



Knowsley Metropolitan Borough Council

HALEWOOD LUF - HALEWOOD LEISURE CENTRE AND GRACE PARK

Phase 2 Geo-Environmental Assessment Report





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Phase 2 Geo-Environmental Assessment Report

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INTRODUCTION

1.1 TERMS OF REFERENCE

WSP UK Ltd (WSP) was instructed by Knowsley Metropolitan Borough Council (KMBC) (the Client) to undertake a Phase 2 Geo-Environmental Assessments on two sites; one located at Grace Park (off Leather's Lane and Wood Road, Liverpool L26 0TX) (Grace Park) and another located at Halewood Leisure Centre (Baileys Lane, Liverpool, L26 0TY) (Leisure Centre).

WSP understands that the client proposes to redevelop both sites as part of a wider regeneration project including improvement of existing public greenspaces and civic amenities. WSP has previously undertaken a Phase 1 report for both sites (WSP 2023, *Halewood LUF, Geo-environmental Preliminary Risk Assessment, Ref: 70112144/PRA, September 2023*) which identified a number of plausible contaminant linkages and recommended a site investigation was undertaken to delineate and confirm potential geo-environmental and geotechnical risks.

A site location plan and site boundary plans are presented in Figures 1, 2 and 3 in **Appendix A**. The locations of the exploratory holes are presented in Figure 4 in **Appendix A**.

Work reported herein was undertaken in accordance with our proposal dated 31st July 2024 (Site Investigation Works – Halewood LUF, Ref: UK0029106.9719-P02). This report has been updated with ground gas and groundwater monitoring data for the Grace Park site, in accordance with our proposal dated 15th September 2025 (Halewood LUF (Grace Park Site) Post Site Works Monitoring and Updated Risk Assessment Reporting, Ref: UK0029106.9719-P05_Rev01).

1.2 AIMS AND OBJECTIVES

The principal aim of this assessment is to assess the previously identified potential geo-environmental and geotechnical risks associated with the site in the context of the proposed redevelopment.

1.3 PROJECT SCOPE

The scope of works for the project undertaken at both sites comprised:

- Review of the existing reports (see Section 1.6)
- Site utility clearance and extended Ground Penetrating Radar (GPR) survey;
- Excavation of 27 trial pits across both sites to maximum depths of approximately 3 metres below ground level (m bgl);
- The drilling of seven boreholes to a maximum depth of 5.00m bgl using dynamic sampling drilling (window sampling) to characterise intermediate soil depths;
- Ground gas and groundwater monitoring from all wells installed at the Grace Park site over a 12 week period.
- Groundwater sampling from all wells installed at the Grace Park site.
- Laboratory analysis of recovered soils both for environmental and geotechnical purposes;
- Generic quantitative risk assessment (GQRA) of potentially sensitive receptors with respect to ground contamination;
- Refinement of conceptual site model (CSM);
- Consideration of geotechnical properties of soil in relation to proposed development; and

- Provision of recommendations with respect to the management of ground conditions in relation to the geotechnical and environmental properties and the proposed development.

This report should form part of the Health and Safety File for the sites.

1.4 LEGISLATIVE CONTEXT AND GUIDANCE

The assessment was undertaken in the legislative context of:

- Part 2A of The Environmental Protection Act (1990).
- The National Planning Policy Framework (2023).

The following good practice was considered and the assessment was undertaken in accordance with:

- Environment Agency 'Land Contamination Risk Management', LCRM (October 2020, updated July 2023);
- British Standard 'Eurocode 7 – Geotechnical Design – Part 2: Ground investigation and testing'. BS EN 1997-2:2007;
- British Standard 'Investigation of Potentially Contaminated Sites – Code of Practice', BS EN 10175:2011+A2:2017;
- British Standard 'Code of Practice for Ground Investigations', BS 5930:2015+A1:2020;

1.5 REPORT STRUCTURE

The report is structured to provide a focussed assessment of soil and groundwater conditions on the site and the associated geotechnical and geo-environmental conditions. Detailed information on the site works undertaken are presented within **Appendix B**.

1.6 SOURCES OF INFORMATION

Information from the following reports has been included in Section 2 of this report:

- WSP 2023, Halewood LUF, Geo-environmental Preliminary Risk Assessment, Ref: 70112144/PRA, September 2023).

A copy of this report has been included in **Appendix C**. No other relevant reports were provided to WSP for review.

1.7 CONFIDENTIALITY STATEMENT AND LIMITATIONS

This report is addressed to and may be relied upon by the following parties:

- Knowsley Metropolitan Borough Council (KMBC)

This assessment was prepared for the sole use and reliance of the above-named party. This report was prepared in line with the WSP proposal and associated notes. This report shall not be relied upon or transferred to any other parties without the express written authorisation of WSP. No responsibility will be accepted where this report is used, either in its entirety or in part, by any other party.

Note that where this report summarises information provided from external sources, WSP cannot offer any guarantees or warranties for the completeness or accuracy of information relied upon.

General limitations of this assessment are included in **Appendix E**.

2 DESK STUDY SUMMARY

A summary of information from the WSP Phase 1 report (WSP, 2023) is presented in Tables 2-1, 2-2 and 2-3.

Table 2-1 - Summary Desk Study Information

Subject	Summary Description	
	Grace Park	Leisure Centre
Site address	Grace Park off Leathers Lane, Halewood, L26 0TX	Halewood Leisure Centre, Baileys Lane, Halewood, L26 0TY
National Grid Reference	344616, 385298 (approximate site centre)	345217, 385182 (approximate site centre)
Site Location	Located in Halewood town centre, situated within a mainly residential setting. Halewood shopping centre is along the eastern boundary.	Located in Halewood town centre, situated within a mainly residential setting.
Site Size	7.32 Ha	6.94 Ha
Current site use	Public open space with two playgrounds located in the northwest of the site and a fenced off area in the southeast which is used by Halewood Town Junior Football Academy and includes football pitches, a small clubhouse, storage containers for equipment and an electrical substation.	Leisure centre building and associated astroturf sports pitches and carpark area. In the centre of the leisure centre site are three tennis / basketball courts which were in poor condition at the time of the ground investigation. The land around the leisure centre facilities is grass covered with occasional trees and used as public open space.
Topography	The site is generally flat. There are five gently sloping mounds noted across the site and pond area in the centre.	The site is generally flat lying however there are four gently sloping shaped mounds noted within areas of soft landscaping associated with the existing Leisure Centre. There is a slope from the sports pitches to the eastern and northern boundary of the site.
Surrounding Land Use	The surrounding area is predominantly residential housing with Halewood Shopping Centre adjacent to the east.	The surrounding area consists of residential housing. Adjacent to the east of the site is Finch Woods Academy (school), Finch Woods and a housing estate.

Subject	Summary Description	
	Grace Park	Leisure Centre
Site History	On-Site Earliest mapping (1849) shows the site to be agricultural / undeveloped land. In 1891 a building is located in the southwest. This is no-longer there in 1971 mapping. A school and substation are shown in the southeast of the site by 1971. The school was demolished between 2010 and 2023 when the current layout was formed. Off-Site 1849 mapping shows the surrounding area was predominantly agricultural land with various residential properties and woodland. In 1981 a railway is shown 159m north of the site and is still present at time of writing. By 1938 residential properties were present to the south and southwest of the site and by 1967 they were present to the north as well. By 1971 the general layout of the surrounding area is the same as at the time of writing. By 1988 Halewood station is marked 242m north of the site and is present at the time of writing.	On-Site 1849 mapping shows the site was used as agricultural / undeveloped land with small ponds located in the north, south and east of the site. By 1891 the southern and eastern ponds were assumed to have been infilled. 1974 mapping shows the northern pond to have been infilled and a structure to be present in the west of the site. By 2001 a leisure centre had been built in the west of the site. This was replaced by the current (at time of writing) leisure centre by 2010. No significant changes have been made from 2010 to present day (at time of writing). Off-Site Earliest mapping from 1849 shows the surrounding area was predominantly agricultural land with some residential properties and woodland. A railway was located 500m south of the site. By 1891 another railway was located 372m north of the site and is still present at time of writing. 1954 mapping shows residential properties had been constructed to the south and southwest of the site and by 1967 residential properties were present to the north of the site. No significant changes have been shown from 1967 to the time of writing.
Geology	Geological Survey (BGS) indicates over 30m of superficial deposits are anticipated consisting of Made Ground and Glacial Till (Devensian). Beneath this mudstone, sandstone or conglomerate from the Etruria Formation is anticipated (approximate depth / thickness is not recorded).	BGS mapping indicates over 30m of superficial deposits are expected consisting of Made Ground and Glacial Till (Devensian). Beneath this the Kinnerton Sandstone Formation is anticipated (approximate depth / thickness is not recorded).
Mining	The Mining Remediation Authority's (MRA) indicates the site is not within a coal mining reporting area nor is it located within a development high risk area (DHRA). However, it is located within a surface coal resource area.	According to the MRA's interactive map viewer the site is located within a coal mining reporting area but not within a DHRA.

Subject	Summary Description	
	Grace Park	Leisure Centre
Hydrogeology	The superficial deposits are recorded as a Secondary Undifferentiated Aquifer with low vulnerability to contamination. The Etruria Formation (bedrock) is classified as a Secondary A Aquifer. There are no groundwater or surface water abstractions recorded within 1km of the site. A Source Protection Zone (SPZ) 3 is located beneath the site in the centre and western area. Classified as having negligible soluble rock risk.	The superficial deposits are recorded as a Secondary Undifferentiated Aquifer with low vulnerability to contamination. The Kinnerton Sandstone Formation (bedrock) is classified as a Principal Aquifer. There are no surface water abstractions recorded within 1km of the site. One groundwater abstraction is recorded approximately 500m east of the site. A SPZ3 is located beneath the site. Classified as having negligible soluble rock risk.
Hydrology	A small pond is located in the centre of the site. The closest off-site surface water feature is a stream located approximately 445m northwest. The topsoil across the site was waterlogged during the ground investigation.	No surface water features are located on-site. The closest surface water feature is a stream located 130m northeast. The topsoil across the site was waterlogged during the ground investigation.
Sensitive Land Uses	Located within a Nitrite Vulnerable Zone (NVS) (Ditton Brook (Halewood to Mersey Estuary)).	

Potential on-site sources of contamination were identified for each site by WSP in the Phase 1 Report and are listed in Table 2-2.

Table 2-2 - On-Site Sources of Potential Contamination

Potential Source	Type of Potential Contamination	Anticipated Contaminants in Soil &/or Groundwater
Grace Park		
1	Contaminants within Made Ground associated with localised historical developments (e.g. school building).	Includes inorganic and organic contaminants, ground gases, and asbestos.

Potential Source	Type of Potential Contamination	Anticipated Contaminants in Soil &/or Groundwater
Leisure Centre		
2	Contaminants within Made Ground associated with localised historical developments (e.g. infilled ponds).	Includes inorganic and organic contaminants, ground gases, and asbestos.

Potential offsite sources of contamination were also considered, with both sites (Grace Park and Leisure Centre) identified as having the same potential off-site sources of contamination. These are shown in Table 2-3.

Table 2-3 - Off-Site Sources of Potential Contamination

Potential Source.	Type of Potential Contamination	Anticipated Contaminants in Soil &/or Groundwater
3	Potential Made Ground deposits associated with the construction/demolition/redevelopment of the wider area including commercial properties.	Include inorganic and organic contaminants, ground gases, and asbestos.

3 FIELDWORK SUMMARY

3.1 INTRODUCTION

The site investigation was completed in general accordance with BS5930:2015 'Code of Practice for Site Investigation' and 'BS10175:2011 'Investigation of Potentially Contaminated Sites – Codes of Practice'.

Works were undertaken by WSP between the 13 and 24 January 2025. The scoped ground investigation as detailed by WSP in the proposal document (WSP, 2024) was designed to give a broad overview of the ground conditions across both sites and to identify any potential geo-environmental or geotechnical constraints or opportunities associated with the future development. All works were undertaken under the full-time supervision of a WSP engineer.

The completed exploratory locations are detailed below and location maps are presented as Figure 4 in **Appendix A**.

Table 3-1 – Summary of Fieldworks

Investigation Method	Number	Exploratory Hole References	Range of Final Depths (m bgl*)
Grace Park			
Window Sample Boreholes	5	WS01-WS05	3.0 – 5.0
Trial Pits	13	TP01, TP02, TP04, TP06, TP08, TP12, TP13, TP15, TP16, TP18, TP21, TP22, TP23	0.9 - 3.0
Leisure Centre			
Window Sample Boreholes	2	WS06-WS07	5.0
Trial Pits	14	TP27, TP28, TP30, TP33, TP35, TP38, TP39, TP40, TP42, TP45, TP46, TP47, TP48, TP49	1.5 – 3.1

*m bgl: metres below ground level

3.2 MONITORING WELL INSTALLATION

Groundwater and gas monitoring wells were installed in all seven of the window sample locations for future gas and groundwater monitoring. The details of the installations are summarised in Table 3-2 and shown on the borehole logs presented in **Appendix B**. Monitoring wells were constructed from 50mm diameter plastic pipe and fitted with end cap at the base, air-tight gas valves at the surface and flush covers. The pipe was perforated within the response zone of the monitoring well and surrounded with pea gravel with a bentonite seal around the top of the pipe.

Table 3-2 – Monitoring Well Installations

Exploratory Hole Location	Ground Level (m AOD*)	Response Zone Upper and Lower Depth (m bgl)	Response Zone Upper and Lower Depth (m AOD)	Response Zone Strata (m AOD)	Maximum Depth(m bgl)	Maximum Depth(m AOD)
WS01	23.785	1.0 - 3.0	22.79 to 20.79	Glacial Till	3.0 (due to collapse)	20.79
WS02	23.83	1.0 – 3.0	22.83 to 20.83	Glacial Till	4.0 (due to collapse)	19.83
WS03	23.68	1.0 – 5.0	22.68 to 18.68	Glacial Till	5.0	18.68
WS04	23.54	1.0 – 5.0	22.54 to 18.54	Glacial Till	5.0	18.54
WS05	23.92	1.0 – 5.0	22.92 to 18.92	Glacial Till	5.0	18.92
WS06	17.18	1.0 – 5.0	16.18 to 12.18	Made Ground	5.0	12.18
WS07	16.37	2.0 – 5.0	14.37 to 11.37	Glacial Till	5.0	11.37

*m AOD: metres above ordnance datum

3.3 IN-SITU TESTING

3.3.1 PHOTO-IONISATION DETECTOR (PID) SCREENING

Soil samples from various depths across the exploratory hole locations were screened using a Photoionization detector (PID) to test for volatile organic compounds (VOC) present in the soils. The results are provided in the exploratory hole logs presented in **Appendix B** and discussed further in Section 4.

3.3.2 STANDARD PENETRATION TESTS

Standard Penetration Tests (SPTs) were performed within the window sample boreholes. The results are presented in the exploratory hole logs provided in **Appendix B**.

3.4 SAMPLING AND LABORATORY TESTING

3.4.1 GEO-ENVIRONMENTAL

Soil samples were taken at various depths in each exploratory hole location to be tested for potential contamination. Groundwater sampling was not undertaken as part of the scope of the ground investigation and will be undertaken at a later date. The depths of soil samples are recorded in the exploratory hole logs presented in **Appendix B**. The soil environmental analysis was undertaken at ALS Hawarden Laboratory, in accordance with UKAS / MCERTS accredited methods. Table 3-3

shows the analysis scheduled for the samples. The laboratory results are presented in **Appendix B** and discussed in Section 7.

Table 3-3 – Summary of Soil Sample Geo-Environmental / Chemical Analysis

Laboratory Analysis	Number of Samples Scheduled
Toxic 9 Metals	49
Asbestos Identification	49
Asbestos Quantification	1 – (TP33 at 0.3 – 0.4)
Polyaromatic Hydrocarbons (PAHS)	49
Soil Organic Matter (SOM)	48 (TP38 at 0.75 – 0.8m bgl not scheduled)
pH	49
Total Petroleum Hydrocarbons (TPH)	49
Benzene, Toluene, Ethylbenzene and xylene (BTEX), Tertiary Amyl Methyl Ether (TAME) and Methyl Tert-Butyl Ether (MTBE)	49
Waste Assessment Criteria (WAC) Suite	12 (TP27 at 1.4 – 1.5m bgl, TP28 at 1.6 – 1.65m bgl, and 2.95 – 3.0m bgl, TP39 at 0.3 – 0.4m bgl, TP40 at 1.2 – 1.3m bgl, TP42 at 0.45 – 0.5m bgl, and 1.4 – 1.45m bgl, TP45 at 2.4 – 2.5m bgl, TP46 at 1.0 – 1.1m bgl, TP49 at 0.1 – 0.15m bgl, and 2.5 – 2.6m bgl, WS07 at 2.2-2.3m bgl).
Waste Assessment Criteria (WAC) Leachate Suite	11* (TP27 at 1.4 – 1.5m bgl, TP28 1.6 – 1.65m bgl and 2.95 – 3.0m bgl, TP39 0.3 – 0.4m bgl, TP40 1.2 – 1.3m bgl, TP42 0.45 – 0.5m bgl and 1.4 – 1.45m bgl, TP46 1.0 – 1.1m bgl, TP 49 0.1 – 0.15m bgl, and 2.5 - 2.6m bgl, WS07 2.2 – 2.3m bgl).

*No WAC Leachate testing scheduled for TP45 at 2.4 – 2.5m bgl

3.4.2 GEOTECHNICAL

Standard geotechnical sampling was followed as far as was practical at all exploratory hole locations. The geotechnical test results are included in **Appendix B**.

Table 3-4 - Summary of Soil Sample Geotechnical Analysis

Lab Analysis	Number of Samples Scheduled
Moisture Content	18

Lab Analysis	Number of Samples Scheduled
Atterberg Testing	18
Building Research Establishment (BRE) testing	18
Particle Size Distribution	16
Sedimentation: Test undertaken if >15% fines recorded in Particle Size Distribution test	16
California Bearing Ratio (CBR)	8
2.5kg Compaction	8

3.5 ADDITIONAL GROUNDWATER AND GAS MONITORING

Groundwater and gas monitoring was performed at all five wells installed at the Grace Park site (WS01-WS05) on six occasions between 3rd October and 11th December 2025 in line with current guidance (CIRIA, 2007). At least two of the gas monitoring rounds targeted periods of low and/or falling atmospheric pressure events. Gas and groundwater level monitoring was conducted on all visits. Ground gas monitoring used an [GFM435] infra-red gas analyser and photo ionisation detector (PID) in order to record atmospheric pressure, gas flow rate, oxygen, methane, carbon dioxide, carbon monoxide and hydrogen sulphide. Water levels were recorded using an oil/water interface dip meter.

Well development for groundwater sampling was carried out during the first monitoring round, with the sampling conducted in the third round, three weeks later. During the well development, a submersible pump was used to remove approximately six times the volume of the water column or until the borehole went dry.

The groundwater samples were collected and placed in suitable sample containers and cool boxes prior to dispatch for environmental analysis, undertaken at ALS Hawarden Laboratory, in accordance with UKAS / MCERTS accredited methods.

Tables 3-5 and 3-6 show the parameters assessed during gas monitoring and groundwater analysis respectively.

Table 3-5 - Summary of Field Readings

Field Analysis	Number of positions
Gas: Oxygen, Carbon Dioxide, Methane, Carbon Monoxide, Hydrogen Sulphide	5
Groundwater: pH, Specific Conductivity, Oxidation-Reduction Potential, Temperature, Dissolved Oxygen	5

Results of the ground gas monitoring are attached as Appendix B.6

Table 3-6 - Summary of Lab Analysis (Groundwater)

Lab Analysis	Number of samples
Metals: Mercury, Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Zinc	5
Total Petroleum Hydrocarbons: GRO Surrogate % recovery, GRO>C5-C12, Aliphatic >C5-C35, Aromatics >EC5-EC35,	5
Polyaromatic Hydrocarbons: Naphthalene, Acenaphthene, Acenaphthylene, Fluoranthene, Anthracene, Phenanthrene, Fluorene, Chrysene, Pyrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene, Indeno(1,2,3-cd)pyrene, PAH Total detected USEPA 16	5
Volatile Organic Compounds: Toluene-d8, Methyl tertiary butyl ether, Benzene, Toluene, Ethylbenzene, m,p-Xylene, o-Xylene, Sum of detected Xylenes, Sum of BTEX	5

Results of the groundwater monitoring are attached as Appendix B.7.

4 GROUND AND GROUNDWATER CONDITIONS

4.1 GROUND CONDITIONS

A summary of the ground conditions encountered at both sites during the ground investigation is presented in Table 4-1. The ground conditions across the two sites were generally comparable therefore they have been summarised together. Further detail is presented in the borehole logs in **Appendix B**. The material properties of the ground are discussed in Section 5. An exploratory hole location plan is presented as Figure 4 in **Appendix A**.

Table 4-1 – Summary of Ground Conditions

Strata		Range of Depth to Base (m bgl)	Range of Thickness (m)	Typical Description	Comments
Topsoil		0.2 - 0.6	0.2 – 0.6	Grass over soft dark brown sandy clayey SILT with abundant rootlets.	In some locations described as slightly gravelly, sandy or silty CLAY. Commonly between 0.2-0.35m thick. Thickest at 0.6m described as dark brown slightly clayey fine and medium SAND with occasional gravel.
Made Ground	Cohesive Made Ground	0.6 – 5.0	0.3 – 1.9	Firm locally soft reddish brown sandy slightly gravelly CLAY. Gravel is rounded to angular fine to coarse and includes brick, terracotta, coal, clinker, asphalt limestone, mudstone and sandstone.	Occasionally with pockets of sand or different shades of brown (e.g. dark brown, greyish brown) or soft locally firm or stiff. Sometimes with bricks or concrete boulders and rare plastic or wood.
	Granular Made Ground	0.4 – 1.55	0.2 – 0.95	Reddish brown gravelly clayey fine to coarse SAND with brick. Gravel is subrounded to angular fine to coarse of brick, concrete, asphalt and coal.	Not as common as Cohesive Made Ground – found in TP06, TP16, TP33, TP46. TP46 described as very dark brown.

Strata	Range of Depth to Base (m bgl)	Range of Thickness (m)	Typical Description	Comments
				TP06 Described as brown silty very clayey SAND.
Glacial Till	Not proven.	Not proven.	Firm dark reddish brown mottled grey sandy slightly gravelly CLAY with frequent pockets of sand.	Occasionally soft locally firm. Sometimes described as very sandy or with a sand horizon. Occasionally with organics. WS05 described as having a silt horizon.

4.1.1 TOPSOIL

Topsoil was recorded at all exploratory hole locations. The thickness ranged from 0.2 - 0.6m. It typically comprised grass over soft dark brown sandy clayey silt with rootlets. The topsoil was waterlogged across the majority of both of the sites.

4.1.2 MADE GROUND

Cohesive Made Ground was encountered in the majority of exploratory hole locations (it was not located in WS01-WS05 and TP08 at Grace Park). It was generally described as firm locally soft reddish brown slightly gravelly sandy CLAY. The gravel was generally rounded to angular fine to coarse and included anthropogenic materials such as brick, terracotta, charcoal, clinker and asphalt as well as natural lithologies. Bricks, boulders of concrete, timber, glass, plastic and textiles were also identified within the trial pits.

The greatest depth of Cohesive Made Ground was identified as 5.0m bgl in WS06 at the Leisure Centre site. WS06 was located on a slope however it seems unlikely the entire slope is constructed of Made Ground as WS07 located close to WS06 (see Figure 4 **Appendix A**) records natural Glacial Till at 1.8m bgl and the road adjacent to the site also slopes suggesting it is at least partially a natural feature. Therefore, WS06 may be located in the position of the historical pond which was thought to have been infilled. Other exploratory holes were located on mounds across the sites (TP06, TP15, TP12, TP21, TP22 at Grace Park) (TP28, TP30, TP35, TP45 at Leisure Centre). The majority of which recorded maximum Cohesive Made Ground depths of less than 2m bgl, except for TP21 at 2.1m bgl (Grace Park) and TP35 at 3.0m bgl (Leisure Centre). A maximum depth of less than 2m bgl appears consistent across all exploratory hole locations at both sites regardless of the topography (excluding TP21 and TP35) which suggests most of the mounds were initially naturally occurring.

TP06 (Grace Park) was terminated at 0.9m bgl as a concrete slab was encountered that extended beyond the limits of the trial pit so could not be dug through to target depth. It is thought this concrete slab and the bricks and concrete found in other locations and the anthropogenic gravel are relicts of previous development and demolition historically recorded across the two sites.

Granular Made Ground was also encountered in some exploratory holes (TP06 and TP16 at Grace Park and TP33 and TP46 at Leisure Centre). This was generally described as reddish brown very gravelly clayey fine to coarse sand. The gravel was described similarly to the Cohesive Made Ground; subrounded to angular fine to coarse of brick, concrete, asphalt and coal. Bricks were also recorded within some horizons of Granular Made Ground.

4.1.3 SUPERFICIAL DEPOSITS

The majority of exploratory hole locations recorded Glacial Till deposits (with the exception of TP06 at Grace Park and TP35 and WS06 at Leisure Centre). Glacial Till is generally described as firm (occasionally stiff or soft locally firm) reddish brown sandy slightly gravelly CLAY with frequent pockets of grey, yellow, red and occasionally green sand. The gravel is rounded to subangular of mudstone, sandstone, quartz and shelly fragments. At shallower depths the colour is sometimes described as reddish brown mottled grey.

During this ground investigation the base of the Glacial Till has not been proven. The shallowest it was encountered was 0.3m bgl in (TP08, WS01, WS03 and WS05 at Grace Park).

4.1.4 BEDROCK

No bedrock was encountered during the ground investigation.

4.1.5 OBSTRUCTIONS

An obstruction was encountered in TP06 (Grace Park); noted to be a concrete slab at 0.9m bgl. The trial pit was terminated at this depth.

TP33 (Leisure Centre) was initially advanced to 0.4m bgl but a brick wall structure was encountered from 0.2 – 0.4m bgl which limited the ability to advance the pit further. It was therefore moved 0.5m to the east to avoid the brick structure and progressed to the scheduled depth of 3.0m bgl.

Clay pipes from what was thought to be an old land drainage system were encountered in a number of trial pits at both sites generally located just above the natural superficial deposits. Details of these can be found on the logs included in **Appendix B**.

4.2 GROUNDWATER CONDITIONS

Groundwater seepage was recorded in eleven exploratory hole locations (TP01, TP04, TP12, TP13, TP15, TP18, TP22 at Grace park and TP28, TP33, TP35 and WS06 at Leisure Centre). Seepage predominantly occurred through pockets of sand in the natural Glacial Till deposits. The exploratory hole logs presented in **Appendix B** provide further detail on groundwater strikes.

Groundwater levels were taken on each of the six monitoring rounds at the Grace Park site between 3rd October and 11th December 2025. Groundwater level ranges for each borehole are shown in Table 4-2.

Groundwater in-situ and laboratory results are presented in Tables 4-3, 4-4 and 4-5 below.

Table 4-2 – Groundwater Level Ranges

Borehole ID	Groundwater Level Range (mbgl)	Depth to Base (mbgl)	Groundwater Level Range (mAoD)	Depth to Base (mAoD)
WS01	0.92-1.29	2.02	22.87-22.50	21.77
WS02	0.74-0.90	3.01	23.09-22.93	20.82
WS03	0.96-1.08	4.36	22.72-22.60	19.32
WS04	1.12-1.235	4.45	22.42-22.305	19.09
WS05	1.07-1.20	3.72	22.84-22.71	20.19

Table 4-3 – In-situ Parameters

In-situ parameter	Unit	Minimum	Maximum
pH	pH Units	7.271	7.695
Specific Conductivity		894.2	1066.0
Oxidation Reduction Potential	mV	21.8	206.6
Temperature	°C	14.13	14.49
Dissolved Oxygen	mg/l	0.765	3.896

Table 4-4 – Laboratory Analysis Results – Metals

Determinand	Unit	Limit of detection	Minimum	Maximum
Arsenic	ug/l	<0.5	0.852	3.06
Chromium	ug/l	<1	<1	2.89

Determinand	Unit	Limit of detection	Minimum	Maximum
Copper	ug/l	<0.3	0.403	2.5
Nickel	ug/l	<0.4	1.81	6.95
Zinc	ug/l	<1.0	2.3	9.02

Table 4-5 – Laboratory Analysis results – PAHs

Determinand	Unit	Limit of detection	Minimum	Maximum
Fluoranthene	ug/l	<0.005	0.0192	0.189
Anthracene	ug/l	<0.005	<0.005	0.00818
Phenanthrene	ug/l	<0.005	0.00868	0.0791
Chrysene	ug/l	<0.005	<0.005	0.128
Pyrene	ug/l	<0.005	0.0156	0.209
Benzo(a)anthracene	ug/l	<0.005	<0.005	0.0115
Benzo(b)fluoranthene	ug/l	<0.005	<0.005	0.1
Benzo(k)fluoranthene	ug/l	<0.005	<0.005	0.0806
Benzo(a)pyrene	ug/l	<0.002	<0.002	0.0923
Benzo(g,h,i)perylene	ug/l	<0.005	<0.005	0.0086
Indeno(1,2,3-cd)pyrene	ug/l	<0.005	<0.005	0.00548

All other determinands analysed, including all TPH and VOCs were reported to be below their limits of detection.

4.3 GROUND GAS

No evidence of ground gas generation was recorded during the ground investigation works. Minor amounts of material with potential to generate ground gas is recorded in the made ground of WS06 and WS07 at Halewood Leisure Centre. No exploratory locations at the Grace Park site recorded evidence of potential gas generating material.

Ground gas monitoring took place on each of the six monitoring rounds at the Grace Park site between 3rd October and 11th December. The installations are summarised in Table 4-6 and the atmospheric pressure recorded during the monitoring is provided in Table 4-7.

The gas monitoring included two round with low pressure (<1,000 mb), Falling pressure was encountered in three monitoring rounds.

Table 4-6 - Summary of gas monitoring installations

Monitoring Point	Standpipe Diameter (mm)	Response Zone Top (m bgl)	Response Zone Base (m bgl)	Strata monitored and evidence of potential gas generation sources
WS01	50	1.00	3.00	Glacial Till: Slightly gravelly slightly sandy CLAY. No potential gas generating sources.
WS02	50	1.00	3.00	Glacial Till: Slightly gravelly slightly sandy CLAY. No potential gas generating sources.
WS03	50	1.00	5.00	Glacial Till: Slightly gravelly slightly sandy CLAY. No potential gas generating sources.
WS04	50	1.00	5.00	Glacial Til: Slightly gravelly slightly sandy CLAY/Slightly sandy CLAY. No potential gas generating sources.
WS05	50	1.00	5.00	Glacial Till: Slightly gravelly slightly sandy CLAY/Slightly sandy SILT. No potential gas generating sources.

Table 4-7 - Summary of atmospheric pressure during monitoring

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6
Monitoring Dates	03/10/2025	17/10/2025	31/10/2025	07/11/2025	05/12/2025	11/12/2025
Initial Atmospheric pressure	1005	1026	996	1003	1001	1011
Final Atmospheric pressure	1001	1027	994	1003	999	1011
Low Pressure (<1000mbar)	No	No	Yes	No	Yes	No
Falling Pressure?	Yes	No	Yes	No	Yes	No

The range of ground gas parameters analysed is presented below in Table 4-5 and the data is attached as Appendix B.6.

The results of the six gas monitoring rounds are presented in Appendix B6. No detectable volume of steady flow was found in any borehole. WS02 recorded high levels of initial flow, though this quickly reduced to 0. Methane was consistently detected in WS02 across all rounds in concentrations between 0.4 and 2.3%v/v. WS04 was the only other borehole to record steady concentrations of methane only in rounds five and six. The maximum concentration in WS04 was 5.4%v/v in round six. Carbon dioxide was found in all boreholes between concentrations of 0.1 and 2.1%v/v. No depleted oxygen concentrations (<10%v/v) were encountered. The lowest oxygen concentration encountered was 16.6%.

The monitoring wells were also analysed for the presence of hydrogen sulphide and carbon monoxide. Across all rounds, all wells returned values of <0.1ppm. wells were also analysed with a PID on each round, all wells returned values of <0.1ppm with the exception of WS02 which returned a value of 0.1ppm in rounds 1-3.

Table 4.8 Summary of monitoring data

BH ID	Number of rounds	Flow Rate (l/hr)		Methane (%v/v)		Carbon Dioxide (%v/v)		Oxygen (%v/v)	
		Peak	Stead	Peak	Steady	Peak	Steady	Peak(low)	Steady
WS01	6	0.0	0.0	0.0	0.0	0.1-0.3	0.1-0.3	19.7-21.6	19.7-21.6
WS02	6	32.0-74.0	0.0	0.4 - 2.3	0.4-2.3	0.9-1.3	0.9-1.3	16.6-20.1	16.6-20.1
WS03	6	0.0	0.0	0.0-0.1	0.0-0.0	0.7-2.1	0.7-2.1	18.1-21.3	18.1-21.3
WS04	6	0.0	0.0	0.0-5.4	0.0 - 5.4	0.6-1.4	0.6-1.4	18.2-20.3	18.2-20.3
WS05	6	0.0	0.0	0.0-0.0	0.0-0.0	0.2-1.8	0.2-1.8	17.4-20.8	17.4-20.8

The gas regime has been assessed using gas screening values (GSV) to derive a Characteristic Situation (CS) as set out in BS8485:2015+A1:2019 using steady state concentrations. The methane concentrations detected exceed typical values found in a low gas situation in WS02 and WS04. Due to the homogenous nature of the superficial deposits and lack of gas generating sources, it is unclear why methane concentrations were recorded. Table 4.9 summarises the CS.

Table 4.9 Summary of anticipated gas regime

Location	Methane GSV	Carbon Dioxide GSV	Characteristic situation (CS) based on Steady readings	
	(l/hr CH ₄)	(l/hr CO ₂)	Methane CS	Carbon dioxide CS
WS01	-	0.003	CS-1	CS-1
WS02	0.0023	0.0013	CS-2*	CS-1
WS03	-	0.021	CS-1	CS-1
WS04	0.0054	0.0019	CS-2*	CS-1
WS05	-	0.00018	CS-1	CS-1

GSV – gas screening value CS-2* indicates that although the gas screening value is low, the typical maximum concentration of methane or carbon dioxide is exceeded and consideration should be given to increasing the regime to CS-2.

4.4 EVIDENCE OF CONTAMINATION

No visual or olfactory evidence of contamination was recorded in any of the exploratory hole locations.

PID readings were taken of each soil sample that was due for chemical testing to gather information on the VOCs being released by the soil.

At Grace Park all PID readings were below 1.0ppm, with values above 0ppm were recorded in both Cohesive Made Ground samples and Glacial Till samples.

At Leisure Centre the majority of PID readings were 0ppm, with the highest reading recorded in TP35 (0.4ppm) in the Cohesive Made Ground.

5 GEOTECHNICAL ASSESSMENT

The derivation of geotechnical properties is based on stratigraphical information from the exploratory holes, interpretation of in situ and laboratory test data and literature recommendations, as applicable.

5.1 TOPSOIL

It is assumed that topsoil shall be stripped as part of the construction works. No geotechnical testing has been undertaken on the topsoil and no geotechnical parameters have been assigned to the stratum. If required, it is considered likely that the topsoil on site will be suitable for re-use as part of the sites landscaping works, although may require a specific agricultural land / soil quality assessment.

5.2 MADE GROUND

5.2.1 GRANULAR MADE GROUND

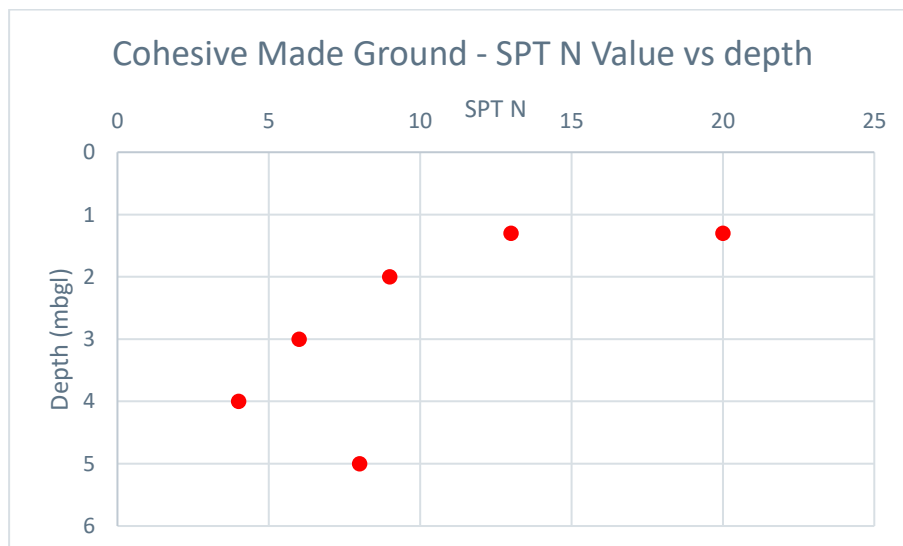
Due to the limited thickness of Granular Made Ground encountered over both sites, no in-situ or laboratory testing was undertaken. It is recommended that this material is locally removed from foundation and pavement formations if encountered during construction and replaced with well compacted engineered fill.

5.2.2 COHESIVE MADE GROUND

5.2.2.1 In-situ Standard Penetration Testing (SPT)

6 SPTs were undertaken in the Cohesive Made Ground from depths of between 1.3m and 5m bgl, recording corrected SPT 'N' values ranging between N=4 and N=20, average N=10. The results are presented against depth in Figure 5-1.

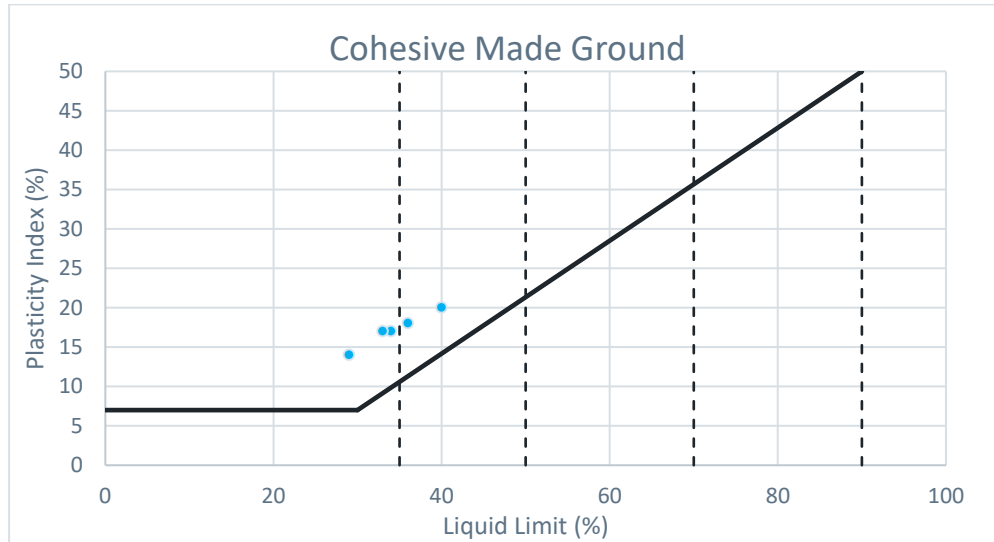
Figure 5 1: SPT N Values vs Depth



5.2.2.2 Classification Testing

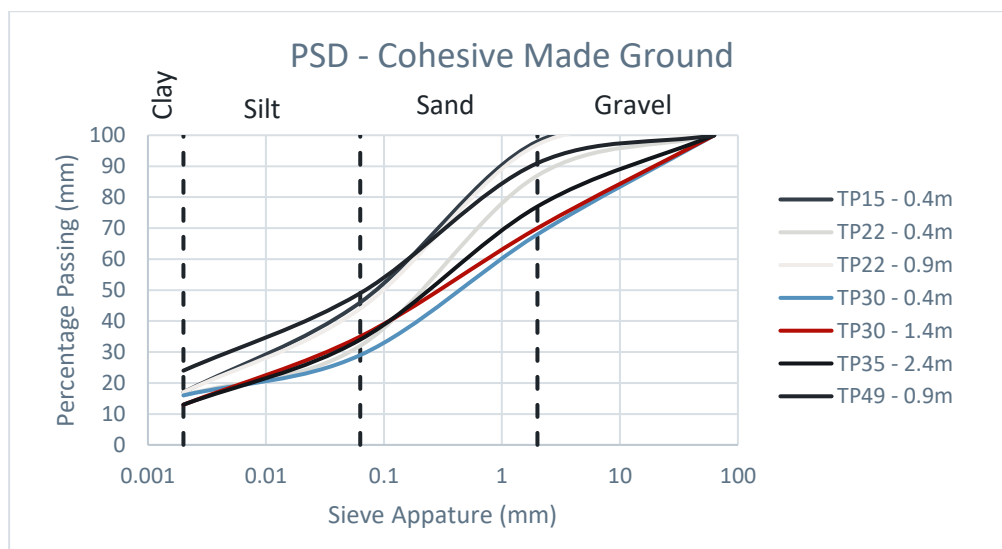
Moisture content testing was carried out on five samples of Cohesive Made Ground deposits. The tests gave moisture contents of between 12.6 and 24.8%, average 17%. The samples were also tested for Atterberg Limit testing, giving a Liquid Limit range of between 29 and 40%, average 34%, and a Plastic Limit of between 15 and 20%, average 17%, Plasticity Index (PI) of between 14 and 20%, average 17% was recorded. The results generally indicate the material to be a clay of low to intermediate plasticity as shown in Figure 5-2.

Figure 5 2: Plasticity index vs Liquid limit



Seven samples of Cohesive Made Ground deposits were subjected to Particle Size Distribution (PSD) testing. The testing recorded the Made Ground to comprise 29-49% fines, average 38%, 35-55% sand, average 46%, and 2-30% gravel, average 16%. These results in Figure 5-3 show variability within this material, with results ranging from a sandy silt to a sandy gravelly clay.

Figure 5-1: Particle Size Distribution



5.2.3 CBR

Six CBR tests were conducted in the Cohesive Made Ground, recording values of between 1.2 and 4.8%, average 2.6%.

5.2.4 COMPACTION

Six 2.5kg compaction tests were conducted in the Cohesive Made Ground, recording maximum dry densities of 1.73-1.85Mg/m³, average 1.81Mg/m³ and optimum moisture contents of 15-18%, average 16% with less than 10% air voids.

5.2.5 GEOTECHNICAL RECOMMENDATIONS FOR MADE GROUND

The Made Ground is identified as variable in nature and locally present at depths up to 5.0m, typically between 1m to 2m depth.

The Made Ground is not considered to be a suitable founding stratum for building structures due to its variability in strength and stiffness. Made Ground should be excavated and replaced below building structure foundations with well compacted engineered granular fill at formation.

Lightly loaded structures not sensitive to differential settlement can be founded within the Made Ground, provided compaction is undertaken with a heavy roller prior to construction. A conservative allowable bearing capacity of 75kPa can be adopted for lightly loaded structures.

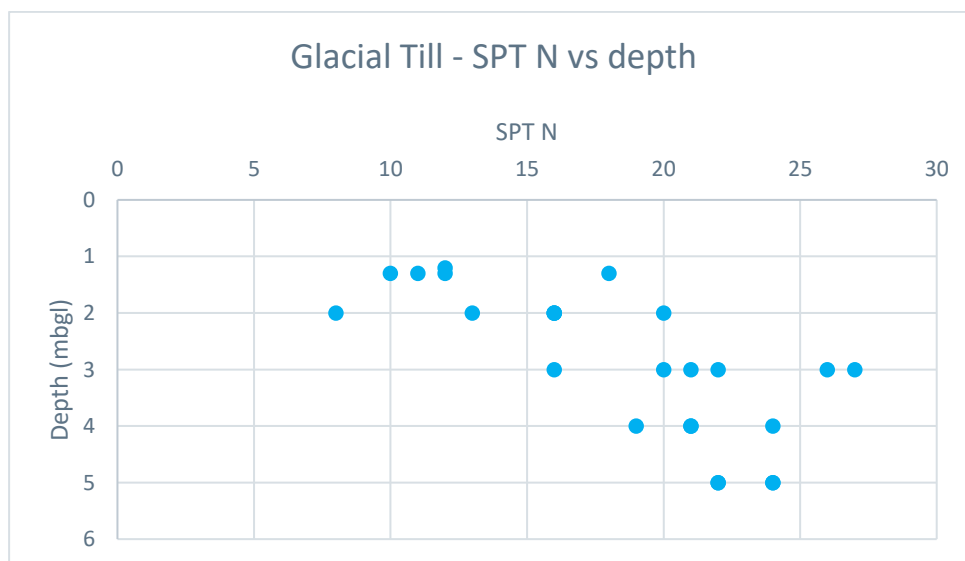
The Made Ground may be suitable for re-use on site as bulk fill depending on the results of any waste classification testing.

5.3 GLACIAL TILL

5.3.1 IN-SITU STANDARD PENETRATION TESTING (SPT) AND UNDRAINED SHEAR STRENGTH

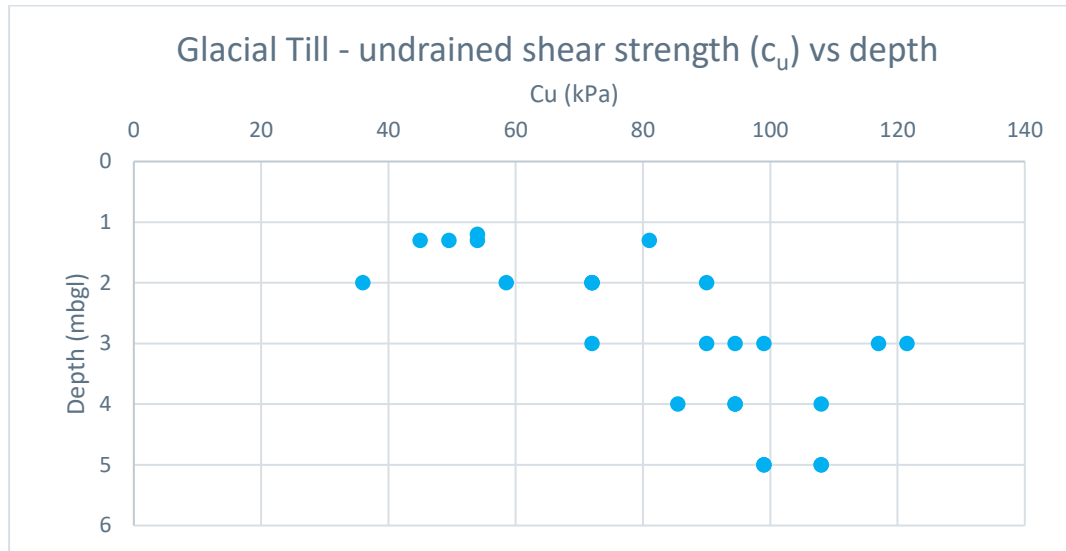
25 SPTs were undertaken in the Glacial Till from depths of between 1.3m and 5m bgl, recording corrected SPT 'N' values ranging between N=8 and N=27, average N=18. The results are presented against elevation in Figure 5-4.

Figure 5-2 SPT N Values vs Depth



Using the correlation postulated by Stroud (1974), undrained shear strengths values ranging between 36 and 122kPa, average 83kPa were derived from the nine corrected SPT results based on a conservative f_1 value of 4.5. The undrained shear strength for the Glacial Till records a general increase with depth as shown in Figure 5-5.

Figure 5-3: Undrained Shear Strength vs Depth



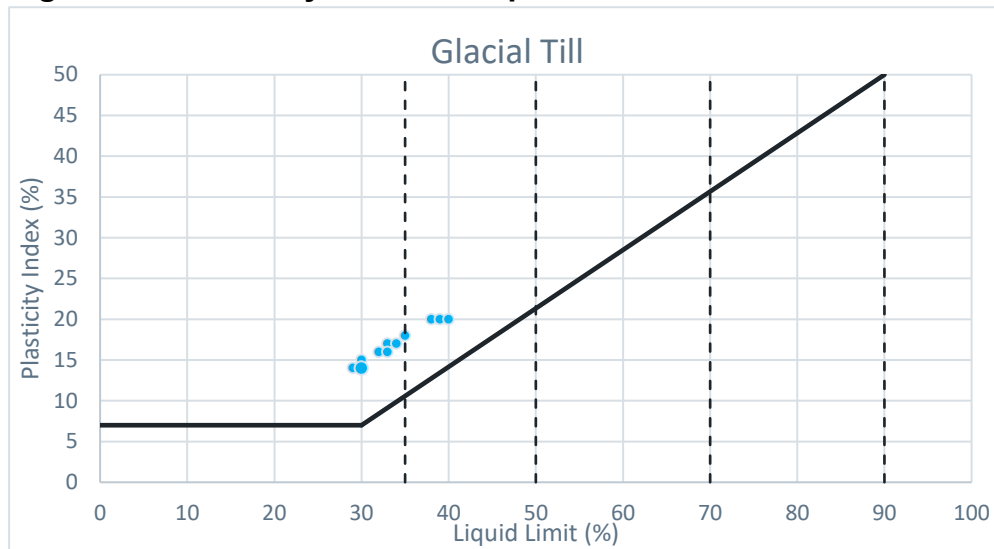
Coefficient of compressibility (m_v)

Correlations between SPT N value and m_v were undertaken in accordance with CIRIA Report 143 (1995) where $m_v = (1/(SPT N \times f_2))$. Using a conservative f_2 value of 0.45, m_v values ranging between 0.08 and 0.28 m^2/MN , average 0.13 m^2/MN were estimated.

5.3.2 CLASSIFICATION TESTING

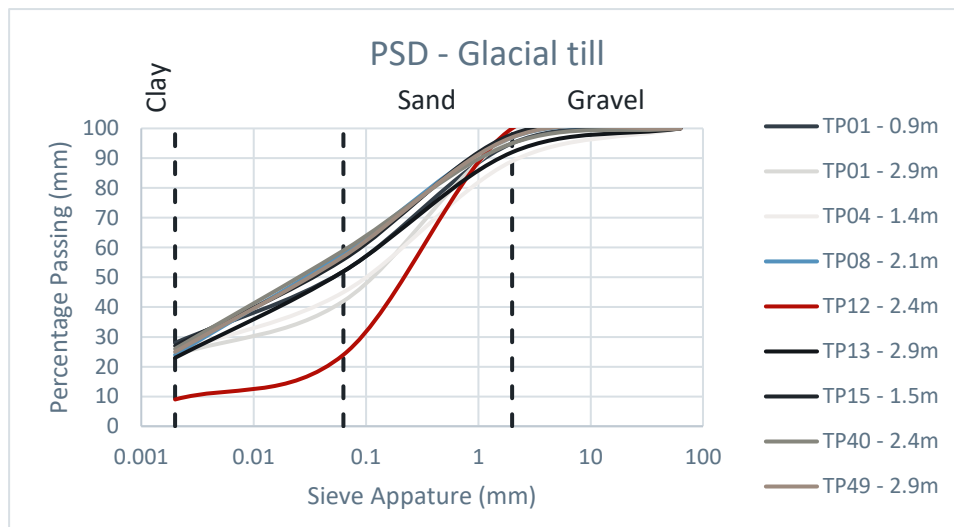
Moisture content testing was carried out on thirteen samples of Glacial Till deposits. The tests gave moisture contents of between 10.5 and 19.7%, average 15%. All but one of the samples were also tested for Atterberg Limit testing (one sample was non-plastic), giving a Liquid Limit range of between 19 and 40%, average 34%, and a Plastic Limit of between 15 and 20%, average 17%, Plasticity Index (PI) of between 14 and 20%, average 17% was recorded. The results generally indicate the material to be a clay of low to intermediate plasticity as shown on Figure 5-6.

Figure 5-4: Plasticity index vs Liquid limit



Nine samples of Glacial Till deposits were subjected to Particle Size Distribution (PSD) testing as shown in Figure 5-7. The testing generally confirms the cohesive nature of the soil, with results comprising 24-59% fines, average 49%, 39-76% sand, average 46%, and 0-11% gravel, average 5%. A sample comprising a silty sand is recorded at 2.4m in trial pit TP12.

Figure 5-5: Particle size distribution



5.3.3 EFFECTIVE ANGLE OF SHEARING RESISTANCE

The effective angle of shearing resistance has been estimated using the equation given in BS8004 where:

$$\phi'_{cv,k} = 42 - 12.5 \log_{10} I_p$$

Where I_p is the Plasticity Index.

The range of PI values obtained for the Glacial Till result in effective angles of shearing resistance of between 26 and 28°.

5.3.4 CBR

Two CBR tests were conducted in the Glacial Till, recording values of between 1.4 and 4.2%, average 2.8%.

5.3.5 COMPACTION

Two 2.5kg compaction tests were conducted in the Glacial Till, recording maximum dry densities of 1.77 and 1.86Mg/m³, average 1.82Mg/m³ and optimum moisture contents of 15 and 16%, average 16% with less than 10% air voids.

5.3.6 GEOTECHNICAL RECOMMENDATIONS FOR GLACIAL TILL

Based on an assessment of the available data, the following characteristic parameters are derived for the Glacial Till as shown in Table 5-1.

Table 5-1– Summary of Derived Values for Glacial Till

Geotechnical Parameter	No. of Tests	Characteristic Value*	Source of value
Undrained Shear Strength, c_u (kPa)**	25	60 for depths up to 2m 80 for depths>2.0m	Empirical relationship with SPT results
Constant Volume Effective angle of friction Φ'_{cv} (°)***	13	27	Plasticity Index results BS 8002
Bulk Unit Weight (kN/m ³)	2	18	BS 8002 CBR Results
Undrained Young's Modulus, E_u (MPa)	25	12 for depths up to 2m 18 for depths>2.0m	Empirical relationship with SPT results and coefficient of compressibility correlation

* The characteristic values should be re-assessed during detailed design with consideration of the limit state for the structure or earthwork being assessed.

