionisation Detector (FID) or a Thermocouple Detector (TD)	PM0	No preparation is required.				

VOC	Unit	VGP2H01	VGP2H02	VGP2H03	VGP2H04	VGP2H05	VGP2H06	VGP2H07	VGP2H08	VGP2H09	VGP2H10	VGP2H11
Vinyl Chloride [#]	ug.m3	25.6	148.3	2.6	2.6	2.6	2.6	10.2	2.6	2.6	2.6	17.9
Chloromethane	ug.m3	6.2	4.1	2.1	6.2	4.1	12.4	4.1	14.5	4.1	4.1	12.4
Chloroethane [#]	ug.m3	2.6	2.6	5.3	23.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Dichloromethane (DCM) [#]	ug.m3	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	27.8	17.4	17.4
Trans-1,2-Dichloroethene	ug.m3	4	4	4	4	4	4	4	4	4	4	19.8
1,1,1-Trichloroethane [#]	ug.m3	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	16.4	5.5	5.5
Benzene [#]	ug.m3	217.2	210.8	41.5	54.3	25.6	31.9	25.6	102.2	41.5	12.8	57.5
Trichloroethene (TCE) [#]	ug.m3	5.4	5.4	5.4	5.4	10.7	5.4	5.4	5.4	16.1	5.4	5.4
Toluene [#]	ug.m3	3768	3621	1981.9	211	67.8	49	109.3	98	474.8	90.4	124.3
Ethylbenzene [#]	ug.m3	91.2	17.4	17.4	21.7	4.3	4.3	17.4	8.7	56.4	8.7	34.7
m/p-Xylene [#]	ug.m3	286.6	34.7	43.4	60.8	17.4	13	39.1	26.1	69.5	26.1	52.1
o-Xylene [#]	ug.m3	60.8	8.7	8.7	17.4	4.3	4.3	13	17.4	26.1	8.7	21.7
Isopropylbenzene	ug.m3	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	29.5
Propylbenzene	ug.m3	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	14.7
Methyl tertiary butyl ether	ug.m3	245.2	43.3	18	75.7	3.6	3.6	18	3.6	3.6	7.2	3.6
Volatile Hydrocarbons	Unit	VGP2H01	VGP2H02	VGP2H03	VGP2H04	VGP2H05	VGP2H06	VGP2H07	VGP2H08	VGP2H09	VGP2H10	VGP2H11
Aliphatic >C4-C6	ug.m3	682	1855	89	6215	33	43	600	53	1269	126	311
Aliphatic >C6-C8	ug.m3	1313	1812	192	1836	41	286	286	155	3558	49	12298
Aliphatic >C8-C10	ug.m3	287	53	53	308	53	53	160	85	2972	53	18662
Aliphatic >C10-C12	ug.m3	72	65	65	170	65	65	124	65	353	65	995
Aromatic >C5-EC7 (Benzene)	ug.m3	216.6	211.2	42.2	52.7	26.5	30.7	24.3	100.6	39.9	11.8	57.2
Aromatic >EC7-EC8 (Toluene)	ug.m3	3766.1	3622.1	1980.8	211.4	66.3	47.9	110.4	98	474.4	90.1	122.8
Aromatic >EC8-EC10	ug.m3	574	83	83	152	49	49	98	98	226	69	98
Aromatic >EC10-EC12	ug.m3	53	53	53	53	53	53	53	53	53	53	53
Bulk Gases	Unit	VGP2H01	VGP2H02	VGP2H03	VGP2H04	VGP2H05	VGP2H06	VGP2H07	VGP2H08	VGP2H09	VGP2H10	VGP2H11
Carbon Dioxide	ug.m3	NA	NA	NA	NA	NA	0.08	1.34	NA	0.08	NA	1.99
Carbon Monoxide	ug.m3	NA	NA	NA	NA	NA	0.05	0.05	NA	0.05	NA	0.05
Hydrogen	ug.m3	NA	NA	NA	NA	NA	0.5	0.5	NA	0.5	NA	0.5
Methane	ug.m3	NA	NA	NA	NA	NA	0.44	18.76	NA	29.68	NA	3.77
Methane	PPMv	NA	NA	NA	NA	NA	4253	180302	NA	278208	NA	34814
Nitrogen	ug.m3	NA	NA	NA	NA	NA	79.5	65.3	NA	63.6	NA	78.8
Oxygen	ug.m3	NA	NA	NA	NA	NA	19.9	14.6	NA	6.6	NA	15.5

Min	Max	Screening value	
2.6	148.3	0.33	Derived using S4ULs
2.1	14.5	2.88	Derived using CL:AIRE 2010
2.6	23.7	3191.43	Derived using CL:AIRE 2010
17.4	27.8	75.36	Derived using CL:AIRE 2010
4	19.8	12.34	Derived using CL:AIRE 2010
5.5	16.4	336.7	Derived using S4ULs
12.8	217.2	5	AQS
5.4	16.1	0.63	Derived using S4ULs
49	3768	1468.05	Derived using S4ULs
4.3	91.2	62.51	Derived using S4ULs
13	286.6	33.67	Derived using S4ULs
4.3	60.8	33.67	Derived using S4ULs
4.9	29.5	64.14	Derived using CL:AIRE 2010
4.9	14.7	228.46	Derived using CL:AIRE 2010
3.6	245.2	585.87	Derived using CL:AIRE 2010
Min	Max	SV	
33	6215	2,805.90	Derived using S4ULs
41	12298	2,805.90	Derived using S4ULs
53	18662	162.74	Derived using S4ULs
65	995	162.74	Derived using S4ULs
11.8	216.6	5	As Benzene
47.9	3766.1	1468.05	As Toluene
49	574	33.67	Derived using S4ULs
53	53	33.67	Derived using S4ULs
Min	Max	SV	
0.08	1.99	-	
0.05	0.05	-	
0.5	0.5	-	
0.44	29.68	-	
4253	278208	-	
63.6	79.5	-	
6.6	19.9	-	