**To derive the undrained shear strength from the SPT results the empirical correlation with N values has been used as listed in Section 4.2. For this correlation a plasticity index of 17 has been used and an f_1 value of 4.5.

***To derive constant volume of angle of friction from the plasticity testing the empirical correlation with the plasticity index has been used as listed in Section 4.2. For this correlation a plasticity index of 17 has been used.

The Glacial Till is considered to be a suitable founding stratum for building structures due to its consistent medium strength and stiffness as shown in Table 5-1.

An allowable bearing capacity of 120kPa is considered appropriate for foundation formations at 2.0m depth or above, and an allowable bearing capacity of 150kPa is considered appropriate for foundation formations below 2.0m depth.

All formations should be inspected by a competent geotechnical engineer with any identified localised soft spots excavated and replaced with well compacted engineered granular fill at

The Made Ground may be suitable for re-use on site as engineered fill depending on the natural moisture content of the excavated material. The natural moisture content recorded in the laboratory testing recorded values ranging from 10.5 and 19.7%, the recorded optimum moisture content from the material compaction testing is 15 to 16%.

5.4 CHEMICAL ATTACK ON BURIED CONCRETE

The design sulphate class has been assessed in accordance with BRE Special Digest 1:2005 based on the soil chemical testing results for pH and sulphates (BRE Suite C)

A design sulphate Class of DS-1 and an ACEC class of AC-1 has been assessed assuming mobile groundwater conditions for the Made Ground and Glacial Till.

6 CONTAMINATION QUANTITATIVE RISK ASSESSMENT

6.1 INTRODUCTION

Legislation and guidance on the assessment of potentially contaminated sites requires a tiered risk-based approach. Tier 1 comprises a Generic Quantitative Risk Assessment (GQRA), which is a comparison of site contaminant levels in soil and groundwater against generic assessment criteria (GAC) representing minimal risk to human health or groundwater/surface water receptors.

6.2 HUMAN HEALTH RISK ASSESSMENT

6.2.1 METHODOLOGY

In order to provide a consistent methodology for the assessment of contaminants, a series of human health GAC ('screening values') have been calculated by WSP for different standard land use scenarios. Further detail of the risk assessment approach and methodology for the derivation of GAC is provided in **Appendix F**.

Based on the CSM and the proposed land uses at each site, the reported soil concentrations were compared against the GAC for public open space land use and a commercial land use. A conservative soil organic matter (SOM) content of 1% was adopted for screening purposes based on site specific data (average SOM content 1.43%). The laboratory and screening reports are presented in **Appendix B**.

For some contaminants of concern, direct contact will be the dominant pathway for exposure. To support construction and development options, human exposure to all unsaturated soils, irrespective of depth, was assumed possible for the purpose of this assessment. This will maximise the information available to the design team on the suitability of all the unsaturated material and can support with materials management options.

6.2.2 RISK TO HUMAN HEALTH-SOILS

A total of 49 samples were analysed; and screened against the adopted GAC. Following the screening of the laboratory results no exceedances of the public open space or commercial site end use screening values protective of human health have been identified.

6.2.3 ASBESTOS

Asbestos was identified in one sample of Made Ground at the Leisure Centre site; within TP33 at a depth of 0.3 - 0.4m bgl with a total quantity of 0.0036% in the form of loose fibres.

It should be noted that there is no quantifiable safe exposure limit for asbestos. Asbestos contamination may not conform to a normal spatial distribution as compared to other contaminants where concentrations generally diminish with distance from a central source area. The presence of asbestos fibres or ACM (asbestos containing material) within soils in other areas across the site therefore cannot be discounted. As such, there is a potential for asbestos to be present in any Made Ground at the site, risks from asbestos could be mitigated through the placement of a suitable

thickness of clean cover soils or hardstanding or the excavation and disposal of asbestos impacted Made Ground as necessary.

Leisure Centre development plans at the time of writing indicate that TP33 will be covered by an area of hard standing which would sever the potential pathway. Both the Leisure Centre and Grace Park development plans are presented in **Appendix D**. In addition, the type of Made Ground in which the asbestos was recorded was not identified in any other locations across the two sites.

Assuming that any sub surface works in this area are carried out in accordance with appropriate health and safety risk assessments risks to the identified human health receptors from asbestos in soil contamination is considered low.

6.3 CONTROLLED WATERS RISK ASSESSMENT

Groundwater analysis was retrospectively added to the scope of works for the Grace Park area only. Groundwater analysis was performed on the 17th October 2026. The laboratory analysis results and screening reports are presented in **Appendix B**. Groundwater levels are presented in Appendix B6.

Environmental Quality Standards (EQS) have been derived from the Water Framework Directive (Standards and Classification) Directions (England and Wales) generally used for assessment of surface water. EQS values have been used for assessment of groundwater and surface water as the Secondary A Aquifer provides baseflow to rivers but is not anticipated to be used for potable supply. As such Drinking Water Standards (DWS) are not used as part of this assessment except where EQS values for determinands are absent.

2 exceedances were recorded above the Drinking Water Standards (DWS) during this monitoring round. Both for Benzo(a)pyrene in WS01 (0.0923ug/l) and WS03 (0.0108ug/l). No other exceedances of EQS or DWS were recorded.

Due to the generally impermeable nature of the strata, lack of sensitive receptors, lack of groundwater abstractions near the site as well as the proposed end use of the site. This is not deemed as an unacceptable risk. The larger exceedance of benzo(a)pyrene in WS01 is located adjacent to Leathers Lane and is possibly indicative of built-up runoff from the road entering the well as opposed to a wider level of contamination.

7 REVISED CONCEPTUAL SITE MODEL

The preliminary conceptual site model presented in the WSP Phase 1 Report (WSP, 2023) has been revised and updated based on the risk assessments for human health presented above with an end use of public open space with areas of soft and hard landscaping is assumed.

Table 7-1 outlines the plausible contaminant linkages that have been identified and discusses their potential risk levels (CIRIA risk assessment guidance was followed and is presented in **Appendix G**).

Table 7-1 – Revised Conceptual Site Model (Grace Park and Leisure Centre)

Plausible Source	Plausible Pathway	Plausible Receptor	Likelihood of Complete Linkage	Severity	Risk	Comment
Contaminants of concern in Made Ground associated with current and previous on-site development	Ingestion Dermal contact	Future site users Construction workers Future site maintenance workers	Unlikely	Mild	Very Low	No exceedances of GAC were identified on either site therefore the potential severity is considered to be mild and the likelihood of a receptor coming into contact with significant levels of contamination from Made Ground is considered to be unlikely meaning the overall risk is classified as low.
	Inhalation	Future site users Adjacent site users Construction workers Future site maintenance workers	Unlikely	Medium	Low	Asbestos was identified at one location at Leisure Centre (TP33). The severity of asbestos inhalation is considered to be medium as it may cause chronic damage to human health. The likelihood of a future site user coming into contact with asbestos is thought to be unlikely because the presence of asbestos is thought to be localised to the area around TP33 and the current proposed development plans indicate TP33 is located in an area of proposed hard standing which would sever the potential pathway between the identified asbestos and future site users. Construction workers (particularly ground workers), future site workers and adjacent site users could become exposed to airborne asbestos fibres where present in Made Ground. Management of risks from asbestos in soils during construction will be required. There is no quantifiable safe exposure limit for asbestos. An Asbestos Management Plan compliant with the Control of Asbestos Regulations 2012 (CAR-SOIL) should be prepared for the site to ensure risks posed to receptors during any future intrusive works are adequately managed. Assuming that works are carried out in accordance with appropriate health and safety risk assessments, method statements etc and in line with CAR-SOIL noted above, risks to the construction workers and future site users from asbestos are considered low.

Plausible Source	Plausible Pathway	Plausible Receptor	Likelihood of Complete Linkage	Severity	Risk	Comment
	Ground Gas Migration, Inhalation or Accumulation	Future site users Construction workers Future site maintenance workers	Low Likelihood	Medium	Low to Moderate	Ground gas risk has been found to be CS1 for Carbon Dioxide across the whole site. Methane is CS2 for WS02 and WS04 only. The gas risk is still thought to be low. This is due to the high water table on site limiting how much gas can be produced, as well as open nature of the site development. If development plans change to include more enclosed spaces. Further gas monitoring may be pertinent, as well as the installation of gas membranes for buildings. Ground gas migration to off-site receptors is thought to be limited due to the high-water level, low flow readings, and relatively low methane readings. If construction works involve construction workers entering excavations then standard mitigation measures should be in place such as gas alarms.
	Migration of leachable / mobile contamination	Groundwater within the bedrock aquifer Drinking water supplies	Low Likelihood	Medium	Low to Moderate	Benzo(a)pyrene exceedances against drinking water standards (DWS) were found in WS01 and WS03 during the groundwater monitoring round. The thickness of the superficial deposits and lack of groundwater abstractions in the area mean it is unlikely for there to be a complete pollutant linkage. DWS is also a much more conservative screening criteria than is typically used in controlled waters assessments. Therefore the risk to groundwater within bedrock aquifers is considered to be low to moderate.

Plausible Source	Plausible Pathway	Plausible Receptor	Likelihood of Complete Linkage	Severity	Risk	Comment
		Small pond on-site at Grace Park. Unnamed stream approximately 130m east of the Leisure Centre site.	Unlikely	Mild	Low	Surface waters were not assessed as a part of the controlled waters. Exceedances of benzo(a)pyrene are thought to have little impact on the surface water receptors. This is due to the low mobility of PAH's in water and the impermeable nature of the ground. As well as the limited elevated levels. The potential severity is considered to be mild as the surface water features are thought to be non-sensitive water resources. Therefore the risk to surface water features is considered to be low.

8 CONCLUSIONS AND RECOMMENDATIONS

8.1 GEO-ENVIRONMENTAL

8.1.1 RISKS TO HUMAN HEALTH

No exceedances of GAC were identified on either site therefore the risk to future site users, construction workers and future maintenance workers from contaminated soil are considered very low.

One occurrence of asbestos was recorded at TP33 (Leisure Centre). Current proposed development plans indicate TP33 is located in an area of proposed hard standing which would sever the potential pathway between the identified asbestos and future site users.

Construction workers (particularly ground workers) and future site workers could become exposed to airborne asbestos fibres where present in Made Ground. Management of risks from asbestos in soils during construction will be required.

There is no quantifiable safe exposure limit for asbestos. An Asbestos Management Plan compliant with the Control of Asbestos Regulations 2012 (CAR-SOIL) should be prepared for the site to ensure risks posed to workers during any future intrusive works are adequately managed.

Assuming that works are carried out in accordance with appropriate health and safety risk assessments, method statements etc and in line with CAR-SOIL noted above, risks to the construction workers and future site users from asbestos are considered to be low.

8.1.2 RISKS TO CONTROLLED WATERS

Exceedances of Benzo(a)pyrene against DWS were found in 2 locations. This is not deemed as an unacceptable risk due to the thickness of superficial deposits limiting the transport of contaminants toward the bedrock aquifer. As well as DWS being a much more conservative criteria than is typically used for controlled waters assessments. The superficial deposits are not a productive aquifer. No groundwater abstractions are recorded within 1km of the Grace Park site.

Surface water is not thought to be at risk as a result of these exceedances due to impermeable strata in large areas of the site and low mobility of benzo(a)pyrene in water. A small pond is located in the centre of the Grace Park site. The closest off-site surface water feature is a stream located approximately 445m northwest.

The risk to controlled waters is low.

8.1.3 GROUND GAS RISKS

There is considered to be a low risk to human health during normal use of the Grace Park site from ground gases, based on recent monitoring results.

For any proposed buildings, the overall classification of the site for ground gas mitigation measures is Characteristic Situation 1. However, elevated methane concentrations were recorded in WS02 and WS04, close to the proposed Sports Community Pavilion (see drawing 70119719_WSP_LUD_GRP_DR_LA_0004 P03 in Appendix D) resulting in Characteristic Situation 2..

High groundwater levels across the site limit the gas generation potential of the boreholes. No carbon monoxide or hydrogen sulphide were detected during monitoring.

8.2 GEOTECHNICAL

8.2.1 FOUNDATIONS

The ground investigation undertaken records the ground conditions at the site comprise a layer of variable Made Ground underlain by Glacial Till deposits. The Glacial Till deposits typically comprise a clay of moderate strength and stiffness.

Confirmed structural loadings are not yet available at the time of preparing this report. It is however anticipated that the proposed development will comprise one to two storey structures and groundworks. It is considered based on the ground conditions at the site that shallow foundations in the form of pad and strip footings taken through Made Ground and bearing with the underlying Glacial Till will likely be suitable. An allowable bearing capacity of 120kPa is considered appropriate for foundation formations at 2.0m depth or above, and an allowable bearing capacity of 150kPa is considered appropriate for foundation formations below 2.0m depth.

Lightly loaded structures not sensitive to differential settlement can be founded within the Made Ground providing compaction is undertaken with a heavy roller prior to construction. A conservative allowable bearing capacity of 75kPa can be adopted for lightly loaded structures.

A design sulphate Class of DS-1 and an ACEC class of AC-1 have been assessed assuming mobile groundwater conditions for the Made Ground and Glacial Till.

8.2.2 EXCAVATIONS

Excavations are anticipated to be through the Made Ground and into the underlying natural deposits. It is anticipated that such excavations could be achieved using conventional hydraulic excavators. Vertical sided excavations may not be stable in the immediate or short term without shoring or battering back to safe angles. Ground obstructions in the form of foundation remains at other below ground obstructions associated with previous site development may be encountered during construction. Allowance for over digging and replacement with suitably compacted engineered fill may be necessary during construction.

Shallow perched groundwaters and seepages were recorded during the ground investigation works. Localised perched groundwater may be encountered during construction. Appropriate groundwater control measures, such as shoring and sump pumping, may be required during construction.

8.2.3 DRAINAGE

Direct infiltration of surface waters via soakaway is unlikely to be feasible due to the recorded cohesive soils of the Head deposits and the Peterborough Member at shallow depth. Conventional piped surface water drainage with gullies and chambers is recommended.

8.2.4 PAVEMENT

Based on the soil descriptions, in-situ testing, and laboratory testing undertaken as part of the ground investigation, a preliminary design CBR of 2.5% is recommended for pavement construction subject to further targeted verification testing when the layout is finalised.

During construction, the exposed subgrade should be proof rolled, inspected by an engineer, and any unsuitable soils (*“soft spots”*) removed and

replaced with well compacted granular fill. If encountered, any existing foundations / obstructions should be removed to a minimum depth of 500mm below the underside of the formation to prevent hard spots from forming. Following proof rolling and the appropriate treatment of any soft spots, confirmatory in situ CBR tests should be undertaken to confirm design values.

It is anticipated that soils may soften and/or weather on exposure. The contractor should undertake all necessary steps to protect the formation, which may include, but not be restricted to, one or more of the following:

- Shaping the formation to falls to prevent surface water ponding
- Avoid the trafficking of the formation
- Placing subbase as soon as practicable
- Leaving the formation slightly high until capping and/or subbase is ready to be placed and trimming immediately in advance of stone placement.

8.2.5 GEOTECHNICAL RISK REGISTER

A Geotechnical Risk Register has been prepared for the proposed development at the site following the ground investigation completed and is presented as **Appendix H**.

8.3 RECOMMENDATIONS

Gas mitigation measures in accordance with Characteristic Situation 2 should be adopted for buildings on site in order to reduce risk to human health receptors. Should plans be updated to include more buildings, further gas monitoring may be required in the vicinity of proposed building locations.

Appendix A

FIGURES





DO NOT SCALE

Information Classification:
INTERNAL

Information that is only intended for internal distribution among
WSP employees, independent consultants, contractors,
sub-contractors, clients and authorised third parties.

Legend :

 Approximate Red Line Boundary

Title : Site Locations-Halewood LUF
Author : WSP-Halewood LUF
Scale : 1:72,224
Layout : WSP A4 Landscape
Current Time : 04/02/2025 15:56



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Information Classification:
INTERNAL

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sub-contractors, clients and authorised third parties.

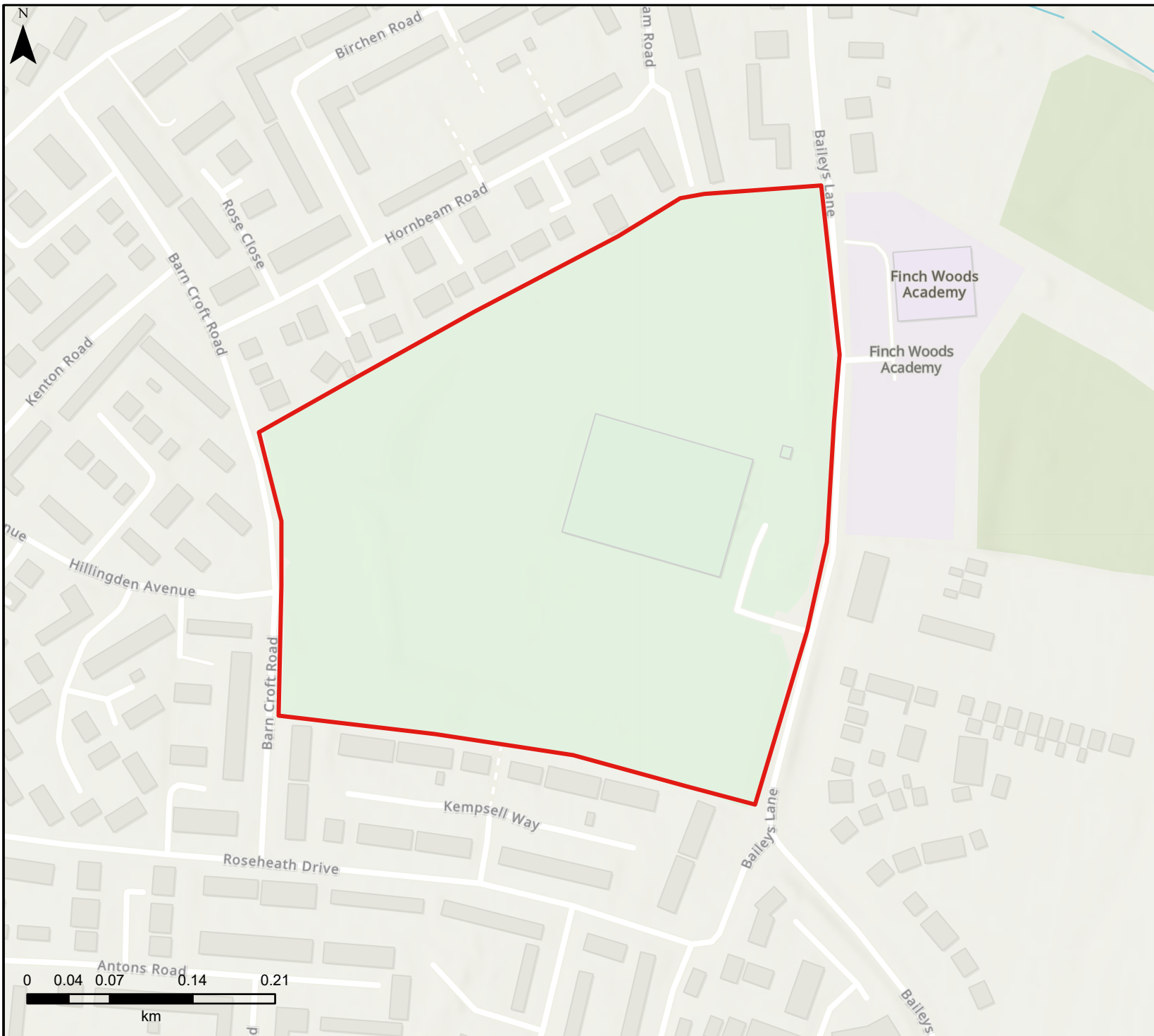
Legend :

 Approximate Red Line Boundary

Title : Grace Park Site Layout
Author : WSP-Halewood LUF
Scale : 1:4,514
Layout : WSP A4 Landscape
Current Time : 04/02/2025 15:55



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Information Classification:

INTERNAL

Information that is only intended for internal distribution among WSP employees, independent consultants, contractors, sub-contractors, clients and authorised third parties.

Legend :

 Approximate Red Line Boundary

Title : Leisure Centre Site Layout
Author : WSP-Halewood LUF
Scale : 1:4,514
Layout : WSP A4 Landscape
Current Time : 04/02/2025 15:55



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Approximate Site Boundary



Borehole Location



Trial Pit Location



Trial Pit Location (plus
Soakaway)

Figure 4a
Exploratory Plan – Grace Park



Approximate Site Boundary



Borehole Location



Trial Pit Location

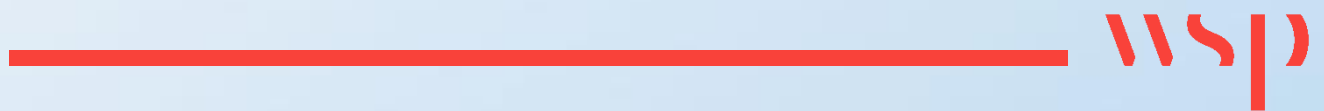


Trial Pit Location (plus
Soakaway)

Figure 4b
Exploratory Plan– Leisure Centre

Appendix B

GROUND INVESTIGATION INFORMATION



Appendix B.1

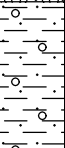
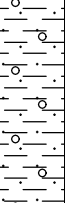
EXPLORATORY HOLE LOGS



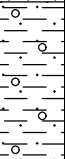
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		Project Phase 2 GI					Sheet 1 of 1					
Job No UK0029106.9719		Client KMBC					Date Start: 22-01-25 End: 22-01-25					
Contractor/Driller Clyde Ground Investigation Ltd		Method/Plant Used Dando 1500		Logged By Fay Chappel		Co-Ordinates () E: 344761.47 N: 385109.51		Ground Level (m) 23.785				
SAMPLES & TESTS							STRATA					
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thickness)	Description	Legend	Geology	Dia Install / Backfill mm
0.20-0.00	ES		0.0				23.49	(0.30) 0.30	Dark brown slightly gravelly slightly sandy CLAY. Gravel is angular to subrounded fine to coarse of mudstone, sandstone and glass fragments.(TOPSOIL)		TS	
1.00-0.00	D								Firm dark reddish brown slightly gravelly slightly sandy CLAY. Gravel is subrounded to well rounded fine and medium of mudstone, quartz, sandstone and siltstone. (GLACIAL TILL)			
1.30	(S)	1,2,2 3,3,3 N=11						(2.00)			TILL	
1.50-1.60	D								1.70 - 1.80 Reddish brown fine to medium sand pocket.			
2.00	(S)	3,4,5 5,5,5 N=20					21.49	2.30				
2.70-2.80	D						20.99	(0.50) 2.80	Dark reddish brown slightly gravelly fine and medium SAND. Gravel is subrounded to rounded fine and medium of mudstone, quartz and sandstone. Sand horizon. (GLACIAL TILL)		TILL	
3.00-0.00	D-SPT (S)	3,5,5 5,6,6 N=22					20.79	3.00	Firm locally stiff dark reddish brown slightly gravelly slightly sandy CLAY. Gravel is subrounded to well rounded fine and medium of mudstone, quartz, sandstone and siltstone. (GLACIAL TILL)		TILL	
									Abandoned due to collapse			
Hole Diameter			Run Information				Water Strikes					
Depth	Diameter (mm)	Remarks	Top (m)	Base (m)	Diam (mm)	Rec'v (m)	Date	Time	Strike	Minutes	Standing	Casing
			1.30	2.00	89	89.00						
			2.00	3.00	89	1.00						
							General Remarks Terminated at 3m bgl due to collapse.					
Scale 1:34.375		Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.										

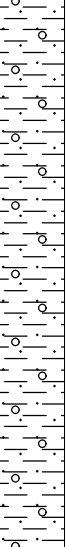
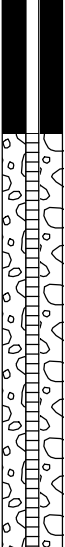
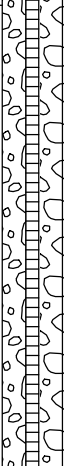
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 WSP Telephone: Email:		WINDOW SAMPLE LOG					Hole No. WS02					
		Project Phase 2 GI					Sheet 1 of 1					
Job No UK0029106.9719		Client KMBC					Date Start: 23-01-25 End: 22-01-25					
Contractor/Driller Clyde Ground Investigation Ltd		Method/Plant Used Dando 1500		Logged By Fay Chappel		Co-Ordinates () E: 344668.51 N: 385162.91		Ground Level (m) 23.830				
SAMPLES & TESTS							STRATA					
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thickness)	Description	Legend	Geology	Dia Install / Backfill mm
0.20-0.00	ES		0.0				23.48	(0.35)	Dark brown slightly sandy CLAY. Locally sandy. (TOPSOIL)		TS	
0.60-1.00 0.60-0.00	B ES		0.0						Firm locally stiff dark reddish brown slightly gravelly slightly sandy CLAY. Gravel is subrounded to well rounded fine to coarse of mudstone, quartz, sandstone and siltstone. With frequent fine to medium sand pockets. (GLACIAL TILL)			
1.30	(S)	2,2,3 3,3,3 N=12						(1.65)			TILL	
1.90-0.00 2.00	D (S)	2,2,2 3,4,4 N=13					21.83	2.00	Firm dark reddish brown sandy CLAY. With frequent fine to medium sandy pockets. (GLACIAL TILL)		TILL	
2.00-2.10	D						21.13	2.70	Firm dark reddish brown slightly gravelly slightly sandy CLAY. Gravel is subrounded to rounded fine and medium of mudstone, quartz, sandstone and siltstone. (GLACIAL TILL)		TILL	
3.00	(S)	2,5,6 7,7,7 N=27					20.83	(0.30) 3.00	NO RECOVERY. (NO RECOVERY)		NR	
							19.83	4.00	Abandoned due to collapse			
Hole Diameter			Run Information				Water Strikes					
Depth	Diameter (mm)	Remarks	Top (m)	Base (m)	Diam (mm)	Rec'v (m)	Date	Time	Strike	Minutes	Standing	Casing
			1.30	2.00	89	0.70						
			2.00	3.00	89	1.00						
			3.00	4.00	00	0.00						
							General Remarks Terminated at 3m bgl due to collapse. Rig sinking due to waterlogged conditions.					
Scale 1:34.375		Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.										

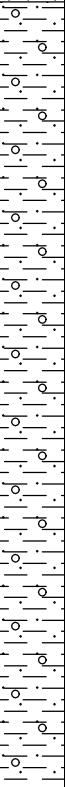
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 WSP Telephone: Email:		WINDOW SAMPLE LOG					Hole No. WS03					
		Project Phase 2 GI					Sheet 1 of 1					
Job No UK0029106.9719		Client KMBC					Date Start: 22-01-25 End: 22-01-25					
Contractor/Driller Clyde Ground Investigation Ltd		Method/Plant Used Dando 1500		Logged By Fay Chappel		Co-Ordinates () E: 344688.67 N: 385212.99		Ground Level (m) 23.681				
SAMPLES & TESTS							STRATA					
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thickness)	Description	Legend	Geology	Dia Install / Backfill mm
0.20-0.00	ES		0.0				23.38	(0.30) 0.30	Dark brown slightly sandy CLAY. With frequent rootlets. (TOPSOIL)		TS	
0.50-0.60	D							(1.10)	Firm dark reddish brown slightly sandy CLAY with frequent fine to medium sand pockets and rare subrounded to well rounded gravel of mudstone and siltstone. (GLACIAL TILL)		TILL	
1.00	(S)	2,2,3 3,3,3 N=12					22.28	1.40				
1.50-1.60	D								Firm locally stiff dark reddish brown and greyish green slightly gravelly slightly sandy CLAY. Gravel is subrounded to well rounded fine to coarse of mudstone, quartz, sandstone and siltstone. (GLACIAL TILL)			
2.00	(S)	1,2,4 4,4,4 N=16										
3.00-3.45	D-SPT (S)	3,5,5 5,5,6 N=21						(3.60)			TILL	
4.00	(S)	3,4,4 5,6,6 N=21										
4.00-5.00	B											
5.00-5.45	D-SPT (S)	3,4,4 6,7,7 N=24					18.68	5.00	Reached scheduled depth			
Hole Diameter			Run Information				Water Strikes					
Depth	Diameter (mm)	Remarks	Top (m)	Base (m)	Diam (mm)	Rec'v (m)	Date	Time	Strike	Minutes	Standing	Casing
							General Remarks Terminated at 5m bgl as scheduled.					
Scale 1:34.375		Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.										

20 WSP WINDOW SAMPLE LOG HALEWOOD LUF G1 JAN 2025 GPJ WSPTEMPLATE8.00.GDT 27/2/26

 WSP Telephone: Email:		WINDOW SAMPLE LOG					Hole No. WS04					
		Project Phase 2 GI					Sheet 1 of 1					
Job No UK0029106.9719		Client KMBC					Date Start: 22-01-25 End: 22-01-25					
Contractor/Driller Clyde Ground Investigation Ltd		Method/Plant Used Dando 1500		Logged By Fay Chappel		Co-Ordinates () E: 344685.36 N: 385259.34		Ground Level (m) 23.538				
SAMPLES & TESTS							STRATA					
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	Description	Legend	Geology	Dia Install / Backfill mm
0.00-0.00	ES								Dark brown slightly sandy CLAY. Topsoil. (TOPSOIL)		TS	
0.20-0.00	ES		0.0				23.19	0.35	Firm locally stiff dark reddish brown slightly gravelly slightly sandy CLAY. Gravel is subrounded to well rounded fine to coarse of mudstone, quartz, sandstone and siltstone. (GLACIAL TILL)		TILL	
1.30	(S)	1,2,2 2,3,3 N=10										
1.30-0.00	ES		0.0					(2.55)				
2.00	(S)	2,3,4 4,4,4 N=16										
2.00-0.00	D											
3.00	(S)	2,3,3 4,4,5 N=16					20.64	2.90	Soft locally firm dark reddish brown slightly sandy CLAY. Locally sandy. (GLACIAL TILL)		TILL	
3.00-5.00	B											
4.00	(S)	2,3,4 5,5,5 N=19						(2.10)				
5.00	(S)	3,4,5 6,6,5 N=22					18.54	5.00	Reached scheduled depth			
Hole Diameter			Run Information				Water Strikes					
Depth	Diameter (mm)	Remarks	Top (m)	Base (m)	Diam (mm)	Rec'v (m)	Date	Time	Strike	Minutes	Standing	Casing
			1.30	2.00	79	0.70						
			2.00	3.00	79	1.00						
			3.00	4.00	79	1.00						
			4.00	5.00	79	1.00						
							General Remarks Terminated at 5m bgl as scheduled.					
Scale 1:34.375			Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.									

20 WSP WINDOW SAMPLE LOG HALEWOOD LUF G1 JAN 2025 GPJ WSPTEMPLATE8.00.GDT 27/2/26

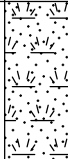
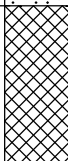
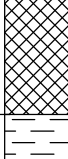
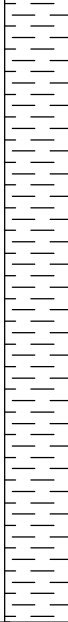
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Job No UK0029106.9719		Client KMBC					Date Start: 22-01-25 End: 22-01-25					
Contractor/Driller Clyde Ground Investigation Ltd		Method/Plant Used Dando 1500		Logged By Fay Chappel		Co-Ordinates () E: 344650.25 N: 385275.62		Ground Level (m) 23.915				
SAMPLES & TESTS							STRATA					
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	Description	Legend	Geology	Dia Install / Backfill mm
0.20-0.00	ES		0.0				23.62	(0.30) 0.30	Dark brown slightly sandy CLAY with rare subrounded to rounded gravel of mudstone, sandstone and quartzite. (TOPSOIL)		TS	
1.30	(S)	3,4,4 4,5,5 N=18							Soft locally firm dark reddish brown slightly gravelly slightly sandy CLAY with frequent fine to medium sandy pockets. Gravel is subrounded to rounded fine to coarse of mudstone, sandstone and siltstone. (GLACIAL TILL)		TILL	
2.00	(S)	2,3,4 4,4,4 N=16						(3.60)				
2.50-2.70	D											
3.00	(S)	3,3,5 5,5,5 N=20										
4.00	(S)	3,5,6 6,6,6 N=24					20.02	3.90	Soft dark reddish brown slightly sandy SILT with rare subrounded fine to coarse gravel of mudstone and sandstone. (GLACIAL TILL)		TILL	
4.00-4.30	D							(1.10)				
5.00	(S)	4,3,5 5,6,6 N=22					18.92	5.00	4.75 - 4.80 Reddish brown clayey fine to medium sand pocket.			
									Reached scheduled depth			
Hole Diameter			Run Information				Water Strikes					
Depth	Diameter (mm)	Remarks	Top (m)	Base (m)	Diam (mm)	Rec'v (m)	Date	Time	Strike	Minutes	Standing	Casing
			1.30	2.00	89	0.70						
			2.00	3.00	80	1.00						
			3.00	4.00	60	1.00						
			4.00	5.00	50	1.00						
							General Remarks Terminated at 5m bgl as scheduled.					
Scale 1:34.375		Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.										

20 WSP WINDOW SAMPLE LOG HALEWOOD LUF G1 JAN 2025 GPJ WSPTEMPLATE8.00.GDT 27/2/26

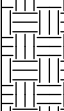
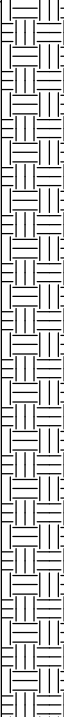
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		Project Phase 2 GI						Sheet 1 of 1											
Job No UK0029106.9719		Client KMBC						Date Start: 21-01-25 End: 21-01-25											
Contractor/Driller Clyde Ground Investigation Ltd		Method/Plant Used Dando 1500		Logged By Ellie Hale		Co-Ordinates () E: 345367.35 N: 385304.57		Ground Level (m) 16.374											
SAMPLES & TESTS										STRATA									
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	Description	Legend	Geology	Dia Install / Backfill mm							
0.40-0.50	D						16.07	(0.30) 0.30	Soft dark brown very sandy clayey SILT with abundant rootlets. (TOPSOIL)		TS								
							15.57	(0.50) 0.80	Firm locally soft reddish brown sandy slightly gravelly CLAY. Gravel is rounded to angular fine to coarse of brick, concrete, mudstone, sandstone, clinker, charcoal and coal. (MADE GROUND COHESIVE)		CMG								
1.30	(S)	3,4,5 5,5,5 N=20/ 0mm	0.0					(1.00)	Stiff locally soft dark brown sandy slightly gravelly CLAY. Gravel is rounded to angular fine to coarse of brick, limestone, mudstone, sandstone, clinker, coal and charcoal. (MADE GROUND COHESIVE) 0.80 - 1.80 Soft from 0.8-1.3m bgl. Stiff from 1.3 to 1.8m bgl.		CMG								
1.40-1.50	B						14.57	1.80	Firm locally soft reddish brown mottled grey sandy slightly gravelly CLAY with occasional pockets of grey, yellow and red sand. Gravel is rounded to subangular fine and medium of limestone, mudstone, sandstone and various lithologies. (GLACIAL TILL)		TILL								
2.00	(S)	2,2,2 2,2,2 N=8/ 0mm																	
2.20-2.30 2.40-2.50	ES D																		
3.00	(S)	5,6,6 6,7,7 N=26/ 0mm							3.00 - 5.00 Over-drilled in order to retrieve sample - one run from 3-5m bgl retrieved.		TILL								
3.00-5.00	B							(3.20)											
4.00	(S)	4,5,5 5,5,6 N=21/ 0mm																	
5.00	(S)	4,5,6 6,6,6 N=24/ 0mm					11.37	5.00	Reached scheduled depth										
Hole Diameter			Run Information				Water Strikes												
Depth	Diameter (mm)	Remarks	Top (m)	Base (m)	Diam (mm)	Rec'v (m)	Date	Time	Strike	Minutes	Standing	Casing							
			1.30	2.00	100	0.70													
			2.00	3.00	100	1.00													
			3.00	5.00	50	1.00													
							General Remarks Terminated at 5m bgl as scheduled. No groundwater encountered.												
Scale 1:34.375			Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.																

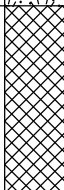
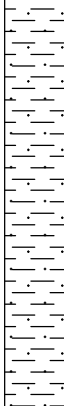
WSP Telephone: Project Phase 2 GI Job No UK0029106.9719		TRIAL PIT LOG										Depth	Type	PID (ppm V)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)		STRATA	Legend	Geology	Install / Backfill
		0.10-0.20	D						24.22	-0.20	Soft dark brown very sandy clayey SILT with abundant rootlets and frequent roots. (TOPSOIL)		TS											
		0.50-0.60	D							-0.60	Soft locally firm dark brown occasionally reddish brown sandy slightly gravelly CLAY. Gravel is rounded to angular fine to coarse of brick, limestone, mudstone, sandstone, terracotta, tile, coal and clinker. (MADE GROUND COHESIVE)		CMG											
		0.80-0.90	ES	0.4					23.62	0.80	Firm locally soft reddish brown mottled grey sandy slightly gravelly CLAY with numerous pockets of grey, yellow and red sand. Gravel is rounded to subangular fine to coarse of limestone, mudstone, sandstone, various lithologies and shelly fragments. (GLACIAL TILL)													
		0.90-1.00	B																					
		1.40-1.50	D																					
		2.00-2.10	B																					
		2.60-2.70	ES	0.6																				
		2.90-3.00	B						21.42	3.00														
General Remarks Terminated at 3m bgl as scheduled. Groundwater seep at 1.1m bgl. Samples: 3x disturbed, 3x bulk, 2x ES Shoring/Support: None Stability: Stable Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.		4.20m A 0.75m B C		Length 4.20m Width 0.75m Orientation 90 degrees from north		Logged By Ellie Hale Ground Level (m) 24.421 Method/Plant Used Excavator (Tracked 360°)		Client KMBC Co-Ordinates () E 344696 N 385125 Contractor Clyde Ground Investigation Ltd				Date Started: 24-01-25 Finished: 24-01-25 Scale 1:20.0		Sheet 1 of 1 Trial Hole No. TP01										

20 WSP TP LOG LS 2 PHOTO HALEWOOD LUF GI JAN 2025.GPJ WSPETEMPLATE8.00.GDT 17/3/25

WSP		TRIAL PIT LOG		Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick- ness)	STRATA				
Telephone:		Description										Legend	Geology	Install / Backfill		
Project Phase 2 GI		Job No UK0029106.9719		0.00-0.10	D							0.00 - 0.25 Saturated and very soft Very soft locally soft brown sandy silty CLAY with abundant rootlets and occasional fine to medium gravel of mudstone, asphalt and clinker. (TOPSOIL)		TS		
		0.40-0.50	B						22.06	0.45	0.25 - 0.45 Soft					
		0.70-0.80	ES	0.5								Firm locally soft reddish brown sandy slightly gravelly CLAY with numerous pockets of sand. Gravel is rounded to angular fine to coarse of brick, limestone, mudstone, sandstone, terracotta, charcoal and asphalt. Reworked natural. (MADE GROUND COHESIVE)		CMG		
		0.90-1.00	D													
		1.40-1.50	B								21.31	1.20	Firm locally soft reddish brown mottled grey sandy slightly gravelly CLAY with numerous pockets of grey, yellow, green and red sand. Gravel is rounded to subangular fine to coarse of limestone, mudstone, sandstone, various lithologies and shelly fragments. (GLACIAL TILL)		TILL	
		1.80-1.90	D													
2.90-3.00	B									19.51	3.00					
General Remarks Terminated at 3m bgl as scheduled. Groundwater seepage at 0.9m bgl. Samples: 3x disturbed, 3x bulk, 1x ES				Length 4.20m		Logged By Ellie Hale		Client KMBC				Sheet 1 of 1				
Shoring/Support: None Stability: Stable				Width 0.75m		Ground Level (m) 22.505		Co-Ordinates () E 344803 N 385234		Date Started: 24-01-25 Finished: 24-01-25		Trial Hole No. TP04				
Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.				Orientation 90 degrees from north		Method/Plant Used Excavator (Tracked 360°)		Contractor Clyde Ground Investigation Ltd		Scale 1:20.0						

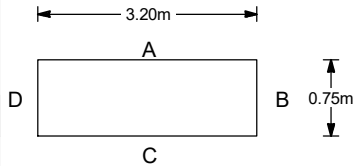
20 WSP TP LOG LS 2 PHOTO HALEWOOD LUF GI JAN 2025.GPJ WSPETEMPLATE8.00.GDT 17/3/25

 WSP Telephone:		TRIAL PIT LOG		Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA			
												Description	Legend	Geology	Install / Backfill
Project Phase 2 GI		Job No UK0029106.9719		0.10-0.20	D						(0.30)	Soft locally firm dark brown sandy clayey SILT with abundant rootlets. (TOPSOIL)		TS	
No photograph available. Soakaway test.		0.40-0.50	D									Firm locally soft reddish brown mottled grey sandy slightly gravelly CLAY with numerous pockets of grey, yellow and red sand and occasional organics. Gravel is rounded to angular fine to coarse of limestone, mudstone, sandstone and various lithologies. (GLACIAL TILL)		TILL	
		1.00-1.10	B								(1.90)				
		1.40-1.50	D												
		1.60-1.70	ES	0.4											
		1.90-2.00	D												
		2.10-2.20	B												
General Remarks Terminated at 2.2m bgl. Soakaway test undertaken. No groundwater encountered.		← 3.00m → A D C B 0.75m		Length 3.00m		Logged By Ellie Hale		Client KMBC		Sheet 1 of 1					
Width 0.75m				Ground Level (m) 24.373		Co-Ordinates () E 344642 N 385212		Date Started: 23-01-25 Finished: 23-01-25		Trial Hole No. TP08					
Orientation 0 degrees from north				Method/Plant Used Excavator (Tracked 360°)		Contractor Clyde Ground Investigation Ltd		Scale 1:20.0							
Shoring/Support: None Stability: Stable															
Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.															

WSP		Telephone:		TRIAL PIT LOG		Depth	Type	PID (ppm V)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick- ness)	STRATA					
Project Phase 2 GI				Job No UK0029106.9719										Description	Legend	Geology	Install / Backfill		
						0.10-0.20	D								Soft dark brown sandy clayey SILT with abundant rootlets. (TOPSOIL)		TS		
						0.20-0.30	ES	0.3					23.30	0.30					
						0.40-0.50	B								(0.50)	Soft locally stiff brown and reddish brown sandy slightly gravelly CLAY with numerous brick, rare concrete boulders and rare plastic. Gravel is rounded to angular fine to coarse of brick, concrete, limestone, mudstone, sandstone and charcoal. (MADE GROUND COHESIVE) 0.60 - 0.80 Becomes stiff		CMG	
						0.90-1.00	D						22.80	0.80					
						1.40-1.50	B									Soft locally firm reddish brown mottled yellow, grey and orange sandy slightly gravelly CLAY with numerous pockets of sand. Gravel is rounded to angular fine to coarse of limestone, mudstone, sandstone and various lithologies. (GLACIAL TILL)			
						1.60-2.00	D								(2.20)				
						2.40-2.50	B												
						2.90-3.00	D												
2.90-3.00	ES	0.4						20.60	3.00										
General Remarks Terminated at 3m bgl as scheduled. Groundwater seep at 2.5m bgl. On side of mound.						Length 3.20m		Logged By Ellie Hale		Client KMBC				Sheet 1 of 1					
Shoring/Support: None Stability: Stable						Width 0.75m		Ground Level (m) 23.600		Co-Ordinates () E 344680 N 385340		Date Started: 23-01-25 Finished: 23-01-25		Trial Hole No. TP12					
Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.						Orientation 90 degrees from north		Method/Plant Used Excavator (Tracked 360°)		Contractor Clyde Ground Investigation Ltd		Scale 1:20.0							

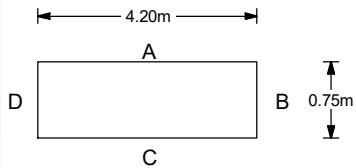
20 WSP TP LOG L5 2 PHOTO HALEWOOD LUF GI JAN 2025.GPJ WSPETEMPLATE8.00.GDT 17/3/25

WSP		TRIAL PIT LOG		Depth	Type	PID (ppmV)	HSV (kN/m2)	P-Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA							
Telephone:		Description										Legend	Geology	Install / Backfill					
Project Phase 2 GI		Job No UK0029106.9719		0.00-0.10	D						(0.20)	Soft dark brown sandy clayey SILT with abundant rootlets. (TOPSOIL)		TS					
				0.40-0.50	D						(0.90)	Firm locally soft reddish brown and brown sandy slightly gravelly CLAY. Gravel is rounded to angular fine to coarse of brick, limestone, mudstone, sandstone and occasional slate and terracotta. Reworked natural. (MADE GROUND COHESIVE)		CMG					
				0.90-1.00	B						23.04	1.10	Soft locally firm reddish brown sandy slightly gravelly CLAY with occasional organics and frequent pockets of sand. Gravel is rounded to subangular fine and medium of limestone, mudstone, sandstone, various lithologies and shelly fragments. (GLACIAL TILL)		TILL				
				1.40-1.50	D														
				1.50-1.60	ES	0.7													
				1.90-2.00	B						(1.90)								
				2.40-2.50	D														
				2.90-3.00	B						21.14	3.00							
				General Remarks Terminated at 3m bgl as scheduled. Groundwater encountered at 1.9m bgl.												Length 3.20m		Logged By Ellie Hale	
Shoring/Support: None Stability: Stable				Width 0.75m		Ground Level (m) 24.137		Co-Ordinates () E 344634 N 385295		Date Started: 23-01-25 Finished: 23-01-25		Trial Hole No. TP13							
Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.				Orientation 0 degrees from north		Method/Plant Used Excavator (Tracked 360°)		Contractor Clyde Ground Investigation Ltd		Scale 1:20.0									

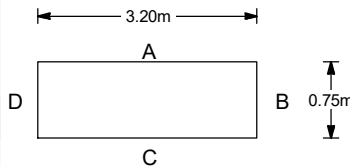


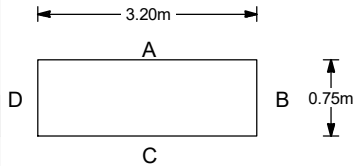
20 WSP TP LOG LS 2 PHOTO HALEWOOD LUF GI JAN 2025.GPJ WSPETEMPLATE8.00.GDT 17/3/25

WSP		TRIAL PIT LOG		Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA		Legend	Geology	Install / Backfill	
Telephone:														Description			
Project Phase 2 GI		Job No UK0029106.9719		0.00-0.10	D						(0.20)	Soft dark brown sandy clayey SILT with abundant rootlets. (TOPSOIL)			TS		
		0.40-0.50 0.40-0.50		B ES	0.2					25.73	0.20	Soft locally firm brown and reddish brown occasionally very dark greyish brown sandy slightly gravelly CLAY with occasional brick and rare wood fragments, plastic and boulders of concrete. Gravel is rounded to subangular fine to coarse of brick, concrete, limestone, mudstone, sandstone, coal, asphalt and terracotta. (MADE GROUND COHESIVE)			CMG		
		0.90-1.00		D						(1.30)							
		1.50-1.60		B					24.43	1.50	1.50 - 1.70 Abundant grey sand						
		1.90-2.00 1.90-2.00		D ES	0.7					(1.50)	Soft locally firm reddish brown mottled grey sandy slightly gravelly CLAY with frequent pockets of grey, yellow and red sand. Gravel is rounded to subangular fine to coarse of limestone, mudstone, sandstone, various lithologies and shelly fragments. (GLACIAL TILL)			TILL			
		2.50-2.60		B							2.70 - 3.00 Abundant pockets/bands of sand						
2.90-3.00		D							22.93	3.00							
General Remarks Terminated at 3m bgl as scheduled. Groundwater encountered at 2.7m bgl. Collapse of walls from 2.7-3m bgl. Located on side of mound.				Length 4.20m		Logged By Ellie Hale		Client KMBC		Sheet 1 of 1							
Shoring/Support: None Stability: Stable				Width 0.75m		Ground Level (m) 25.933		Co-Ordinates () E 344569 N 385239		Date Started: 23-01-25 Finished: 23-01-25		Trial Hole No. TP15					
Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.				Orientation 0 degrees from north		Method/Plant Used Excavator (Tracked 360°)		Contractor Clyde Ground Investigation Ltd		Scale 1:20.0							



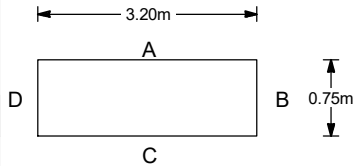
20 WSP TP LOG LS 2 PHOTO HALEWOOD LUF GI JAN 2025.GPJ WSPETEMPLATE8.00.GDT 17/3/25

WSP		WSP		TRIAL PIT LOG		Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA							
Telephone:				Description										Legend	Geology	Install / Backfill					
Project Phase 2 GI				Job No UK0029106.9719		0.10-0.20	D						(0.20) 25.25	Soft dark brown sandy clayey SILT with abundant rootlets. (TOPSOIL)		TS					
						0.40-0.50	D					(0.30) 24.95	Reddish brown very gravelly very clayey fine to coarse SAND with numerous brick. Gravel is subrounded to angular fine to coarse of brick, concrete and asphalt. (MADE GROUND GRANULAR)		GMG						
						0.70-0.80	ES	0.4													
						0.90-1.00	B														
						1.40-1.50	D														
												(1.20) 23.75	Firm locally soft reddish brown mottled grey sandy slightly gravelly CLAY. Gravel is rounded to subangular fine to coarse of brick, limestone, mudstone, sandstone, coal, charcoal and terracotta. Reworked natural. (MADE GROUND COHESIVE)		CMG						
						1.90-2.00	B														
						2.40-2.50	D										(1.30) 22.45	Soft locally firm reddish brown mottled grey sandy slightly gravelly CLAY with occasional pockets of grey, yellow and red sand. Gravel is rounded to subangular fine to coarse of limestone, mudstone, sandstone, various lithologies and shelly fragments. (GLACIAL TILL)		TILL	
						2.90-3.00	B					3.00									
General Remarks Terminated at 3m bgl as scheduled. No groundwater encountered.						Length 3.20m		Logged By Ellie Hale		Client KMBC				Sheet 1 of 1							
Shoring/Support: None Stability: Stable						Width 0.75m		Ground Level (m) 25.454		Co-Ordinates () E 344524 N 385259		Date Started: 22-01-25 Finished: 22-01-25									
Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.						Orientation 135 degrees from north		Method/Plant Used Excavator (Tracked 360°)		Contractor Clyde Ground Investigation Ltd		Scale 1:20.0									
																					
														Trial Hole No. TP16							



20 WSP TP LOG LS 2 PHOTO HALEWOOD LUF GI JAN 2025.GPJ WSPPETEMPLATES.00.GDT 17/3/25

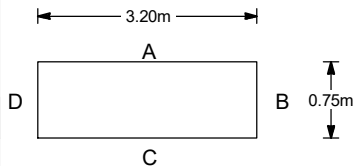
WSP		TRIAL PIT LOG		Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick- ness)	STRATA				
Telephone:												Description	Legend	Geology	Install / Backfill	
Project Phase 2 GI		Job No UK0029106.9719		0.00-0.10	D						(0.20)	Soft dark brown sandy clayey SILT with abundant rootlets. (TOPSOIL)		TS		
				0.40-0.50	D					24.08	0.20	Stiff locally firm dark brown sandy slightly gravelly CLAY. Gravel is rounded to angular fine and medium of brick, mudstone, sandstone and coal. (MADE GROUND COHESIVE)		CMG		
						0.90-1.00	B	0.6			(1.30)	Soft locally firm reddish brown mottled grey sandy slightly gravelly CLAY. Gravel is rounded to subangular fine to coarse of limestone, mudstone, sandstone and rare brick and terracotta. Reworked natural. (MADE GROUND COHESIVE)			CMG	
						0.90-1.00	ES									
						1.40-1.50	D									
						1.90-2.00	B		22.38	1.90	Reddish brown slightly silty fine to coarse SAND with rare pockets of clay. Sand horizon. (GLACIAL TILL)		TILL			
									(0.40)							
						2.40-2.50	D		21.98	2.30	Soft locally firm reddish brown slightly gravelly slightly sandy CLAY with numerous organics. Gravel is rounded to subangular fine and medium of limestone, mudstone, sandstone, various lithologies and shelly fragments. (GLACIAL TILL)		TILL			
								(0.70)								
						2.90-3.00	B	21.28	3.00							
				General Remarks Terminated at 3m bgl as scheduled. Groundwater seep at 1.9m bgl.				Length 3.20m		Logged By Ellie Hale		Client KMBC				Sheet 1 of 1
Shoring/Support: None Stability: Stable				Width 0.75m		Ground Level (m) 24.278		Co-Ordinates () E 344605 N 385321		Date Started: 22-01-25 Finished: 22-01-25		Trial Hole No. TP18				
Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.				Orientation 90 degrees from north		Method/Plant Used Excavator (Tracked 360°)		Contractor Clyde Ground Investigation Ltd		Scale 1:20.0						

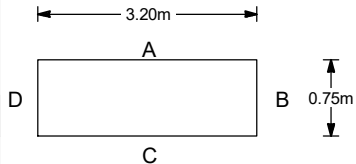


20 WSP TP LOG L5 2 PHOTO HALEWOOD LUF GI JAN 2025.GPJ WSPPETEMPLATES.00.GDT 17/3/25

 WSP Telephone:		TRIAL PIT LOG		Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick- ness)	STRATA			
												Description	Legend	Geology	Install / Backfill
Project Phase 2 GI		Job No UK0029106.9719		0.00-0.10	D						(0.20)	Soft dark brown sandy clayey SILT with abundant rootlets. (TOPSOIL)		TS	
		0.40-0.50	B	0.3					24.63	0.20	Soft locally stiff brown occasionally black and greyish brown sandy slightly gravelly CLAY. Gravel is rounded to angular fine to coarse of brick, limestone, mudstone, sandstone, clinker, tile, terracotta and coal. (MADE GROUND COHESIVE)		CMG		
		0.40-0.50	ES												
		0.90-1.00	D						(1.90)	1.30 - 2.10 Becomes stiff greyish brown with frequent black areas with organics and coal gravel.					
		1.40-1.50	ES	0.9											
		1.50-1.60	B												
1.90-2.00	D					22.73	2.10	Firm locally soft reddish brown mottled grey sandy slightly gravelly CLAY with occasional pockets of grey, yellow and red sand. Gravel is rounded to subangular fine to coarse of limestone, mudstone, sandstone, various lithologies and shelly fragments. (GLACIAL TILL)		TILL					
2.40-2.50	B					(0.90)									
2.90-3.00	D					21.83	3.00								
General Remarks Terminated at 3m bgl as scheduled. No groundwater encountered.		3.20m A B C D 0.75m		Length 3.20m	Logged By Ellie Hale	Client KMBC		Sheet 1 of 1							
Shoring/Support: None Stability: Stable				Width 0.75m	Ground Level (m) 24.834	Co-Ordinates () E 344628 N 385370	Date Started: 22-01-25 Finished: 22-01-25	Trial Hole No. TP21							
Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.				Orientation 135 degrees from north	Method/Plant Used Excavator (Tracked 360°)	Contractor Clyde Ground Investigation Ltd	Scale 1:20.0								

20 WSP TP LOG L5 2 PHOTO HALEWOOD LUF GI JAN 2025.GPJ WSPTEMPLATE8.00.GDT 17/3/25

WSP		TRIAL PIT LOG		Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA			
Telephone:												Description	Legend	Geology	Install / Backfill
Project Phase 2 GI		Job No UK0029106.9719		0.10-0.20	D						(0.20) 24.88	Soft dark brown sandy slightly gravelly clayey SILT with abundant rootlets and occasional brick. Gravel is rounded to subangular fine and medium of brick, concrete, mudstone, sandstone, clinker and terracotta. (TOPSOIL)		TS	
				0.40-0.50	B						(0.50) 24.38	Soft dark brown very sandy slightly gravelly CLAY with occasional brick. Gravel is rounded to angular fine to coarse of brick, concrete, mudstone, sandstone, tile and terracotta. (MADE GROUND COHESIVE)		CMG	
				0.90-1.00	B						(1.00)	Firm locally soft reddish brown sandy slightly gravelly CLAY. Gravel is rounded to angular fine to coarse of brick, limestone, mudstone and sandstone. Reworked natural. (MADE GROUND COHESIVE)		CMG	
				1.40-1.50	B							1.40 - 1.50 Clay drainage pipe			
				2.20-2.30 2.20-2.30	B ES	0.5						(1.30)	Firm locally soft reddish brown mottled grey sandy slightly gravelly CLAY with occasional pockets of grey, yellow and red sand. Gravel is rounded to subangular fine to coarse of limestone, mudstone, sandstone, various lithologies and shelly fragments. (GLACIAL TILL)		TILL
				2.50-2.60	B										
				2.90-3.00	B						22.08	3.00			
General Remarks Terminated at 3m bgl as scheduled. No groundwater encountered.				Length 3.20m		Logged By Ellie Hale		Client KMBC				Sheet 1 of 1			
Shoring/Support: None Stability: Stable				Width 0.75m		Ground Level (m) 25.079		Co-Ordinates () E 344576 N 385321		Date Started: 24-01-25 Finished: 24-01-25		Trial Hole No. TP22			
Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.				Orientation 0 degrees from north		Method/Plant Used Excavator (Tracked 360°)		Contractor Clyde Ground Investigation Ltd		Scale 1:20.0					

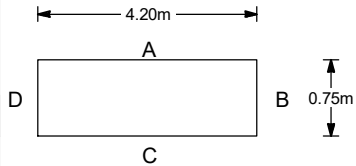


20 WSP TP LOG LS 2 PHOTO HALEWOOD LUF GI JAN 2025.GPJ WSPETEMPLATE8.00.GDT 17/3/25

 WSP Telephone:		TRIAL PIT LOG		Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA				
												Description	Legend	Geology	Install / Backfill	
Project Phase 2 GI		Job No UK0029106.9719		0.10-0.20	D					25.28	(0.20)	Soft dark brown sandy clayey SILT with abundant rootlets. (TOPSOIL)		TS		
		0.40-0.50	B								(0.50)	Soft dark brown and light yellowish brown very sandy slightly gravelly silty CLAY. Gravel is subrounded to subangular fine and medium of brick, limestone, mudstone, sandstone, clinker and coal. (MADE GROUND COHESIVE)		CMG		
		0.55-0.60	ES	0					24.78	0.70	0.70 - 0.80 Clay drainage pipe					
		0.80-0.90	D						24.48	1.00	Firm locally soft reddish brown mottled grey sandy slightly gravelly CLAY. Gravel is rounded to subangular fine to coarse of brick, limestone, mudstone, sandstone, coal, charcoal and terracotta. Reworked natural. (MADE GROUND COHESIVE)					
		1.40-1.50	B										Firm locally soft reddish brown mottled grey sandy slightly gravelly CLAY with occasional pockets of grey, yellow and red sand. Gravel is rounded to subangular fine to coarse of limestone, mudstone, sandstone, various lithologies and shelly fragments. (GLACIAL TILL)		TILL	
		2.00-2.10	D								(2.00)					
2.40-2.50	B															
2.90-3.00	D															
2.90-3.00	ES	0								22.48	3.00					
General Remarks Terminated at 3m bgl as scheduled. Groundwater seep at 2m bgl.		← 3.20m → A D C B 0.75m ↑ ↓		Length 3.20m		Logged By Ellie Hale		Client KMBC		Sheet 1 of 1						
Shoring/Support: None Stability: Stable				Width 0.75m		Ground Level (m) 25.477		Co-Ordinates () E 344516 N 385304		Date Started: 22-01-25 Finished: 22-01-25		Trial Hole No. TP23				
Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.				Orientation 0 degrees from north		Method/Plant Used Excavator (Tracked 360°)		Contractor Clyde Ground Investigation Ltd		Scale 1:20.0						

20 WSP TP LOG LS 2 PHOTO HALEWOOD LUF GI JAN 2025.GPJ WSPETEMPLATE8.00.GDT 17/3/25

WSP		TRIAL PIT LOG		Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick- -ness)	STRATA				
Telephone:		Description										Legend	Geology	Install / Backfill		
Project Phase 2 GI		Job No UK0029106.9719		0.00-0.10	D						(0.30)	Soft dark brown very sandy clayey SILT with abundant rootlets and numerous roots. (TOPSOIL)		TS		
				0.40-0.50	B					22.64	0.30	Firm locally soft reddish brown sandy slightly gravelly CLAY with numerous brick, occasional cobbles of concrete and occasional plastic and rags. Gravel is rounded to angular fine to coarse of brick, concrete, mudstone, terracotta, coal and shelly fragments. (MADE GROUND COHESIVE)		CMG		
				1.20-1.30	D	0					21.74	1.20	Firm very dark brown very sandy slightly gravelly CLAY with frequent brick, occasional rootlets and rare plastic and metal. Gravel is rounded to angular fine to coarse of brick, concrete, mudstone, coal and clinker. (MADE GROUND COHESIVE)		CMG	
				1.25-1.30	ES											
				1.40-1.50	B							(0.60)				
				1.80-1.90	D					21.14	1.80	Soft locally firm reddish brown and greyish brown very sandy slightly gravelly CLAY with frequent pockets of grey, yellow and red sand and numerous organics. Gravel is rounded to subangular fine to coarse of various lithologies including mudstone, sandstone and shelly fragments. (GLACIAL TILL)		TILL		
				2.40-2.50	B								(1.20)			
				2.90-3.00	D						19.94	3.00				
General Remarks Terminated at 3m bgl as scheduled. No groundwater encountered.				Length 4.20m		Logged By Ellie Hale		Client KMBC				Sheet 1 of 1				
Shoring/Support: None Stability: Stable				Width 0.75m		Ground Level (m) 22.942		Co-Ordinates () E 345135 N 385072		Date Started: 20-01-25 Finished: 20-01-25		Trial Hole No. TP30				
Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.				Orientation 90 degrees from north		Method/Plant Used Excavator (Tracked 360°)		Contractor Clyde Ground Investigation Ltd		Scale 1:20.0						

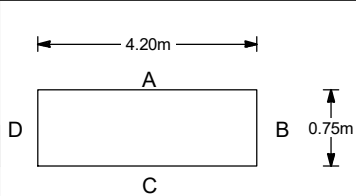


WSP		TRIAL PIT LOG											
Telephone:		Depth	Type	PID (ppm V)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA			
										Description	Legend	Geology	Install / Backfill
Project Phase 2 GI		Job No UK0029106.9719	0.00-0.10	D						Soft very dark brown very sandy very clayey SILT with abundant rootlets. (TOPSOIL)		TS	
		0.30-0.40	ES	0				20.68	0.20	0.20 - 0.40 Brick wall structure encountered so pit moved 0.5m east of original position to avoid.		GMG	
		0.50-0.60	B					20.48	0.40	Reddish brown very gravelly slightly clayey fine to coarse SAND with abundant brick. Gravel is subrounded to angular fine to coarse of brick, concrete, mudstone, tile and coal. (MADE GROUND GRANULAR)			
		1.00-1.10	D					19.68	1.20	Firm reddish brown slightly gravelly slightly sandy CLAY. Gravel is rounded to angular fine to coarse of brick, limestone, mudstone, sandstone and coal. (MADE GROUND COHESIVE)		CMG	
		1.40-1.50	B							Firm locally soft reddish brown sandy slightly gravelly CLAY with frequent pockets of grey, yellow and red sand. Gravel is rounded to subangular fine to coarse of limestone, mudstone, sandstone and various lithologies. (GLACIAL TILL)		TILL	
		1.90-2.00	D						1.80				
		2.40-2.50	B										
		2.90-3.00	D					17.88	3.00				

General Remarks
Terminated at 3m bgl as scheduled. Groundwater encountered at 2.5m bgl.

Shoring/Support: None
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



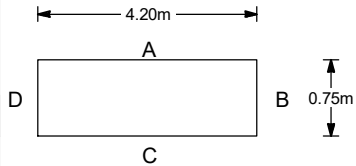
Length 4.20m	Logged By Ellie Hale	Client KMBC		Sheet 1 of 1
Width 0.75m	Ground Level (m) 20.878	Co-Ordinates () E 345140 N 385135	Date Started: 21-01-25 Finished: 21-01-25	Trial Hole No. TP33
Orientation 0 degrees from north	Method/Plant Used Excavator (Tracked 360°)	Contractor Clyde Ground Investigation Ltd	Scale 1:20.0	

20 WSP TP LOG LS 2 PHOTO HALEWOOD LUF GI JAN 2025.GPJ WSPETEMPLATE8.00.GDT 17/3/25

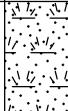
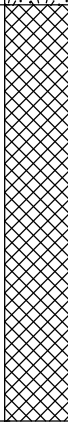
 WSP Telephone:		TRIAL PIT LOG		Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA					
												Description	Legend	Geology	Install / Backfill		
Project Phase 2 GI		Job No UK0029106.9719		0.00-0.10	D							Soft dark brown very sandy clayey SILT with abundant rootlets. (TOPSOIL)		TS			
No photograph available. Soakaway test.										19.19	0.35						
		0.40-0.50	D									Firm locally soft dark brown and reddish brown sandy slightly gravelly CLAY with occasional brick. Gravel is rounded to angular fine to coarse of brick, concrete, mudstone, terracotta, tile, coal, shelly fragments and clinker. (MADE GROUND COHESIVE)		CMG			
		0.75-0.80	ES	0													
		0.90-1.00	B														
											18.34	1.20					
		1.40-1.50	D										Soft locally firm reddish brown mottled grey sandy slightly gravelly CLAY with frequent pockets of grey, yellow and red sand and numerous organics. Gravel is rounded to subangular fine to coarse of various lithologies including mudstone, sandstone and shelly fragments. (GLACIAL TILL)				
		1.45-1.50	ES	0													
		1.90-2.00	B									(1.40)			TILL		
		2.40-2.50	D														
											16.94	2.60					
General Remarks Terminated at 2.6m bgl. Soakaway. No groundwater encountered.		← 3.00m → A B C 0.75m		Length 3.00m		Logged By Ellie Hale		Client KMBC		Sheet 1 of 1							
Width 0.75m				Ground Level (m) 19.537		Co-Ordinates () E 345218 N 385184		Date Started: 20-01-25 Finished: 20-01-25		Trial Hole No. TP38							
Orientation 0 degrees from north				Method/Plant Used Excavator (Tracked 360°)		Contractor Clyde Ground Investigation Ltd		Scale 1:20.0									
Shoring/Support: None Stability: Stable																	
Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.																	

20 WSP TP LOG LS 2 PHOTO HALEWOOD LUF GI JAN 2025.GPJ WSPETEMPLATE8.00.GDT 17/3/25

WSP		Telephone:		TRIAL PIT LOG		Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA								
														Description	Legend	Geology	Install / Backfill					
Project Phase 2 GI				Job No UK0029106.9719		0.10-0.20	D						(0.25)	Soft dark brown very sandy clayey SILT with abundant rootlets. (TOPSOIL)								
						0.30-0.40	ES	0				18.83	0.25	Firm locally soft reddish brown sandy slightly gravelly CLAY with occasional brick. Gravel is rounded to angular fine to coarse of brick, mudstone, sandstone, terracotta, tile, coal, clinker and shelly fragments. (MADE GROUND COHESIVE)								
						0.50-0.60	B											0.60 - 0.70 Plastic drainage ducting surrounded by black mudstone pea gravel.				
																			0.80 Old rusted cables			
						0.90-1.00	D									(1.45)						
						1.40-1.50	B															
						1.90-2.00	D					17.38	1.70	Firm reddish brown sandy slightly gravelly CLAY with frequent pockets of grey, yellow and red sand and numerous organics. Gravel is rounded to subangular fine to coarse of various lithologies including mudstone, sandstone and shelly fragments. (GLACIAL TILL)								
						2.40-2.50	B								(1.30)							
						2.90-3.00	D								16.08	3.00						
General Remarks Terminated at 3m bgl as scheduled. No groundwater encountered.						Length 4.20m		Logged By Ellie Hale		Client KMBC				Sheet 1 of 1								
Shoring/Support: None Stability: Stable						Width 0.75m		Ground Level (m) 19.078		Co-Ordinates () E 345253 N 385195		Date Started: 20-01-25 Finished: 20-01-25		Trial Hole No. TP39								
Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.						Orientation 0 degrees from north		Method/Plant Used Excavator (Tracked 360°)		Contractor Clyde Ground Investigation Ltd		Scale 1:20.0										



20 WSP TP LOG L5 2 PHOTO HALEWOOD LUF GI JAN 2025.GPJ WSPETEMPLATE8.00.GDT 17/3/25

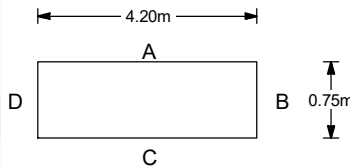
WSP		TRIAL PIT LOG		Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick- ness)	STRATA							
Telephone:		Description										Legend	Geology	Install / Backfill					
Project Phase 2 GI		Job No UK0029106.9719		0.00-0.10	D								Soft dark brown very sandy clayey SILT with abundant rootlets. (TOPSOIL)					TS	
		0.40-0.50 0.45-0.50		D ES	0.2					18.14	0.30	Firm locally soft reddish brown sandy slightly gravelly CLAY with occasional brick and rare plastic, wood and boulders of concrete. Gravel is rounded to angular fine to coarse of brick, concrete, limestone, mudstone, sandstone, terracotta, coal and clinker. (MADE GROUND COHESIVE)					CMG		
		0.90-1.00		B								(1.10)							
		1.40-1.50 1.40-1.45		D ES	0						17.04	1.40	Greyish brown slightly gravelly very silty very clayey fine to coarse SAND. Gravel is subrounded to angular fine to coarse of mudstone and coal. Sand horizon. (GLACIAL TILL)					TILL	
		1.90-2.00		B									(1.50)	Firm locally soft reddish brown mottled grey sandy slightly gravelly CLAY with frequent pockets of grey, yellow and red sand and rare organics. Gravel is rounded to subangular fine to coarse of limestone, mudstone, sandstone, various lithologies and shelly fragments. (GLACIAL TILL)					TILL
		2.50-2.60		D															
		2.90-3.00		B						15.44	3.00								
General Remarks Terminated at 3m bgl as scheduled. No groundwater encountered.				Length 4.20m		Logged By Ellie Hale		Client KMBC				Sheet 1 of 1							
Shoring/Support: None Stability: Stable				Width 0.75m		Ground Level (m) 18.444		Co-Ordinates () E 345245 N 385263		Date Started: 21-01-25 Finished: 21-01-25		Trial Hole No. TP42							
Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.				Orientation 45 degrees from north		Method/Plant Used Excavator (Tracked 360°)		Contractor Clyde Ground Investigation Ltd		Scale 1:20.0									

20 WSP TP LOG LS 2 PHOTO HALEWOOD LUF GI JAN 2025.GPJ WSPETEMPLATE8.00.GDT 17/3/25

WSP		TRIAL PIT LOG		Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA				
Telephone:		Description										Legend	Geology	Install / Backfill		
Project Phase 2 GI		Job No UK0029106.9719		0.10-0.20	D	0				21.33	(0.20)	Soft dark brown very sandy clayey SILT with abundant rootlets. (TOPSOIL)			TS	
		0.50-0.60	B								20.93	(0.40)	Firm locally soft reddish brown very sandy slightly gravelly CLAY with occasional boulders of concrete, rare cobbles of concrete and rare wood. Gravel is rounded to angular fine to coarse of brick, concrete, mudstone, terracotta, tile, coal and shelly fragments. (MADE GROUND COHESIVE)			
					0.90-1.00					D					Very dark brown gravelly very clayey fine to coarse SAND. Gravel is rounded to subangular fine and medium of brick, mudstone and coal. (MADE GROUND GRANULAR)	
		1.00-1.10	ES								(0.95)					
		1.40-1.50	B		19.98					1.55	1.50 - 1.55 Clay drainage pipe strike. Slight water flow.			TILL		
		1.90-2.00	D				(1.45)	Soft locally firm reddish brown mottled grey very sandy slightly gravelly CLAY with frequent pockets of grey, yellow and red sand. Gravel is rounded to subangular fine and medium of various lithologies including mudstone, sandstone and shelly fragments. (GLACIAL TILL)								
		2.40-2.50	B													
		2.90-3.00	D	18.53	3.00											
General Remarks Terminated at 3m bgl as scheduled. Slow water flow from clay pipe strike.		4.20m A B 0.75m C		Length 4.20m		Logged By Ellie Hale		Client KMBC		Sheet 1 of 1						
Shoring/Support: None Stability: Stable				Width 0.75m		Ground Level (m) 21.527		Co-Ordinates () E 345339 N 385024		Date Started: 17-01-25 Finished: 17-01-25		Trial Hole No. TP46				
Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.				Orientation 0 degrees from north		Method/Plant Used Excavator (Tracked 360°)		Contractor Clyde Ground Investigation Ltd		Scale 1:20.0						

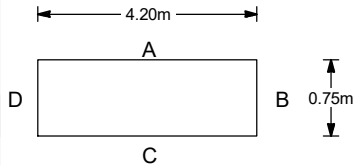
20 WSP TP LOG LS 2 PHOTO HALEWOOD LUF GI JAN 2025.GPJ WSPETEMPLATE8.00.GDT 17/3/25

WSP		TRIAL PIT LOG		Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick- ness)	STRATA					
Telephone:												Description	Legend	Geology	Install / Backfill		
Project Phase 2 GI		Job No UK0029106.9719		0.00-0.10	D						(0.25)	Soft dark brown very sandy clayey SILT with abundant rootlets. (TOPSOIL)		TS			
		0.40-0.50	D								20.15 0.25	Firm locally soft reddish brown and brown sandy slightly gravelly CLAY with rare boulders of concrete, cobbles of clay pipe and brick. Gravel is rounded to angular fine to coarse of brick, concrete, mudstone, terracotta, tile, coal and shelly fragments. (MADE GROUND COHESIVE)		CMG			
		0.60-0.70	ES	0													
		0.90-1.00	B									(1.15)					
		1.40-1.50	D									19.00 1.40					
		1.80-1.90	ES	0								17.30 3.10	Firm locally soft reddish brown slightly gravelly slightly sandy CLAY with frequent pockets of grey, yellow and red sand. Gravel is rounded to subangular fine to coarse of various lithologies including mudstone, sandstone and shelly fragments. (GLACIAL TILL)		TILL		
		1.90-2.00	B														
		2.60-2.70	D														
		3.00-3.10	B														

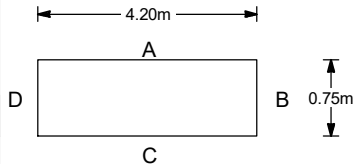
General Remarks Terminated at 3.1m bgl as scheduled. No groundwater encountered.				Length 4.20m		Logged By Ellie Hale		Client KMBC				Sheet 1 of 1	
Shoring/Support: None Stability: Stable				Width 0.75m		Ground Level (m) 20.404		Co-Ordinates () E 345322 N 385054		Date Started: 17-01-25 Finished: 17-01-25		Trial Hole No. TP47	
Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.				Orientation 0 degrees from north		Method/Plant Used Excavator (Tracked 360°)		Contractor Clyde Ground Investigation Ltd		Scale 1:20.7			

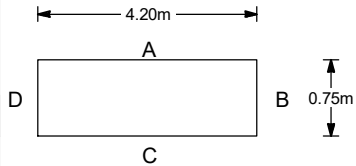
20 WSP TP LOG LS 2 PHOTO HALEWOOD LUF GI JAN 2025.GPJ WSPETEMPLATE8.00.GDT 17/3/25

WSP		TRIAL PIT LOG		Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA							
Telephone:		Description										Legend	Geology	Install / Backfill					
Project Phase 2 GI		Job No UK0029106.9719												Dark brown slightly clayey fine and medium SAND with occasional subrounded to angular fine to medium gravel of mudstone and frequent rootlets. (TOPSOIL)		TS			
				0.30-0.40	D														
				0.50-0.60	B	20.40 0.60													
				0.90-1.00 0.90-10.00	D ES	0	(0.70)										Firm locally soft reddish brown sandy slightly gravelly CLAY with numerous rootlets. Gravel is rounded to angular fine to coarse of brick, concrete, mudstone, terracotta, tile, coal and shelly fragments. (MADE GROUND COHESIVE)		CMG
				1.40-1.50	B	19.70 1.30										1.25 - 1.30 Clay drainage pipe			
				1.90-2.00	D												TILL		
				2.40-2.50	B	(1.80)										Firm locally soft reddish brown mottled grey and brown very sandy slightly gravelly CLAY with frequent pockets of grey, yellow and red sand and numerous rootlets. Gravel is rounded to subangular fine to coarse of various lithologies including mudstone, sandstone and shelly fragments. (GLACIAL TILL)			
				2.90-3.00	D														
										17.90	3.10								
General Remarks Terminated at 3.1m bgl as scheduled. No groundwater encountered.				Length 4.20m		Logged By Ellie Hale		Client KMBC				Sheet 1 of 1							
Shoring/Support: None Stability: Stable Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.				Width 0.75m		Ground Level (m) 21.001		Co-Ordinates () E 345298 N 385043		Date Started: 17-01-25 Finished: 17-01-25		Trial Hole No. TP48							
				Orientation 0 degrees from north		Method/Plant Used Excavator (Tracked 360°)		Contractor Clyde Ground Investigation Ltd		Scale 1:20.7									



20 WSP TP LOG L5 2 PHOTO HALEWOOD LUF GI JAN 2025.GPJ WSPETEMPLATES.00.GDT 17/3/25

WSP		TRIAL PIT LOG		Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA					
Telephone:												Description	Legend	Geology	Install / Backfill		
Project Phase 2 GI		Job No UK0029106.9719		0.00-0.10	D							Soft brown very sandy clayey SILT with abundant rootlets. (TOPSOIL)		TS			
		0.10-0.15		ES	0						(0.40)						
		0.50-0.60		D							20.36	0.40	Soft reddish brown sandy slightly gravelly CLAY. Gravel is rounded to angular fine to coarse of brick, mudstone, sandstone and shelly fragments. (MADE GROUND COHESIVE)		CMG		
		0.90-1.00		B							19.76	1.00	0.95 - 1.00 Clay drainage pipe containing water				
				1.50-1.60		D								Soft locally firm reddish brown mottled grey sandy slightly gravelly CLAY with frequent pockets of grey, yellow and red sand and occasional rootlets. Gravel is rounded to subangular fine to coarse of various lithologies including mudstone, sandstone and shelly fragments. (GLACIAL TILL)		TILL	
				2.00-2.10		B							(2.00)				
2.40-2.50				D													
2.50-2.60				ES	0												
2.90-3.00		B								17.76	3.00						
General Remarks Terminated at 3m bgl as scheduled. No groundwater encountered.				Length 4.20m		Logged By Ellie Hale		Client KMBC		Sheet 1 of 1							
Width 0.75m				Ground Level (m) 20.761		Co-Ordinates () E 345257 N 385060		Date Started: 17-01-25 Finished: 17-01-25		Trial Hole No. TP49							
Orientation 0 degrees from north				Method/Plant Used Excavator (Tracked 360°)		Contractor Clyde Ground Investigation Ltd		Scale 1:20.0									
Shoring/Support: None Stability: Stable																	
Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.																	



Appendix B.2

CONTAMINATION LABORATORY DATA





Units 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777

email: hawardencustomerservices@alsglobal.com

Website: www.alsenvironmental.co.uk

WSP UK Limited
8 First Street
Main
Manchester
M15 4RP

Attention: Ellie Hale

CERTIFICATE OF ANALYSIS

Date of report Generation: 30 January 2025
Customer: WSP UK Limited
Sample Delivery Group (SDG): 250121-32
Your Reference: UK0029106.9719
Location: Halewood LUF
Report No: 754609
Order Number: UK0029106.9719 CE3 LC GI

We received 9 samples on Tuesday January 21, 2025 and 9 of these samples were scheduled for analysis which was completed on Thursday January 30, 2025. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Lauren Ellis

General Manager Western Europe Environmental



1291



CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30966681	TP27	ES	1.40 - 1.50	16/01/2025
30966686	TP45	ES	0.40 - 0.50	17/01/2025
30966691	TP45	ES	2.40 - 2.50	17/01/2025
30966698	TP46	ES	1.00 - 1.10	17/01/2025
30966703	TP47	ES	0.60 - 0.70	17/01/2025
30966708	TP47	ES	1.80 - 1.90	17/01/2025
30966713	TP48	ES	0.90 - 10.00	17/01/2025
30966718	TP49	ES	0.10 - 0.15	17/01/2025
30966724	TP49	ES	2.50 - 2.60	17/01/2025

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

Superseded Report:

Results Legend X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)		Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	30966718	30966713	30966708	30966703	30966698	30966691	30966686	30966681	
								TP49	TP48	TP47	TP47	TP46	TP45	TP45	TP27	
								ES	ES	ES	ES	ES	ES	ES	ES	ES
								0.10 - 0.15	0.90 - 10.00	1.80 - 1.90	0.60 - 0.70	1.00 - 1.10	2.40 - 2.50	0.40 - 0.50	1.40 - 1.50	
								1kg TUB with Handle 60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle 60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle 60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle 60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle 60g VOC (ALE215)
								S	S	S	S	S	S	S	S	S
								S	S	S	S	S	S	S	S	S
ANC at pH4 and ANC at pH 6	All	NDPs: 0 Tests: 4														
Anions by Kone (w)	All	NDPs: 0 Tests: 4														
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 9														
CEN Readings	All	NDPs: 0 Tests: 4														
Coronene	All	NDPs: 0 Tests: 4														
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 4														
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 4														
EPH by GCxGC-FID	All	NDPs: 0 Tests: 4														
EPH CWG GC (S)	All	NDPs: 0 Tests: 9														
Fluoride	All	NDPs: 0 Tests: 4														
GRO by GC-FID (S)	All	NDPs: 0 Tests: 9														
Loss on Ignition in soils	All	NDPs: 0 Tests: 4														
Mercury Dissolved	All	NDPs: 0 Tests: 4														
Metals in solid samples by OES	All	NDPs: 0 Tests: 9														
PAH 16 & 17 Calc	All	NDPs: 0 Tests: 4														



CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

Superseded Report:

Results Legend X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
	30966718	TP49	ES	0.10 - 0.15	1kg TUB with Handle 60g VOC (ALE215)	S
	30966713	TP48	ES	0.90 - 10.00	250g Amber Jar (ALE210)	S
	30966708	TP47	ES	1.80 - 1.90	1kg TUB with Handle 60g VOC (ALE215)	S
	30966703	TP47	ES	0.60 - 0.70	1kg TUB with Handle 60g VOC (ALE215)	S
	30966698	TP46	ES	1.00 - 1.10	1kg TUB with Handle 60g VOC (ALE215)	S
	30966691	TP45	ES	2.40 - 2.50	250g Amber Jar (ALE210)	S
PAH by GCMS	All	NDPs: 0 Tests: 9				
PCBs by GCMS	All	NDPs: 0 Tests: 4				
pH	All	NDPs: 0 Tests: 9				
pH Value of Filtered Water	All	NDPs: 0 Tests: 4				
Phenols by HPLC (W)	All	NDPs: 0 Tests: 4				
Sample description	All	NDPs: 0 Tests: 9				
Total Organic Carbon	All	NDPs: 0 Tests: 9				
TPH CWG GC (S)	All	NDPs: 0 Tests: 9				
VOC MS (S)	All	NDPs: 0 Tests: 9				



CERTIFICATE OF ANALYSIS

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SDG: 250121-32
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Report Number: 754609
Location: Halewood LUF

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30966681	TP27	1.40 - 1.50	Dark Brown	Sandy Clay	Stones	Stones
30966686	TP45	0.40 - 0.50	Dark Brown	Clay	Stones	None
30966691	TP45	2.40 - 2.50	Dark Brown	Sandy Clay	Stones	Stones
30966698	TP46	1.00 - 1.10	Dark Brown	Loamy Sand	Crushed Brick	Stones
30966703	TP47	0.60 - 0.70	Dark Brown	Sandy Clay	Stones	None
30966708	TP47	1.80 - 1.90	Dark Brown	Clay	Stones	None
30966713	TP48	0.90 - 10.00	Dark Brown	Sandy Clay	Stones	Vegetation
30966718	TP49	0.10 - 0.15	Dark Brown	Loamy Sand	Vegetation	Stones
30966724	TP49	2.50 - 2.60	Dark Brown	Sandy Clay	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719Report Number: 754609
Location: Halewood LUF

Superseded Report:

Results Legend		Customer Sample Ref.	TP27	TP45	TP45	TP46	TP47	TP47
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	1.40 - 1.50 Soil/Solid (S) 16/01/2025	0.40 - 0.50 Soil/Solid (S) 17/01/2025	2.40 - 2.50 Soil/Solid (S) 17/01/2025	1.00 - 1.10 Soil/Solid (S) 17/01/2025	0.60 - 0.70 Soil/Solid (S) 17/01/2025	1.80 - 1.90 Soil/Solid (S) 17/01/2025
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		21/01/2025 250121-32 30966681 ES	21/01/2025 250121-32 30966686 ES	21/01/2025 250121-32 30966691 ES	21/01/2025 250121-32 30966698 ES	21/01/2025 250121-32 30966703 ES	21/01/2025 250121-32 30966708 ES
***	6:2 FTAB (see appendix)							
1-4*5@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	13	12	11	14	9.8	11
Loss on ignition	<0.7 %	TM018	2.14 M			4 M		
Organic Carbon, Total	<0.2 %	TM132	<0.2 M			1.56 M		
Soil Organic Matter (SOM)	<0.35 %	TM132	<0.35 #	0.386 #	<0.35 #	2.69 #	0.488 #	<0.35 #
pH	1 pH Units	TM133	8.76 M	8.65 M	8.94 M	8.36 M	8.49 M	8.96 M
PCB congener 28	<0.003 mg/kg	TM168	<0.003 M			<0.003 M		
PCB congener 52	<0.003 mg/kg	TM168	<0.003 M			<0.003 M		
PCB congener 101	<0.003 mg/kg	TM168	<0.003 M			<0.003 M		
PCB congener 118	<0.003 mg/kg	TM168	<0.003 M			<0.003 M		
PCB congener 138	<0.003 mg/kg	TM168	<0.003 M			<0.003 M		
PCB congener 153	<0.003 mg/kg	TM168	<0.003 M			<0.003 M		
PCB congener 180	<0.003 mg/kg	TM168	<0.003 M			<0.003 M		
Sum of detected PCB 7 Congeners	<0.021 mg/kg	TM168	<0.021			<0.021		
Arsenic	<0.6 mg/kg	TM181	4.93 M	6.53 M	6.3 M	11.5 M	9.64 M	4.34 M
Cadmium	<0.02 mg/kg	TM181	0.117 M	0.152 M	0.139 M	0.344 M	0.107 M	0.14 M
Chromium	<0.9 mg/kg	TM181	20.9 M	19.2 M	20.2 M	19.1 M	24.6 M	23.6 M
Copper	<1.4 mg/kg	TM181	14.6 M	16.1 M	14.8 M	30.7 M	19.5 M	16.6 M
Lead	<0.7 mg/kg	TM181	5.54 M	10.1 M	5.94 M	52.8 M	12.5 M	7.81 M
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Nickel	<0.2 mg/kg	TM181	28.3 M	28.3 M	29 M	22.5 M	35.5 M	29.5 M
Selenium	<1 mg/kg	TM181	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Zinc	<1.9 mg/kg	TM181	35.3 M	41.5 M	37.8 M	97.2 M	47.4 M	43.6 M
ANC @ pH 4	<0.03 mol/kg	TM182	0.331			0.0577		
ANC @ pH 6	<0.03 mol/kg	TM182	0.0714			<0.03		
PAH Total 17 (inc Coronene) Moisture Corrected	<10 mg/kg	TM410	<10			<10		
Coronene	<0.2 mg/kg	TM410	<0.2			<0.2		
EPH Surrogate % recovery**	%	TM415	95.5			97.2		
Mineral Oil >C10-C40 (EH_2D_AL)	<5 mg/kg	TM415	<5			<5		



CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719Report Number: 754609
Location: Halewood LUF

Superseded Report:

Results Legend		Customer Sample Ref.	TP48	TP49	TP49			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.90 - 10.00 Soil/Solid (S) 17/01/2025	0.10 - 0.15 Soil/Solid (S) 17/01/2025	2.50 - 2.60 Soil/Solid (S) 17/01/2025			
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		21/01/2025 250121-32 30966713 ES	21/01/2025 250121-32 30966718 ES	21/01/2025 250121-32 30966724 ES			
***	6:2 FTAB (see appendix)							
1-4*5@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	14	21	11			
Loss on ignition	<0.7 %	TM018		7.71 M	2.62 M			
Organic Carbon, Total	<0.2 %	TM132		2.52 M	<0.2 M			
Soil Organic Matter (SOM)	<0.35 %	TM132	0.493 #	4.34 #	<0.35 #			
pH	1 pH Units	TM133	7.81 M	6.45 M	8.94 M			
PCB congener 28	<0.003 mg/kg	TM168		<0.003 M	<0.003 M			
PCB congener 52	<0.003 mg/kg	TM168		<0.003 M	<0.003 M			
PCB congener 101	<0.003 mg/kg	TM168		<0.003 M	<0.003 M			
PCB congener 118	<0.003 mg/kg	TM168		<0.003 M	<0.003 M			
PCB congener 138	<0.003 mg/kg	TM168		<0.003 M	<0.003 M			
PCB congener 153	<0.003 mg/kg	TM168		<0.003 M	<0.003 M			
PCB congener 180	<0.003 mg/kg	TM168		<0.003 M	<0.003 M			
Sum of detected PCB 7 Congeners	<0.021 mg/kg	TM168		<0.021	<0.021			
Arsenic	<0.6 mg/kg	TM181	9.05 M	17.1 M	4.76 M			
Cadmium	<0.02 mg/kg	TM181	0.14 M	0.288 M	0.0934 M			
Chromium	<0.9 mg/kg	TM181	31.1 M	18.7 M	20 M			
Copper	<1.4 mg/kg	TM181	13.9 M	32.2 M	15.4 M			
Lead	<0.7 mg/kg	TM181	9.57 M	53.8 M	5.34 M			
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M	<0.1 M			
Nickel	<0.2 mg/kg	TM181	27 M	21.8 M	28.9 M			
Selenium	<1 mg/kg	TM181	<1 #	<1 #	<1 #			
Zinc	<1.9 mg/kg	TM181	37.3 M	68.7 M	37.4 M			
ANC @ pH 4	<0.03 mol/kg	TM182		0.0479	0.275			
ANC @ pH 6	<0.03 mol/kg	TM182		<0.03	0.0783			
PAH Total 17 (inc Coronene) Moisture Corrected	<10 mg/kg	TM410		<10	<10			
Coronene	<0.2 mg/kg	TM410		<0.2	<0.2			
EPH Surrogate % recovery**	%	TM415		94.2	93.2			
Mineral Oil >C10-C40 (EH_2D_AL)	<5 mg/kg	TM415		12.4	<5			

SDG: 250121-32

Client Ref.: UK0029106.9719

PAH by GCMS

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample Ref.	TP27	TP45	TP45	TP46	TP47	TP47
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	1.40 - 1.50 Soil/Solid (S) 16/01/2025	0.40 - 0.50 Soil/Solid (S) 17/01/2025	2.40 - 2.50 Soil/Solid (S) 17/01/2025	1.00 - 1.10 Soil/Solid (S) 17/01/2025	0.60 - 0.70 Soil/Solid (S) 17/01/2025	1.80 - 1.90 Soil/Solid (S) 17/01/2025
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		21/01/2025 250121-32 30966681 ES	21/01/2025 250121-32 30966686 ES	21/01/2025 250121-32 30966691 ES	21/01/2025 250121-32 30966698 ES	21/01/2025 250121-32 30966703 ES	21/01/2025 250121-32 30966708 ES
***	6:2 FTAB (see appendix)							
1-4*5@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	99.7	95.5	100	92.7	99.5	103
Aliphatics >C5-C6 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aliphatics >C16-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	1.69	3.7	1.01	<1
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #	1.69 #	3.61 #	1.01 #	<1 #
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5	<5	<5	<5	<5	<5
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10 mg/kg	TM414	<10	<10	<10	<10	<10	<10
Aromatics >EC5-EC7 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	1.5 #	<1 #	<1 #
Aromatics > EC16-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	6.34	1.94	<1
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	4.84 #	1.88 #	<1 #
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5	<5	<5	7.39	<5	<5
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10 mg/kg	TM414	<10	<10	<10	<10	<10	<10
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
GRO >C5-C10 (HS_1D_TOTAL)	<0.02 mg/kg	TM089	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02



CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719Report Number: 754609
Location: Halewood LUF

Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample Ref.	TP48	TP49	TP49			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.90 - 10.00	0.10 - 0.15	2.50 - 2.60			
M	mCERTS accredited.		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
aq	Aqueous / settled sample.		17/01/2025	17/01/2025	17/01/2025			
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.		21/01/2025	21/01/2025	21/01/2025			
*	Subcontracted - refer to subcontractor report for accreditation status.		250121-32	250121-32	250121-32			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		30966713	30966718	30966724			
***	6:2 FTAB (see appendix)		ES	ES	ES			
1-4*5@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	100	87.1	96.6			
Aliphatics >C5-C6 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01			
Aliphatics >C6-C8 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01			
Aliphatics >C8-C10 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01			
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #			
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #			
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #			
Aliphatics >C16-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	4.72	<1			
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	4.72 #	<1 #			
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1			
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5	<5	<5			
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10 mg/kg	TM414	<10	11	<10			
Aromatics >EC5-EC7 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01			
Aromatics >EC7-EC8 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01			
Aromatics >EC8-EC10 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01			
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #			
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #			
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	1.81 #	<1 #			
Aromatics > EC16-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	9.74	<1			
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	7.93 #	<1 #			
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	1.12	<1			
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1			
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5	11	<5			
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10 mg/kg	TM414	<10	11	<10			
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05	<0.05			
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05	<0.05			
GRO >C5-C10 (HS_1D_TOTAL)	<0.02 mg/kg	TM089	<0.02	<0.02	<0.02			

SDG: 250121-32

Report Number: 754609

Superseded Report:

Client Ref.: UK0029106.9719

Location: Halewood LUF

VOC MS (S)

[illegible]

SDG: 250121-32

Report Number: 754609

Superseded Report:

Client Ref.: UK0029106.9719

Location: Halewood LUF

VOC MS (S)

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

ISO17025 accredited.
M mCERTS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-58*5@ Sample deviation (see appendix)

Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP27ES 1.40 - 1.50 SOLID 16/01/2025 00:00:00 21/01/2025 09:00:00 250121-32 30966681 TM048	28/01/25 Danielle Duncan N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP45ES 0.40 - 0.50 SOLID 17/01/2025 00:00:00 21/01/2025 09:00:00 250121-32 30966686 TM048	29/01/2025 Paul Poynton N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP45ES 2.40 - 2.50 SOLID 17/01/2025 00:00:00 21/01/2025 09:00:00 250121-32 30966691 TM048	28/01/25 Danielle Duncan N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP46ES 1.00 - 1.10 SOLID 17/01/2025 00:00:00 21/01/2025 09:00:00 250121-32 30966698 TM048	29/01/2025 Renata Bozhkov N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP47ES 0.60 - 0.70 SOLID 17/01/2025 00:00:00 21/01/2025 09:00:00 250121-32 30966703 TM048	28/01/25 Danielle Duncan N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP47ES 1.80 - 1.90 SOLID 17/01/2025 00:00:00 21/01/2025 09:00:00 250121-32 30966708 TM048	29/01/2025 Paul Poynton N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP48ES 0.90 - 10.00 SOLID 17/01/2025 00:00:00 21/01/2025 09:00:00 250121-32 30966713 TM048	28/01/25 Danielle Duncan N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP49ES 0.10 - 0.15 SOLID 17/01/2025 00:00:00 21/01/2025 09:00:00 250121-32 30966718 TM048	28/01/25 Danielle Duncan N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

Superseded Report:

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref.	TP49ES	29/01/2025	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Depth (m)	2.50 - 2.60										
Sample Type	SOLID										
Date Sampled	17/01/2025 00:00:00										
Date Received	21/01/2025 09:00:00										
SDG	250121-32										
Original Sample	30966724										
Method Number	TM048										



CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719Report Number: 754609
Location: Halewood LUF

Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.104

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Halewood LUF

Natural Moisture Content (%) 14.5

Dry Matter Content (%) 87.4

Case

SDG 250121-32

Lab Sample Number(s) 30966681

Sampled Date 16-Jan-2025

Customer Sample Ref. TP27 ESZ

Depth (m) 1.40 - 1.50

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Result

Total Organic Carbon (%) <0.2

Loss on Ignition (%) 2.14

Sum of BTEX (mg/kg) <0.075

Sum of 7 PCBs (mg/kg) <0.021

Mineral Oil (mg/kg) (EH_2D_AL) <5

PAH Sum of 17 (mg/kg) <10

pH (pH Units) 8.76

ANC to pH 6 (mol/kg) 0.0714

ANC to pH 4 (mol/kg) 0.331

Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis

C₂Concⁿ in 10:1 eluate (mg/l)A₂10:1 concⁿ leached (mg/kg)Limit values for compliance leaching test
using BS EN 12457-3 at L/S 10 l/kg

	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.000569	<0.0005	0.00569	<0.005	0.5	2	25
Barium	0.0158	<0.0002	0.158	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00242	<0.0003	0.0242	<0.003	2	50	100
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.000834	<0.0004	0.00834	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00125	<0.001	0.0125	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	0.509	<0.5	5.09	<5	10	150	500
Sulphate (soluble)	4.3	<2	43	<20	1000	20000	50000
Total Dissolved Solids	78.6	<10	786	<100	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	9.36	<3	93.6	<30	500	800	1000

Leach Test Information

Date Prepared 22-Jan-2025
pH (pH Units) 8.72
Conductivity (µS/cm) 103
Volume Leachant (Litres) 0.887

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

30/01/2025 14:54:21



CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719Report Number: 754609
Location: Halewood LUF

Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.101

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Halewood LUF

Natural Moisture Content (%) 15.8

Dry Matter Content (%) 86.4

Case

SDG 250121-32

Lab Sample Number(s) 30966698

Sampled Date 17-Jan-2025

Customer Sample Ref. TP46 ESZ

Depth (m) 1.00 - 1.10

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Result

Total Organic Carbon (%) 1.56

Loss on Ignition (%) 4

Sum of BTEX (mg/kg) <0.07

Sum of 7 PCBs (mg/kg) <0.021

Mineral Oil (mg/kg) (EH_2D_AL) <5

PAH Sum of 17 (mg/kg) <10

pH (pH Units) 8.36

ANC to pH 6 (mol/kg) <0.03

ANC to pH 4 (mol/kg) 0.0577

Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis

C₂Concⁿ in 10:1 eluate (mg/l)A₂10:1 concⁿ leached (mg/kg)Limit values for compliance leaching test
using BS EN 12457-3 at L/S 10 l/kg

	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00277	<0.0005	0.0277	<0.005	0.5	2	25
Barium	0.0187	<0.0002	0.187	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.0069	<0.0003	0.069	<0.003	2	50	100
Mercury Dissolved (CVAf)	0.0000141	<0.00001	0.000141	<0.0001	0.01	0.2	2
Molybdenum	0.00613	<0.003	0.0613	<0.03	0.5	10	30
Nickel	0.00153	<0.0004	0.0153	<0.004	0.4	10	40
Lead	0.000255	<0.0002	0.00255	<0.002	0.5	10	50
Antimony	0.00114	<0.001	0.0114	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00551	<0.001	0.0551	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	1.59	<0.5	15.9	<5	10	150	500
Sulphate (soluble)	4.6	<2	46	<20	1000	20000	50000
Total Dissolved Solids	113	<10	1130	<100	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	8.99	<3	89.9	<30	500	800	1000

Leach Test Information

Date Prepared 22-Jan-2025
pH (pH Units) 8.61
Conductivity (µS/cm) 148
Volume Leachant (Litres) 0.885

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

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14:54:13 30/01/2025



CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719Report Number: 754609
Location: Halewood LUF

Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.116

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Halewood LUF

Natural Moisture Content (%) 27.1

Dry Matter Content (%) 78.7

Case

SDG 250121-32

Lab Sample Number(s) 30966718

Sampled Date 17-Jan-2025

Customer Sample Ref. TP49 ESZ

Depth (m) 0.10 - 0.15

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Result

Total Organic Carbon (%) 2.52

Loss on Ignition (%) 7.71

Sum of BTEX (mg/kg) <0.07

Sum of 7 PCBs (mg/kg) <0.021

Mineral Oil (mg/kg) (EH_2D_AL) 12.4

PAH Sum of 17 (mg/kg) <10

pH (pH Units) 6.45

ANC to pH 6 (mol/kg) <0.03

ANC to pH 4 (mol/kg) 0.0479

Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis

C₂Concⁿ in 10:1 eluate (mg/l)A₂10:1 concⁿ leached (mg/kg)Limit values for compliance leaching test
using BS EN 12457-3 at L/S 10 l/kg

	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00127	<0.0005	0.0127	<0.005	0.5	2	25
Barium	0.0117	<0.0002	0.117	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.0163	<0.0003	0.163	<0.003	2	50	100
Mercury Dissolved (CVAf)	0.0000194	<0.00001	0.000194	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00338	<0.0004	0.0338	<0.004	0.4	10	40
Lead	0.00102	<0.0002	0.0102	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00632	<0.001	0.0632	<0.01	4	50	200
Chloride	2	<2	20	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	42	<10	420	<100	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	9.5	<3	95	<30	500	800	1000

Leach Test Information

Date Prepared 22-Jan-2025
pH (pH Units) 7.53
Conductivity (µS/cm) 55
Volume Leachant (Litres) 0.876

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

30/01/2025 14:54:21



CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719Report Number: 754609
Location: Halewood LUF

Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.101

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Halewood LUF

Natural Moisture Content (%) 13.2

Dry Matter Content (%) 88.3

Case

SDG 250121-32

Lab Sample Number(s) 30966724

Sampled Date 17-Jan-2025

Customer Sample Ref. TP49 ESZ

Depth (m) 2.50 - 2.60

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Result

Total Organic Carbon (%) <0.2

Loss on Ignition (%) 2.62

Sum of BTEX (mg/kg) <0.115

Sum of 7 PCBs (mg/kg) <0.021

Mineral Oil (mg/kg) (EH_2D_AL) <5

PAH Sum of 17 (mg/kg) <10

pH (pH Units) 8.94

ANC to pH 6 (mol/kg) 0.0783

ANC to pH 4 (mol/kg) 0.275

Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis

C₂Concⁿ in 10:1 eluate (mg/l)A₂10:1 concⁿ leached (mg/kg)Limit values for compliance leaching test
using BS EN 12457-3 at L/S 10 l/kg

	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00132	<0.0005	0.0132	<0.005	0.5	2	25
Barium	0.06	<0.0002	0.6	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00334	<0.0003	0.0334	<0.003	2	50	100
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.000594	<0.0004	0.00594	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00245	<0.001	0.0245	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	7.9	<2	79	<20	1000	20000	50000
Total Dissolved Solids	79.2	<10	792	<100	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	7.25	<3	72.5	<30	500	800	1000

Leach Test Information

Date Prepared 22-Jan-2025
pH (pH Units) 8.83
Conductivity (µS/cm) 103
Volume Leachant (Litres) 0.888

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

30/01/2025 14:54:21



CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

Superseded Report:

Table of Results - Appendix

Method No	Description
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM048	Identification of Asbestos in Bulk Material
TM152	Analysis of Aqueous Samples by ICP-MS
TM168	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM218	The determination of PAH in soil samples by GC-MS
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM415	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
PM115	Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM018	Determination of Loss on Ignition
TM090	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM259	Determination of Phenols in Waters and Leachates by HPLC
TM410	Determination of Coronene in soils by GCMS
TM104	Determination of Fluoride using the Kone Analyser
TM182	Determination of Acid Neutralisation Capacity (ANC) Using Autotitration in Soils
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

Superseded Report:

Test Completion Dates

Lab Sample No(s)	30966681	30966686	30966691	30966698	30966703	30966708	30966713	30966718	30966724
Customer Sample Ref.	TP27	TP45	TP45	TP46	TP47	TP47	TP48	TP49	TP49
AGS Ref.	ES	ES	ES	ES	ES	ES	ES	ES	ES
Depth	1.40 - 1.50	0.40 - 0.50	2.40 - 2.50	1.00 - 1.10	0.60 - 0.70	1.80 - 1.90	0.90 - 10.00	0.10 - 0.15	2.50 - 2.60
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
ANC at pH4 and ANC at pH 6	30-Jan-2025			28-Jan-2025				30-Jan-2025	30-Jan-2025
Anions by Kone (w)	30-Jan-2025			30-Jan-2025				30-Jan-2025	30-Jan-2025
Asbestos ID in Solid Samples	28-Jan-2025	29-Jan-2025	28-Jan-2025	29-Jan-2025	28-Jan-2025	29-Jan-2025	28-Jan-2025	28-Jan-2025	29-Jan-2025
CEN 10:1 Leachate (1 Stage)	23-Jan-2025			23-Jan-2025				23-Jan-2025	23-Jan-2025
CEN Readings	29-Jan-2025			29-Jan-2025				29-Jan-2025	29-Jan-2025
Coronene	28-Jan-2025			28-Jan-2025				28-Jan-2025	28-Jan-2025
Dissolved Metals by ICP-MS	28-Jan-2025			28-Jan-2025				28-Jan-2025	28-Jan-2025
Dissolved Organic/Inorganic Carbon	26-Jan-2025			26-Jan-2025				26-Jan-2025	26-Jan-2025
EPH by GCxGC-FID	24-Jan-2025			29-Jan-2025				24-Jan-2025	24-Jan-2025
EPH CWG GC (S)	24-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	30-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	24-Jan-2025
Fluoride	30-Jan-2025			30-Jan-2025				30-Jan-2025	30-Jan-2025
GRO by GC-FID (S)	24-Jan-2025	24-Jan-2025	24-Jan-2025	24-Jan-2025	29-Jan-2025	24-Jan-2025	24-Jan-2025	24-Jan-2025	24-Jan-2025
Loss on Ignition in soils	29-Jan-2025			29-Jan-2025				29-Jan-2025	29-Jan-2025
Mercury Dissolved	28-Jan-2025			28-Jan-2025				28-Jan-2025	29-Jan-2025
Metals in solid samples by OES	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	30-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025
Moisture at 105C	22-Jan-2025			22-Jan-2025				22-Jan-2025	22-Jan-2025
PAH 16 & 17 Calc	27-Jan-2025			27-Jan-2025				27-Jan-2025	27-Jan-2025
PAH by GCMS	27-Jan-2025	29-Jan-2025	27-Jan-2025	27-Jan-2025	30-Jan-2025	27-Jan-2025	29-Jan-2025	27-Jan-2025	27-Jan-2025
PCBs by GCMS	28-Jan-2025			28-Jan-2025				28-Jan-2025	28-Jan-2025
pH	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025
pH Value of Filtered Water	29-Jan-2025			29-Jan-2025				29-Jan-2025	29-Jan-2025
Phenols by HPLC (W)	28-Jan-2025			28-Jan-2025				28-Jan-2025	28-Jan-2025
Sample description	22-Jan-2025	22-Jan-2025	22-Jan-2025	22-Jan-2025	28-Jan-2025	22-Jan-2025	22-Jan-2025	22-Jan-2025	22-Jan-2025
Total Organic Carbon	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025
TPH CWG GC (S)	24-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	30-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	24-Jan-2025
VOC MS (S)	23-Jan-2025	23-Jan-2025	23-Jan-2025	23-Jan-2025	29-Jan-2025	23-Jan-2025	23-Jan-2025	23-Jan-2025	23-Jan-2025



CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

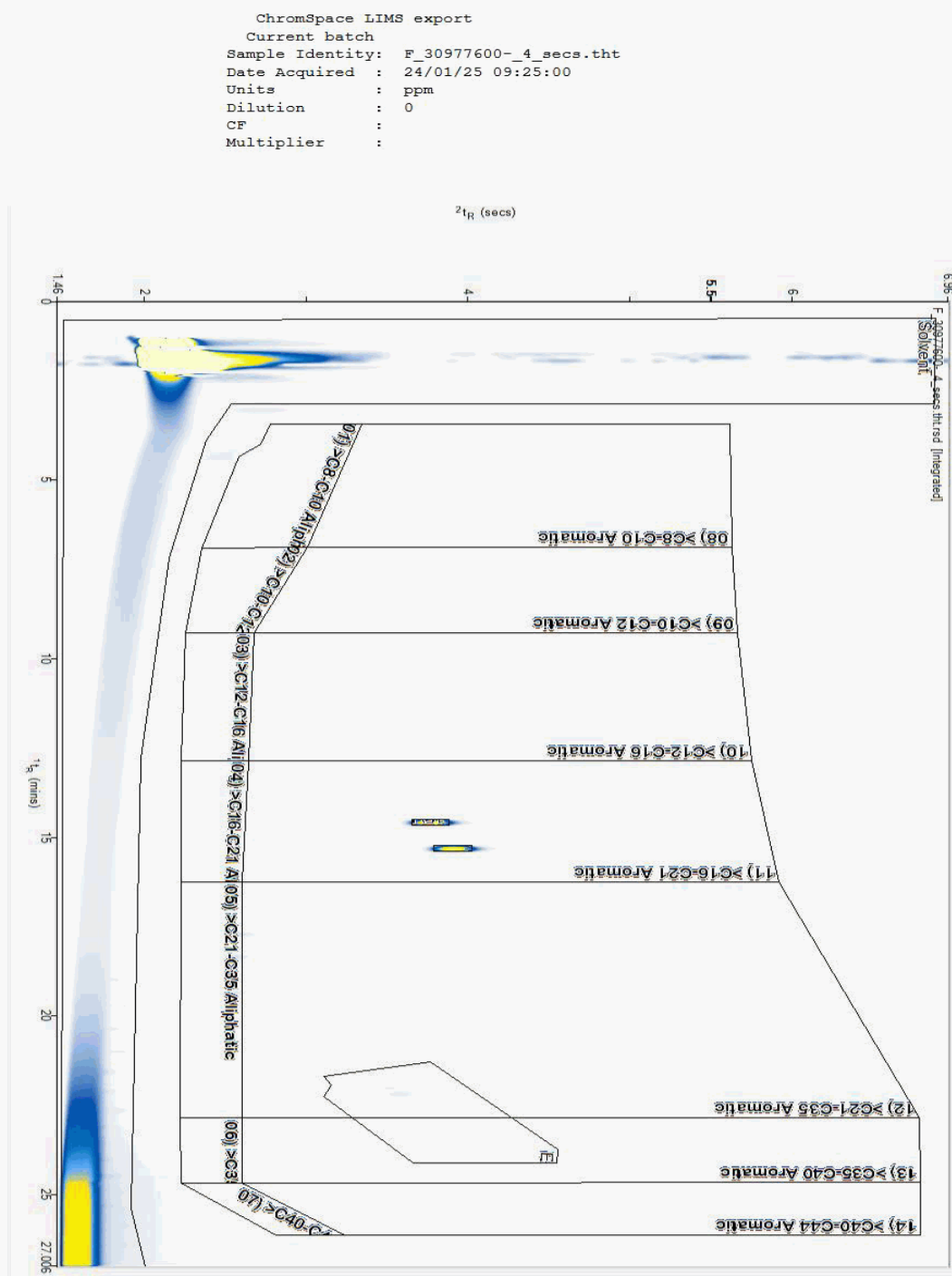
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30977600
Sample ID : TP47

Depth : 1.80 - 1.90



SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

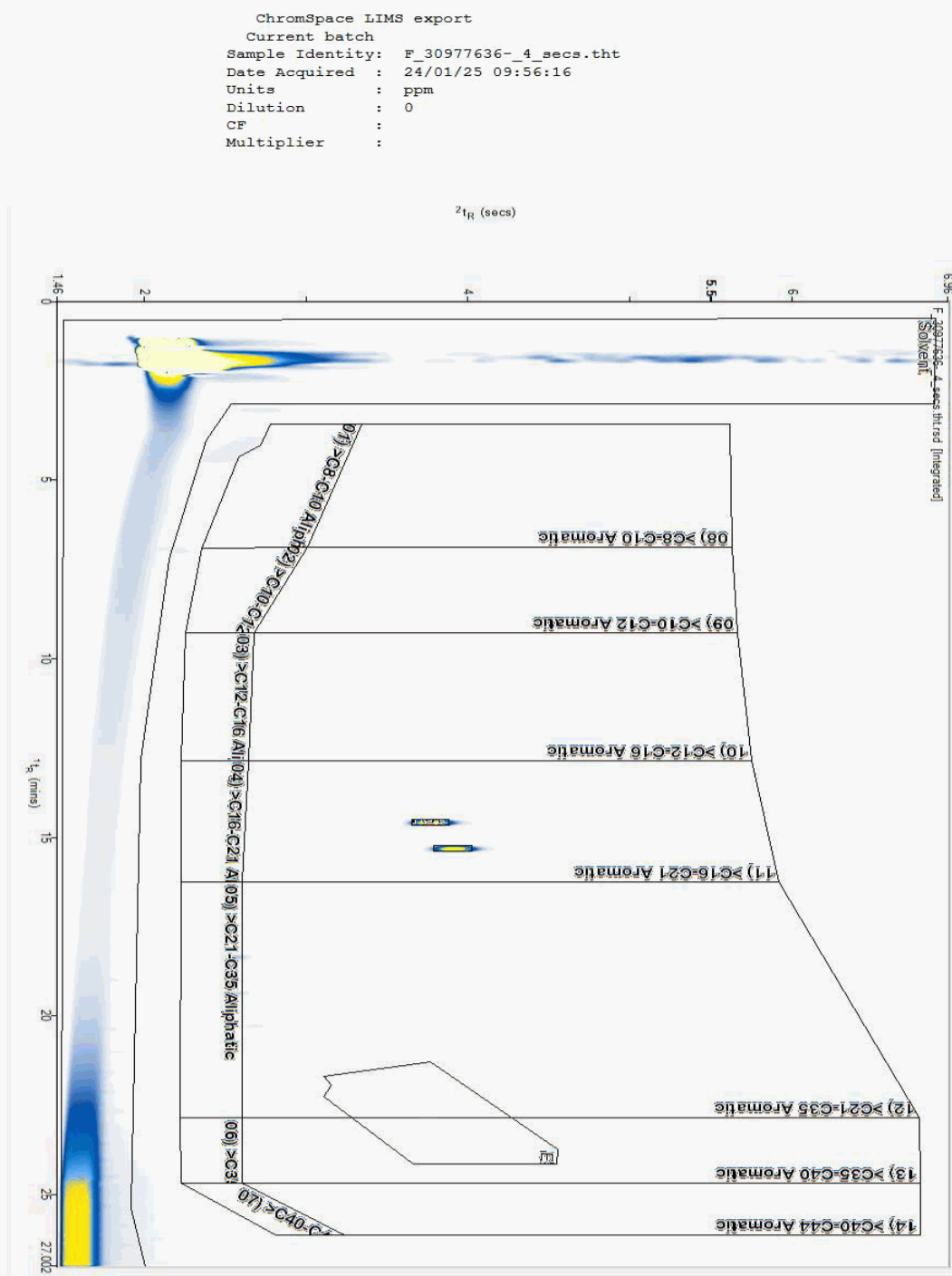
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30977636
Sample ID : TP45

Depth : 0.40 - 0.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

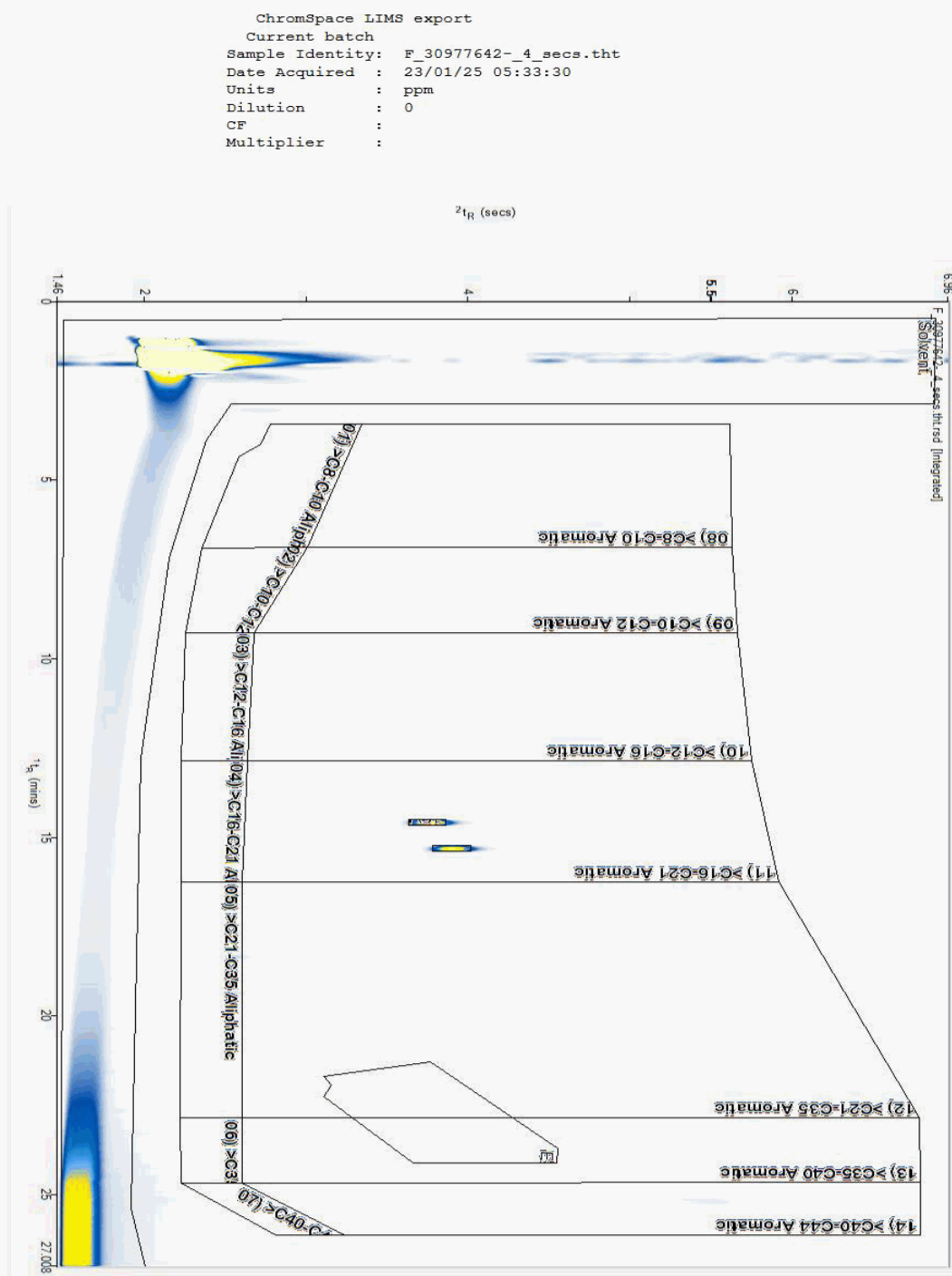
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30977642
Sample ID : TP49

Depth : 2.50 - 2.60





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

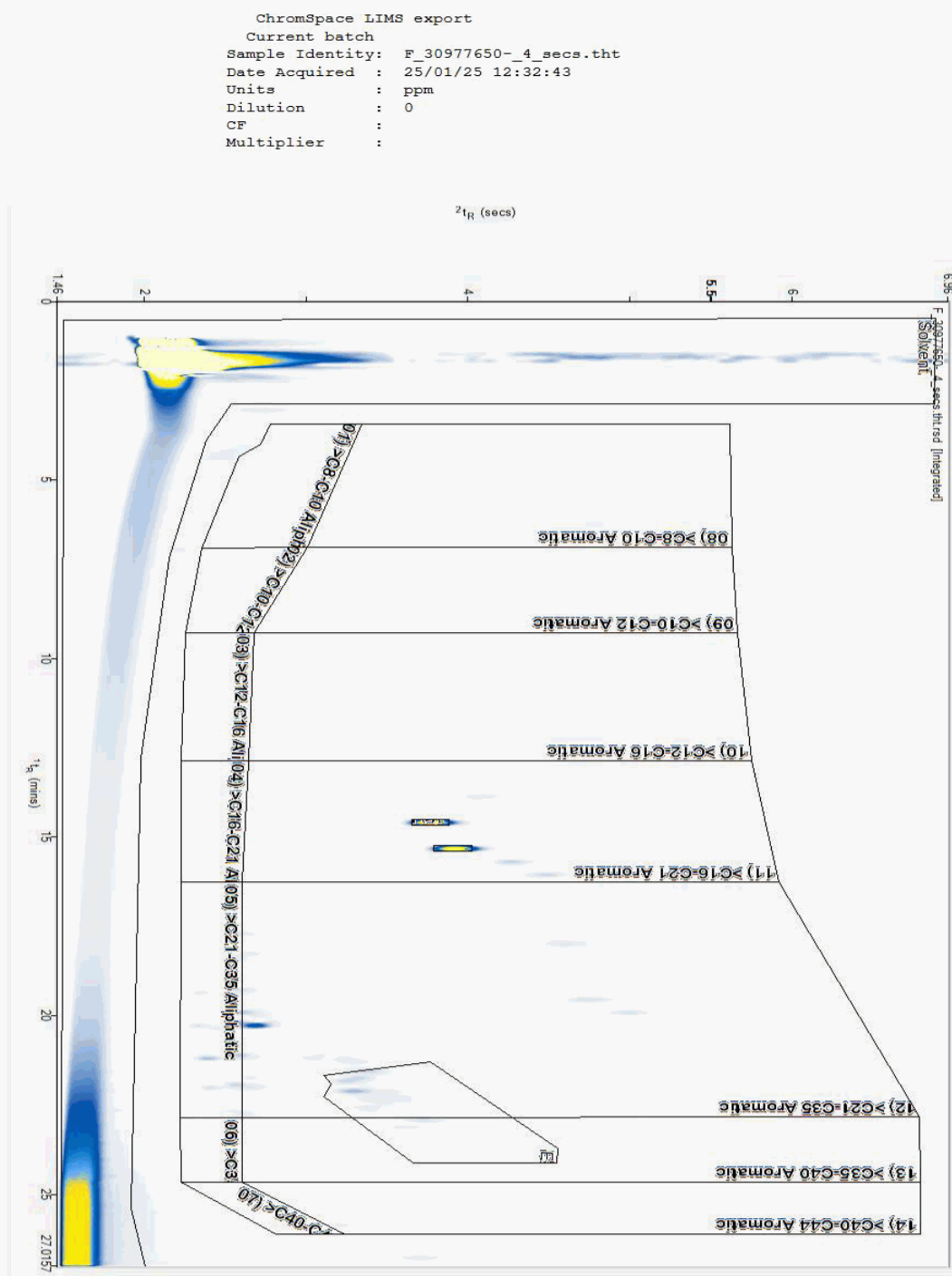
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30977650
Sample ID : TP49

Depth : 0.10 - 0.15





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

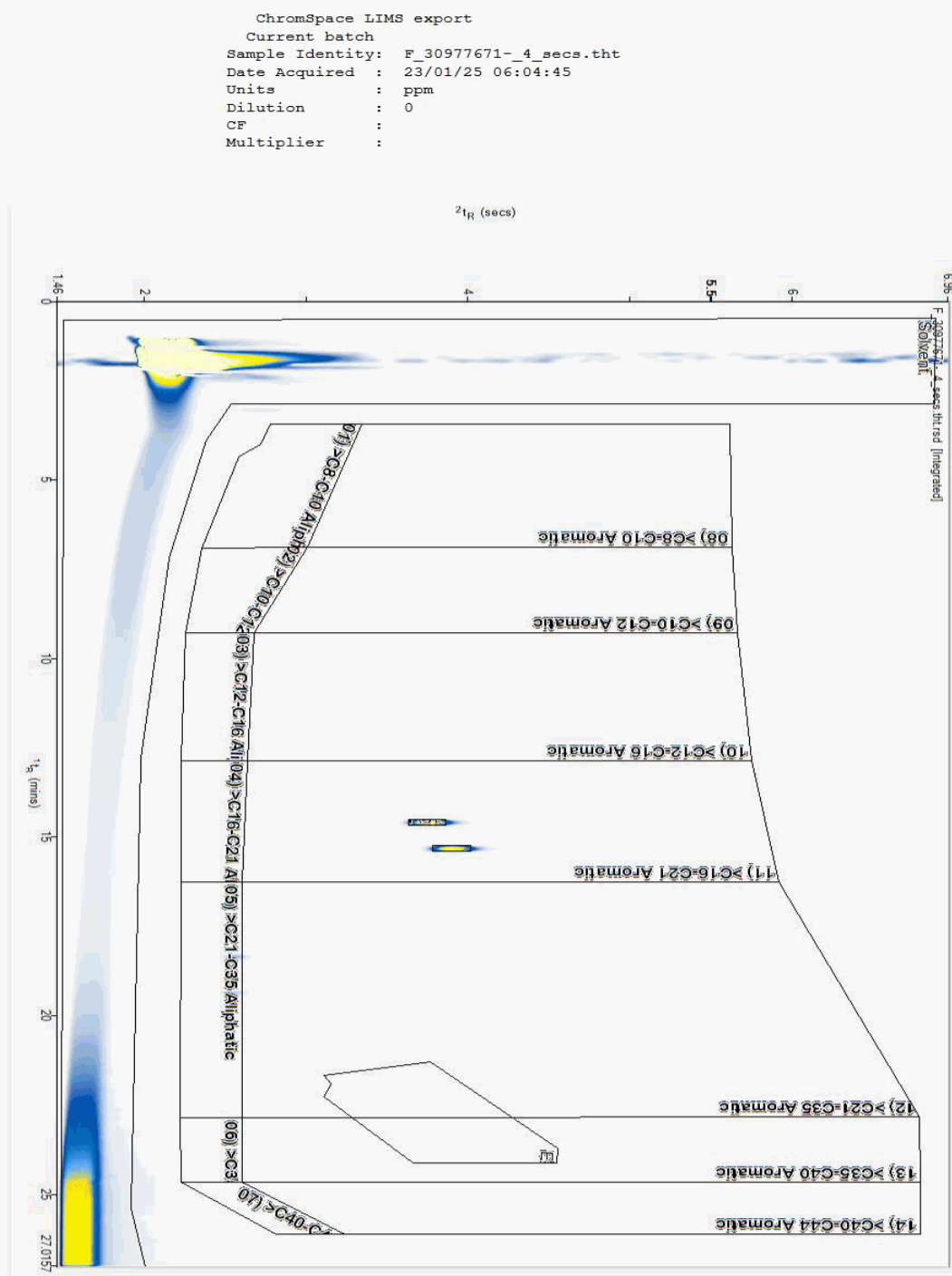
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30977671
Sample ID : TP27

Depth : 1.40 - 1.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

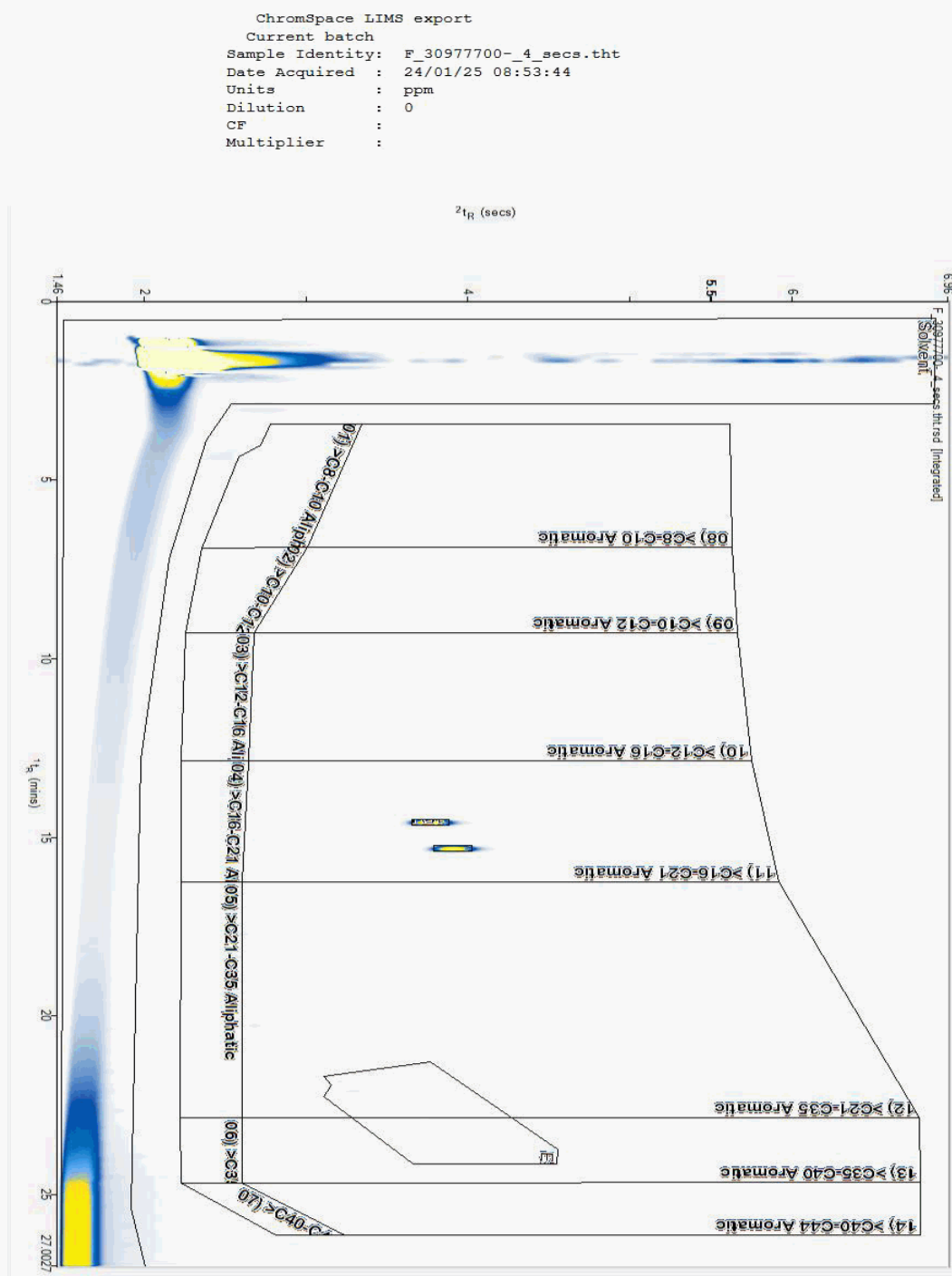
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30977700
Sample ID : TP48

Depth : 0.90 - 10.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

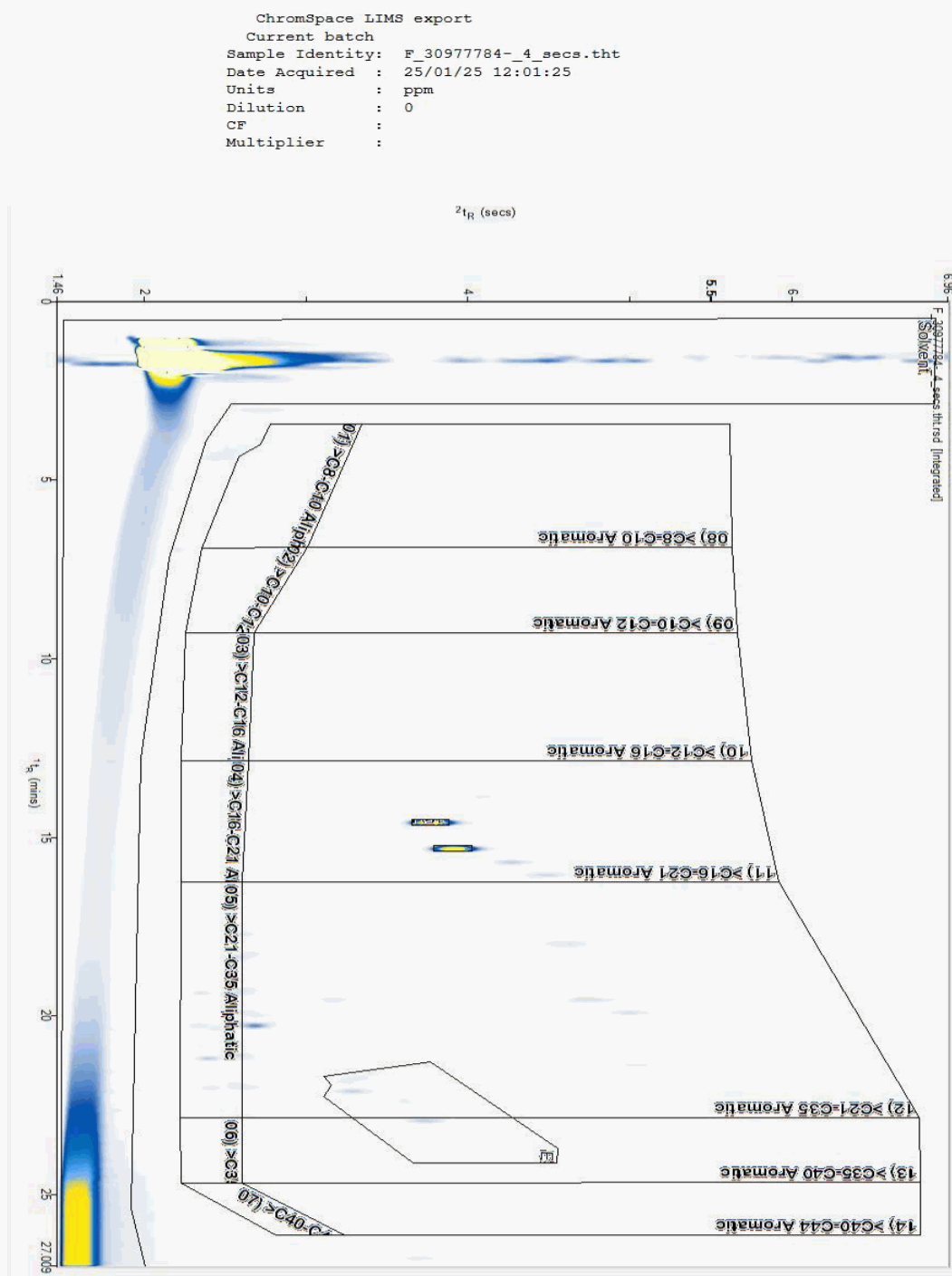
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30977784
Sample ID : TP46

Depth : 1.00 - 1.10





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

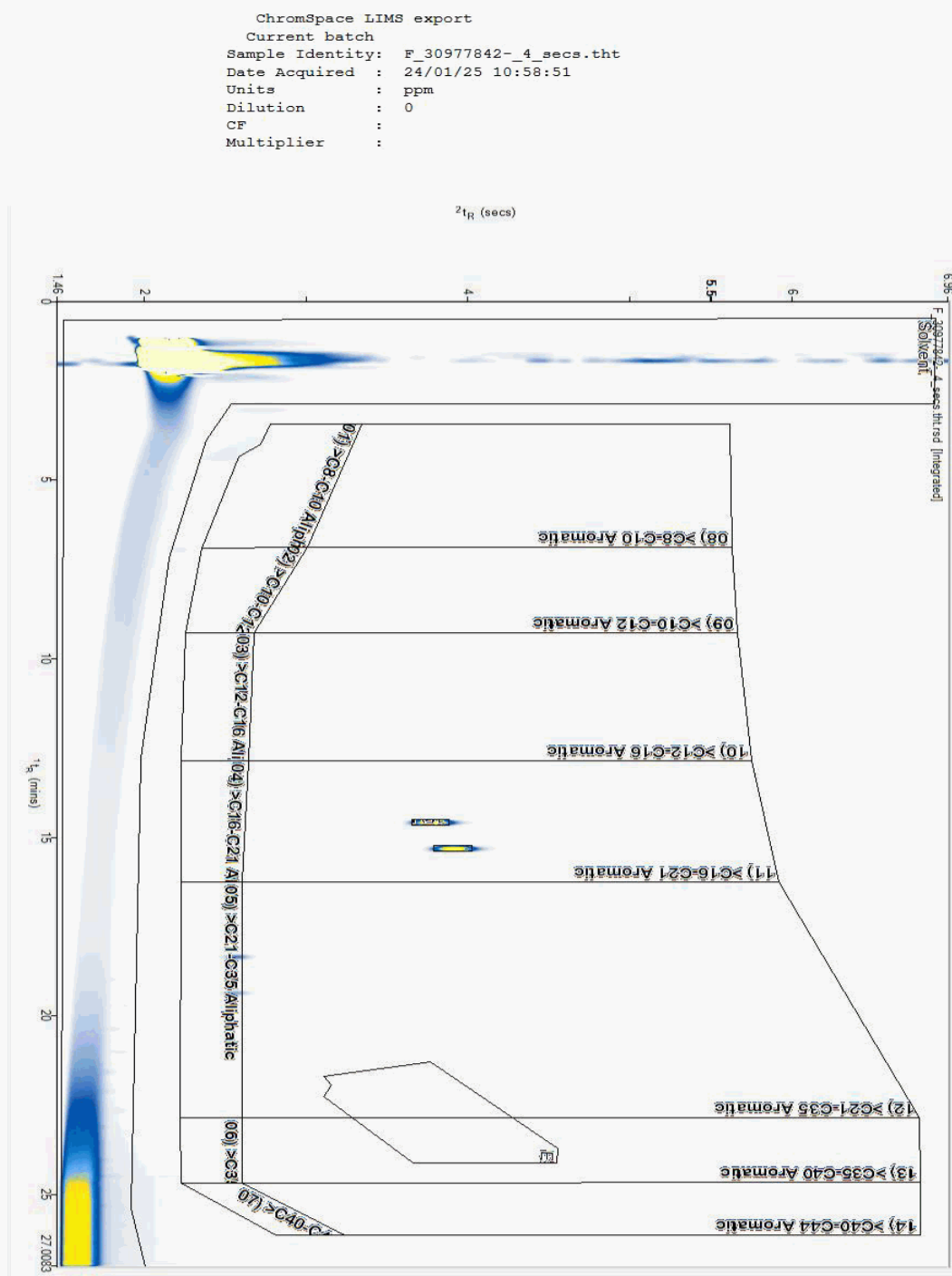
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30977842
Sample ID : TP45

Depth : 2.40 - 2.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

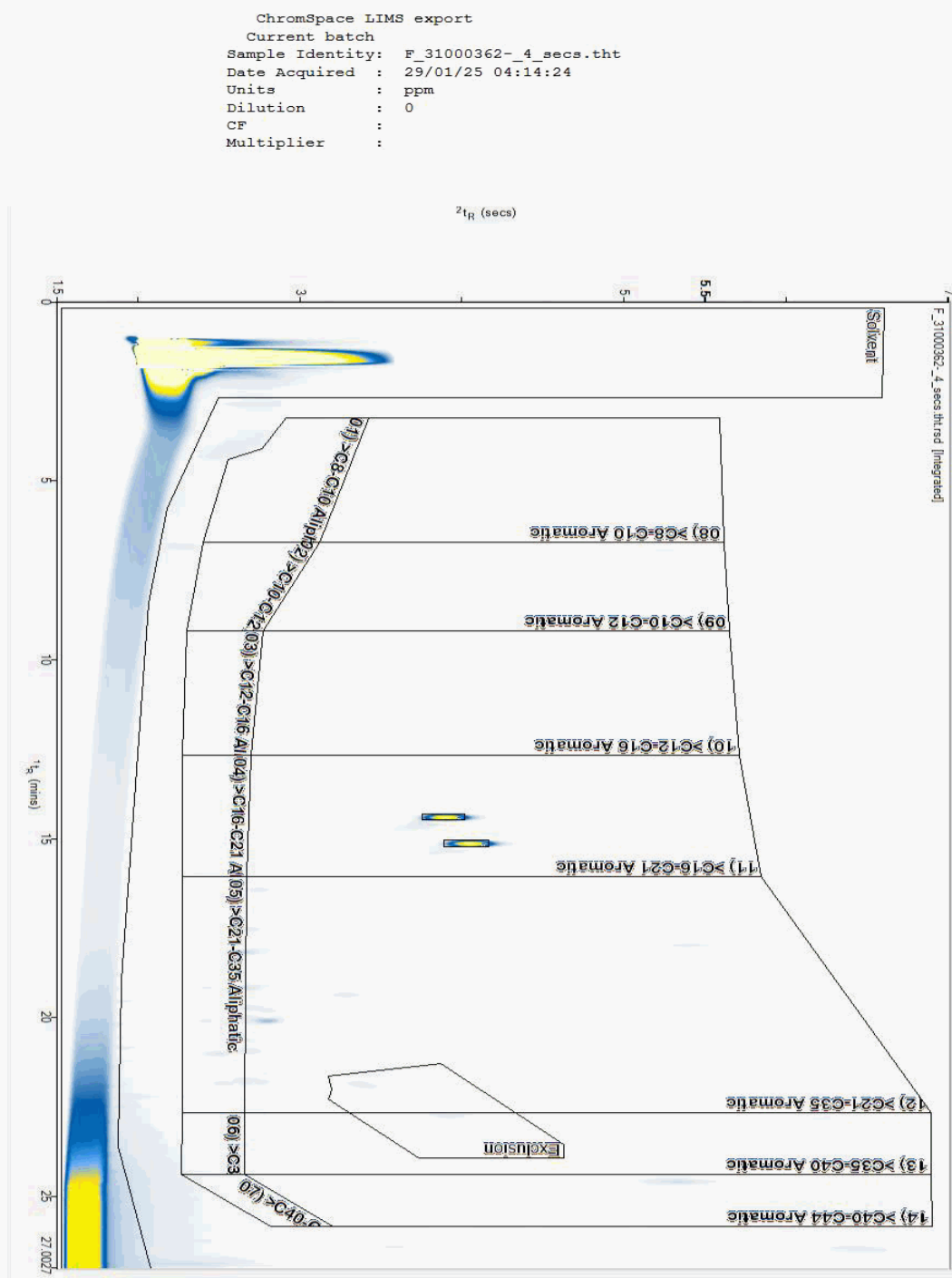
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 31000362
Sample ID : TP47

Depth : 0.60 - 0.70





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

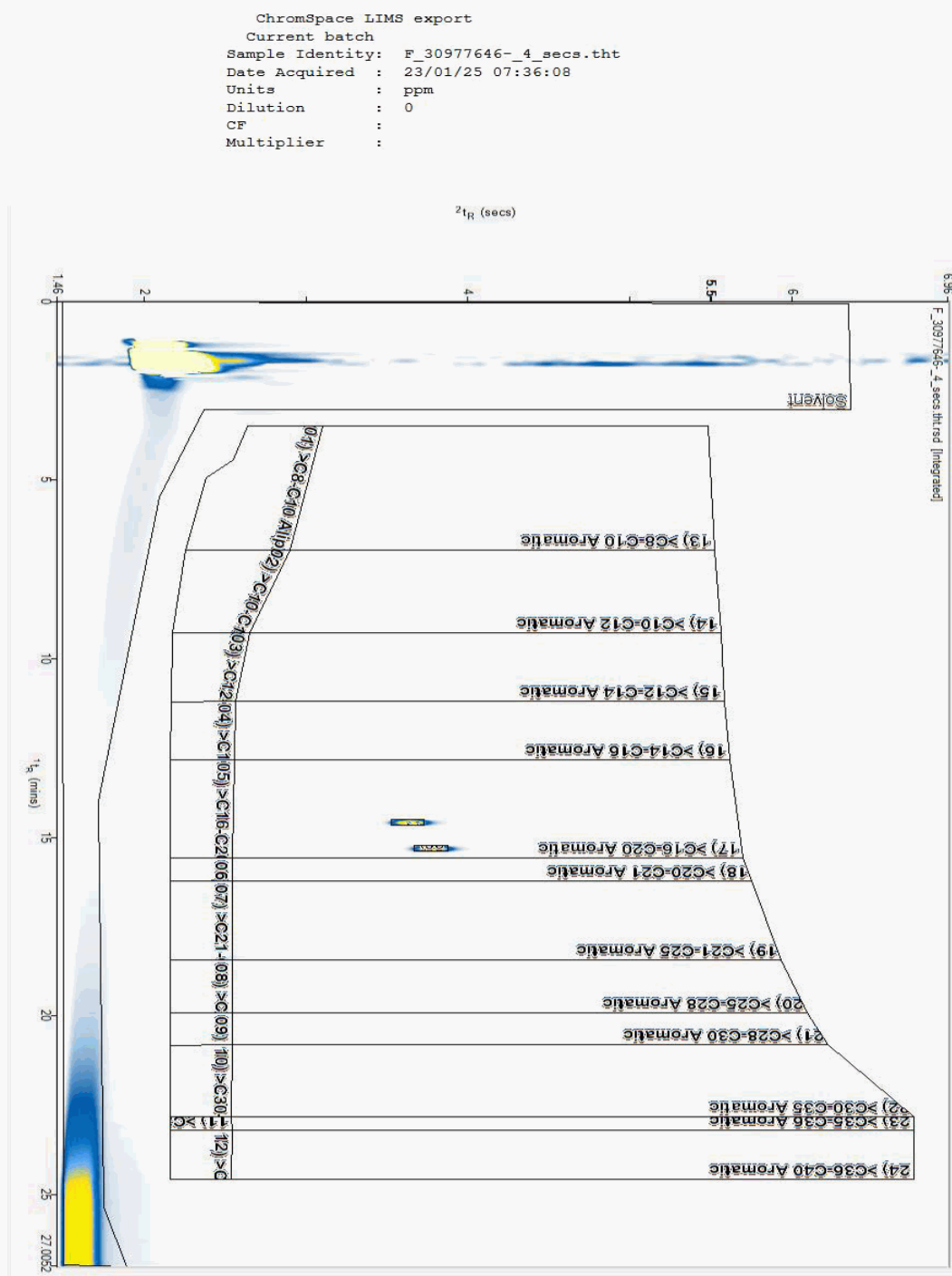
Superseded Report:

Chromatogram

Analysis: EPH by GCxGC-FID

Sample No : 30977646
Sample ID : TP49

Depth : 2.50 - 2.60





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

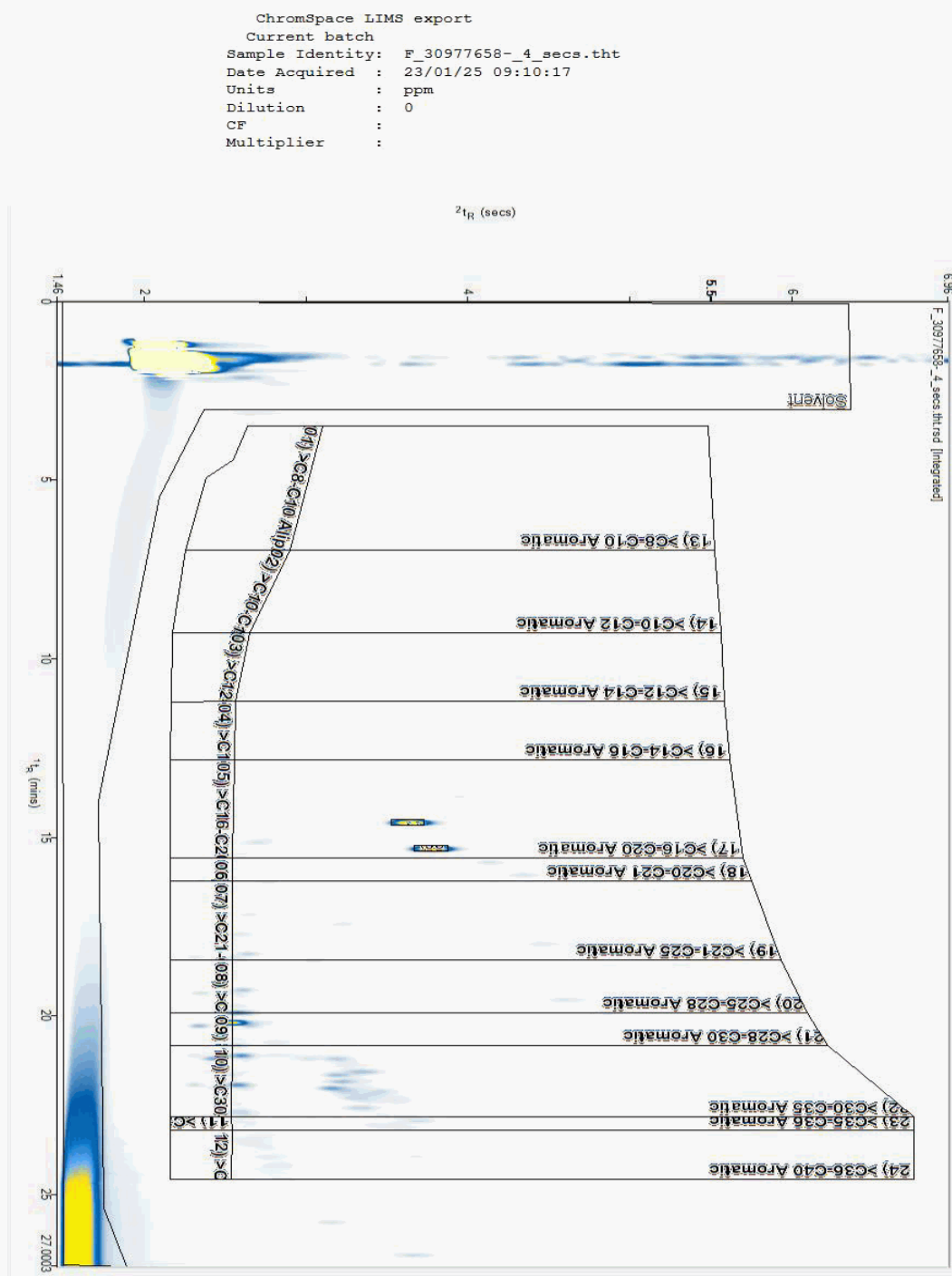
Superseded Report:

Chromatogram

Analysis: EPH by GCxGC-FID

Sample No : 30977658
Sample ID : TP49

Depth : 0.10 - 0.15





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

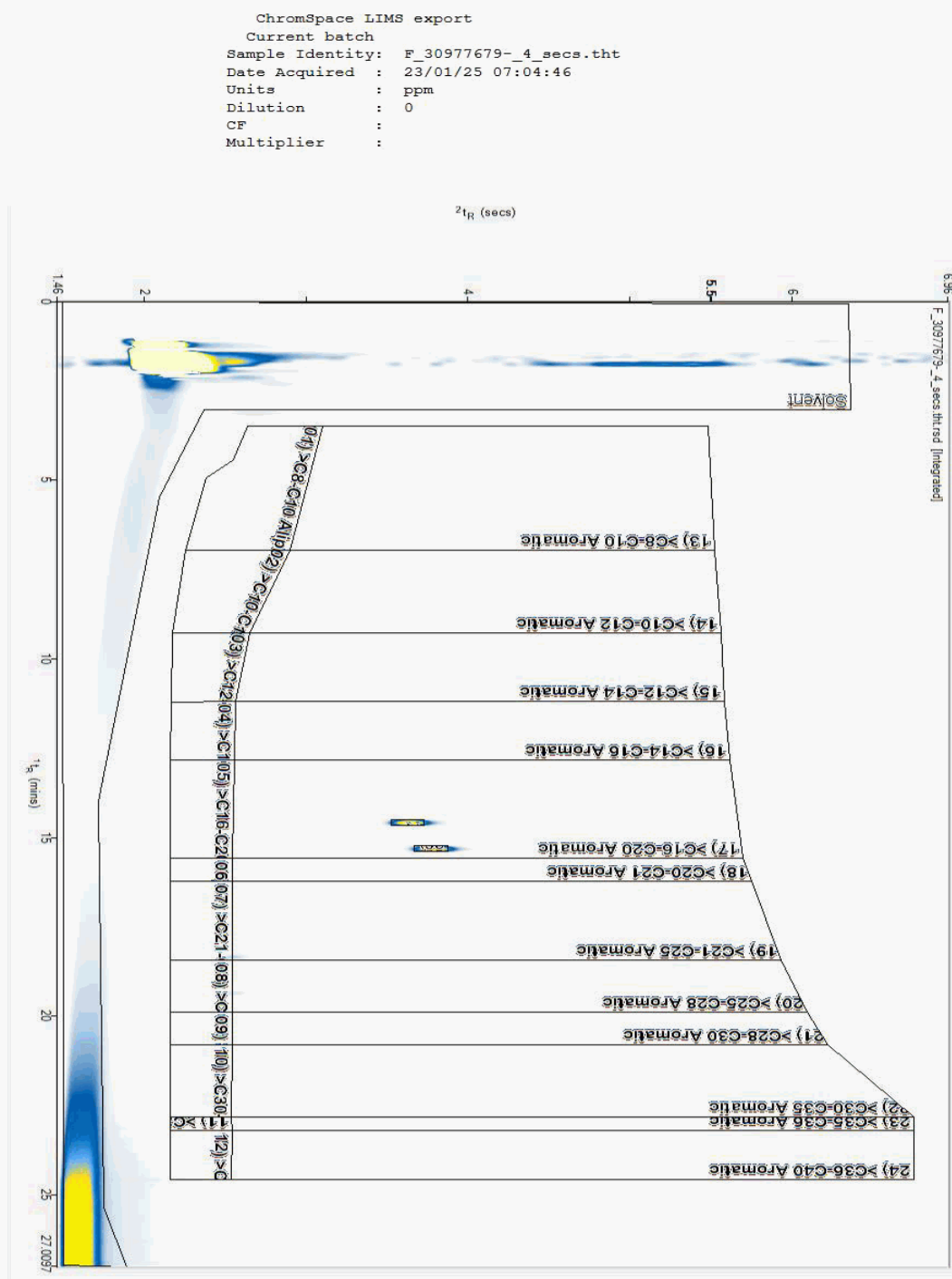
Superseded Report:

Chromatogram

Analysis: EPH by GCxGC-FID

Sample No : 30977679
Sample ID : TP27

Depth : 1.40 - 1.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

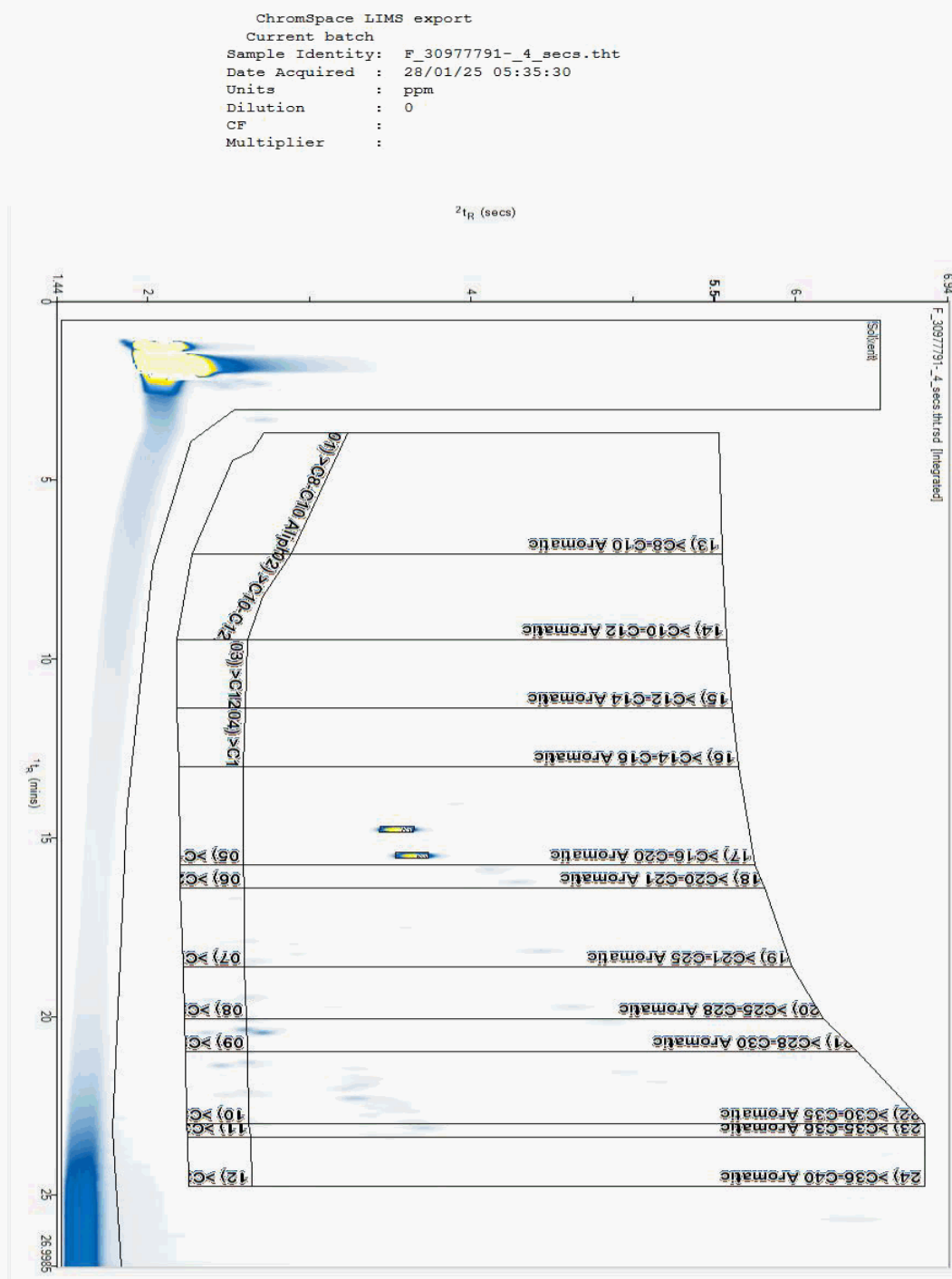
Superseded Report:

Chromatogram

Analysis: EPH by GCxGC-FID

Sample No : 30977791
Sample ID : TP46

Depth : 1.00 - 1.10





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

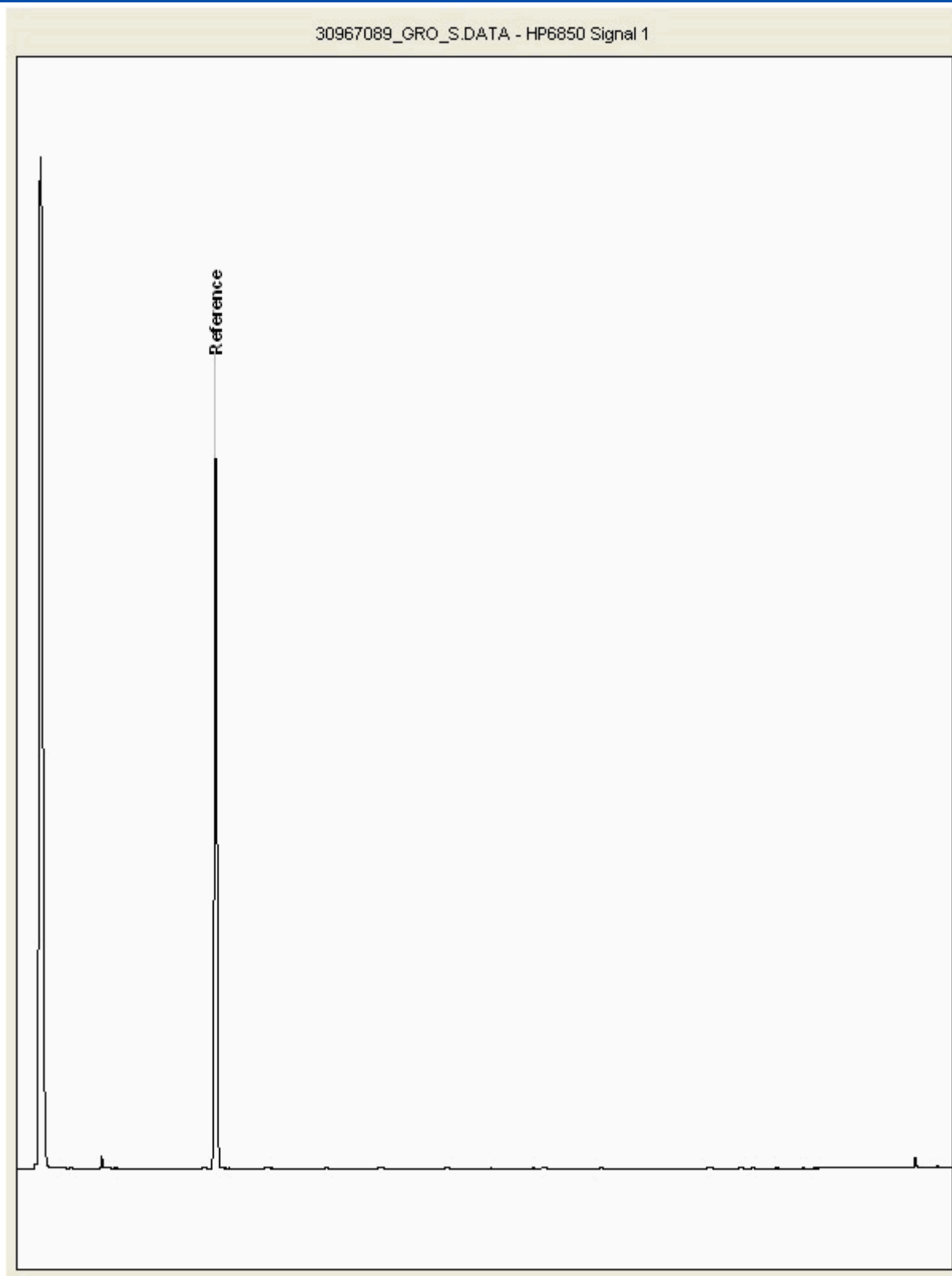
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30967089
Sample ID : TP47

Depth : 0.60 - 0.70





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

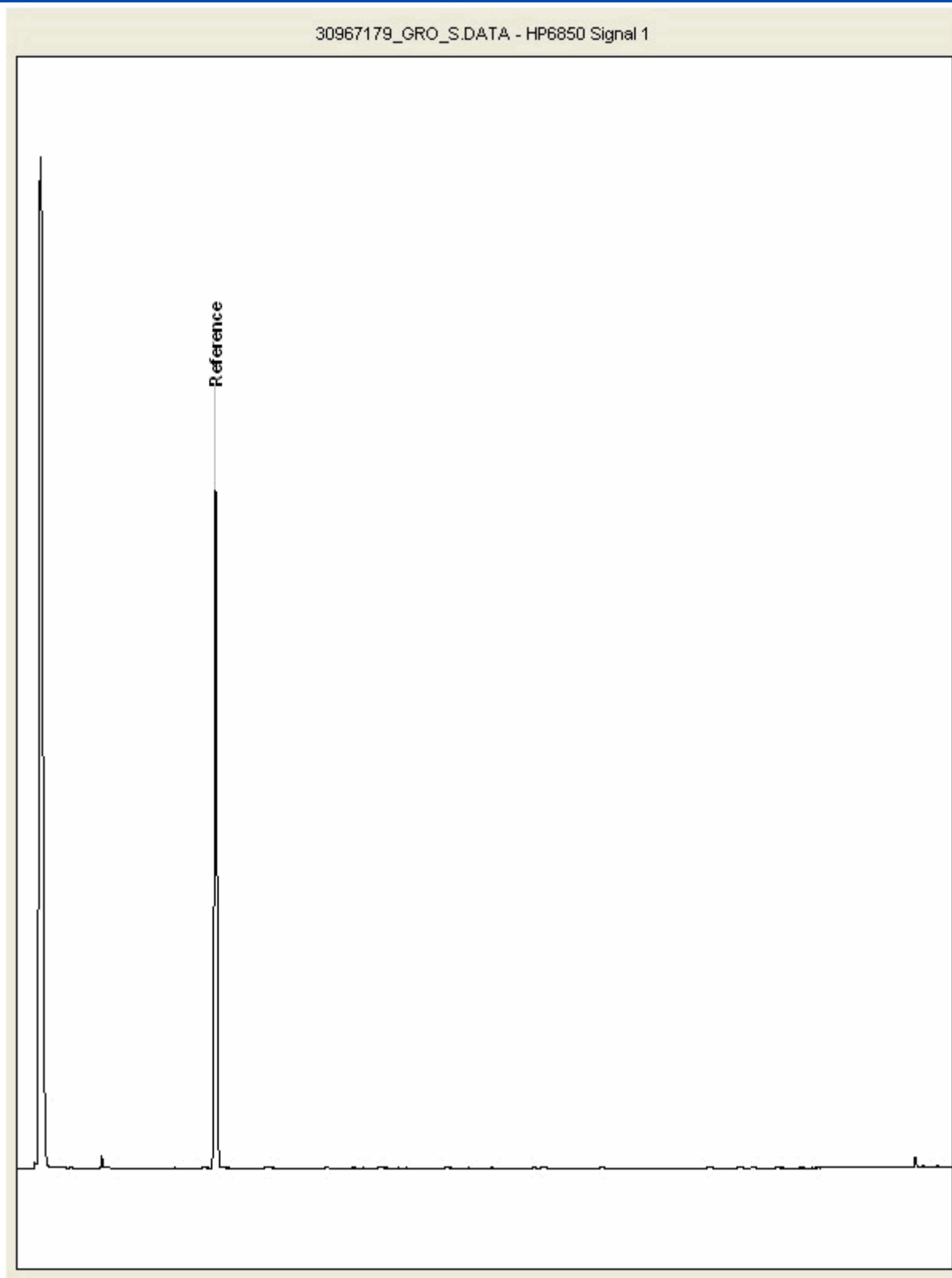
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30967179
Sample ID : TP46

Depth : 1.00 - 1.10





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

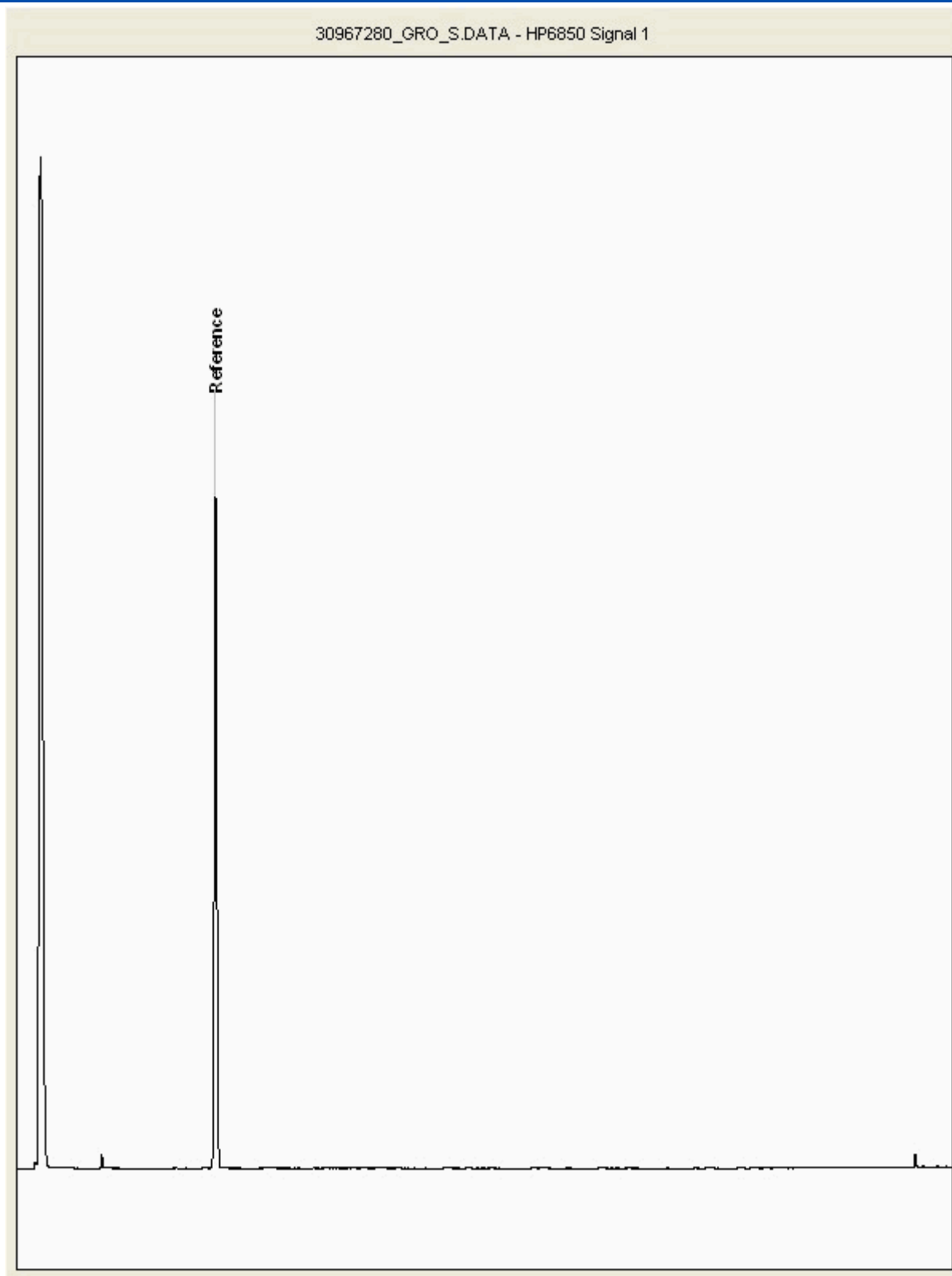
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30967280
Sample ID : TP49

Depth : 0.10 - 0.15





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

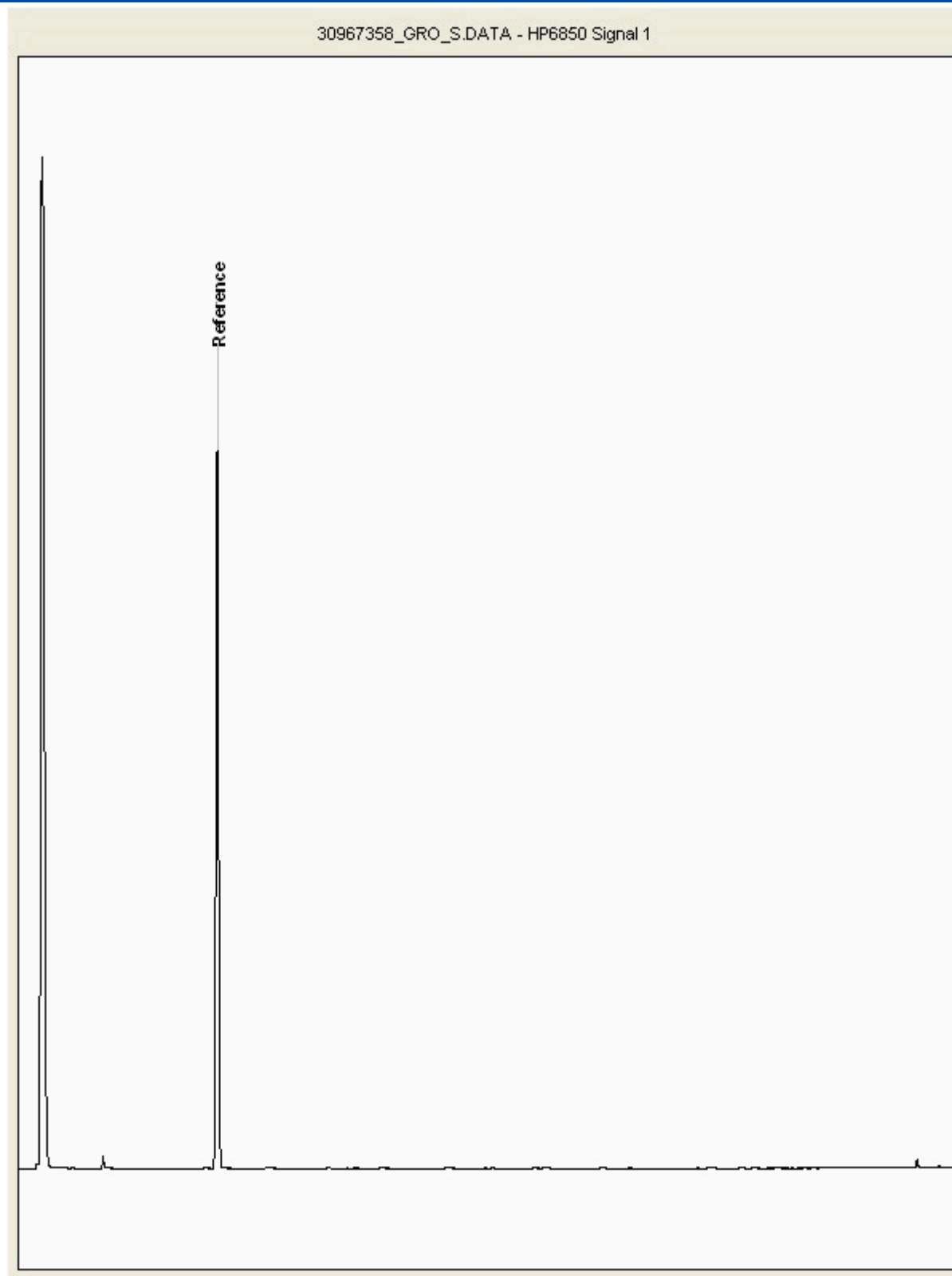
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30967358
Sample ID : TP48

Depth : 0.90 - 10.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

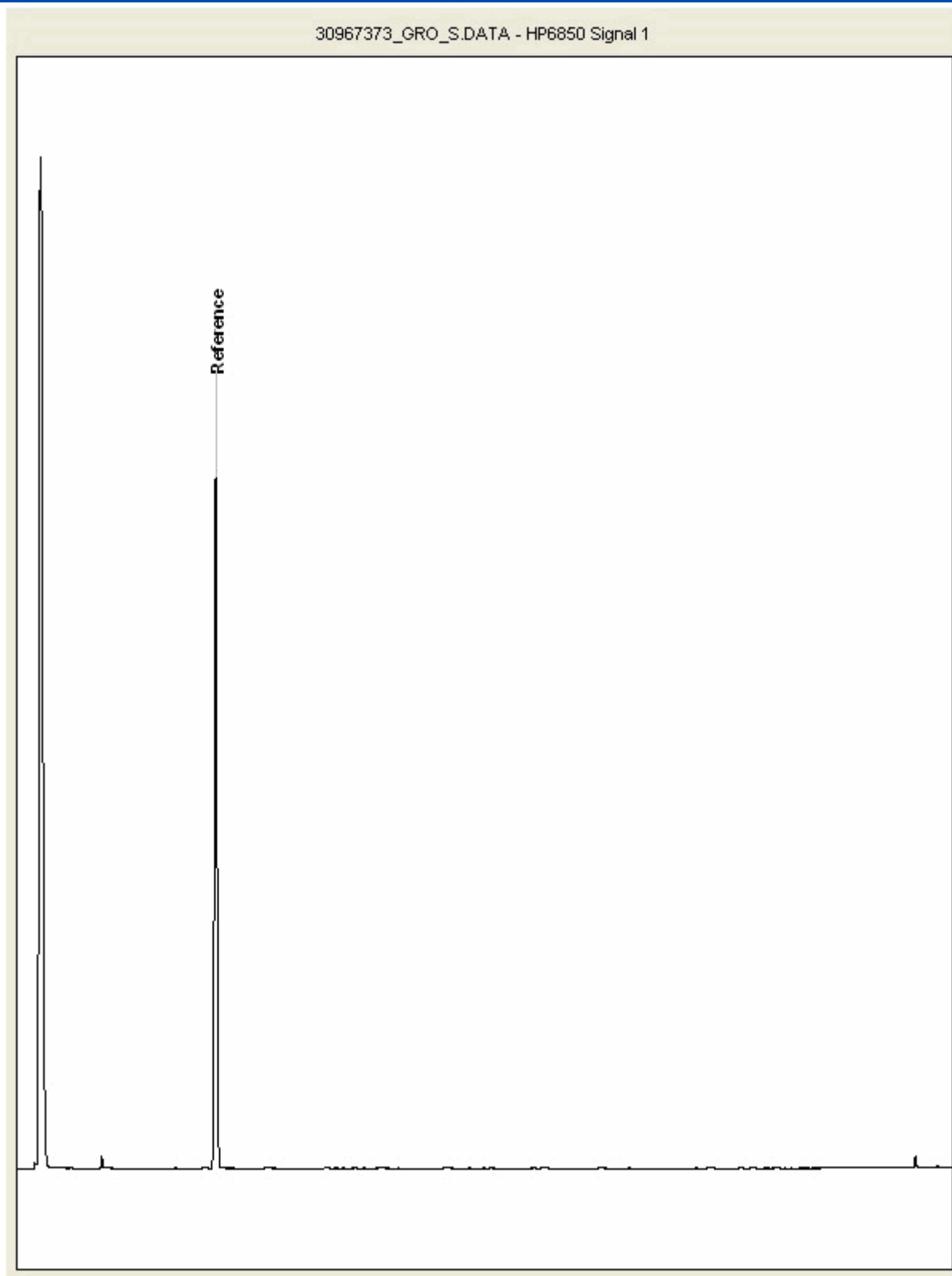
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30967373
Sample ID : TP49

Depth : 2.50 - 2.60





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

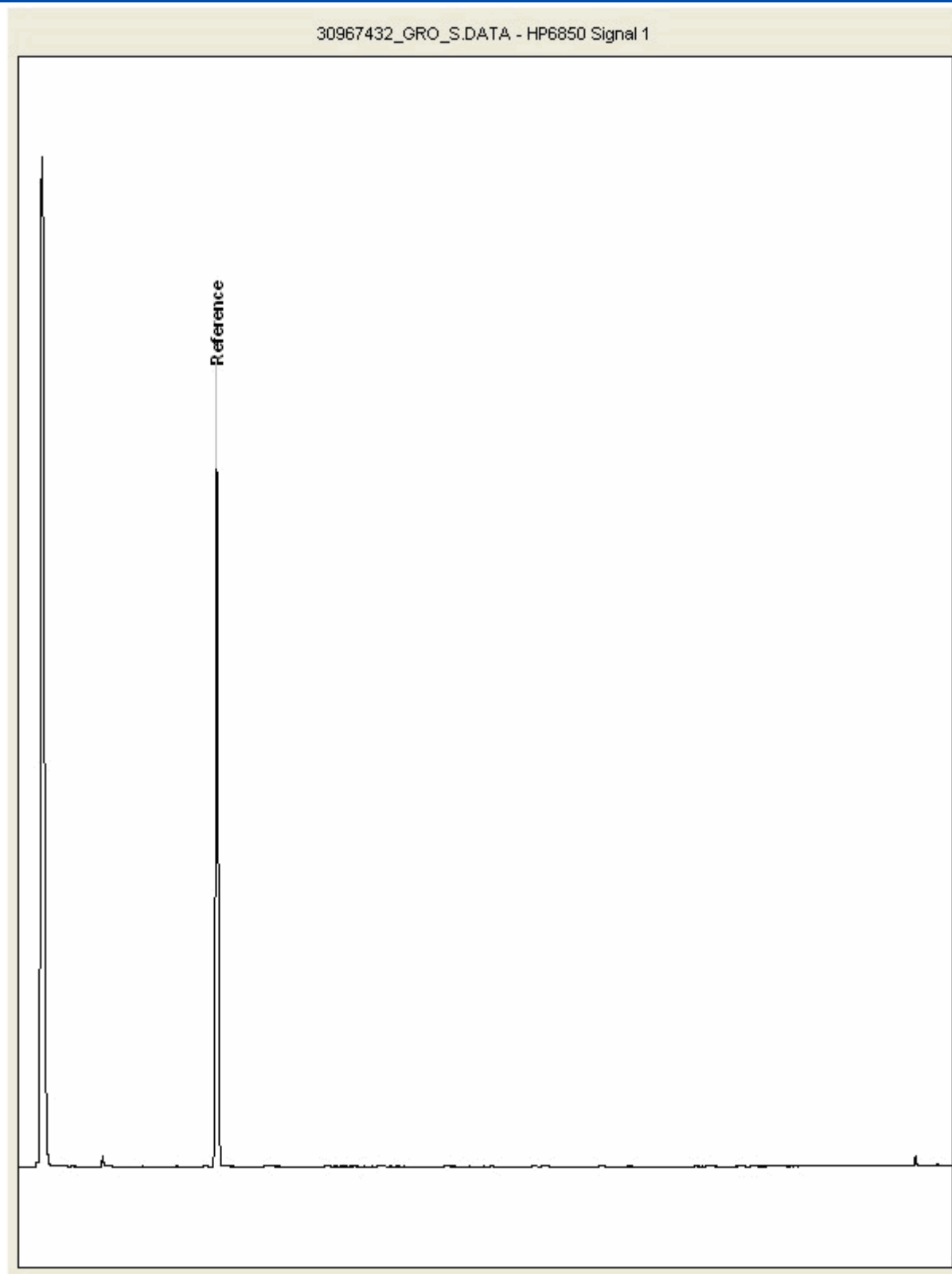
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30967432
Sample ID : TP45

Depth : 0.40 - 0.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

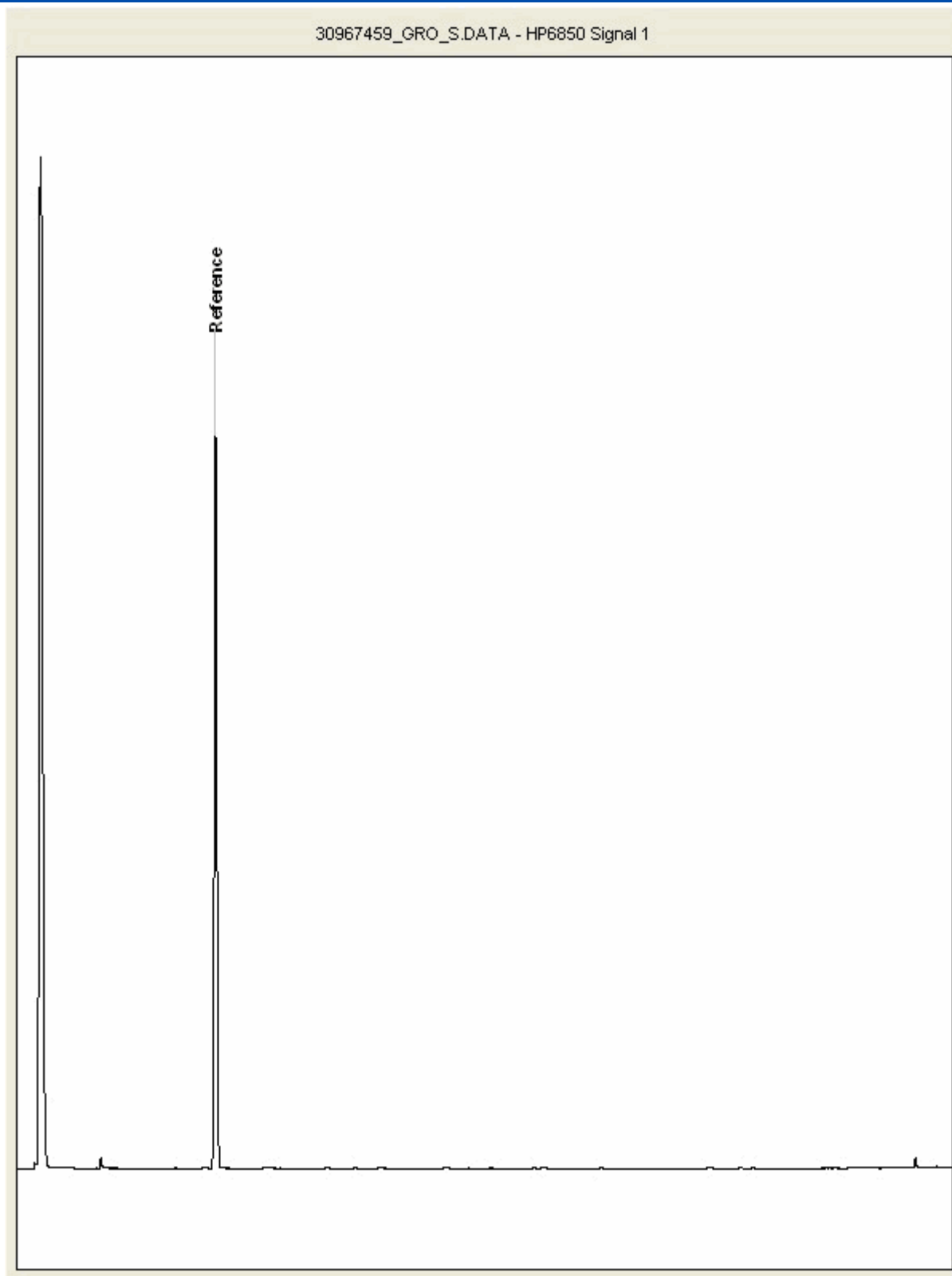
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30967459
Sample ID : TP45

Depth : 2.40 - 2.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

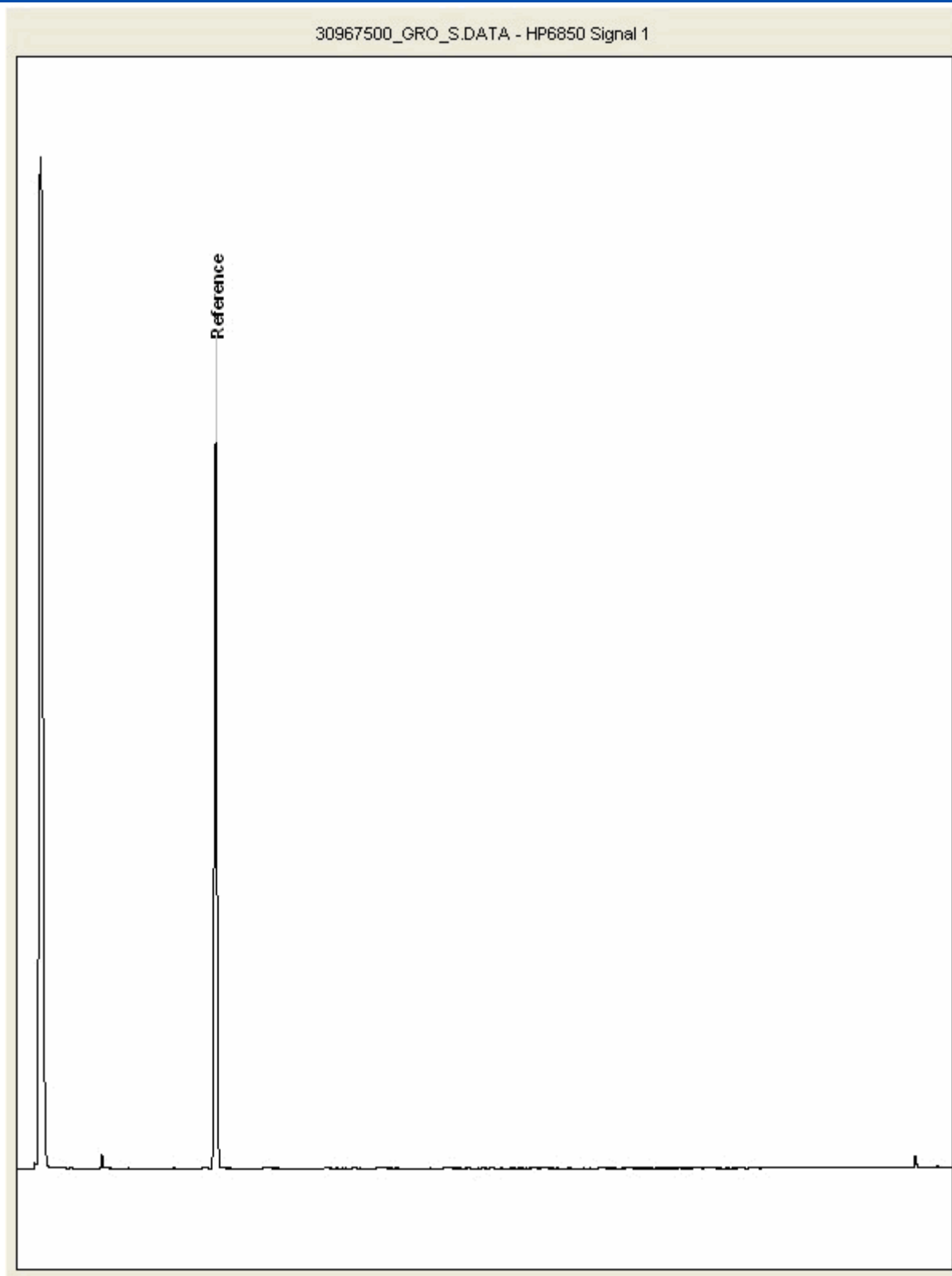
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30967500
Sample ID : TP47

Depth : 1.80 - 1.90





CERTIFICATE OF ANALYSIS

Validated

SDG: 250121-32
Client Ref.: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

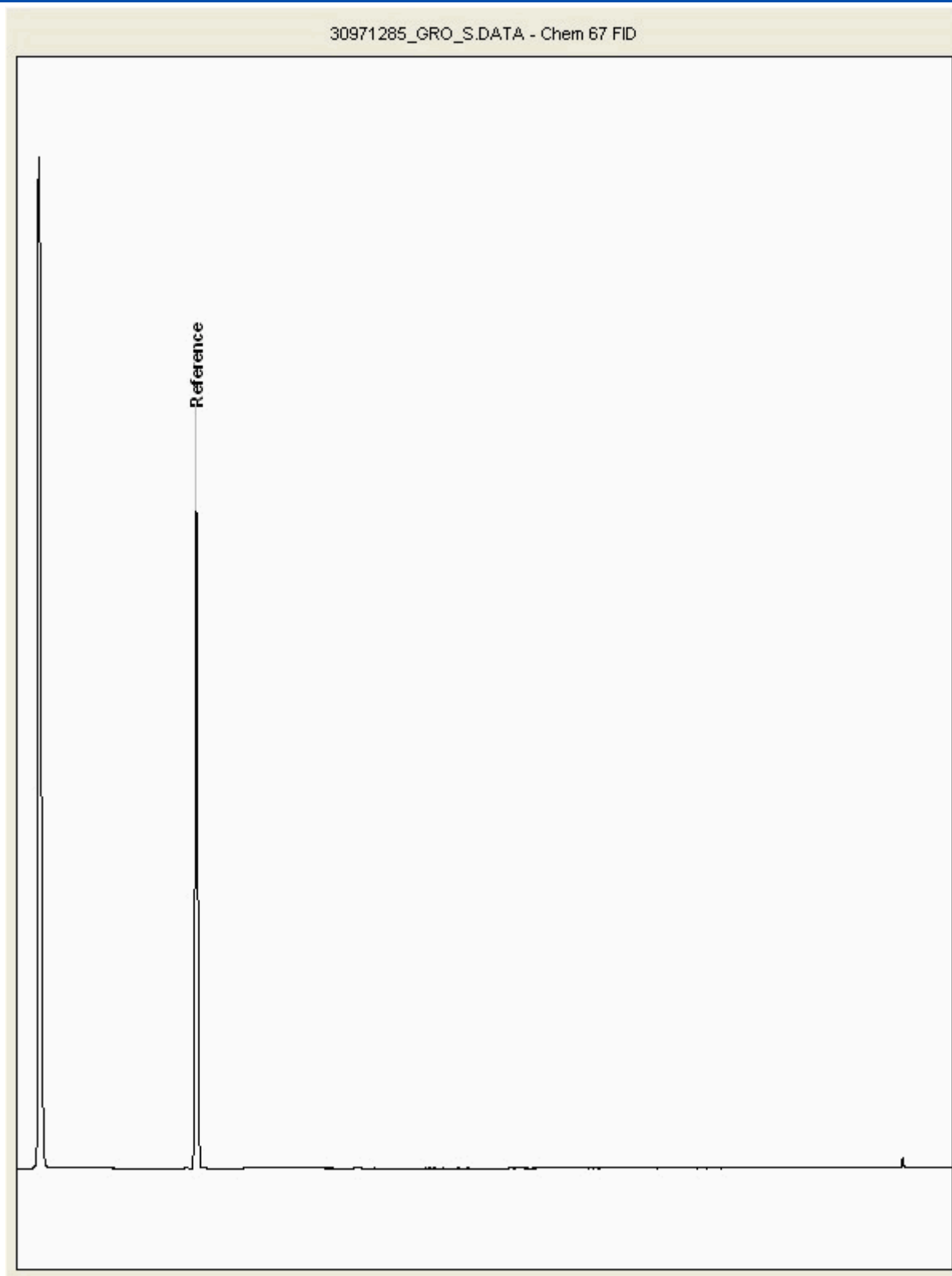
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30971285
Sample ID : TP27

Depth : 1.40 - 1.50





CERTIFICATE OF ANALYSIS

SDG: 250121-32
Client Ref: UK0029106.9719

Report Number: 754609
Location: Halewood LUF

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur - e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Potentially respirable fibres are identified by using a Phase Contrast Microscope.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

21. 6:2 FTAB

Recovery of 6:2 FTAB in the quality control samples has been observed to be <50% of the target value. Please note the 6:2 FTAB result is supplied as indicative only.



Units 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777

email: hawardencustomerservices@alsglobal.com

Website: www.alsenvironmental.co.uk

WSP UK Limited
8 First Street
Main
Manchester
M15 4RP

Attention: Ellie Hale

CERTIFICATE OF ANALYSIS

Date of report Generation: 31 January 2025
Customer: WSP UK Limited
Sample Delivery Group (SDG): 250122-50
Your Reference: UK0029106.9719
Location: Halewood LUF
Report No: 754892
Order Number: UK0029106.9719 CE3 LC GI

This report has been revised and directly supersedes 754114 in its entirety.

We received 6 samples on Wednesday January 22, 2025 and 6 of these samples were scheduled for analysis which was completed on Friday January 31, 2025. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Lauren Ellis

General Manager Western Europe Environmental



1291



CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

Superseded Report: 754114

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30972768	TP28	ES	1.60 - 1.65	20/01/2025
30972776	TP28	ES	2.95 - 3.00	20/01/2025
30972782	TP30	ES	1.25 - 1.30	20/01/2025
30972789	TP38	ES	0.75 - 0.80	20/01/2025
30972795	TP38	ES	1.45 - 1.50	20/01/2025
30972802	TP39	ES	0.30 - 0.40	20/01/2025

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

Superseded Report: 754114

Results Legend



Test



No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type										
						30972768	30972776	30972782	30972789	30972795	30972802	30972768	30972776	30972782	30972789
						TP28	TP28	TP30	TP38	TP38	TP39	TP28	TP28	TP30	TP38
						ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
						1.60 - 1.65	2.95 - 3.00	1.25 - 1.30	0.75 - 0.80	1.45 - 1.50	0.30 - 0.40	1.60 - 1.65	2.95 - 3.00	1.25 - 1.30	0.75 - 0.80
						250g Amber Jar (ALE210)	250g Amber Jar (ALE210)	250g Amber Jar (ALE210)	250g Amber Jar (ALE210)	250g Amber Jar (ALE210)	250g Amber Jar (ALE210)	250g Amber Jar (ALE210)	250g Amber Jar (ALE210)	250g Amber Jar (ALE210)	250g Amber Jar (ALE210)
						1kg TUB with Handle (ALE215)	1kg TUB with Handle (ALE215)	1kg TUB with Handle (ALE215)	1kg TUB with Handle (ALE215)	1kg TUB with Handle (ALE215)	1kg TUB with Handle (ALE215)	1kg TUB with Handle (ALE215)	1kg TUB with Handle (ALE215)	1kg TUB with Handle (ALE215)	1kg TUB with Handle (ALE215)
						S	S	S	S	S	S	S	S	S	S
ANC at pH4 and ANC at pH 6	All	NDPs: 0 Tests: 3				X	X				X	X	X		
Anions by Kone (w)	All	NDPs: 0 Tests: 3				X	X				X	X	X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 6				X	X	X	X	X	X	X	X		
CEN Readings	All	NDPs: 0 Tests: 3				X	X				X	X	X		
Coronene	All	NDPs: 0 Tests: 3				X	X				X	X	X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 3				X	X				X	X	X		
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 3				X	X				X	X	X		
EPH by GCxGC-FID	All	NDPs: 0 Tests: 3				X	X				X	X	X		
EPH CWG GC (S)	All	NDPs: 0 Tests: 6				X	X	X	X	X	X	X	X		
Fluoride	All	NDPs: 0 Tests: 3				X	X				X	X	X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 6					X	X	X	X	X	X	X		
Loss on Ignition in soils	All	NDPs: 0 Tests: 3				X	X				X	X	X		
Mercury Dissolved	All	NDPs: 0 Tests: 3				X	X				X	X	X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 6				X	X	X	X	X	X	X	X		
PAH 16 & 17 Calc	All	NDPs: 0 Tests: 3				X	X				X	X	X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

Superseded Report: 754114

Results Legend X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
	30972802	TP39	ES	0.30 - 0.40	60g VOC (ALE215)	S
	30972795	TP38	ES	1.45 - 1.50	250g Amber Jar (ALE210)	S
	30972789	TP38	ES	0.75 - 0.80	1kg TUB with Handle	S
	30972782	TP30	ES	1.25 - 1.30	250g Amber Jar (ALE215)	S
	30972776	TP28	ES	2.95 - 3.00	1kg TUB with Handle	S
	30972768	TP28	ES	1.60 - 1.65	250g Amber Jar (ALE210)	S
PAH by GCMS	All	NDPs: 0 Tests: 6				
PCBs by GCMS	All	NDPs: 0 Tests: 3				
pH	All	NDPs: 0 Tests: 6				
pH Value of Filtered Water	All	NDPs: 0 Tests: 3				
Phenols by HPLC (W)	All	NDPs: 0 Tests: 3				
Sample description	All	NDPs: 0 Tests: 6				
Total Organic Carbon	All	NDPs: 0 Tests: 5				
TPH CWG GC (S)	All	NDPs: 0 Tests: 6				
VOC MS (S)	All	NDPs: 0 Tests: 6				



CERTIFICATE OF ANALYSIS

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SDG: 250122-50
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Superseded Report: 754114

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30972768	TP28	1.60 - 1.65	Dark Brown	Sandy Clay Loam	Stones	Stones
30972776	TP28	2.95 - 3.00	Dark Brown	Sandy Clay	Stones	Stones
30972782	TP30	1.25 - 1.30	Dark Brown	Sandy Clay	Crushed Brick	Stones
30972789	TP38	0.75 - 0.80	Dark Brown	Sandy Clay Loam	Stones	None
30972795	TP38	1.45 - 1.50	Dark Brown	Sandy Clay	Stones	Stones
30972802	TP39	0.30 - 0.40	Dark Brown	Sandy Clay Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719Report Number: 754892
Location: Halewood LUF

Superseded Report: 754114

Results Legend		Customer Sample Ref.	TP28	TP28	TP30	TP38	TP38	TP39
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	1.60 - 1.65 Soil/Solid (S) 20/01/2025	2.95 - 3.00 Soil/Solid (S) 20/01/2025	1.25 - 1.30 Soil/Solid (S) 20/01/2025	0.75 - 0.80 Soil/Solid (S) 20/01/2025	1.45 - 1.50 Soil/Solid (S) 20/01/2025	0.30 - 0.40 Soil/Solid (S) 20/01/2025
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		22/01/2025 250122-50 30972768 ES	22/01/2025 250122-50 30972776 ES	22/01/2025 250122-50 30972782 ES	22/01/2025 250122-50 30972789 ES	22/01/2025 250122-50 30972795 ES	22/01/2025 250122-50 30972802 ES
***	6:2 FTAB (see appendix)							
1-4*5@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	13	12	14	13	12	17
Loss on ignition	<0.7 %	TM018	2.19 M	1.83 M				5.02 M
Organic Carbon, Total	<0.2 %	TM132	0.347 M	<0.2 M				1.36 M
Soil Organic Matter (SOM)	<0.35 %	TM132	0.598 #	<0.35 #	3.72 #		<0.35 #	2.34 #
pH	1 pH Units	TM133	8.66 M	8.93 M	8.48 M	8.45 M	8.66 M	7.92 M
PCB congener 28	<0.003 mg/kg	TM168	<0.003 M	<0.003 M				<0.003 M
PCB congener 52	<0.003 mg/kg	TM168	<0.003 M	<0.003 M				<0.003 M
PCB congener 101	<0.003 mg/kg	TM168	<0.003 M	<0.003 M				<0.003 M
PCB congener 118	<0.003 mg/kg	TM168	<0.003 M	<0.003 M				<0.003 M
PCB congener 138	<0.003 mg/kg	TM168	<0.003 M	<0.003 M				<0.003 M
PCB congener 153	<0.003 mg/kg	TM168	<0.003 M	<0.003 M				<0.003 M
PCB congener 180	<0.003 mg/kg	TM168	<0.003 M	<0.003 M				<0.003 M
Sum of detected PCB 7 Congeners	<0.021 mg/kg	TM168	<0.021	<0.021				<0.021
Arsenic	<0.6 mg/kg	TM181	7.57 M	7.13 M	11.5 M	12.8 M	6.08 M	12.3 M
Cadmium	<0.02 mg/kg	TM181	0.175 M	0.141 M	0.272 M	0.144 M	0.162 M	0.0615 M
Chromium	<0.9 mg/kg	TM181	20.1 M	18.2 M	16.9 M	18.1 M	21.6 M	13.3 M
Copper	<1.4 mg/kg	TM181	15.7 M	14.4 M	54.2 M	31.1 M	15.3 M	21.9 M
Lead	<0.7 mg/kg	TM181	11 M	5.71 M	39.5 M	59.1 M	6.81 M	32 M
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Nickel	<0.2 mg/kg	TM181	27 M	27.6 M	27.6 M	21.9 M	31.3 M	24.4 M
Selenium	<1 mg/kg	TM181	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Zinc	<1.9 mg/kg	TM181	39.9 M	34.6 M	70.5 M	63.1 M	38.3 M	65.1 M
ANC @ pH 4	<0.03 mol/kg	TM182	0.254	0.226				0.0916
ANC @ pH 6	<0.03 mol/kg	TM182	0.05	0.0634				<0.03
PAH Total 17 (inc Coronene) Moisture Corrected	<10 mg/kg	TM410	<10	<10				<10
Coronene	<0.2 mg/kg	TM410	<0.2	<0.2				<0.2
EPH Surrogate % recovery**	%	TM415	98.7	104				87.9
Mineral Oil >C10-C40 (EH_2D_AL)	<5 mg/kg	TM415	<5	<5				<5

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

Superseded Report: 754114

PAH by GCMS

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

Superseded Report: 754114

TPH CWG (S)

Results Legend		Customer Sample Ref.	TP28	TP28	TP30	TP38	TP38	TP39
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	1.60 - 1.65	2.95 - 3.00	1.25 - 1.30	0.75 - 0.80	1.45 - 1.50	0.30 - 0.40
M	mCERTS accredited.		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
aq	Aqueous / filtered sample.		20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025
***	6:2 FTAB (see appendix)		250122-50	250122-50	250122-50	250122-50	250122-50	250122-50
1-4*5@	Sample deviation (see appendix)		30972768	30972776	30972782	30972789	30972795	30972802
			ES	ES	ES	ES	ES	ES
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	100	100	93.4	87.8	95.7	129
Aliphatics >C5-C6 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aliphatics >C16-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	1.48	<1	2.7
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	1.48	<1	2.7
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5	<5	<5	<5	<5	<5
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10 mg/kg	TM414	<10	<10	<10	<10	<10	<10
Aromatics >EC5-EC7 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aromatics > EC16-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	1.1	2.1	<1	2.34
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	1.43	<1	2.03
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5	<5	<5	<5	<5	<5
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10 mg/kg	TM414	<10	<10	<10	<10	<10	<10
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
GRO >C5-C10 (HS_1D_TOTAL)	<0.02 mg/kg	TM089	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

SDG: 250122-50

Report Number: 754892

Superseded Report: 754114

Client Ref.: UK0029106.9719

Location: Halewood LUF

VOC MS (S)

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

Superseded Report: 754114

Asbestos Identification - Solid Samples

Results Legend

ISO17025 accredited.
M mCERTS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5	@ Sample deviation (see appendix)

* Subcontracted test. (F) Trigger breach confirmed 1-5&+&@ Sample deviation (see appendix)		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP28ES 1.60 - 1.65 SOLID 20/01/2025 00:00:00 22/01/2025 09:00:00 250122-50 30972768 TM048	29/01/2025	Alex Horner	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP28ES 2.95 - 3.00 SOLID 20/01/2025 00:00:00 22/01/2025 09:00:00 250122-50 30972776 TM048	29/01/25	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP30ES 1.25 - 1.30 SOLID 20/01/2025 00:00:00 22/01/2025 09:00:00 250122-50 30972782 TM048	29/01/25	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP38ES 0.75 - 0.80 SOLID 20/01/2025 00:00:00 22/01/2025 09:00:00 250122-50 30972789 TM048	29/01/25	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP38ES 1.45 - 1.50 SOLID 20/01/2025 00:00:00 22/01/2025 09:00:00 250122-50 30972795 TM048	29/01/25	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP39ES 0.30 - 0.40 SOLID 20/01/2025 00:00:00 22/01/2025 09:00:00 250122-50 30972802 TM048	29/01/25	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719Report Number: 754892
Location: Halewood LUF

Superseded Report: 754114

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.102

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Halewood LUF

Natural Moisture Content (%) 13.6

Dry Matter Content (%) 88

Case

SDG 250122-50

Lab Sample Number(s) 30972768

Sampled Date 20-Jan-2025

Customer Sample Ref. TP28 ESZ

Depth (m) 1.60 - 1.65

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Result

Total Organic Carbon (%) 0.347

Loss on Ignition (%) 2.19

Sum of BTEX (mg/kg) <0.12

Sum of 7 PCBs (mg/kg) <0.021

Mineral Oil (mg/kg) (EH_2D_AL) <5

PAH Sum of 17 (mg/kg) <10

pH (pH Units) 8.66

ANC to pH 6 (mol/kg) 0.05

ANC to pH 4 (mol/kg) 0.254

Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis

C₂Concⁿ in 10:1 eluate (mg/l)A₂10:1 concⁿ leached (mg/kg)Limit values for compliance leaching test
using BS EN 12457-3 at L/S 10 l/kg

	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.000529	<0.0005	0.00529	<0.005	0.5	2	25
Barium	0.00872	<0.0002	0.0872	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00369	<0.0003	0.0369	<0.003	2	50	100
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.00668	<0.003	0.0668	<0.03	0.5	10	30
Nickel	0.00109	<0.0004	0.0109	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00736	<0.001	0.0736	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	0.744	<0.5	7.44	<5	10	150	500
Sulphate (soluble)	11.5	<2	115	<20	1000	20000	50000
Total Dissolved Solids	87.6	<10	876	<100	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	6.05	<3	60.5	<30	500	800	1000

Leach Test Information

Date Prepared 24-Jan-2025
pH (pH Units) 8.48
Conductivity (µS/cm) 114
Volume Leachant (Litres) 0.888

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

31/01/2025 08:22:01



CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719Report Number: 754892
Location: Halewood LUF

Superseded Report: 754114

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.102

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Halewood LUF

Natural Moisture Content (%) 13.2

Dry Matter Content (%) 88.4

Case

SDG 250122-50

Lab Sample Number(s) 30972776

Sampled Date 20-Jan-2025

Customer Sample Ref. TP28 ESZ

Depth (m) 2.95 - 3.00

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Result

Total Organic Carbon (%) <0.2

Loss on Ignition (%) 1.83

Sum of BTEX (mg/kg) <0.12

Sum of 7 PCBs (mg/kg) <0.021

Mineral Oil (mg/kg) (EH_2D_AL) <5

PAH Sum of 17 (mg/kg) <10

pH (pH Units) 8.93

ANC to pH 6 (mol/kg) 0.0634

ANC to pH 4 (mol/kg) 0.226

Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis

C₂Concⁿ in 10:1 eluate (mg/l)A₂10:1 concⁿ leached (mg/kg)Limit values for compliance leaching test
using BS EN 12457-3 at L/S 10 l/kg

	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	<0.0005	<0.0005	<0.005	<0.005	0.5	2	25
Barium	0.0149	<0.0002	0.149	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00179	<0.0003	0.0179	<0.003	2	50	100
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.000504	<0.0004	0.00504	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00512	<0.001	0.0512	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	4.3	<2	43	<20	1000	20000	50000
Total Dissolved Solids	62.9	<10	629	<100	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	3.2	<3	32	<30	500	800	1000

Leach Test Information

Date Prepared 24-Jan-2025
pH (pH Units) 8.58
Conductivity (µS/cm) 82
Volume Leachant (Litres) 0.888

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

31/01/2025 08:22:01



CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719Report Number: 754892
Location: Halewood LUF

Superseded Report: 754114

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.100

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Halewood LUF

Natural Moisture Content (%) 14.3

Dry Matter Content (%) 87.5

Case

SDG 250122-50

Lab Sample Number(s) 30972802

Sampled Date 20-Jan-2025

Customer Sample Ref. TP39 ESZ

Depth (m) 0.30 - 0.40

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Result

Total Organic Carbon (%)	1.36
Loss on Ignition (%)	5.02
Sum of BTEX (mg/kg)	<0.135
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg) (EH_2D_AL)	<5
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	7.92
ANC to pH 6 (mol/kg)	<0.03
ANC to pH 4 (mol/kg)	0.0916

Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis

C2

Concⁿ in 10:1 eluate (mg/l)

A2

10:1 concⁿ leached (mg/kg)Limit values for compliance leaching test
using BS EN 12457-3 at L/S 10 l/kg

	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.000741	<0.0005	0.00741	<0.005	0.5	2	25
Barium	0.0167	<0.0002	0.167	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00718	<0.0003	0.0718	<0.003	2	50	100
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00108	<0.0004	0.0108	<0.004	0.4	10	40
Lead	0.000278	<0.0002	0.00278	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00599	<0.001	0.0599	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	0.767	<0.5	7.67	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	88.2	<10	882	<100	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	6.58	<3	65.8	<30	500	800	1000

Leach Test Information

Date Prepared	24-Jan-2025
pH (pH Units)	8.28
Conductivity (µS/cm)	115
Volume Leachant (Litres)	0.887

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

31/01/2025 08:22:01



CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

Superseded Report: 754114

Table of Results - Appendix

Method No	Description
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
PM115	Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM018	Determination of Loss on Ignition
TM090	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM259	Determination of Phenols in Waters and Leachates by HPLC
TM410	Determination of Coronene in soils by GCMS
TM104	Determination of Fluoride using the Kone Analyser
TM182	Determination of Acid Neutralisation Capacity (ANC) Using Autotitration in Soils
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM048	Identification of Asbestos in Bulk Material
TM152	Analysis of Aqueous Samples by ICP-MS
TM168	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM218	The determination of PAH in soil samples by GC-MS
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM415	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

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SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

Superseded Report: 754114

Test Completion Dates

Lab Sample No(s)
Customer Sample Ref.

AGS Ref.
Depth
Type

	30972768	30972776	30972782	30972789	30972795	30972802
	TP28	TP28	TP30	TP38	TP38	TP39
	ES	ES	ES	ES	ES	ES
	1.60 - 1.65	2.95 - 3.00	1.25 - 1.30	0.75 - 0.80	1.45 - 1.50	0.30 - 0.40
	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
ANC at pH4 and ANC at pH 6	30-Jan-2025	30-Jan-2025				30-Jan-2025
Anions by Kone (w)	28-Jan-2025	28-Jan-2025				29-Jan-2025
Asbestos ID in Solid Samples	30-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025
CEN 10:1 Leachate (1 Stage)	24-Jan-2025	24-Jan-2025				24-Jan-2025
CEN Readings	27-Jan-2025	27-Jan-2025				27-Jan-2025
Coronene	28-Jan-2025	28-Jan-2025				28-Jan-2025
Dissolved Metals by ICP-MS	27-Jan-2025	27-Jan-2025				27-Jan-2025
Dissolved Organic/Inorganic Carbon	26-Jan-2025	26-Jan-2025				26-Jan-2025
EPH by GCxGC-FID	30-Jan-2025	30-Jan-2025				24-Jan-2025
EPH CWG GC (S)	30-Jan-2025	30-Jan-2025	28-Jan-2025	27-Jan-2025	30-Jan-2025	27-Jan-2025
Fluoride	28-Jan-2025	28-Jan-2025				28-Jan-2025
GRO by GC-FID (S)	27-Jan-2025	23-Jan-2025	23-Jan-2025	23-Jan-2025	23-Jan-2025	23-Jan-2025
Loss on Ignition in soils	29-Jan-2025	29-Jan-2025				29-Jan-2025
Mercury Dissolved	28-Jan-2025	28-Jan-2025				28-Jan-2025
Metals in solid samples by OES	29-Jan-2025	29-Jan-2025	29-Jan-2025	28-Jan-2025	29-Jan-2025	28-Jan-2025
Moisture at 105C	24-Jan-2025	24-Jan-2025				24-Jan-2025
PAH 16 & 17 Calc	27-Jan-2025	27-Jan-2025				28-Jan-2025
PAH by GCMS	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025
PCBs by GCMS	28-Jan-2025	28-Jan-2025				28-Jan-2025
pH	30-Jan-2025	31-Jan-2025	31-Jan-2025	30-Jan-2025	31-Jan-2025	30-Jan-2025
pH Value of Filtered Water	27-Jan-2025	29-Jan-2025				27-Jan-2025
Phenols by HPLC (W)	28-Jan-2025	28-Jan-2025				29-Jan-2025
Sample description	22-Jan-2025	22-Jan-2025	22-Jan-2025	22-Jan-2025	22-Jan-2025	22-Jan-2025
Total Organic Carbon	29-Jan-2025	29-Jan-2025	29-Jan-2025		29-Jan-2025	29-Jan-2025
TPH CWG GC (S)	30-Jan-2025	30-Jan-2025	28-Jan-2025	27-Jan-2025	30-Jan-2025	27-Jan-2025
VOC MS (S)	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025



CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

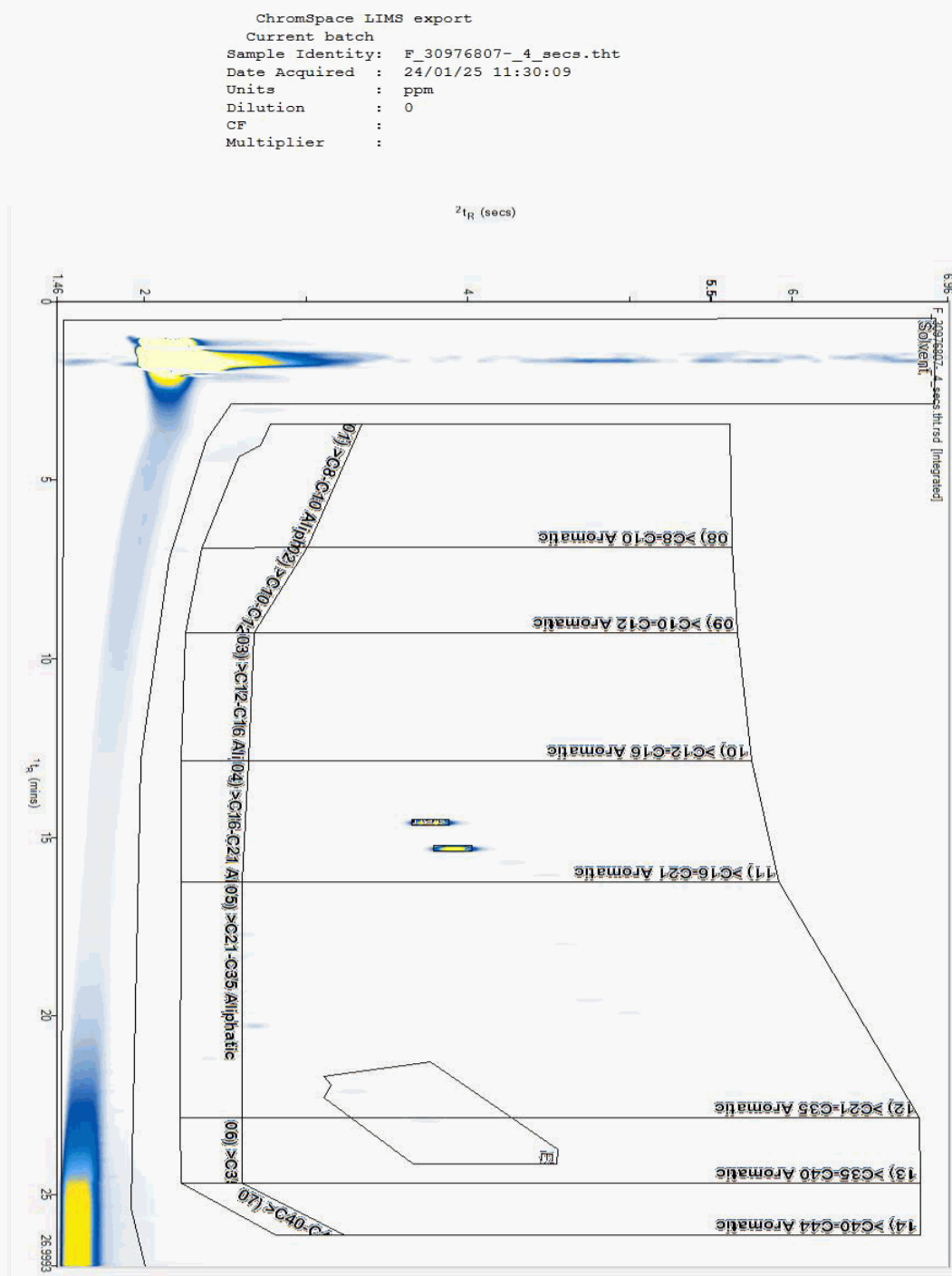
Superseded Report: 754114

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30976807
Sample ID : TP38

Depth : 0.75 - 0.80





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

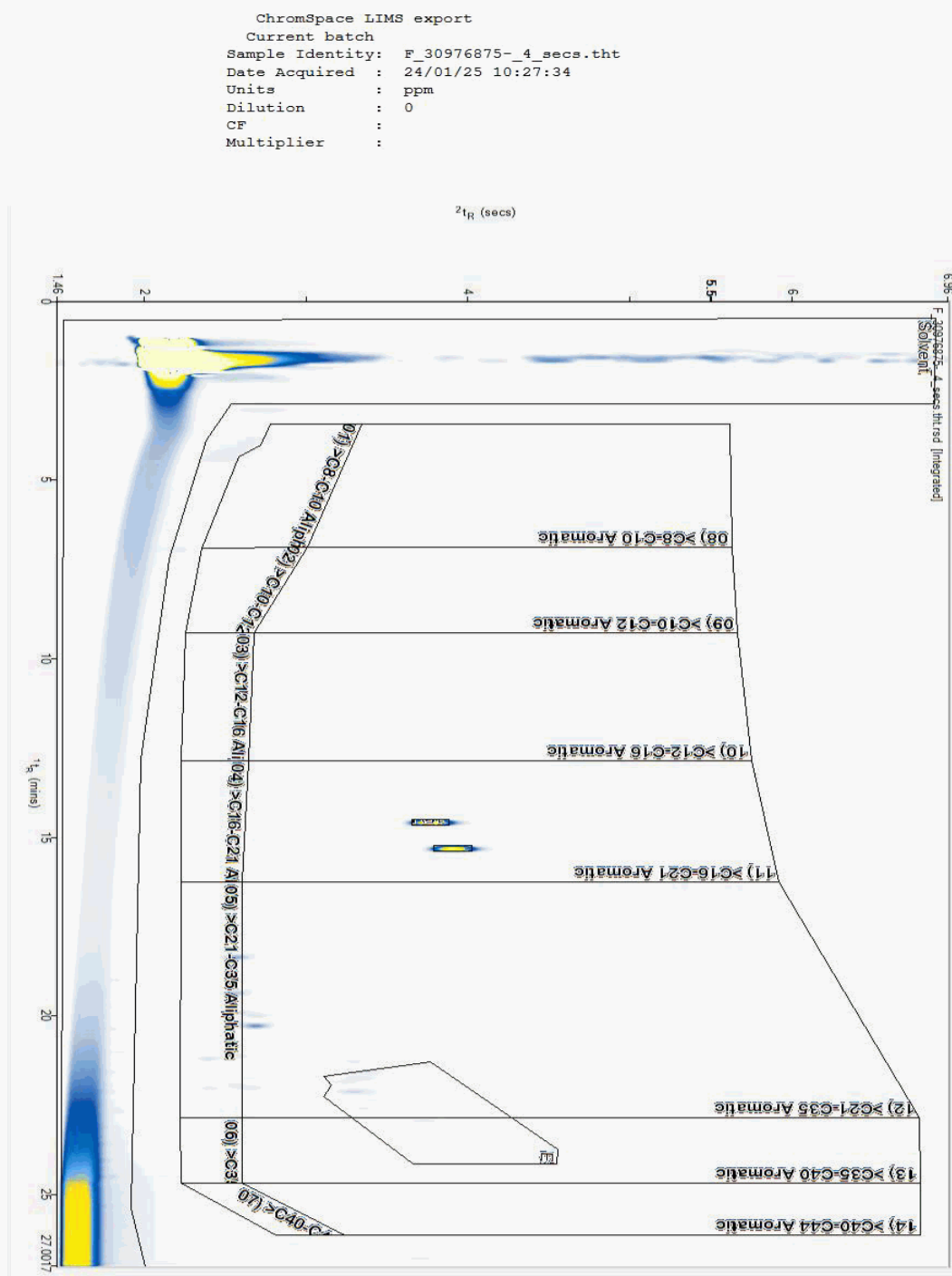
Superseded Report: 754114

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30976875
Sample ID : TP39

Depth : 0.30 - 0.40





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

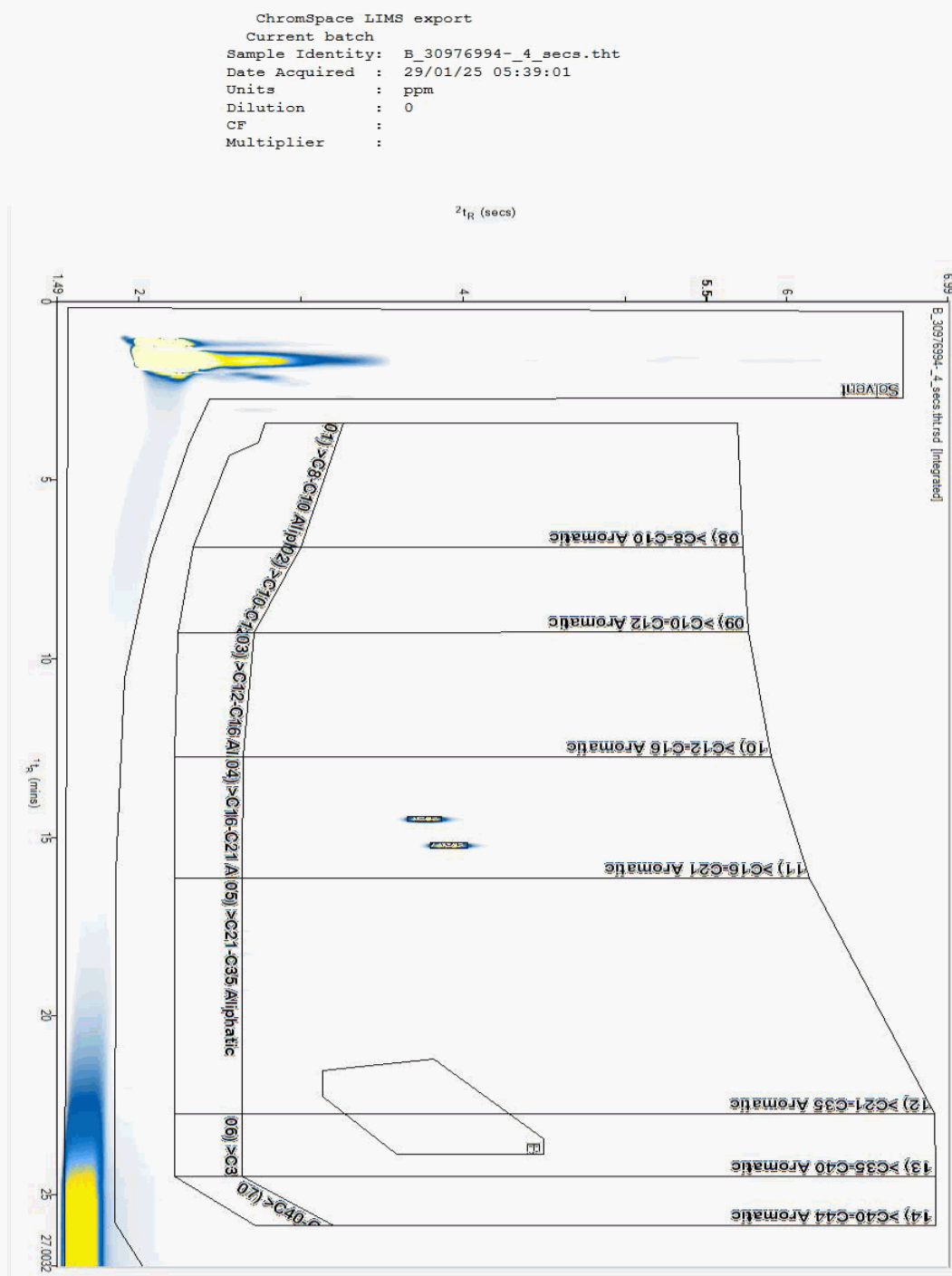
Superseded Report: 754114

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30976994
Sample ID : TP38

Depth : 1.45 - 1.50



SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

Superseded Report: 754114

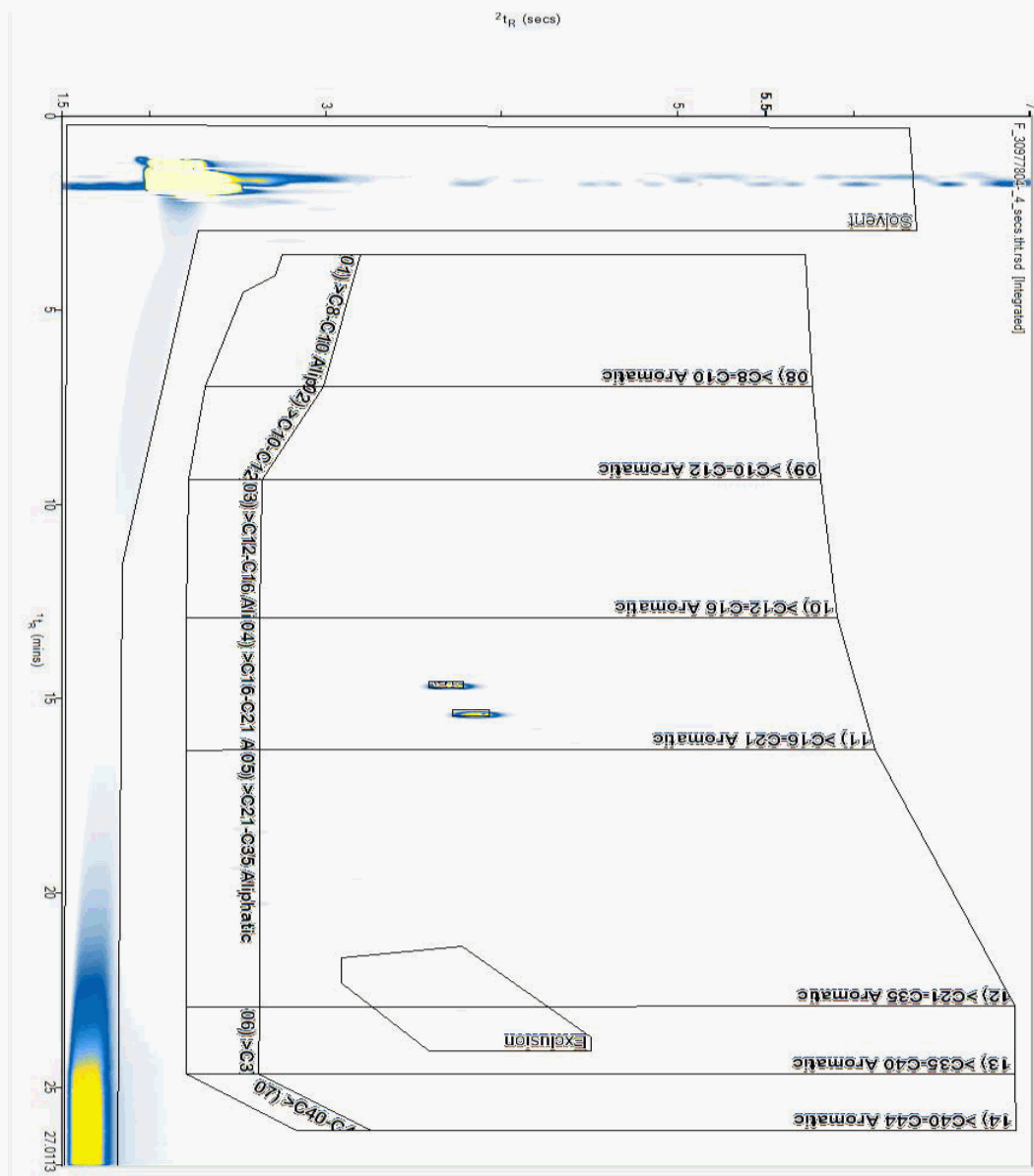
Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30977804
Sample ID : TP30

Depth : 1.25 - 1.30

```
ChromSpace LIMS export
Current batch:
Sample Identity: F_30977804-_4_secs.tht
Date Acquired  : 27/01/25 07:24:54
Units          : ppm
Dilution       : 0
CF              :
Multiplier     :
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CERTIFICATE OF ANALYSIS

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SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

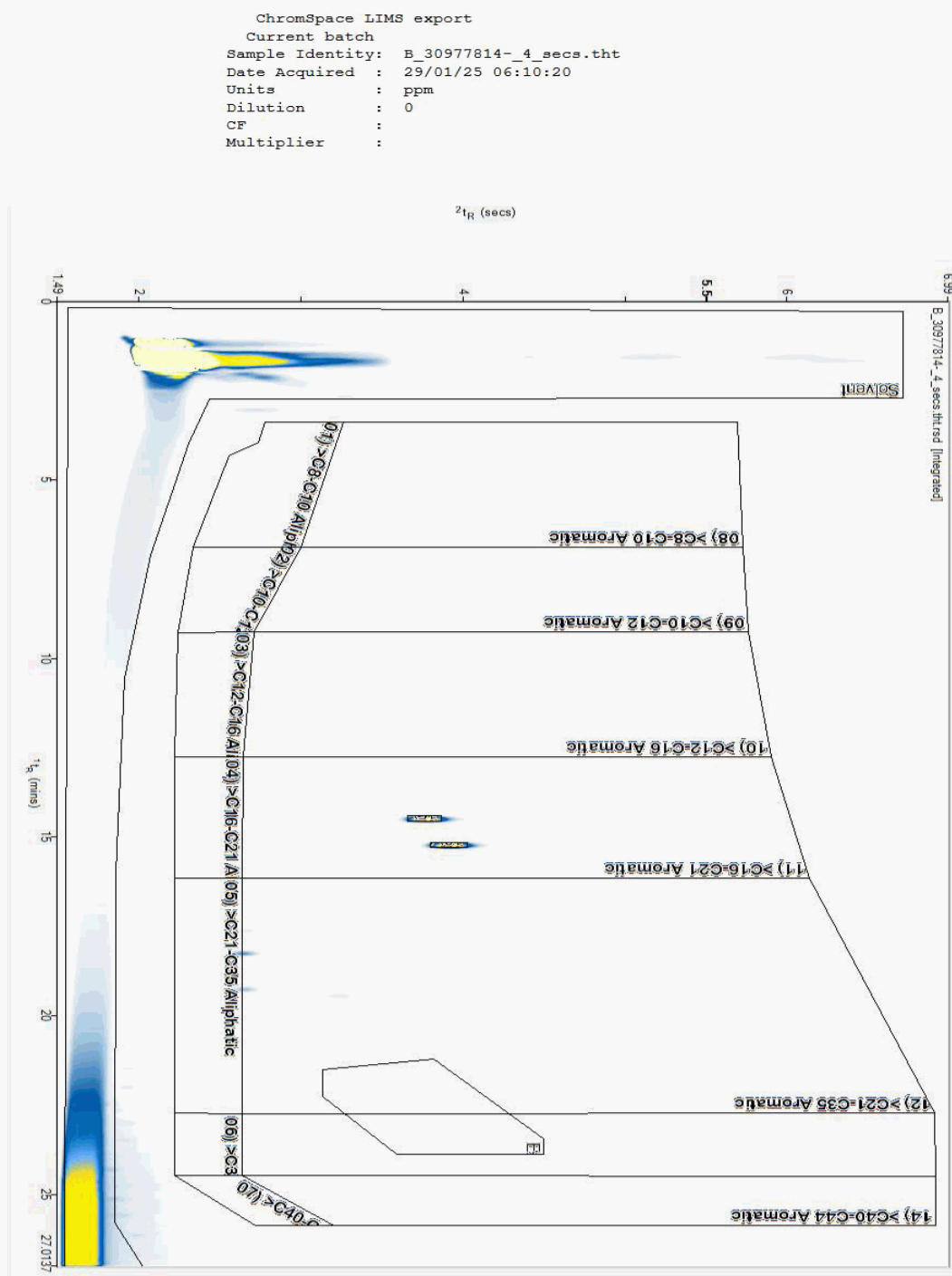
Superseded Report: 754114

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30977814
Sample ID : TP28

Depth : 1.60 - 1.65





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

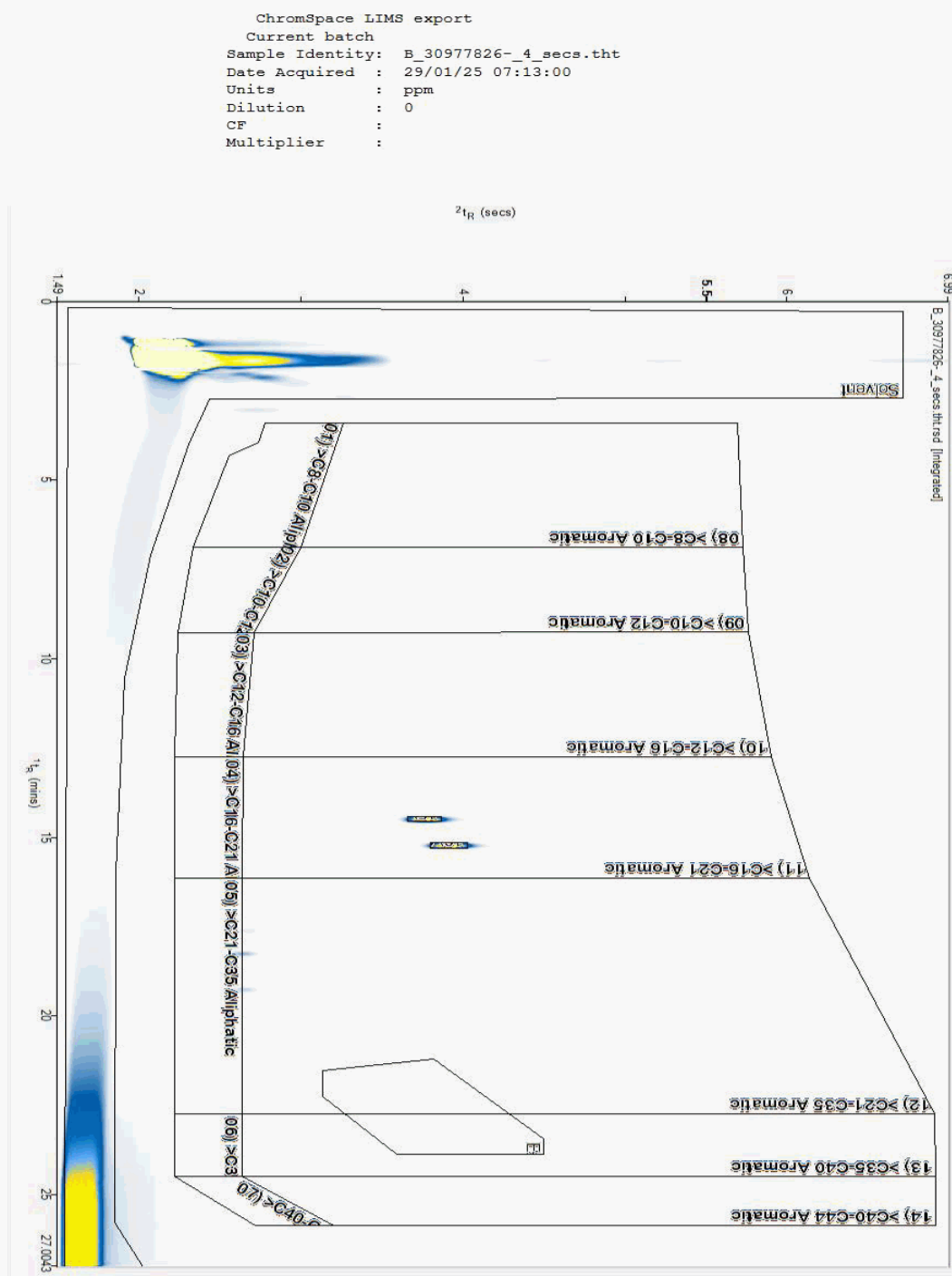
Superseded Report: 754114

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30977826
Sample ID : TP28

Depth : 2.95 - 3.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

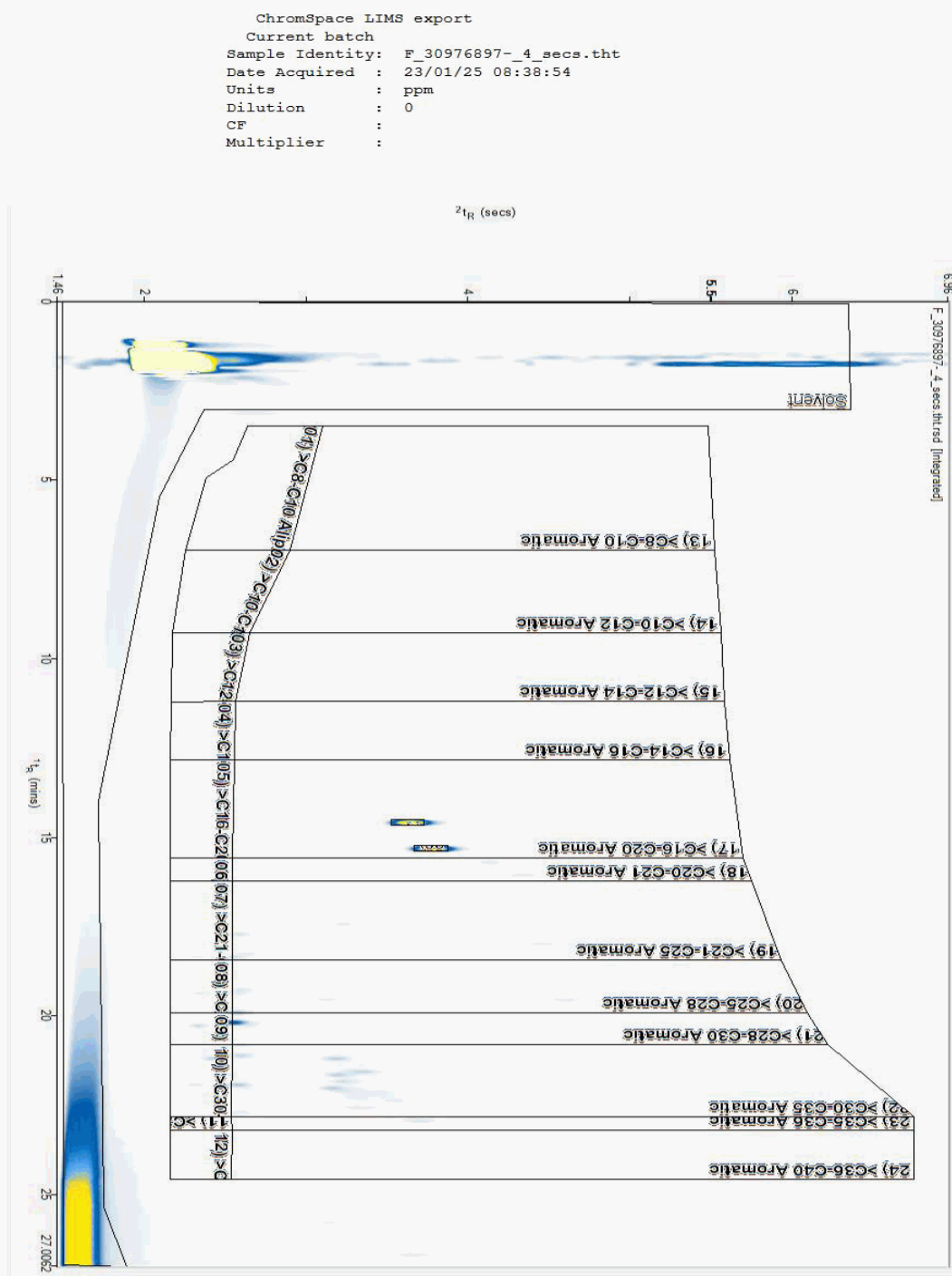
Superseded Report: 754114

Chromatogram

Analysis: EPH by GCxGC-FID

Sample No : 30976897
Sample ID : TP39

Depth : 0.30 - 0.40





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

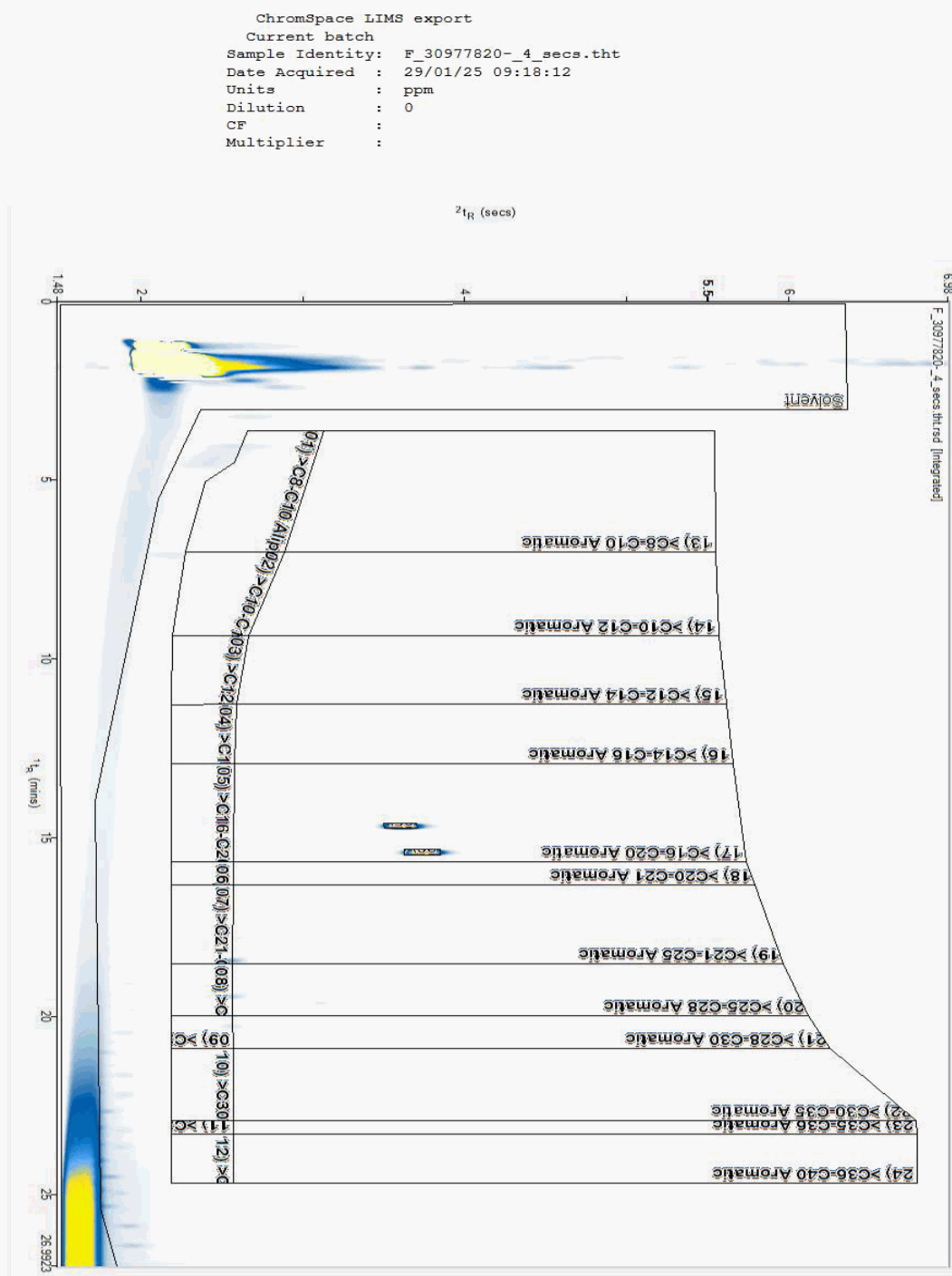
Superseded Report: 754114

Chromatogram

Analysis: EPH by GCxGC-FID

Sample No : 30977820
Sample ID : TP28

Depth : 1.60 - 1.65





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

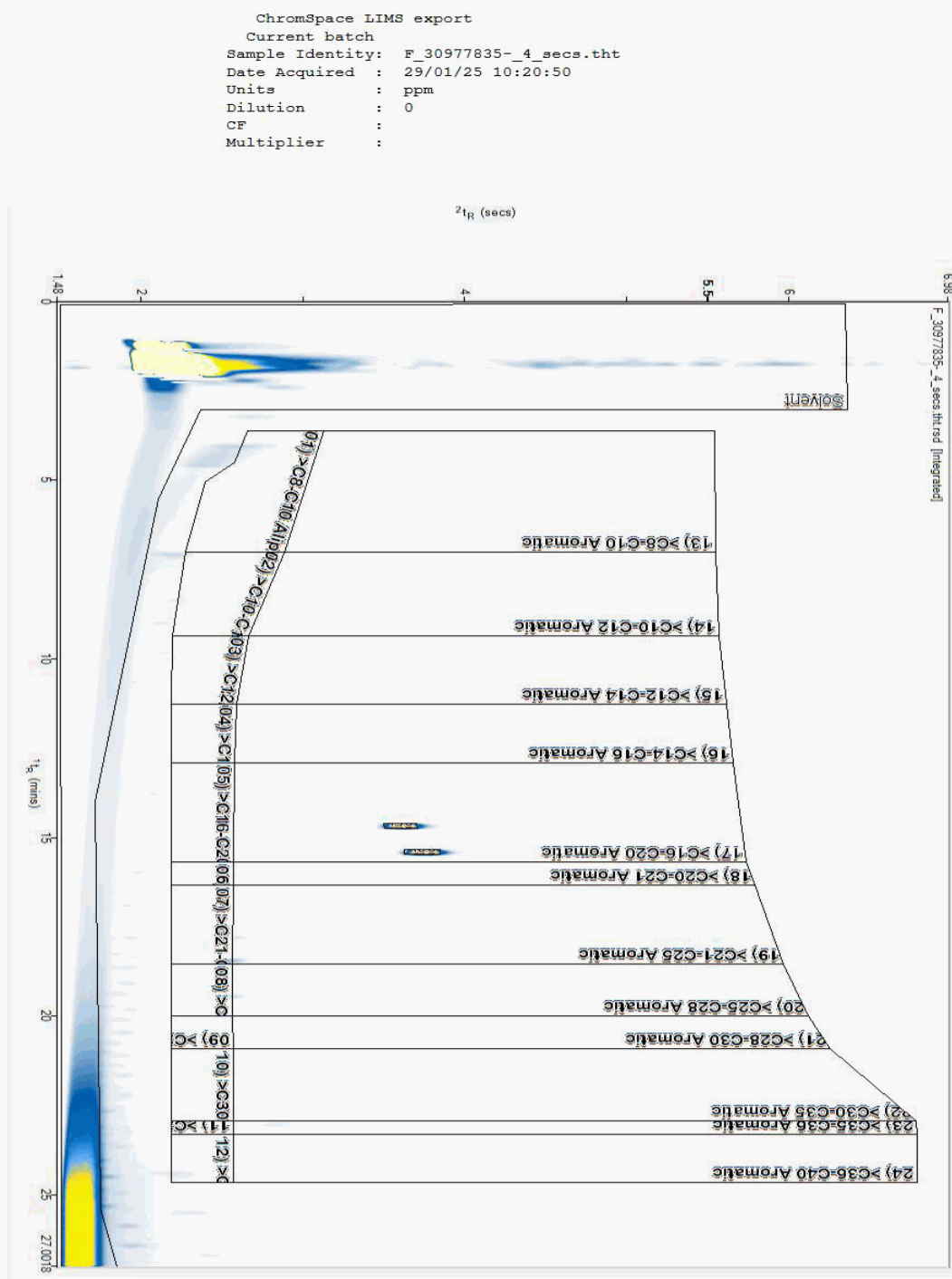
Superseded Report: 754114

Chromatogram

Analysis: EPH by GCxGC-FID

Sample No : 30977835
Sample ID : TP28

Depth : 2.95 - 3.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

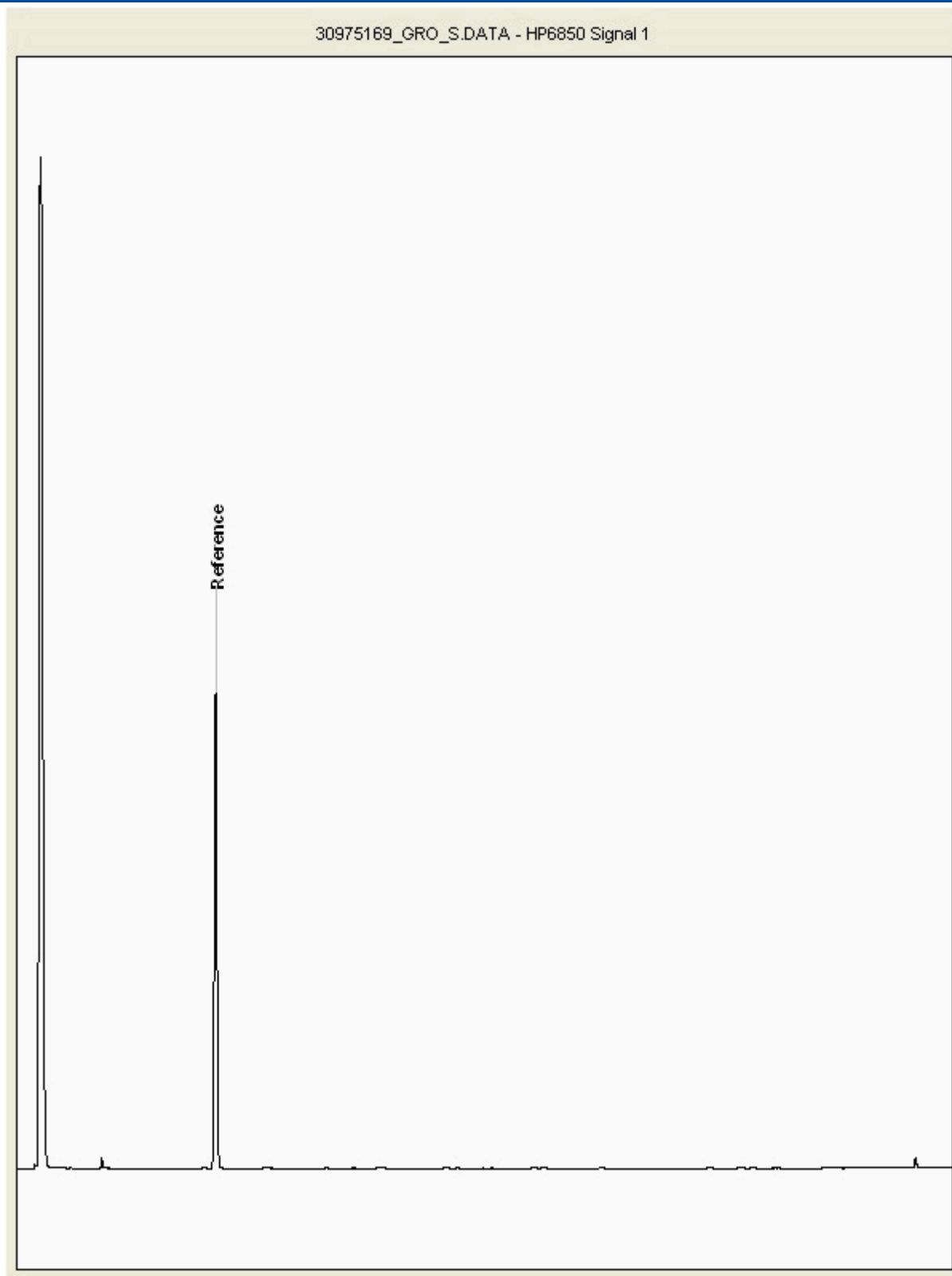
Superseded Report: 754114

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30975169
Sample ID : TP38

Depth : 1.45 - 1.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

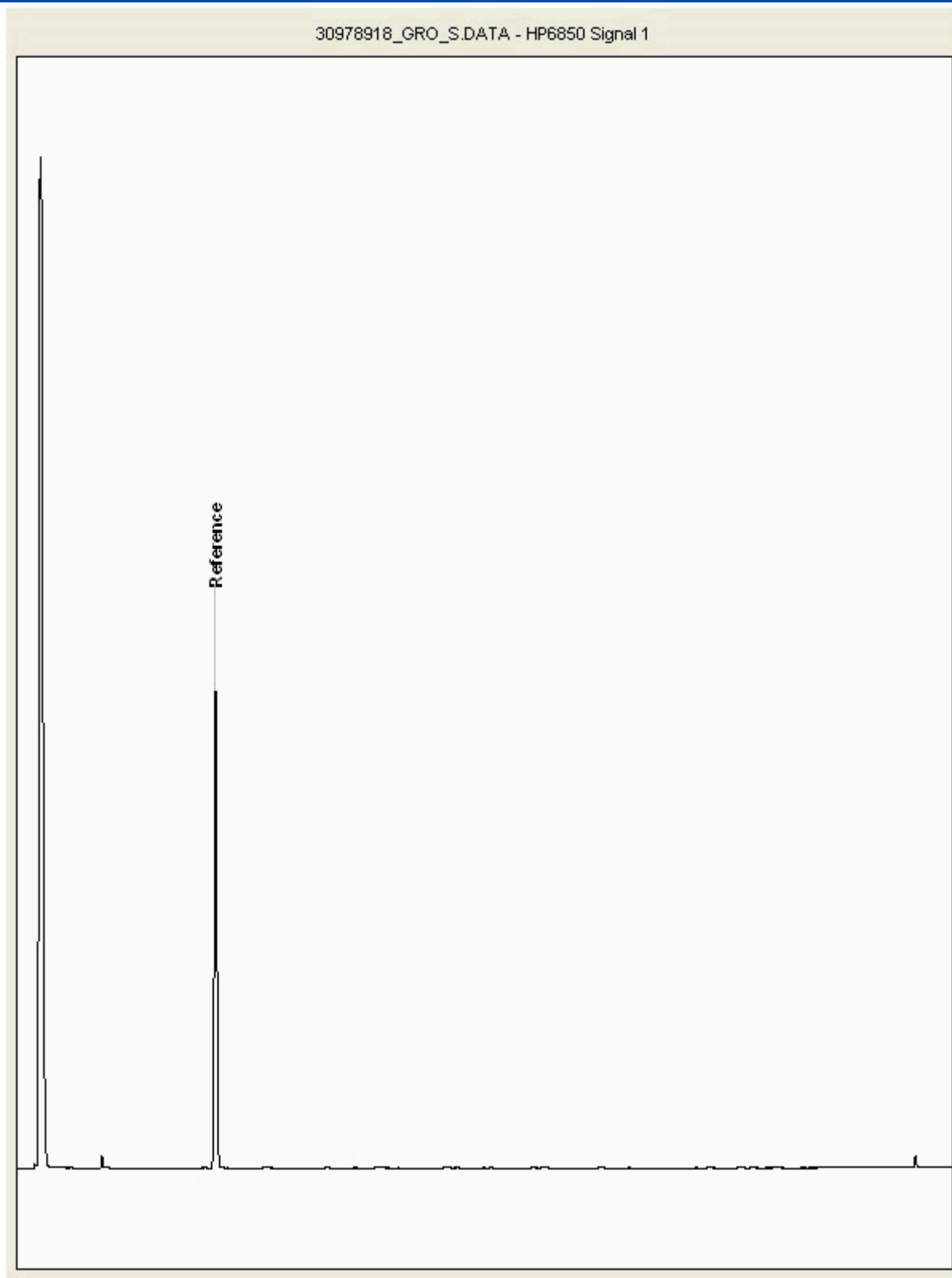
Superseded Report: 754114

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30978918
Sample ID : TP38

Depth : 0.75 - 0.80





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

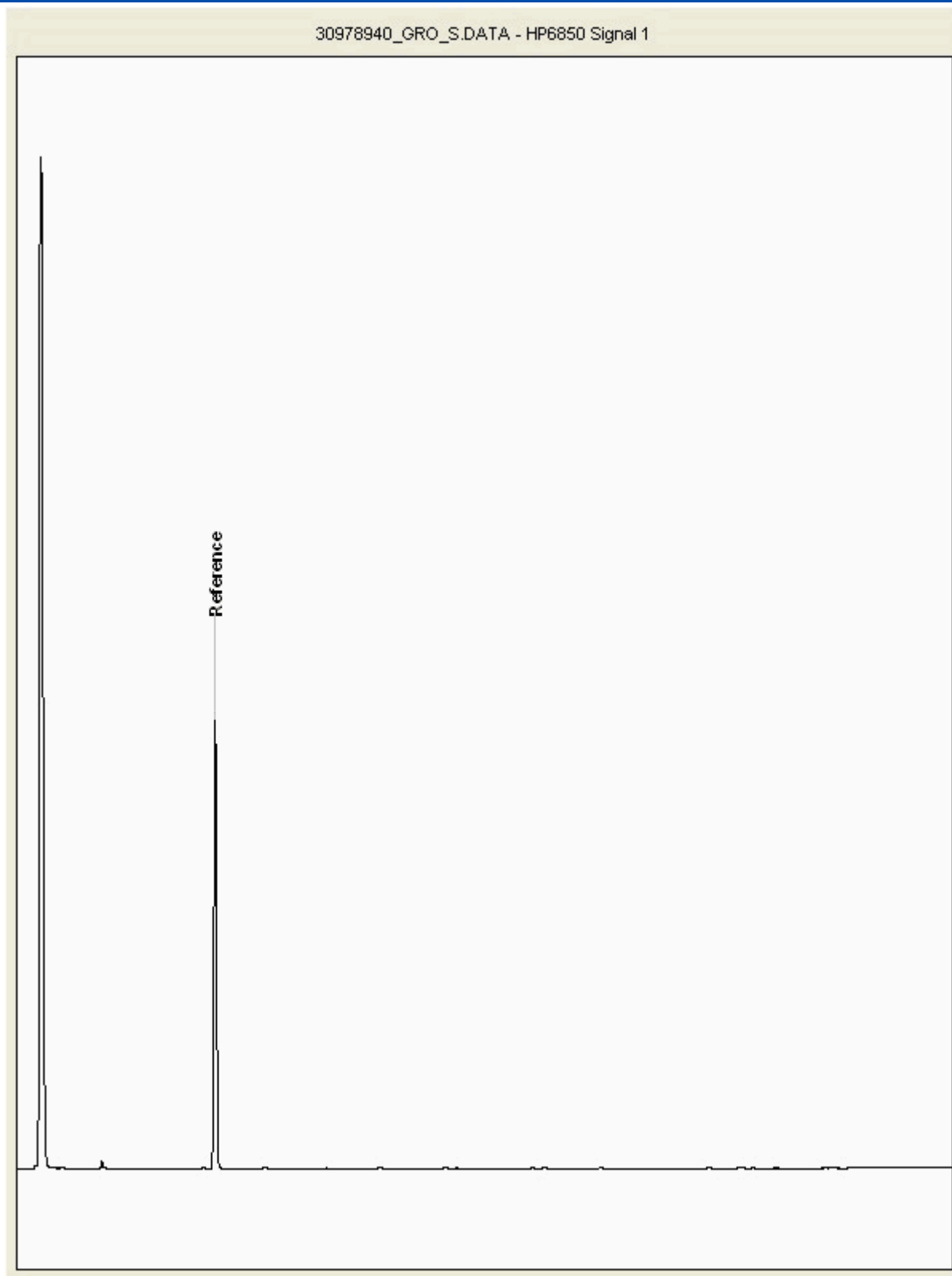
Superseded Report: 754114

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30978940
Sample ID : TP39

Depth : 0.30 - 0.40





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

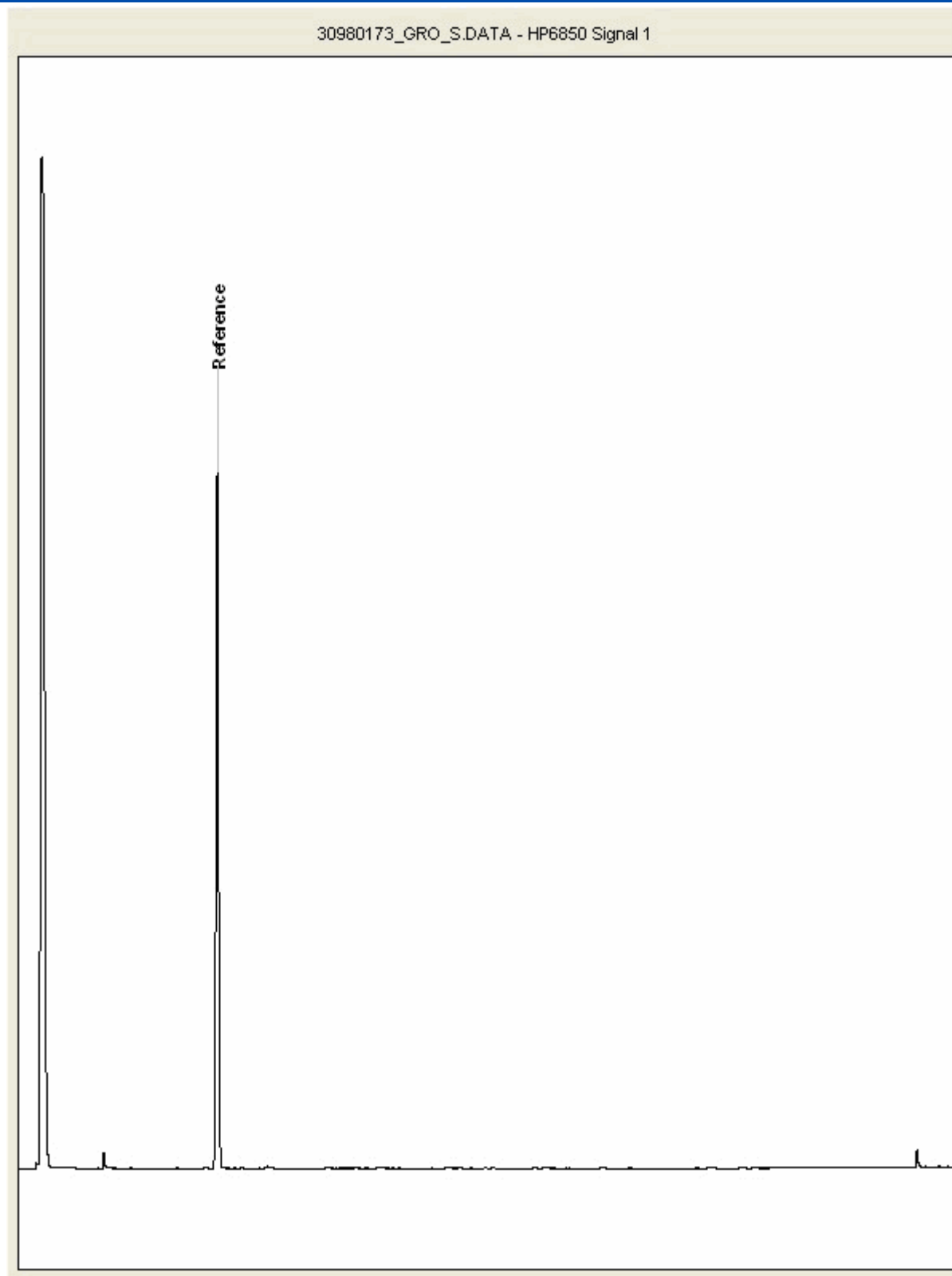
Superseded Report: 754114

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30980173
Sample ID : TP30

Depth : 1.25 - 1.30





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

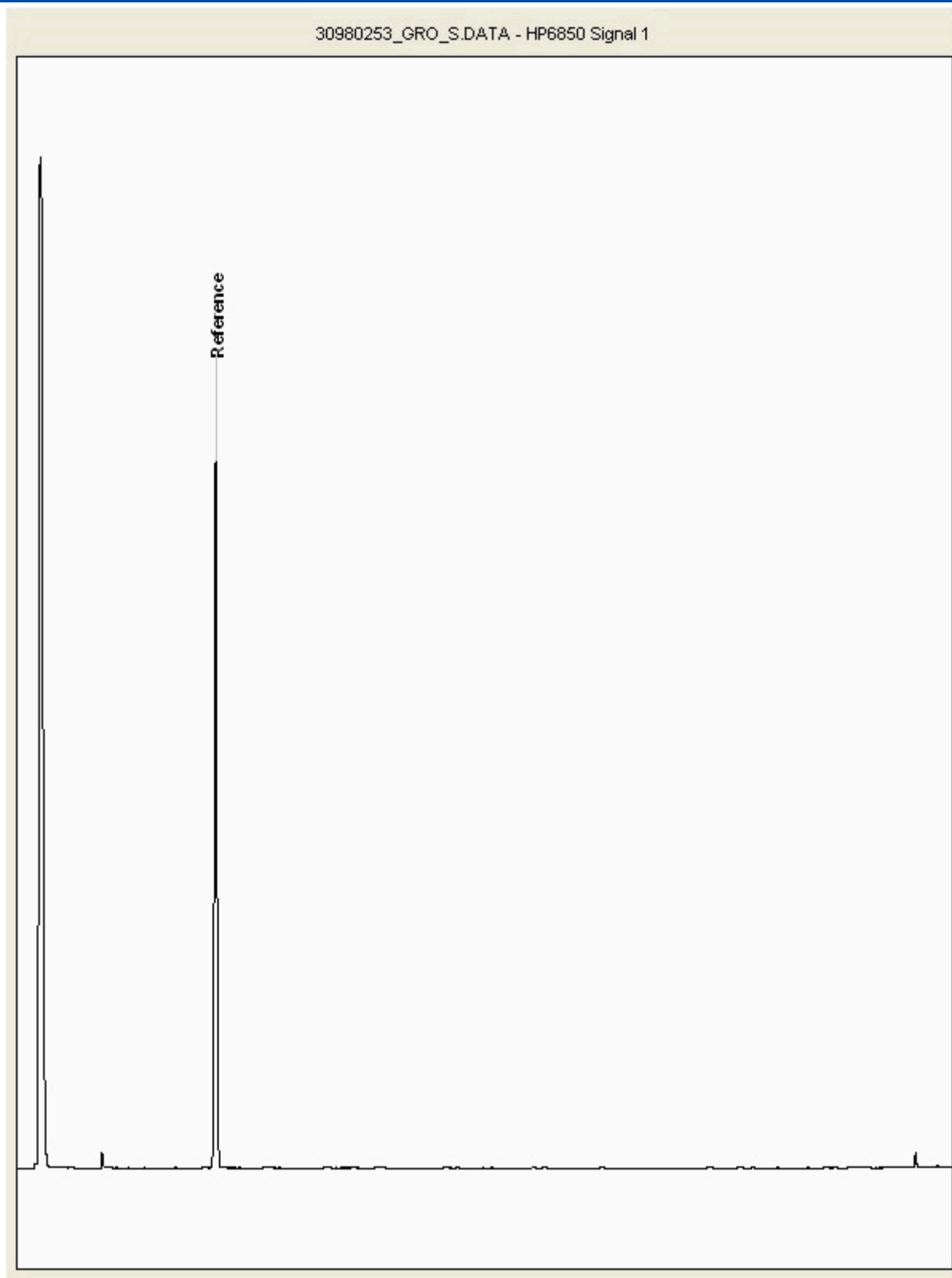
Superseded Report: 754114

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30980253
Sample ID : TP28

Depth : 2.95 - 3.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-50
Client Ref.: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

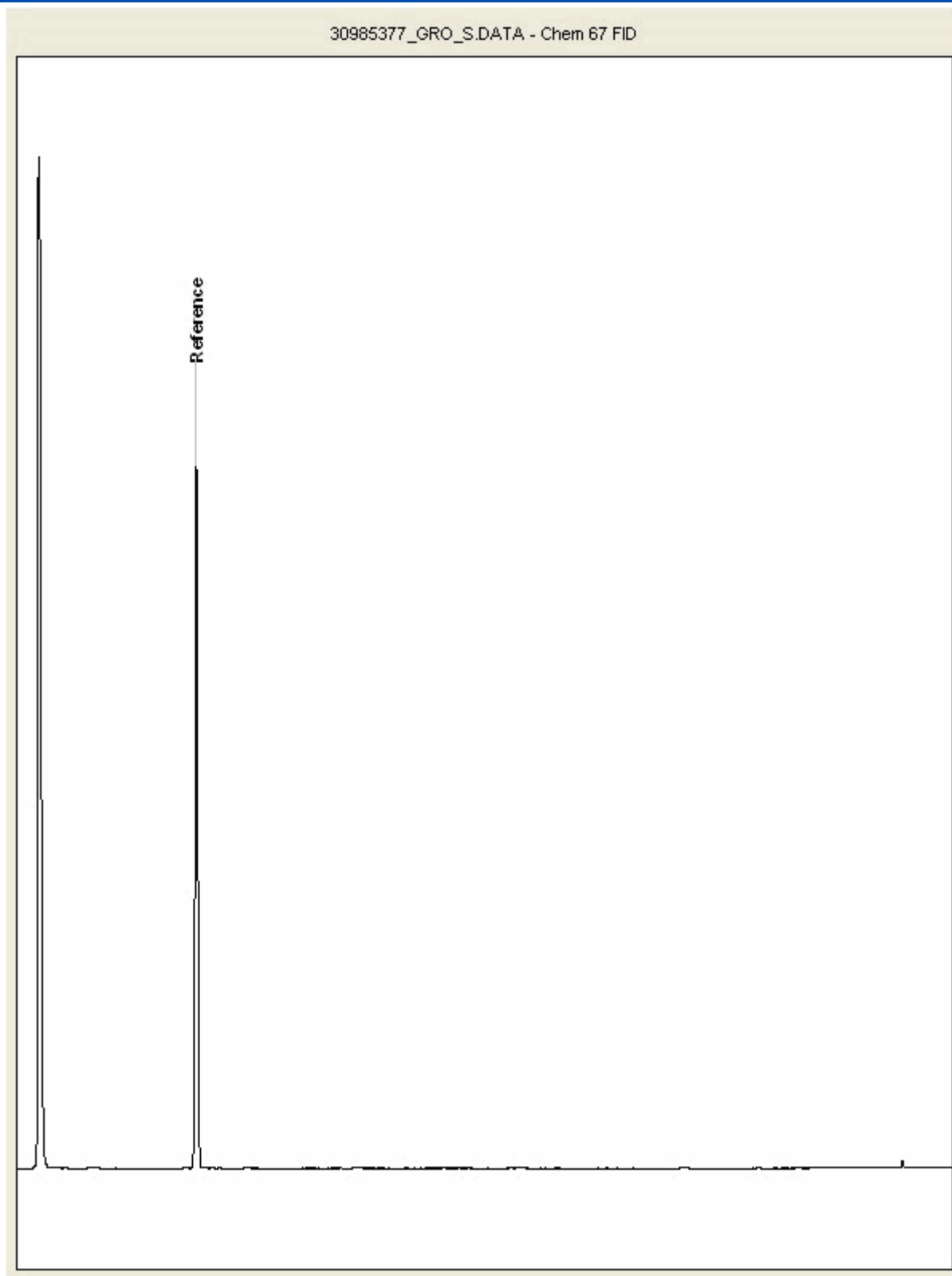
Superseded Report: 754114

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30985377
Sample ID : TP28

Depth : 1.60 - 1.65





CERTIFICATE OF ANALYSIS

SDG: 250122-50
Client Ref: UK0029106.9719

Report Number: 754892
Location: Halewood LUF

Superseded Report: 754114

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur - e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Potentially respirable fibres are identified by using a Phase Contrast Microscope.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

21. 6:2 FTAB

Recovery of 6:2 FTAB in the quality control samples has been observed to be <50% of the target value. Please note the 6:2 FTAB result is supplied as indicative only.



Units 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

WSP UK Limited
8 First Street
Main
Manchester
M15 4RP

Attention: Ellie Hale

CERTIFICATE OF ANALYSIS

Date of report Generation: 30 January 2025
Customer: WSP UK Limited
Sample Delivery Group (SDG): 250122-51
Your Reference: UK0029106.9719
Location: Halewood LUF
Report No: 754576
Order Number: UK0029106.9719 CE3 LC GI

This report has been revised and directly supersedes 753618 in its entirety.

We received 8 samples on Wednesday January 22, 2025 and 8 of these samples were scheduled for analysis which was completed on Thursday January 30, 2025. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Lauren Ellis

General Manager Western Europe Environmental



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CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

Superseded Report: 753618

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30972859	TP35	ES	0.40 - 0.50	21/01/2025
30972864	TP35	ES	1.90 - 2.00	21/01/2025
30972873	TP40	ES	1.20 - 1.30	21/01/2025
30972880	TP42	ES	0.45 - 0.50	21/01/2025
30972887	TP42	ES	1.40 - 1.45	21/01/2025
30972893	WS06	ES	1.60 - 1.70	21/01/2025
30972902	WS06	ES	4.50 - 4.60	21/01/2025
30972909	WS07	ES	2.20 - 2.30	21/01/2025

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

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SDG: 250122-51
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Location: Halewood LUF

Superseded Report: 753618

Results Legend X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)		Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
	30972893		WS06	ES	1.60 - 1.70	250g Amber Jar (ALE210) 1kg TUB with Handle 60g VOC (ALE215)	S																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								



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Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

Superseded Report: 753618

Results Legend X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
	30972902	WS06	ES	4.50 - 4.60	60g VOC (ALE215)	S
	30972893	WS06	ES	1.60 - 1.70	1kg TUB with Handle 250g Amber Jar (ALE210) 60g VOC (ALE215)	S
	30972887	TP42	ES	1.40 - 1.45	1kg TUB with Handle 250g Amber Jar (ALE210) 60g VOC (ALE215)	S
	30972880	TP42	ES	0.45 - 0.50	1kg TUB with Handle 250g Amber Jar (ALE210) 60g VOC (ALE215)	S
	30972873	TP40	ES	1.20 - 1.30	1kg TUB with Handle 250g Amber Jar (ALE210) 60g VOC (ALE215)	S
	30972859	TP35	ES	0.40 - 0.50	1kg TUB with Handle 250g Amber Jar (ALE210) 60g VOC (ALE215)	S
PAH by GCMS	All	NDPs: 0 Tests: 8				
PCBs by GCMS	All	NDPs: 0 Tests: 4				
pH	All	NDPs: 0 Tests: 8				
pH Value of Filtered Water	All	NDPs: 0 Tests: 4				
Phenols by HPLC (W)	All	NDPs: 0 Tests: 4				
Sample description	All	NDPs: 0 Tests: 8				
Total Organic Carbon	All	NDPs: 0 Tests: 8				
TPH CWG GC (S)	All	NDPs: 0 Tests: 8				
VOC MS (S)	All	NDPs: 0 Tests: 8				



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Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30972859	TP35	0.40 - 0.50	Dark Brown	Sandy Clay	Stones	None
30972864	TP35	1.90 - 2.00	Dark Brown	Sandy Clay Loam	Stones	Stones
30972873	TP40	1.20 - 1.30	Dark Brown	Sandy Clay Loam	Stones	None
30972880	TP42	0.45 - 0.50	Dark Brown	Sandy Clay	Stones	Stones
30972887	TP42	1.40 - 1.45	Dark Brown	Sandy Clay Loam	None	None
30972893	WS06	1.60 - 1.70	Dark Brown	Loamy Sand	Crushed Brick	Stones
30972902	WS06	4.50 - 4.60	Dark Brown	Silty Clay Loam	None	None
30972909	WS07	2.20 - 2.30	Dark Brown	Clay	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



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Location: Halewood LUF

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Results Legend		Customer Sample Ref.	TP35	TP35	TP40	TP42	TP42	WS06
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	TP35	TP35	TP40	TP42	TP42	WS06
M	mCERTS accredited.		0.40 - 0.50	1.90 - 2.00	1.20 - 1.30	0.45 - 0.50	1.40 - 1.45	1.60 - 1.70
aq	Aqueous / settled sample.		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
diss.filt	Dissolved / filtered sample.		21/01/2025	21/01/2025	21/01/2025	21/01/2025	21/01/2025	21/01/2025
tot.unfilt	Total / unfiltered sample.		22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025
*	Subcontracted - refer to subcontractor report for accreditation status.		250122-51	250122-51	250122-51	250122-51	250122-51	250122-51
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	6:2 FTAB (see appendix) 1-4 & 5@ Sample deviation (see appendix)	30972859	30972864	30972873	30972880	30972887	30972893
***	6:2 FTAB (see appendix)		ES	ES	ES	ES	ES	ES
1-4 & 5@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	11	14	13	13	10	13
Loss on ignition	<0.7 %	TM018			3.3	3.06	2.79	
Organic Carbon, Total	<0.2 %	TM132			0.332	0.979	0.878	
Soil Organic Matter (SOM)	<0.35 %	TM132	1.21	1.5	0.572	1.69	1.51	1.86
pH	1 pH Units	TM133	8.62	8.3	7.54	8.75	7.51	7.82
PCB congener 28	<0.003 mg/kg	TM168			<0.003	<0.003	<0.003	
PCB congener 52	<0.003 mg/kg	TM168			<0.003	<0.003	<0.003	
PCB congener 101	<0.003 mg/kg	TM168			<0.003	<0.003	<0.003	
PCB congener 118	<0.003 mg/kg	TM168			<0.003	<0.003	<0.003	
PCB congener 138	<0.003 mg/kg	TM168			<0.003	<0.003	<0.003	
PCB congener 153	<0.003 mg/kg	TM168			<0.003	<0.003	<0.003	
PCB congener 180	<0.003 mg/kg	TM168			<0.003	<0.003	<0.003	
Sum of detected PCB 7 Congeners	<0.021 mg/kg	TM168			<0.021	<0.021	<0.021	
Arsenic	<0.6 mg/kg	TM181	9.32	10.9	8.03	9.05	7.81	16.5
Cadmium	<0.02 mg/kg	TM181	0.071	0.209	0.0785	0.13	0.112	0.181
Chromium	<0.9 mg/kg	TM181	20.7	23.1	28.7	17.2	18	22.5
Copper	<1.4 mg/kg	TM181	22.7	26	13.1	21.3	18.6	36.8
Lead	<0.7 mg/kg	TM181	29.9	35	9.62	24.3	26	39.9
Mercury	<0.1 mg/kg	TM181	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	<0.2 mg/kg	TM181	24	26	29.7	24.8	18.7	27.2
Selenium	<1 mg/kg	TM181	<1	<1	<1	<1	<1	<1
Zinc	<1.9 mg/kg	TM181	47.2	68.1	33.2	50.1	41.6	66.4
ANC @ pH 4	<0.03 mol/kg	TM182			0.0719	0.172	0.0954	
ANC @ pH 6	<0.03 mol/kg	TM182			<0.03	0.0406	<0.03	
PAH Total 17 (inc Coronene) Moisture Corrected	<10 mg/kg	TM410			<10	<10	<10	
Coronene	<0.2 mg/kg	TM410			<0.2	<0.2	<0.2	
EPH Surrogate % recovery**	%	TM415			90.1	93.3	91.1	
Mineral Oil >C10-C40 (EH_2D_AL)	<5 mg/kg	TM415			<5	<5	<5	



CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719Report Number: 754576
Location: Halewood LUF

Superseded Report: 753618

Results Legend		Customer Sample Ref.	WS06	WS07			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference					
M	mCERTS accredited.						
aq	Aqueous / settled sample.		4.50 - 4.60	2.20 - 2.30			
diss.filt	Dissolved / filtered sample.		Soil/Solid (S)	Soil/Solid (S)			
tot.unfilt	Total / unfiltered sample.		21/01/2025	21/01/2025			
*	Subcontracted - refer to subcontractor report for accreditation status.						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		22/01/2025	22/01/2025			
***	6:2 FTAB (see appendix)		250122-51	250122-51			
1-4*5@	Sample deviation (see appendix)		30972902	30972909			
			ES	ES			
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	25	13			
Loss on ignition	<0.7 %	TM018		2.14			
				M			
Organic Carbon, Total	<0.2 %	TM132		0.23			
				M			
Soil Organic Matter (SOM)	<0.35 %	TM132	4.26	0.397			
			#	#			
pH	1 pH Units	TM133	7.44	8.9			
			M	M			
PCB congener 28	<0.003 mg/kg	TM168		<0.003			
				M			
PCB congener 52	<0.003 mg/kg	TM168		<0.003			
				M			
PCB congener 101	<0.003 mg/kg	TM168		<0.003			
				M			
PCB congener 118	<0.003 mg/kg	TM168		<0.003			
				M			
PCB congener 138	<0.003 mg/kg	TM168		<0.003			
				M			
PCB congener 153	<0.003 mg/kg	TM168		<0.003			
				M			
PCB congener 180	<0.003 mg/kg	TM168		<0.003			
				M			
Sum of detected PCB 7 Congeners	<0.021 mg/kg	TM168		<0.021			
Arsenic	<0.6 mg/kg	TM181	7.19	7.05			
			M	M			
Cadmium	<0.02 mg/kg	TM181	0.0526	<0.02			
			M	M			
Chromium	<0.9 mg/kg	TM181	20.5	26.2			
			M	M			
Copper	<1.4 mg/kg	TM181	20.2	17.8			
			M	M			
Lead	<0.7 mg/kg	TM181	42	7.7			
			M	M			
Mercury	<0.1 mg/kg	TM181	<0.1	<0.1			
			M	M			
Nickel	<0.2 mg/kg	TM181	21.7	33.9			
			M	M			
Selenium	<1 mg/kg	TM181	<1	<1			
			#	#			
Zinc	<1.9 mg/kg	TM181	45.4	50.3			
			M	M			
ANC @ pH 4	<0.03 mol/kg	TM182		0.318			
ANC @ pH 6	<0.03 mol/kg	TM182		0.129			
PAH Total 17 (inc Coronene) Moisture Corrected	<10 mg/kg	TM410		<10			
Coronene	<0.2 mg/kg	TM410		<0.2			
EPH Surrogate % recovery**	%	TM415		94.9			
Mineral Oil >C10-C40 (EH_2D_AL)	<5 mg/kg	TM415		<5			

SDG: 250122-51

Report Number: 754576

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Client Ref.: UK0029106.9719

Location: Halewood LUF

PAH by GCMS

[illegible]



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Report Number: 754576
Location: Halewood LUF

Superseded Report: 753618

TPH CWG (S)

Results Legend		Customer Sample Ref.	TP35	TP35	TP40	TP42	TP42	WS06
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	TP35	TP35	TP40	TP42	TP42	WS06
M	mCERTS accredited.		0.40 - 0.50	1.90 - 2.00	1.20 - 1.30	0.45 - 0.50	1.40 - 1.45	1.60 - 1.70
aq	Aqueous / settled sample.		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
diss.filt	Dissolved / filtered sample.		21/01/2025	21/01/2025	21/01/2025	21/01/2025	21/01/2025	21/01/2025
tot.unfilt	Total / unfiltered sample.		22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025
*	Subcontracted - refer to subcontractor report for accreditation status.		250122-51	250122-51	250122-51	250122-51	250122-51	250122-51
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		30972859	30972864	30972873	30972880	30972887	30972893
***	6:2 FTAB (see appendix)		ES	ES	ES	ES	ES	ES
1-4*5@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	88.5	97.8	101	72	90.1	91.4
Aliphatics >C5-C6 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aliphatics >C16-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	2.1	1.34	<1	7.59	1.41	2.82
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	2.1	1.34	<1	7.59	1.41	2.82
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	6.29	<1	<1
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5	<5	<5	13.9	<5	<5
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10 mg/kg	TM414	<10	<10	<10	61.9	<10	<10
Aromatics >EC5-EC7 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aromatics > EC16-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	2.1	<1	<1	29	<1	3.12
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	1.66	<1	<1	28.9	<1	2.63
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	19	<1	<1
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	5.2	<1	<1
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5	<5	<5	48	<5	<5
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10 mg/kg	TM414	<10	<10	<10	61.9	<10	<10
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
GRO >C5-C10 (HS_1D_TOTAL)	<0.02 mg/kg	TM089	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02



CERTIFICATE OF ANALYSIS

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Client Ref.: UK0029106.9719Report Number: 754576
Location: Halewood LUF

Superseded Report: 753618

TPH CWG (S)

Results Legend		Customer Sample Ref.	WS06	WS07			
# ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	4.50 - 4.60	2.20 - 2.30			
M mCERTS accredited.			Soil/Solid (S)	Soil/Solid (S)			
aq Aqueous / settled sample.			21/01/2025	21/01/2025			
diss.filt Dissolved / filtered sample.							
tot.unfilt Total / unfiltered sample.			22/01/2025	22/01/2025			
* Subcontracted - refer to subcontractor report for accreditation status.			250122-51	250122-51			
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery			30972902	30972909			
*** 6:2 FTAB (see appendix)			ES	ES			
1-4*5@ Sample deviation (see appendix)							
Component	LOD/Units	Method					
GRO Surrogate % recovery**	%	TM089	84.6	98.4			
Aliphatics >C5-C6 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01			
Aliphatics >C6-C8 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01			
Aliphatics >C8-C10 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01			
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #			
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #			
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1 mg/kg	TM414	2.72 #	<1 #			
Aliphatics >C16-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	12.3	1.45			
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	9.54 #	1.45 #			
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1			
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5 mg/kg	TM414	13.1	<5			
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10 mg/kg	TM414	31.2	<10			
Aromatics >EC5-EC7 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01			
Aromatics >EC7-EC8 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01			
Aromatics >EC8-EC10 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01			
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #			
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #			
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1 mg/kg	TM414	1.43 #	<1 #			
Aromatics > EC16-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	16	<1			
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	14.5 #	<1 #			
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	2.11	<1			
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1			
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5 mg/kg	TM414	18.1	<5			
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10 mg/kg	TM414	31.2	<10			
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05			
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05			
GRO >C5-C10 (HS_1D_TOTAL)	<0.02 mg/kg	TM089	<0.02	<0.02			

SDG: 250122-51

Report Number: 754576

Superseded Report: 753618

Client Ref.: UK0029106.9719

Location: Halewood LUF

VOC MS (S)

[illegible]

SDG: 250122-51

Report Number: 754576

Superseded Report: 753618

Client Ref.: UK0029106.9719

Location: Halewood LUF

VOC MS (S)

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

Superseded Report: 753618

Asbestos Identification - Solid Samples

Results Legend

ISO17025 accredited.
M mCERTS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5	@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP35ES 0.40 - 0.50 SOLID 21/01/2025 00:00:00 22/01/2025 09:00:00 250122-51 30972859 TM048	28/01/2025	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP35ES 1.90 - 2.00 SOLID 21/01/2025 00:00:00 22/01/2025 09:00:00 250122-51 30972864 TM048	28/01/2025	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP40ES 1.20 - 1.30 SOLID 21/01/2025 00:00:00 22/01/2025 09:00:00 250122-51 30972873 TM048	28/01/2025	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP42ES 0.45 - 0.50 SOLID 21/01/2025 00:00:00 22/01/2025 09:00:00 250122-51 30972880 TM048	28/01/2025	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP42ES 1.40 - 1.45 SOLID 21/01/2025 00:00:00 22/01/2025 09:00:00 250122-51 30972887 TM048	28/01/2025	Alex Horner	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS06ES 1.60 - 1.70 SOLID 21/01/2025 00:00:00 22/01/2025 09:00:00 250122-51 30972893 TM048	28/01/2025	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS06ES 4.50 - 4.60 SOLID 21/01/2025 00:00:00 22/01/2025 09:00:00 250122-51 30972902 TM048	28/01/2025	Alex Horner	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS07ES 2.20 - 2.30 SOLID 21/01/2025 00:00:00 22/01/2025 09:00:00 250122-51 30972909 TM048	28/01/2025	Alex Horner	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719Report Number: 754576
Location: Halewood LUF

Superseded Report: 753618

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.102

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Halewood LUF

Natural Moisture Content (%) 13.5

Dry Matter Content (%) 88.1

Case

SDG 250122-51

Lab Sample Number(s) 30972873

Sampled Date 21-Jan-2025

Customer Sample Ref. TP40 ESZ

Depth (m) 1.20 - 1.30

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Result

Total Organic Carbon (%) 0.332

Loss on Ignition (%) 3.3

Sum of BTEX (mg/kg) <0.07

Sum of 7 PCBs (mg/kg) <0.021

Mineral Oil (mg/kg) (EH_2D_AL) <5

PAH Sum of 17 (mg/kg) <10

pH (pH Units) 7.54

ANC to pH 6 (mol/kg) <0.03

ANC to pH 4 (mol/kg) 0.0719

Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis

C₂Concⁿ in 10:1 eluate (mg/l)A₂10:1 concⁿ leached (mg/kg)Limit values for compliance leaching test
using BS EN 12457-3 at L/S 10 l/kg

	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	<0.0005	<0.0005	<0.005	<0.005	0.5	2	25
Barium	0.00809	<0.0002	0.0809	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00272	<0.0003	0.0272	<0.003	2	50	100
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00164	<0.0004	0.0164	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.0128	<0.001	0.128	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	3.3	<2	33	<20	1000	20000	50000
Total Dissolved Solids	61.9	<10	619	<100	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	9.4	<3	94	<30	500	800	1000

Leach Test Information

Date Prepared 22-Jan-2025
pH (pH Units) 8.05
Conductivity (µS/cm) 81
Volume Leachant (Litres) 0.888

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

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CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719Report Number: 754576
Location: Halewood LUF

Superseded Report: 753618

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.103

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Halewood LUF

Natural Moisture Content (%) 14.9

Dry Matter Content (%) 87

Case

SDG 250122-51

Lab Sample Number(s) 30972880

Sampled Date 21-Jan-2025

Customer Sample Ref. TP42 ESZ

Depth (m) 0.45 - 0.50

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Result

Total Organic Carbon (%) 0.979

Loss on Ignition (%) 3.06

Sum of BTEX (mg/kg) <0.165

Sum of 7 PCBs (mg/kg) <0.021

Mineral Oil (mg/kg) (EH_2D_AL) <5

PAH Sum of 17 (mg/kg) <10

pH (pH Units) 8.75

ANC to pH 6 (mol/kg) 0.0406

ANC to pH 4 (mol/kg) 0.172

Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis

C₂Concⁿ in 10:1 eluate (mg/l)A₂10:1 concⁿ leached (mg/kg)Limit values for compliance leaching test
using BS EN 12457-3 at L/S 10 l/kg

	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00175	<0.0005	0.0175	<0.005	0.5	2	25
Barium	0.0184	<0.0002	0.184	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00534	<0.0003	0.0534	<0.003	2	50	100
Mercury Dissolved (CVAf)	0.0000101	<0.00001	0.000101	<0.0001	0.01	0.2	2
Molybdenum	0.00895	<0.003	0.0895	<0.03	0.5	10	30
Nickel	0.00113	<0.0004	0.0113	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	<0.001	<0.001	<0.01	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	1.12	<0.5	11.2	<5	10	150	500
Sulphate (soluble)	4.1	<2	41	<20	1000	20000	50000
Total Dissolved Solids	104	<10	1040	<100	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	9.23	<3	92.3	<30	500	800	1000

Leach Test Information

Date Prepared 22-Jan-2025
pH (pH Units) 8.65
Conductivity (µS/cm) 135
Volume Leachant (Litres) 0.887

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

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CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719Report Number: 754576
Location: Halewood LUF

Superseded Report: 753618

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.098

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Halewood LUF

Natural Moisture Content (%) 10.5

Dry Matter Content (%) 90.5

Case

SDG 250122-51

Lab Sample Number(s) 30972887

Sampled Date 21-Jan-2025

Customer Sample Ref. TP42 ESZ

Depth (m) 1.40 - 1.45

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Result

Total Organic Carbon (%) 0.878

Loss on Ignition (%) 2.79

Sum of BTEX (mg/kg) <0.145

Sum of 7 PCBs (mg/kg) <0.021

Mineral Oil (mg/kg) (EH_2D_AL) <5

PAH Sum of 17 (mg/kg) <10

pH (pH Units) 7.51

ANC to pH 6 (mol/kg) <0.03

ANC to pH 4 (mol/kg) 0.0954

Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis

C₂Concⁿ in 10:1 eluate (mg/l)A₂10:1 concⁿ leached (mg/kg)Limit values for compliance leaching test
using BS EN 12457-3 at L/S 10 l/kg

	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.02	<0.0005	0.2	<0.005	0.5	2	25
Barium	0.0132	<0.0002	0.132	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.0107	<0.0003	0.107	<0.003	2	50	100
Mercury Dissolved (CVAf)	0.0000207	<0.00001	0.000207	<0.0001	0.01	0.2	2
Molybdenum	0.0322	<0.003	0.322	<0.03	0.5	10	30
Nickel	0.00406	<0.0004	0.0406	<0.004	0.4	10	40
Lead	0.00209	<0.0002	0.0209	<0.002	0.5	10	50
Antimony	0.00694	<0.001	0.0694	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00278	<0.001	0.0278	<0.01	4	50	200
Chloride	2.8	<2	28	<20	800	15000	25000
Fluoride	1.34	<0.5	13.4	<5	10	150	500
Sulphate (soluble)	5.8	<2	58	<20	1000	20000	50000
Total Dissolved Solids	70.3	<10	703	<100	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	20.7	<3	207	<30	500	800	1000

Leach Test Information

Date Prepared 22-Jan-2025
pH (pH Units) 7.74
Conductivity (µS/cm) 92
Volume Leachant (Litres) 0.891

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

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CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719Report Number: 754576
Location: Halewood LUF

Superseded Report: 753618

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.103

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Halewood LUF

Natural Moisture Content (%) 15.8

Dry Matter Content (%) 86.4

Case

SDG 250122-51

Lab Sample Number(s) 30972909

Sampled Date 21-Jan-2025

Customer Sample Ref. WS07 ESZ

Depth (m) 2.20 - 2.30

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Result

Total Organic Carbon (%) 0.23

Loss on Ignition (%) 2.14

Sum of BTEX (mg/kg) <0.14

Sum of 7 PCBs (mg/kg) <0.021

Mineral Oil (mg/kg) (EH_2D_AL) <5

PAH Sum of 17 (mg/kg) <10

pH (pH Units) 8.9

ANC to pH 6 (mol/kg) 0.129

ANC to pH 4 (mol/kg) 0.318

Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis

C₂Concⁿ in 10:1 eluate (mg/l)A₂10:1 concⁿ leached (mg/kg)Limit values for compliance leaching test
using BS EN 12457-3 at L/S 10 l/kg

	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	<0.0005	<0.0005	<0.005	<0.005	0.5	2	25
Barium	0.0417	<0.0002	0.417	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00367	<0.0003	0.0367	<0.003	2	50	100
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.00413	<0.003	0.0413	<0.03	0.5	10	30
Nickel	0.000881	<0.0004	0.00881	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00585	<0.001	0.0585	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	8.1	<2	81	<20	1000	20000	50000
Total Dissolved Solids	91.8	<10	918	<100	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	6.86	<3	68.6	<30	500	800	1000

Leach Test Information

Date Prepared 22-Jan-2025
pH (pH Units) 8.46
Conductivity (µS/cm) 120
Volume Leachant (Litres) 0.885

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

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CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

Superseded Report: 753618

Table of Results - Appendix

Method No	Description
TM048	Identification of Asbestos in Bulk Material
TM152	Analysis of Aqueous Samples by ICP-MS
TM168	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM218	The determination of PAH in soil samples by GC-MS
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM415	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM104	Determination of Fluoride using the Kone Analyser
TM182	Determination of Acid Neutralisation Capacity (ANC) Using Autotitration in Soils
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
PM115	Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM018	Determination of Loss on Ignition
TM090	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM259	Determination of Phenols in Waters and Leachates by HPLC
TM410	Determination of Coronene in soils by GCMS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

Superseded Report: 753618

Test Completion Dates

Lab Sample No(s)
Customer Sample Ref.

AGS Ref.
Depth
Type

	30972859	30972864	30972873	30972880	30972887	30972893	30972902	30972909
	TP35	TP35	TP40	TP42	TP42	WS06	WS06	WS07
	ES	ES	ES	ES	ES	ES	ES	ES
	0.40 - 0.50	1.90 - 2.00	1.20 - 1.30	0.45 - 0.50	1.40 - 1.45	1.60 - 1.70	4.50 - 4.60	2.20 - 2.30
	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
ANC at pH4 and ANC at pH 6			28-Jan-2025	28-Jan-2025	28-Jan-2025			28-Jan-2025
Anions by Kone (w)			28-Jan-2025	29-Jan-2025	29-Jan-2025			28-Jan-2025
Asbestos ID in Solid Samples	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	29-Jan-2025	28-Jan-2025	29-Jan-2025	29-Jan-2025
CEN 10:1 Leachate (1 Stage)			23-Jan-2025	23-Jan-2025	23-Jan-2025			23-Jan-2025
CEN Readings			27-Jan-2025	27-Jan-2025	27-Jan-2025			27-Jan-2025
Coronene			24-Jan-2025	24-Jan-2025	24-Jan-2025			24-Jan-2025
Dissolved Metals by ICP-MS			27-Jan-2025	27-Jan-2025	27-Jan-2025			27-Jan-2025
Dissolved Organic/Inorganic Carbon			26-Jan-2025	26-Jan-2025	26-Jan-2025			26-Jan-2025
EPH by GCxGC-FID			24-Jan-2025	24-Jan-2025	24-Jan-2025			24-Jan-2025
EPH CWG GC (S)	27-Jan-2025	24-Jan-2025	27-Jan-2025	24-Jan-2025	27-Jan-2025	24-Jan-2025	24-Jan-2025	27-Jan-2025
Fluoride			28-Jan-2025	28-Jan-2025	28-Jan-2025			28-Jan-2025
GRO by GC-FID (S)	23-Jan-2025	24-Jan-2025	24-Jan-2025	24-Jan-2025	23-Jan-2025	24-Jan-2025	24-Jan-2025	24-Jan-2025
Loss on Ignition in soils			29-Jan-2025	29-Jan-2025	29-Jan-2025			27-Jan-2025
Mercury Dissolved			28-Jan-2025	27-Jan-2025	28-Jan-2025			27-Jan-2025
Metals in solid samples by OES	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025
Moisture at 105C			22-Jan-2025	22-Jan-2025	22-Jan-2025			22-Jan-2025
PAH 16 & 17 Calc			27-Jan-2025	27-Jan-2025	27-Jan-2025			27-Jan-2025
PAH by GCMS	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	30-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025
PCBs by GCMS			27-Jan-2025	27-Jan-2025	27-Jan-2025			27-Jan-2025
pH	27-Jan-2025	27-Jan-2025	24-Jan-2025	27-Jan-2025	24-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025
pH Value of Filtered Water			27-Jan-2025	29-Jan-2025	29-Jan-2025			27-Jan-2025
Phenols by HPLC (W)			28-Jan-2025	28-Jan-2025	29-Jan-2025			28-Jan-2025
Sample description	22-Jan-2025	22-Jan-2025	22-Jan-2025	22-Jan-2025	22-Jan-2025	22-Jan-2025	22-Jan-2025	22-Jan-2025
Total Organic Carbon	29-Jan-2025	29-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	29-Jan-2025	29-Jan-2025	28-Jan-2025
TPH CWG GC (S)	27-Jan-2025	24-Jan-2025	27-Jan-2025	24-Jan-2025	27-Jan-2025	24-Jan-2025	24-Jan-2025	27-Jan-2025
VOC MS (S)	27-Jan-2025	23-Jan-2025	23-Jan-2025	23-Jan-2025	27-Jan-2025	23-Jan-2025	23-Jan-2025	23-Jan-2025



CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

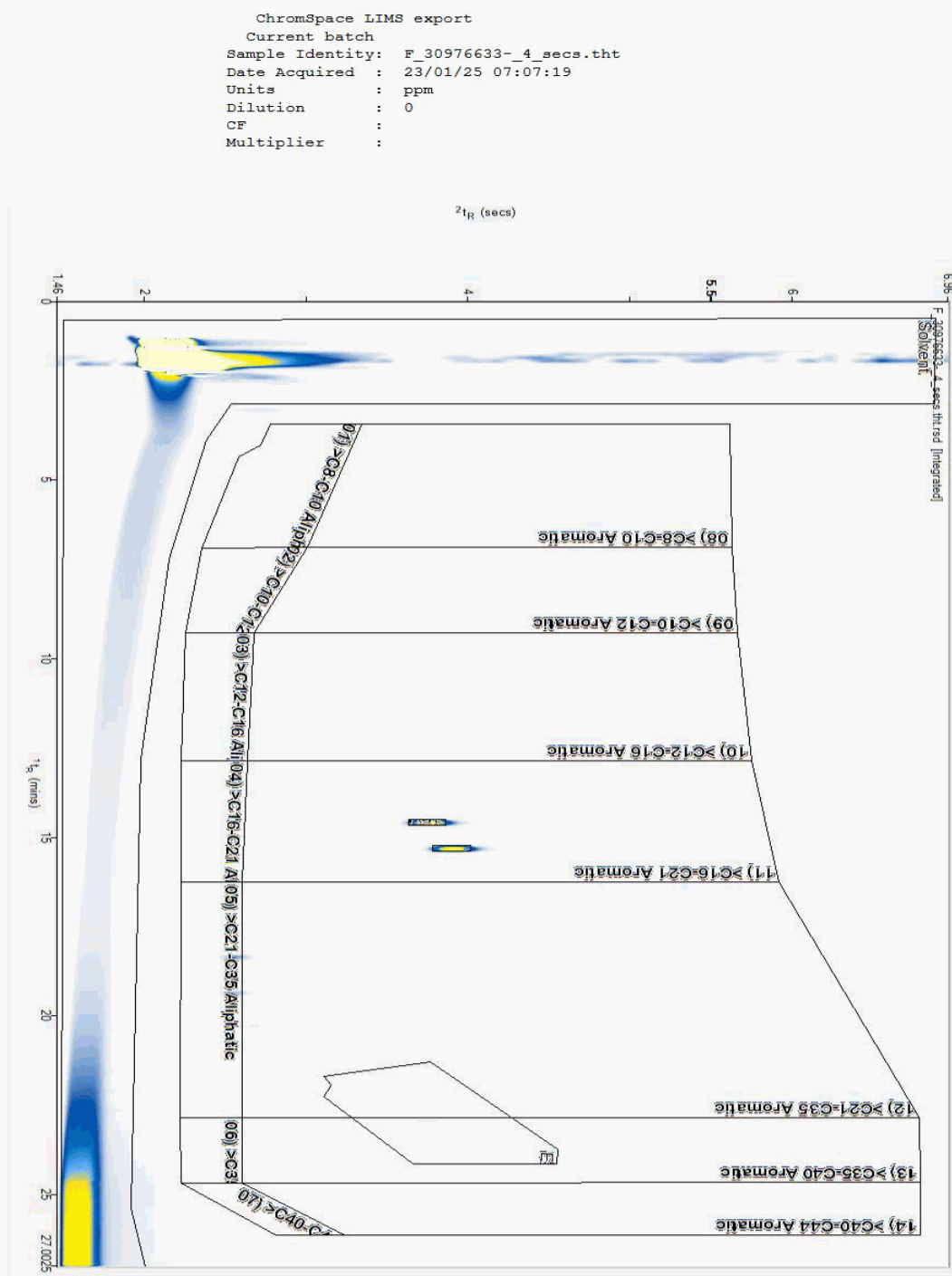
Superseded Report: 753618

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30976633
Sample ID : TP35

Depth : 1.90 - 2.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

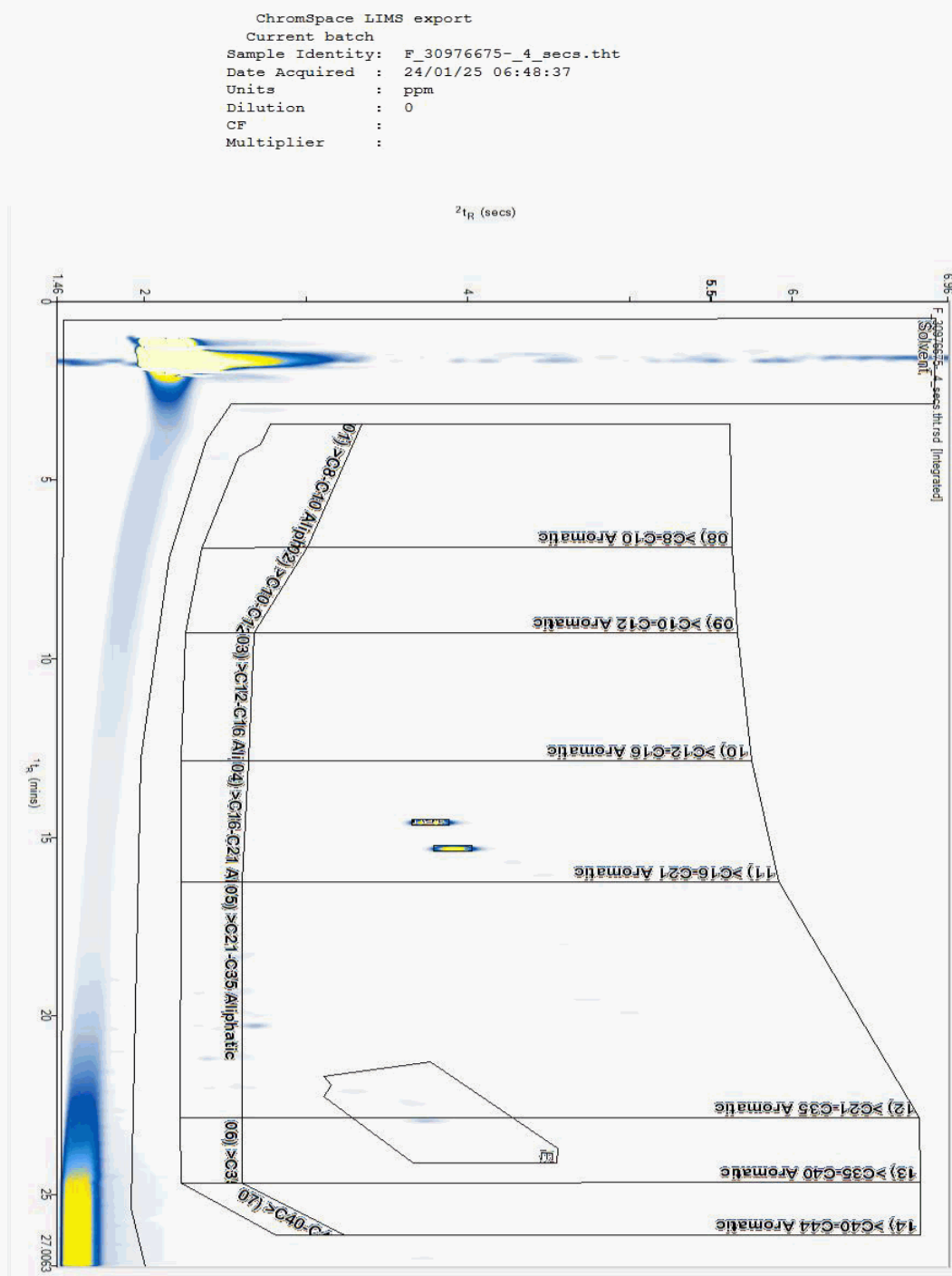
Superseded Report: 753618

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30976675
Sample ID : TP35

Depth : 0.40 - 0.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

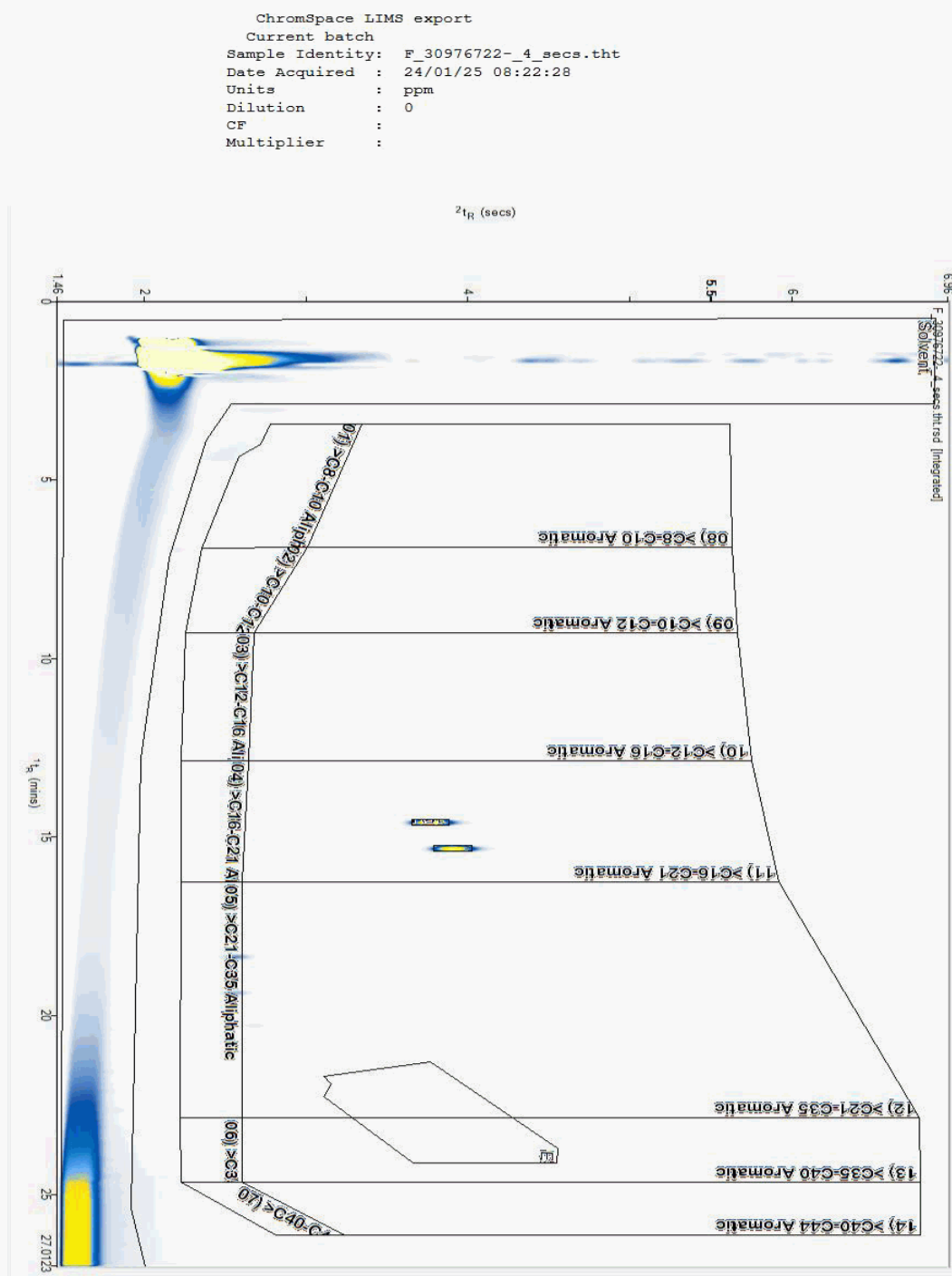
Superseded Report: 753618

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30976722
Sample ID : WS07

Depth : 2.20 - 2.30





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

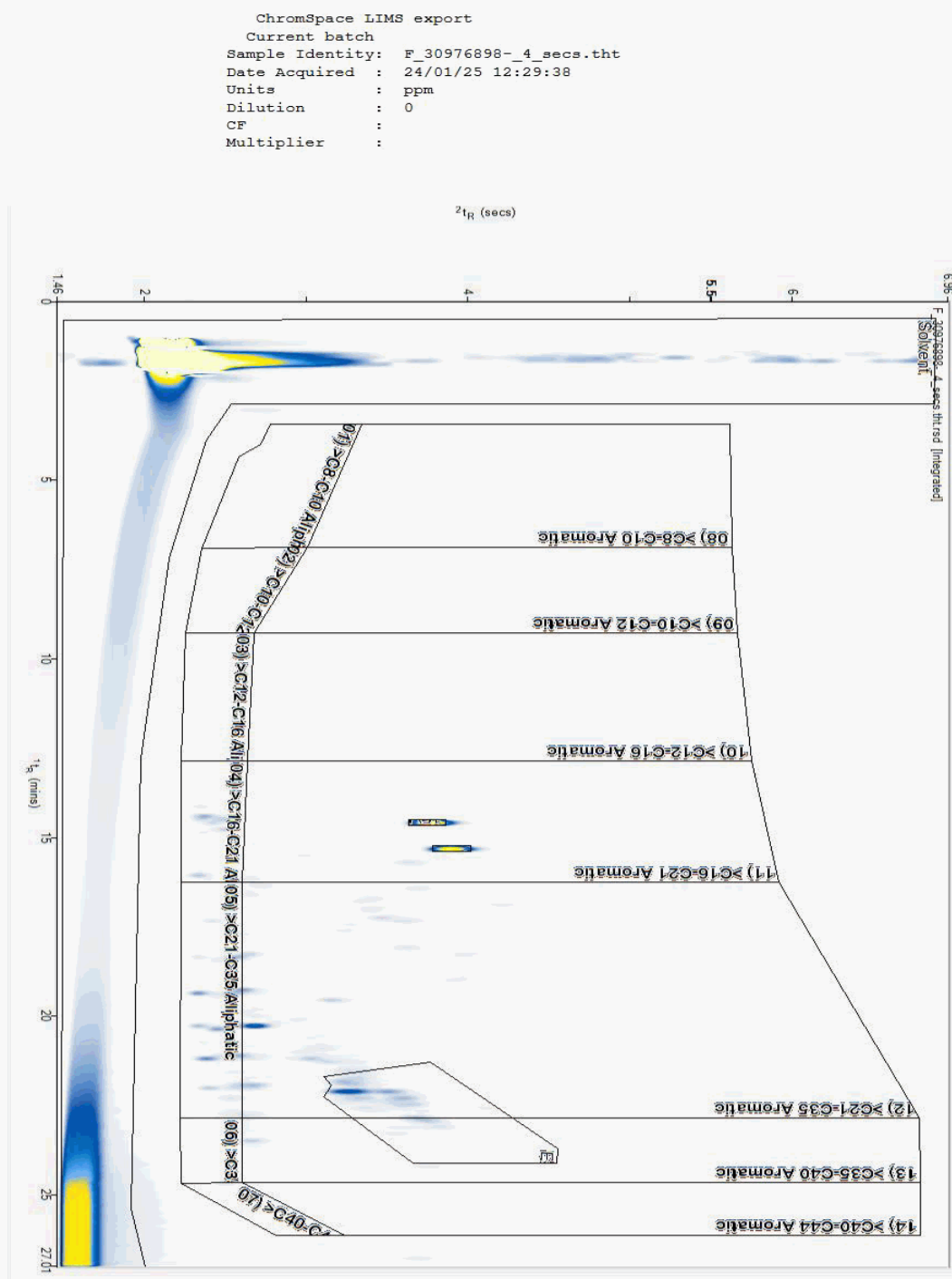
Superseded Report: 753618

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30976898
Sample ID : WS06

Depth : 4.50 - 4.60



SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

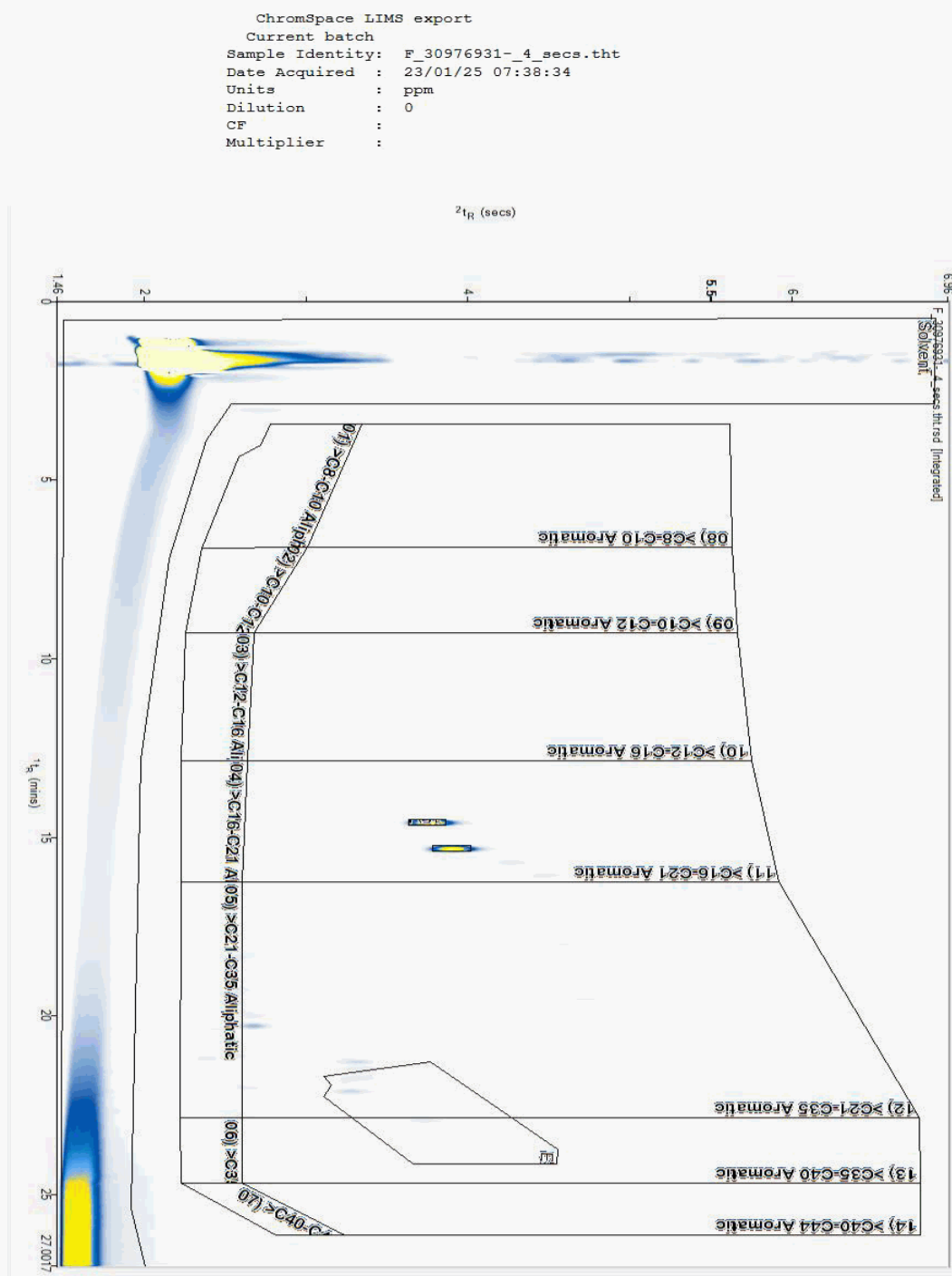
Superseded Report: 753618

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30976931
Sample ID : WS06

Depth : 1.60 - 1.70





CERTIFICATE OF ANALYSIS

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SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

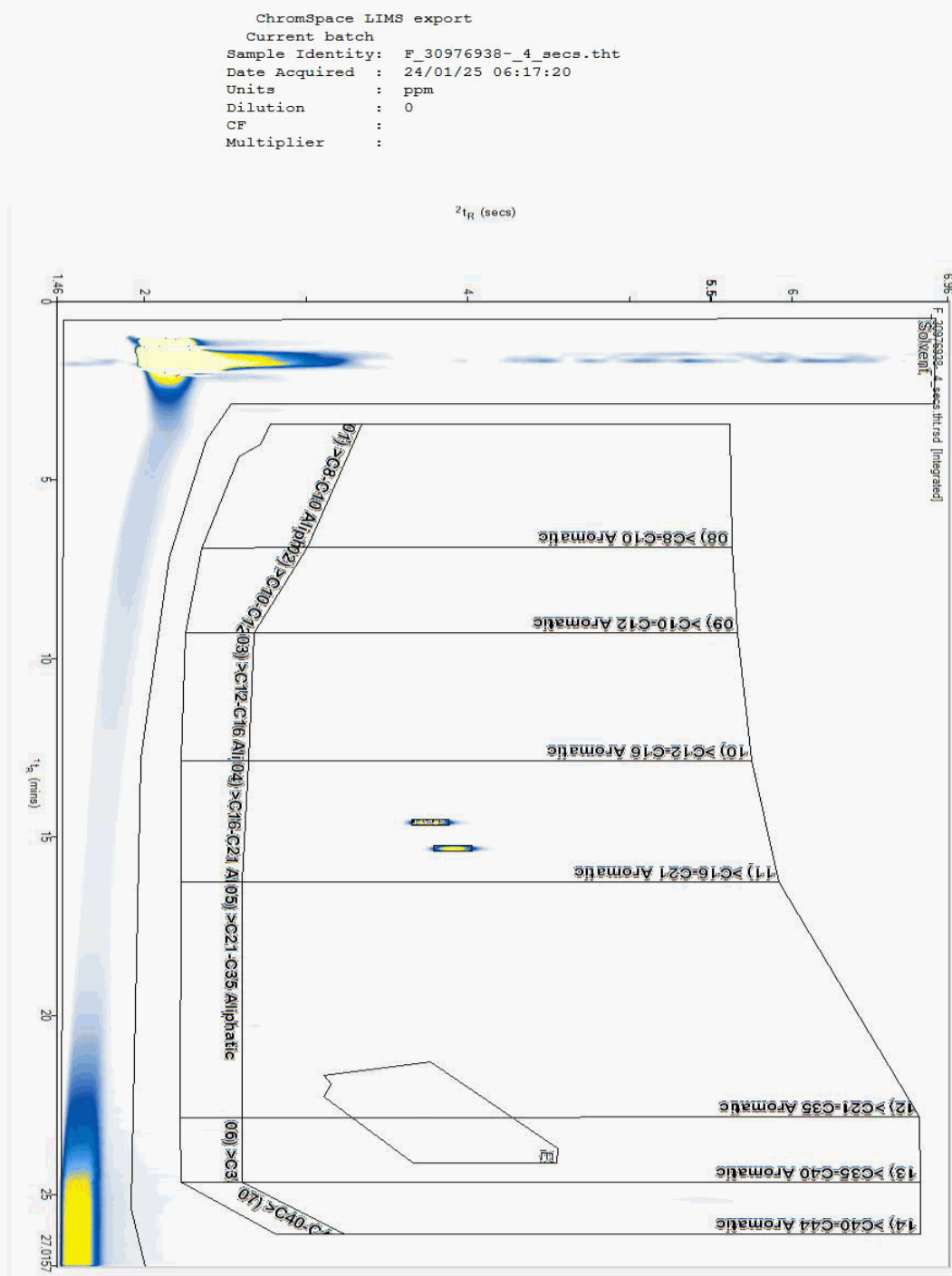
Superseded Report: 753618

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30976938
Sample ID : TP40

Depth : 1.20 - 1.30





CERTIFICATE OF ANALYSIS

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SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

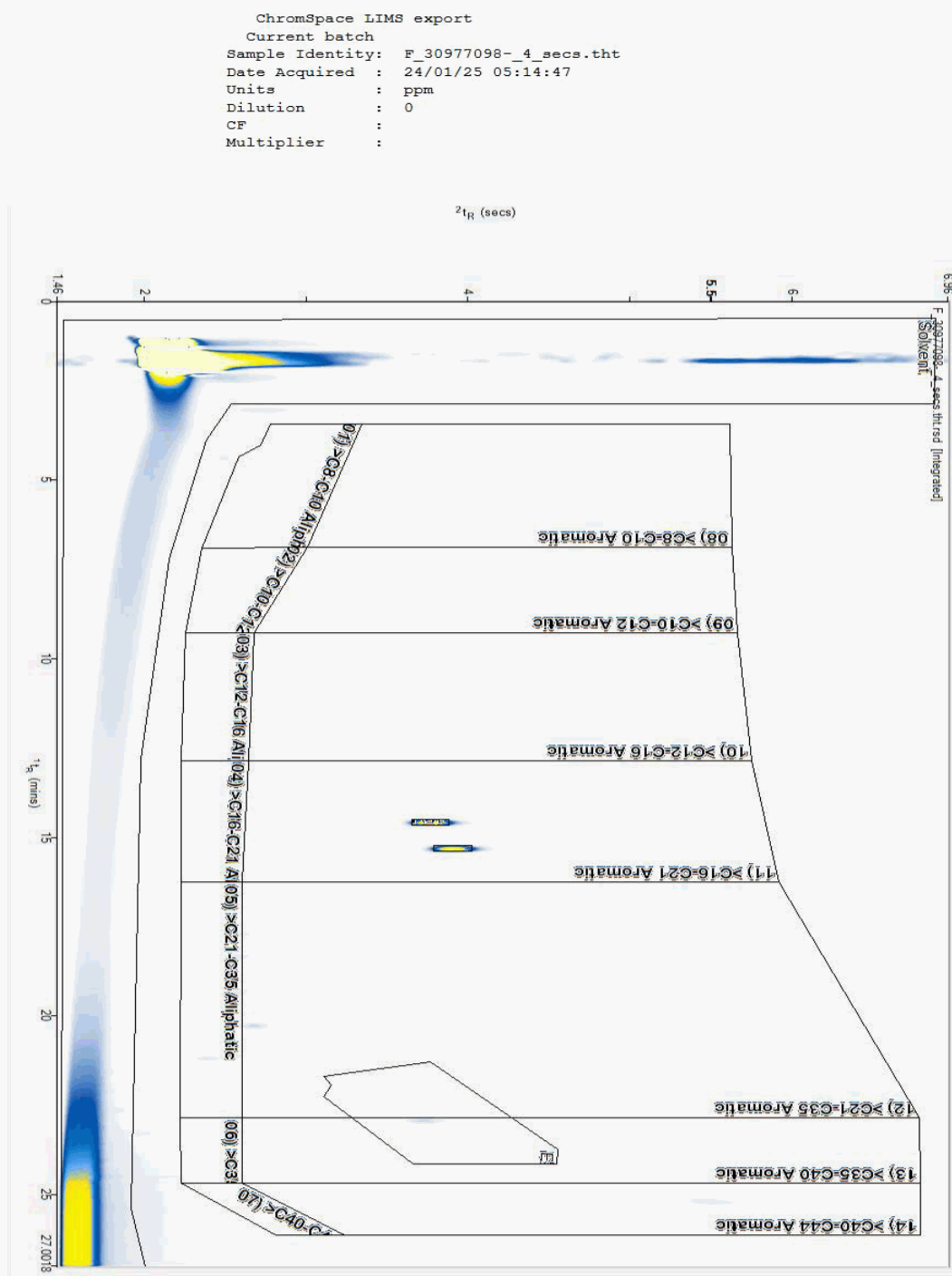
Superseded Report: 753618

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30977098
Sample ID : TP42

Depth : 1.40 - 1.45





CERTIFICATE OF ANALYSIS

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SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

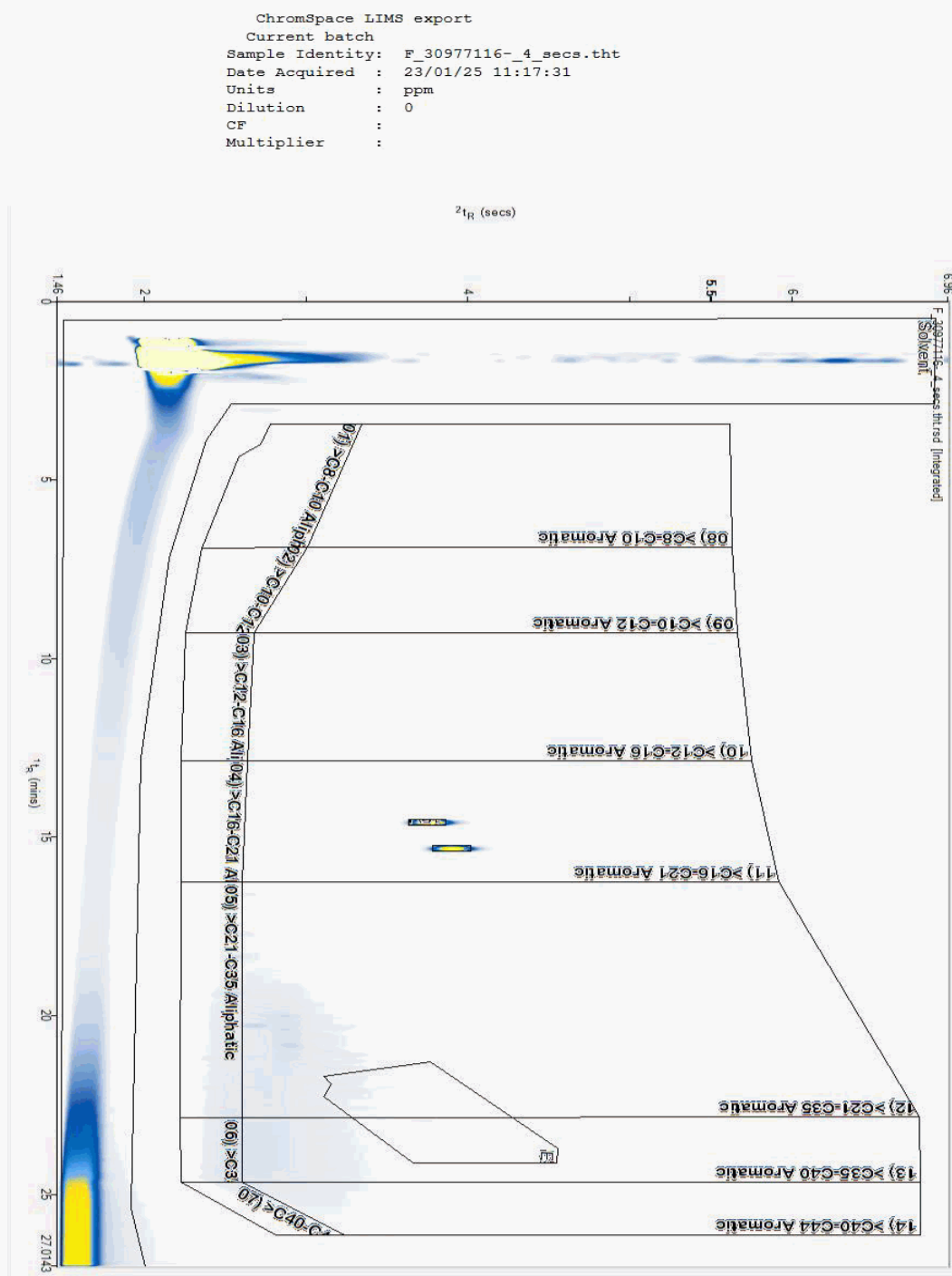
Superseded Report: 753618

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30977116
Sample ID : TP42

Depth : 0.45 - 0.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

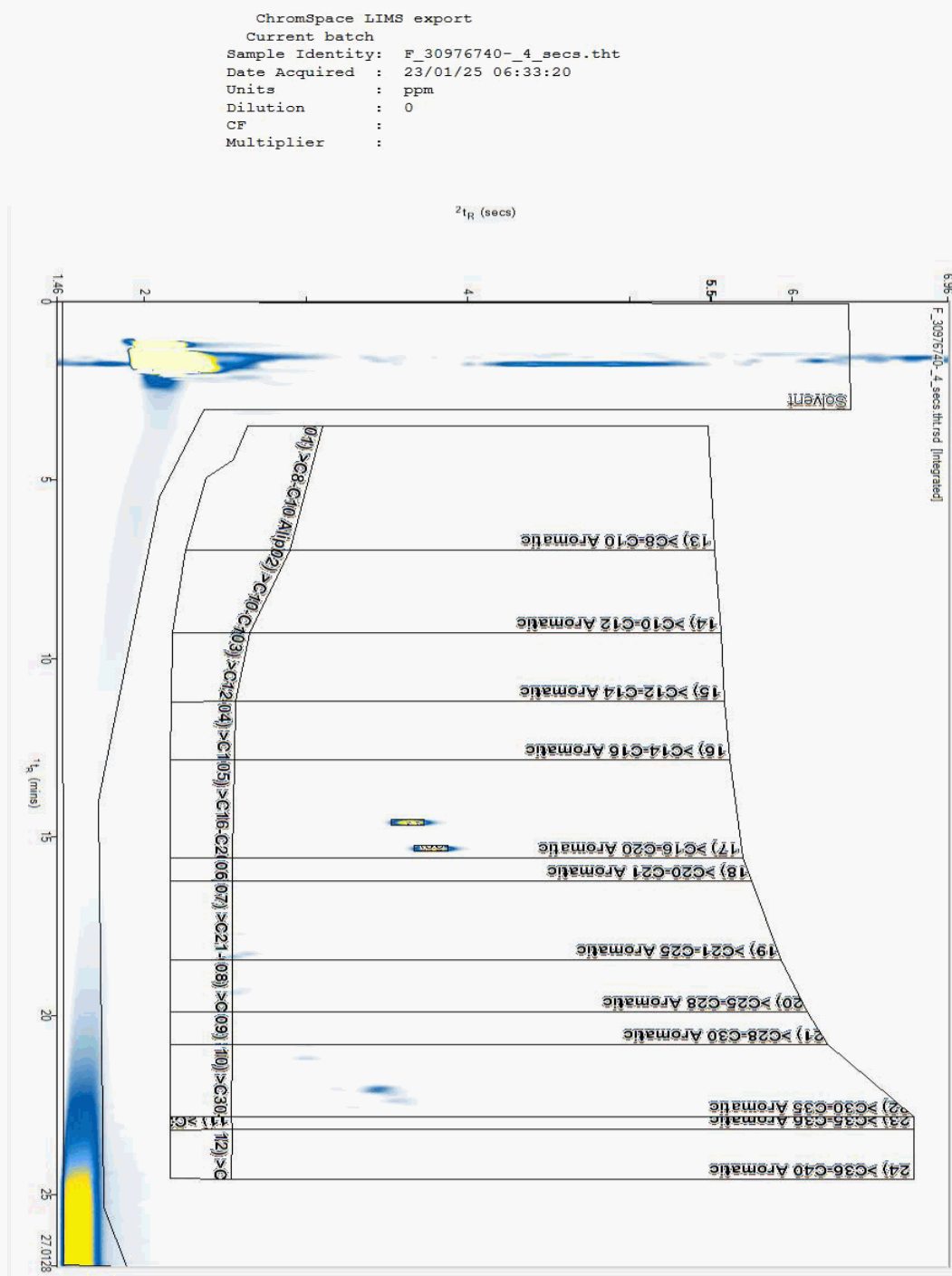
Superseded Report: 753618

Chromatogram

Analysis: EPH by GCxGC-FID

Sample No : 30976740
Sample ID : WS07

Depth : 2.20 - 2.30





CERTIFICATE OF ANALYSIS

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SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

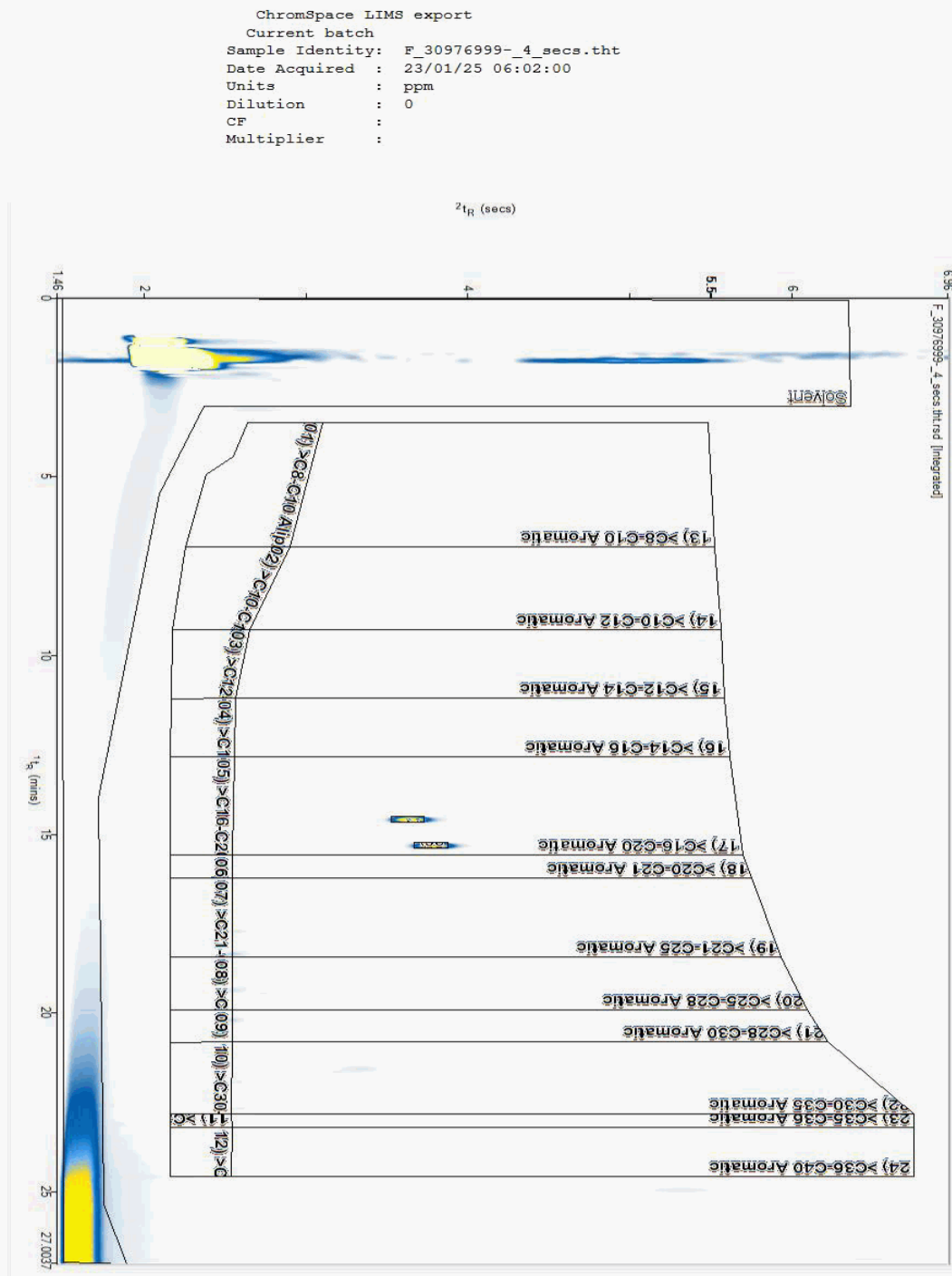
Superseded Report: 753618

Chromatogram

Analysis: EPH by GCxGC-FID

Sample No : 30976999
Sample ID : TP40

Depth : 1.20 - 1.30





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

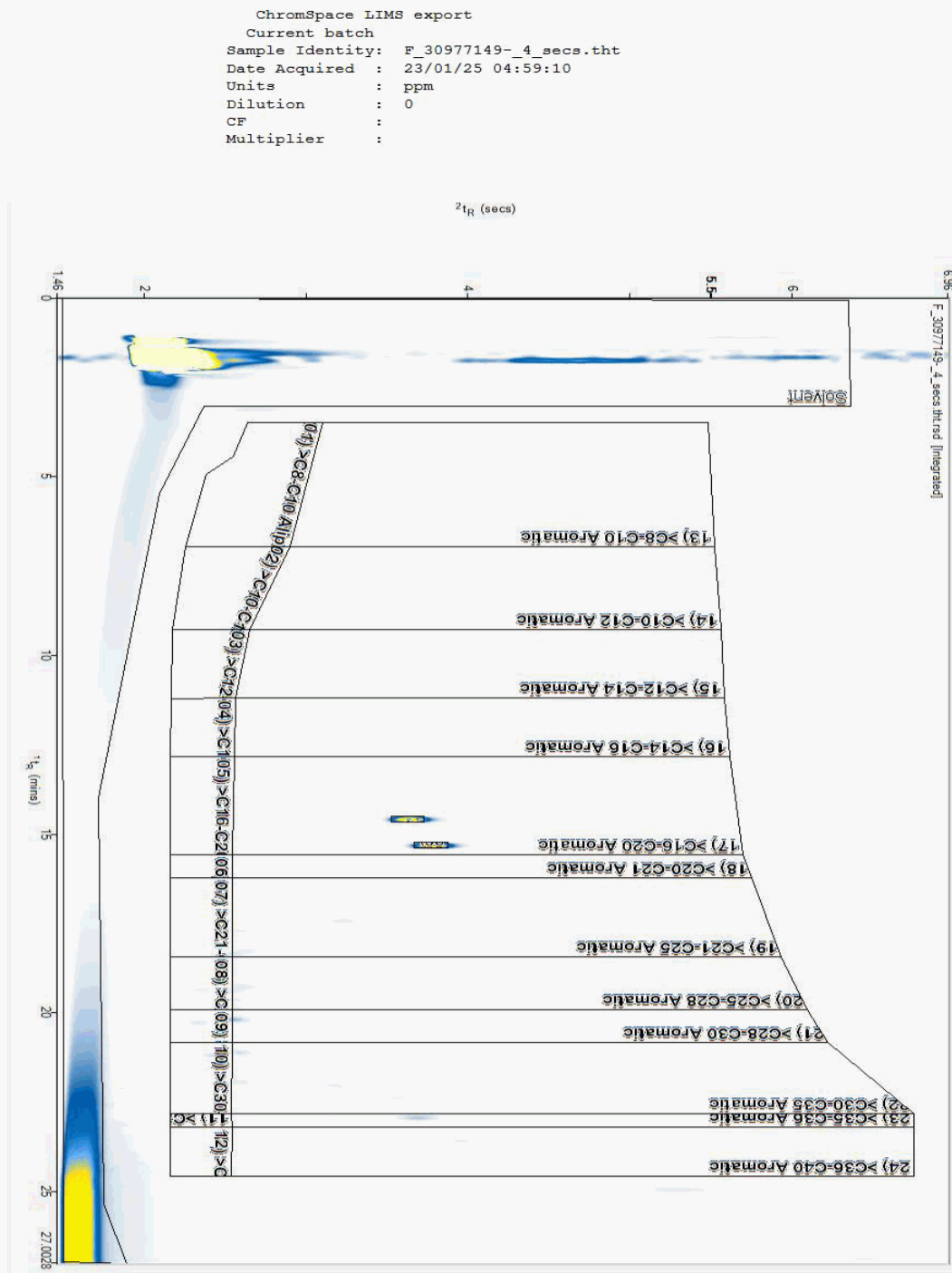
Superseded Report: 753618

Chromatogram

Analysis: EPH by GCxGC-FID

Sample No : 30977149
Sample ID : TP42

Depth : 1.40 - 1.45





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

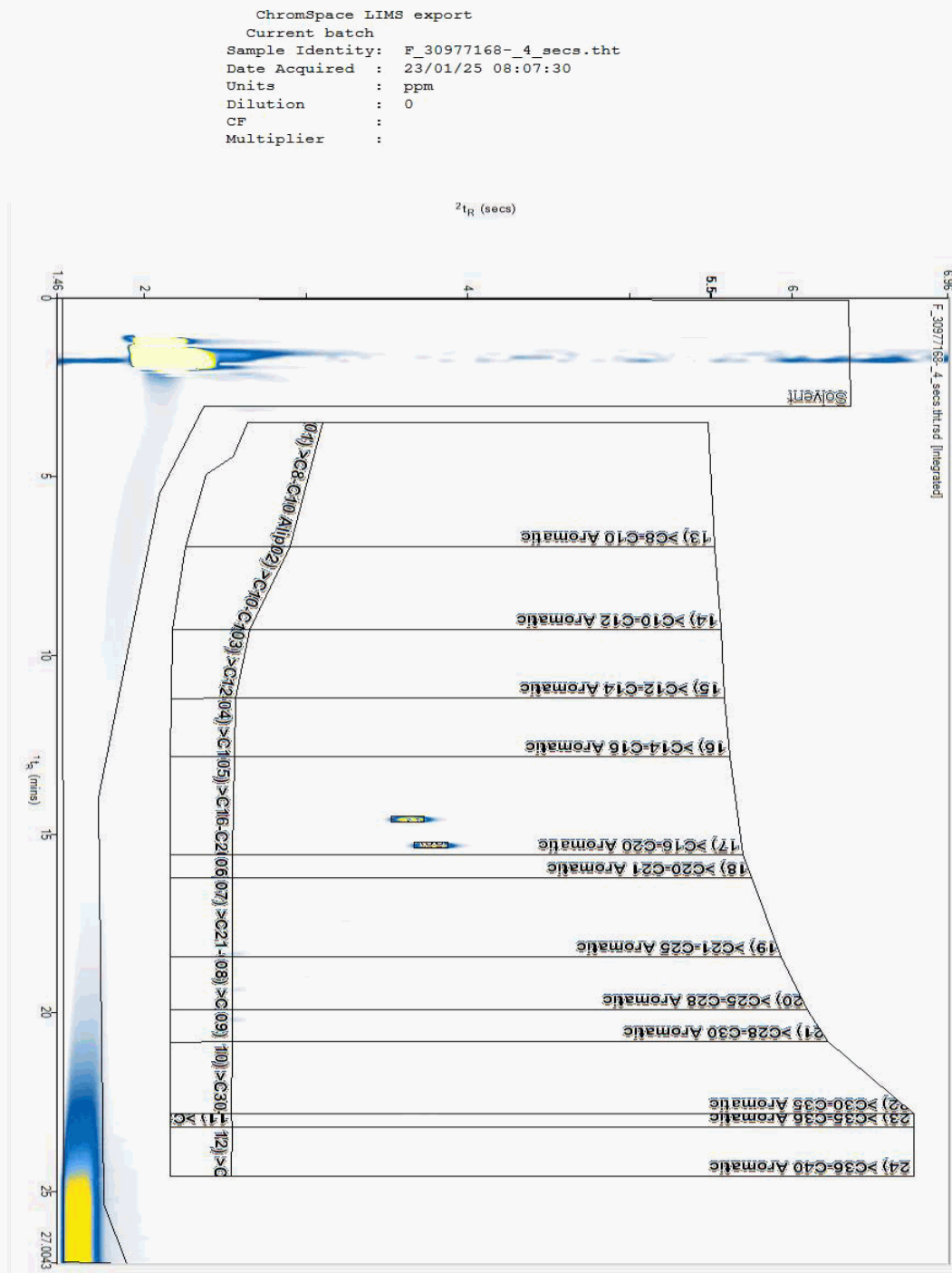
Superseded Report: 753618

Chromatogram

Analysis: EPH by GCxGC-FID

Sample No : 30977168
Sample ID : TP42

Depth : 0.45 - 0.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

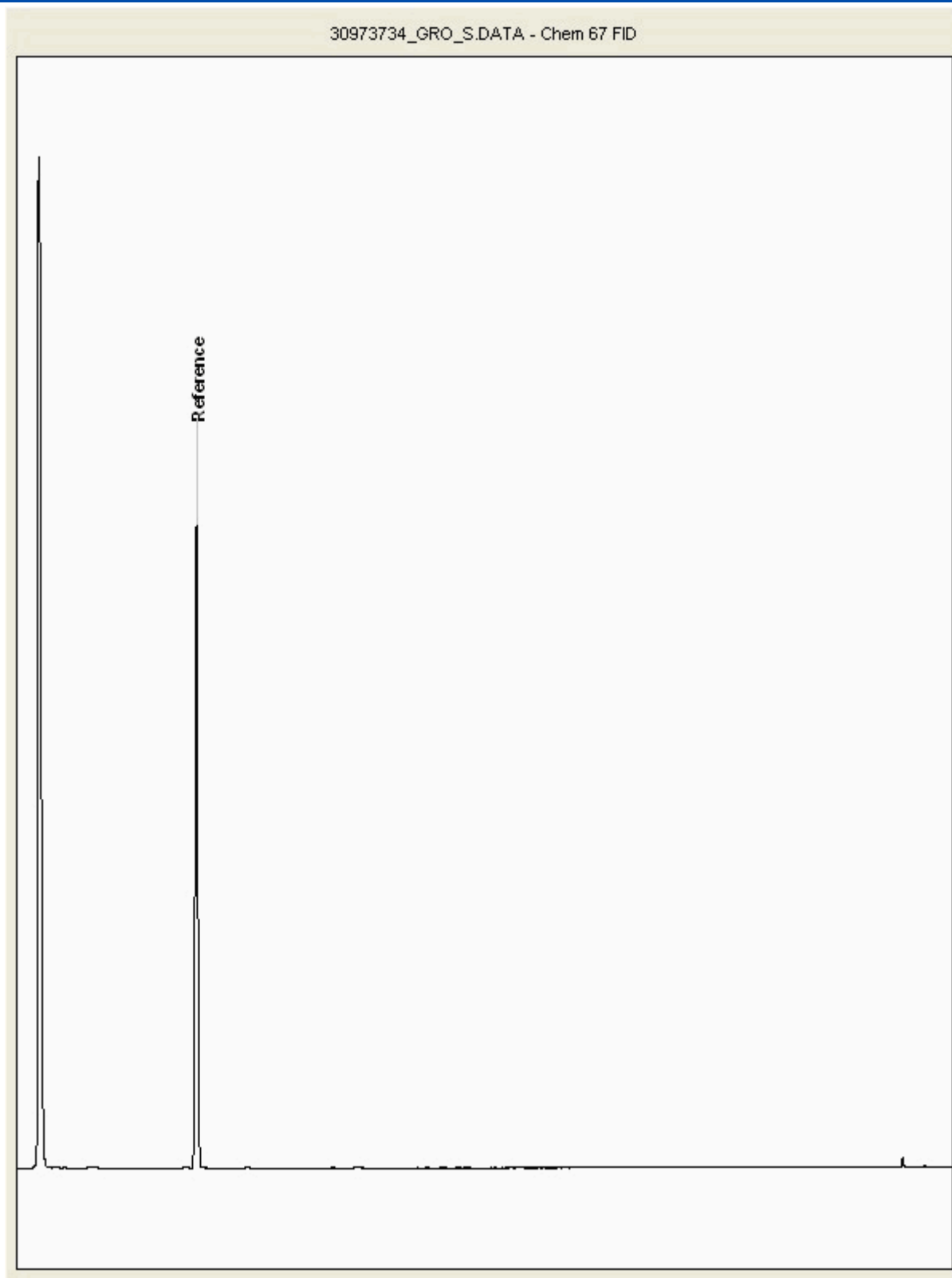
Superseded Report: 753618

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30973734
Sample ID : WS07

Depth : 2.20 - 2.30





CERTIFICATE OF ANALYSIS

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SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

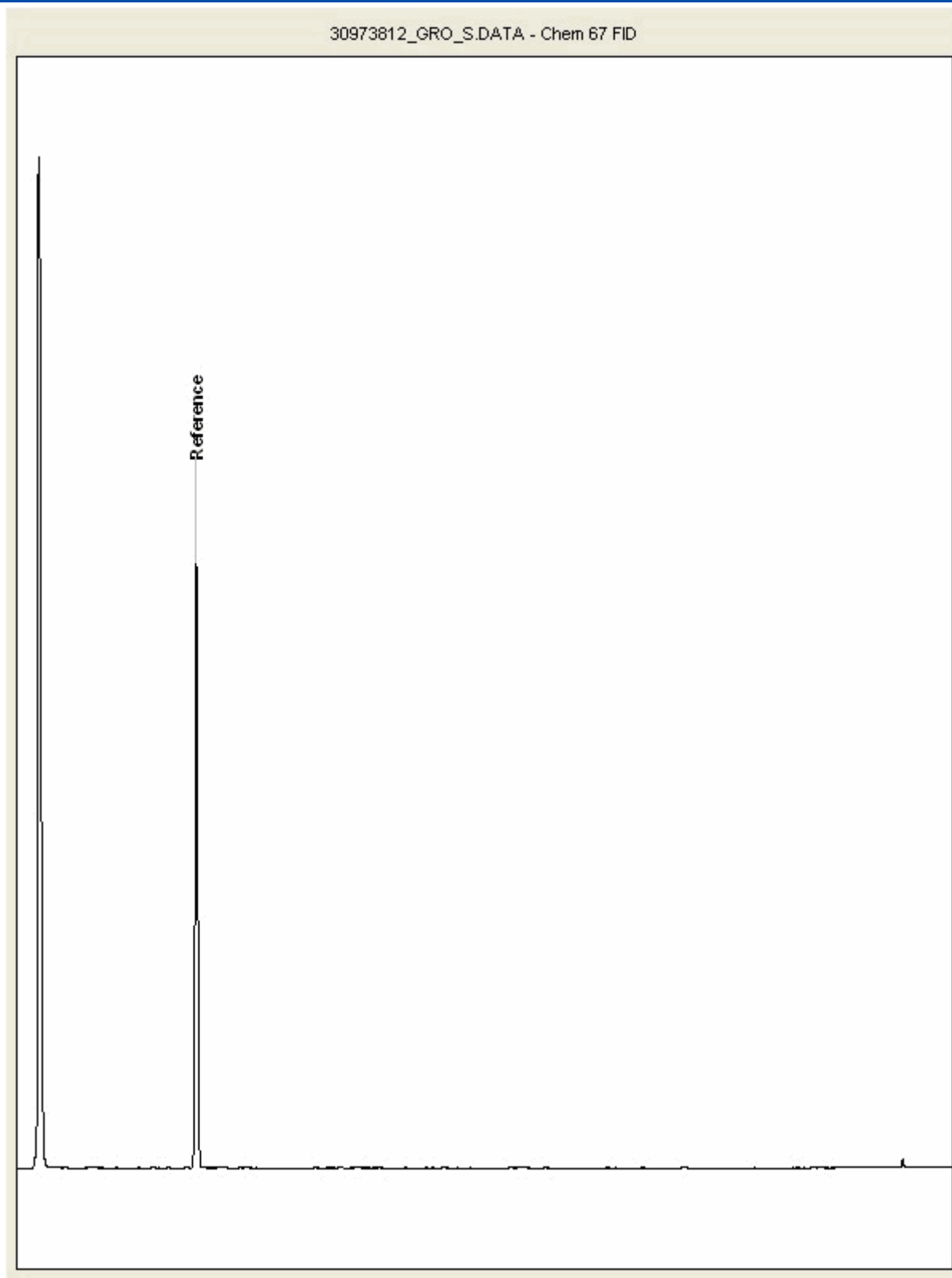
Superseded Report: 753618

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30973812
Sample ID : WS06

Depth : 1.60 - 1.70





CERTIFICATE OF ANALYSIS

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SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

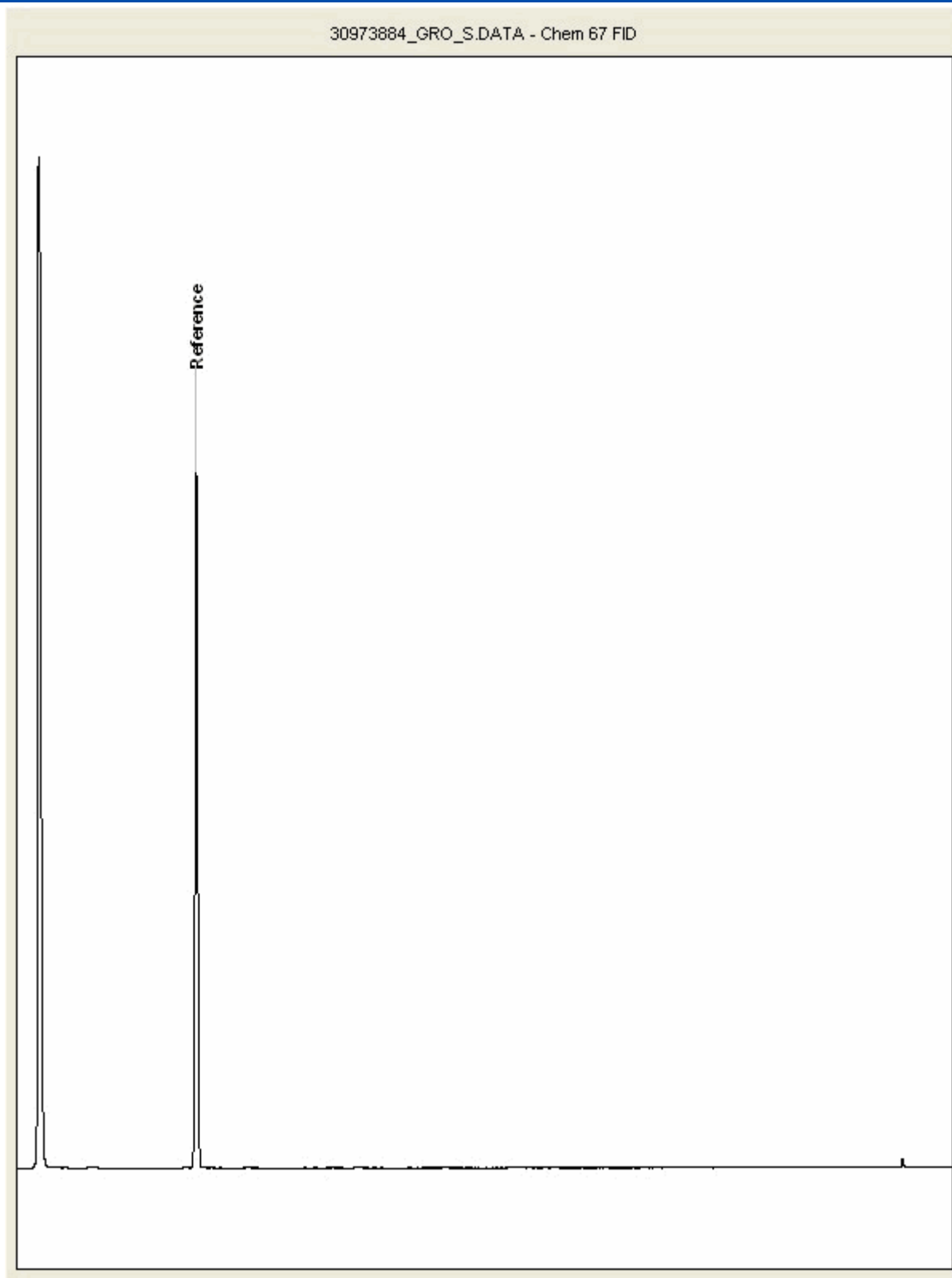
Superseded Report: 753618

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30973884
Sample ID : TP35

Depth : 1.90 - 2.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

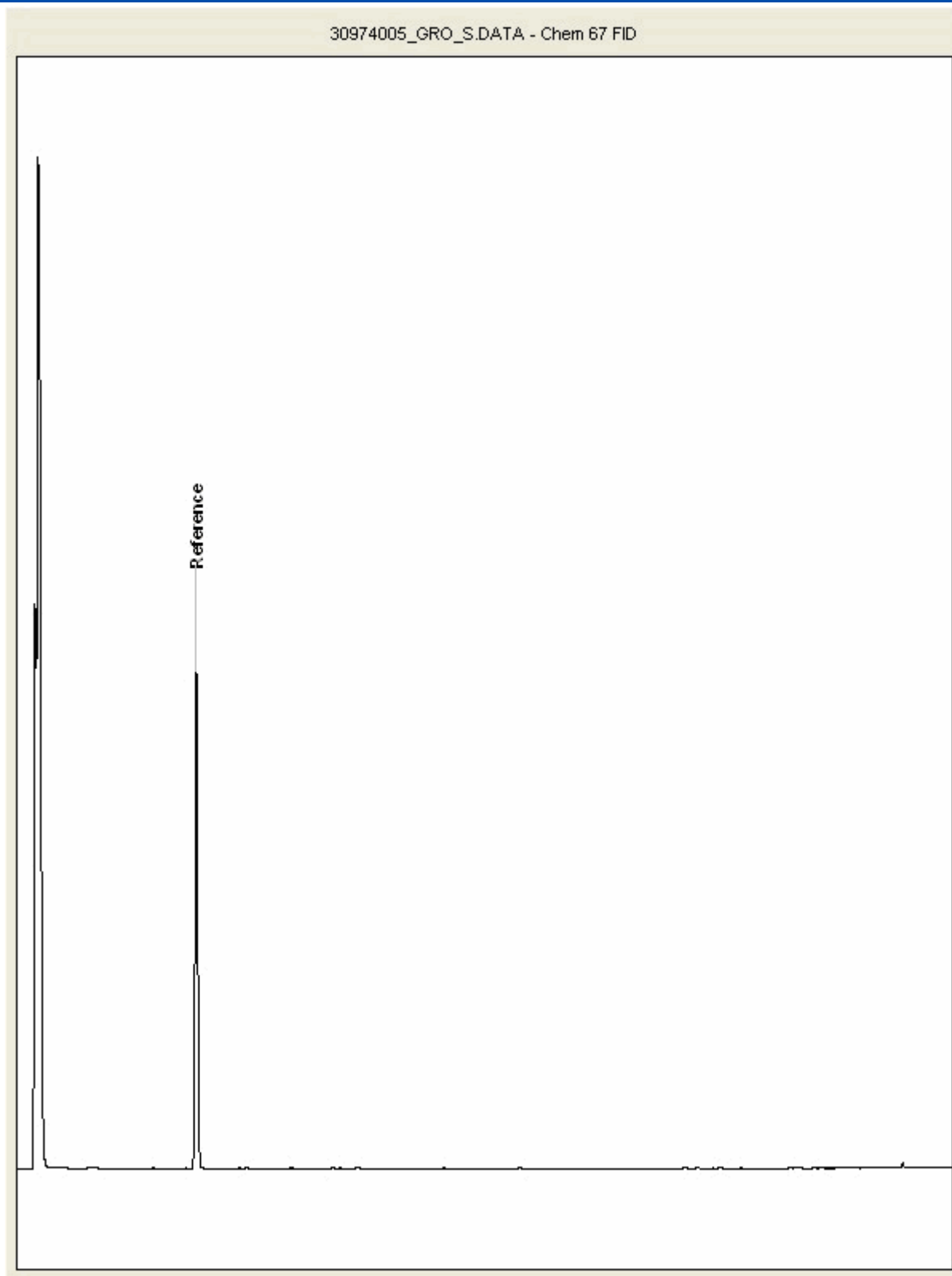
Superseded Report: 753618

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30974005
Sample ID : WS06

Depth : 4.50 - 4.60





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

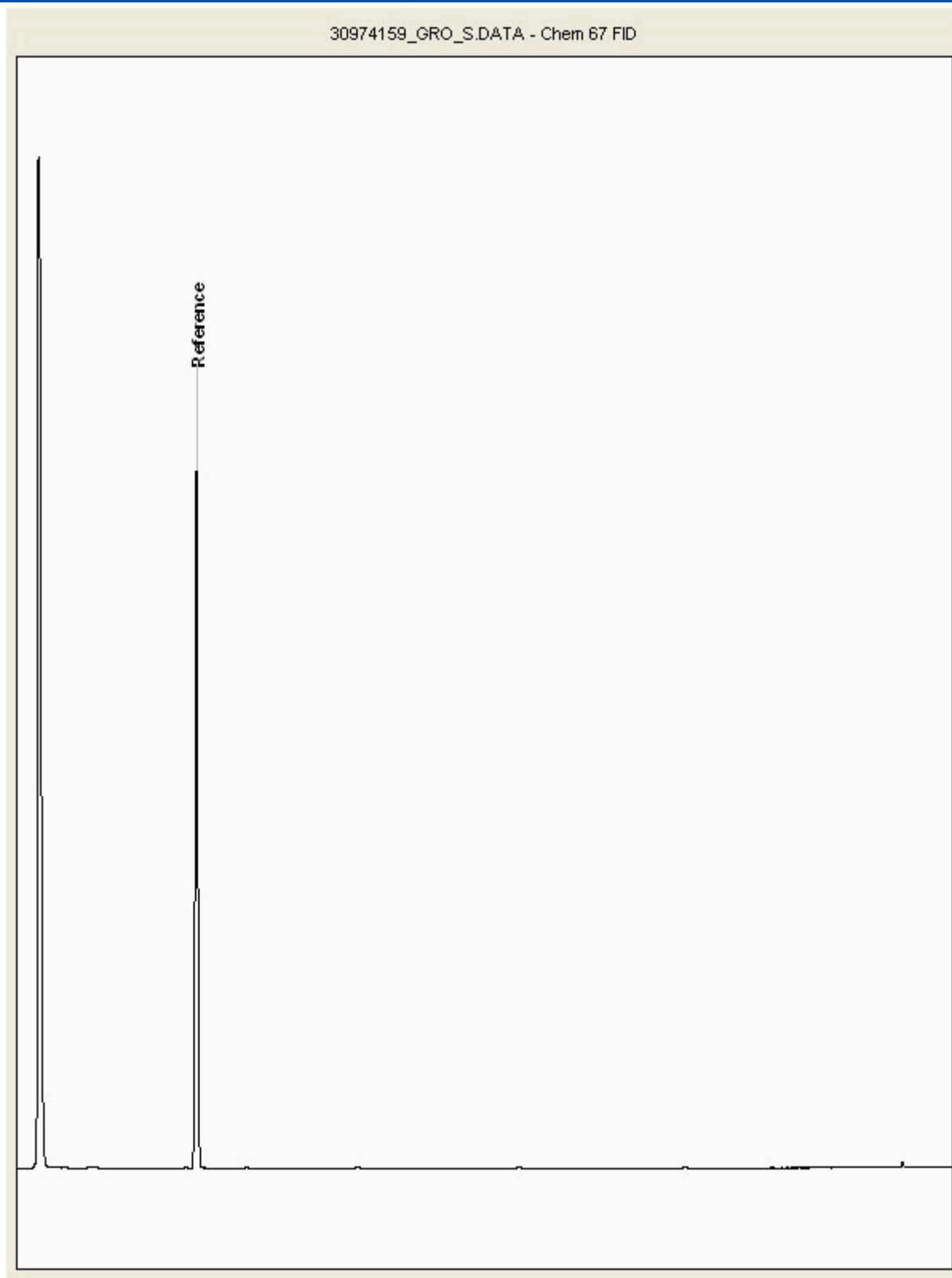
Superseded Report: 753618

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30974159
Sample ID : TP40

Depth : 1.20 - 1.30





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

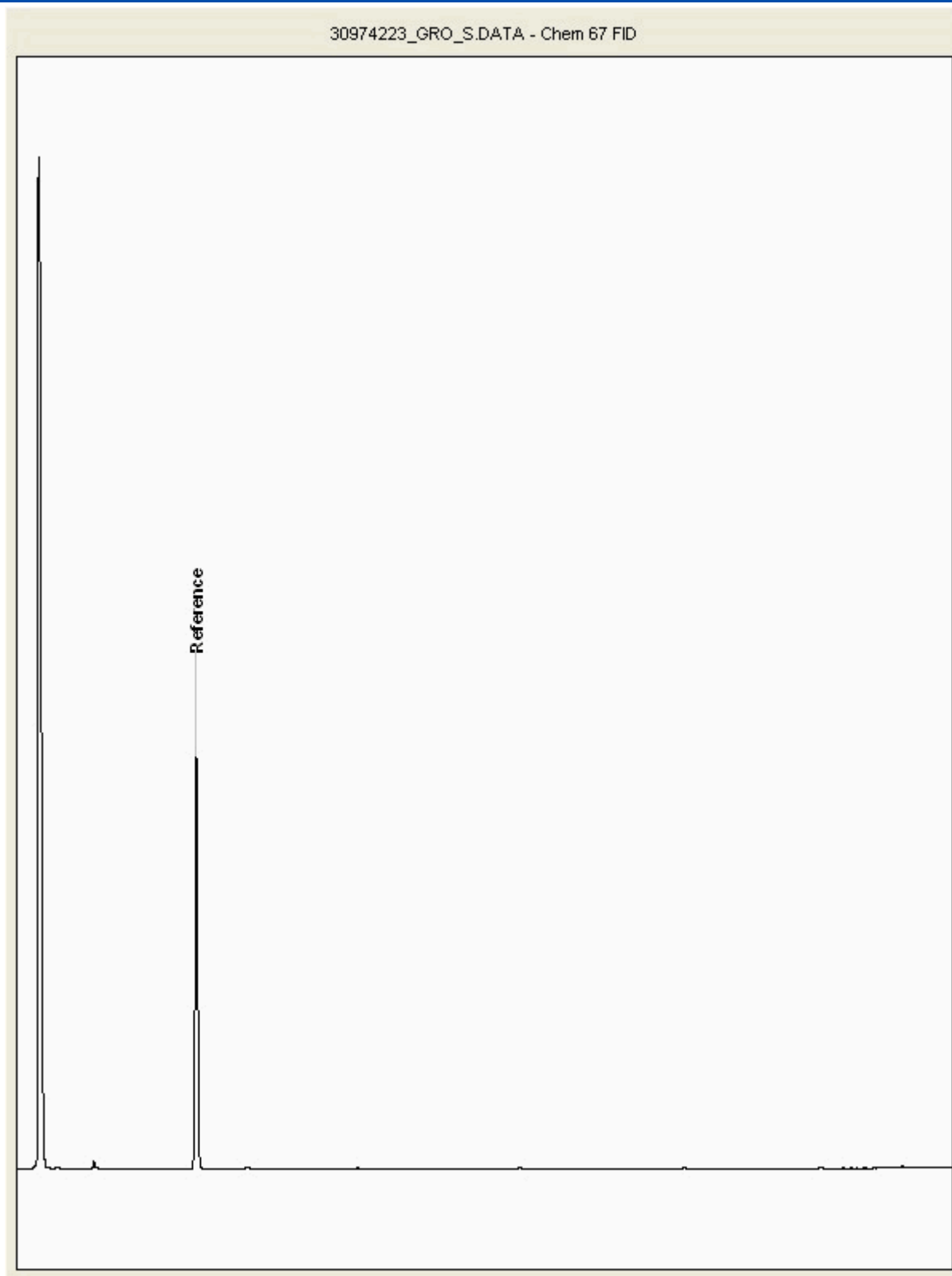
Superseded Report: 753618

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30974223
Sample ID : TP42

Depth : 0.45 - 0.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

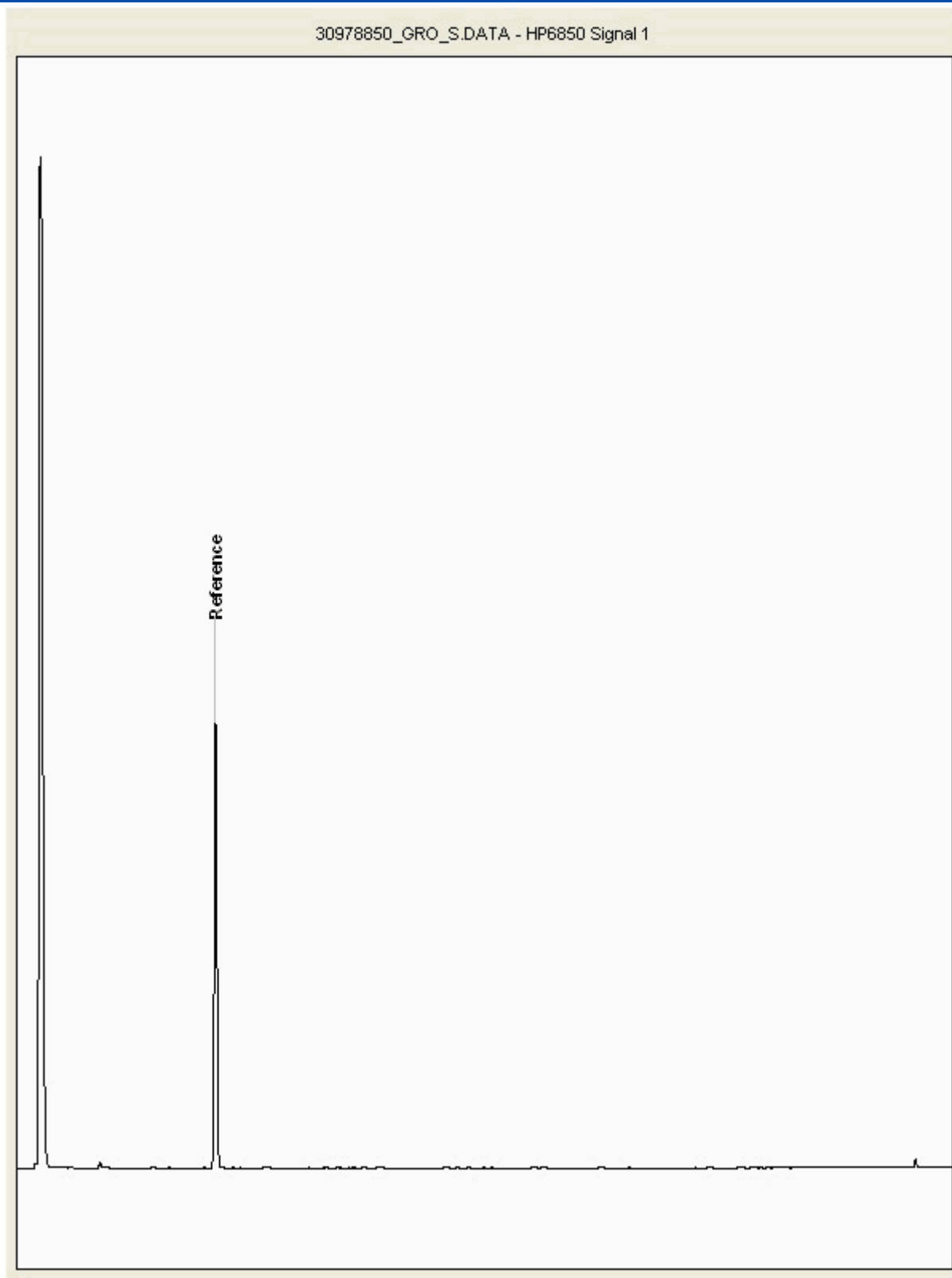
Superseded Report: 753618

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30978850
Sample ID : TP42

Depth : 1.40 - 1.45





CERTIFICATE OF ANALYSIS

Validated

SDG: 250122-51
Client Ref.: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

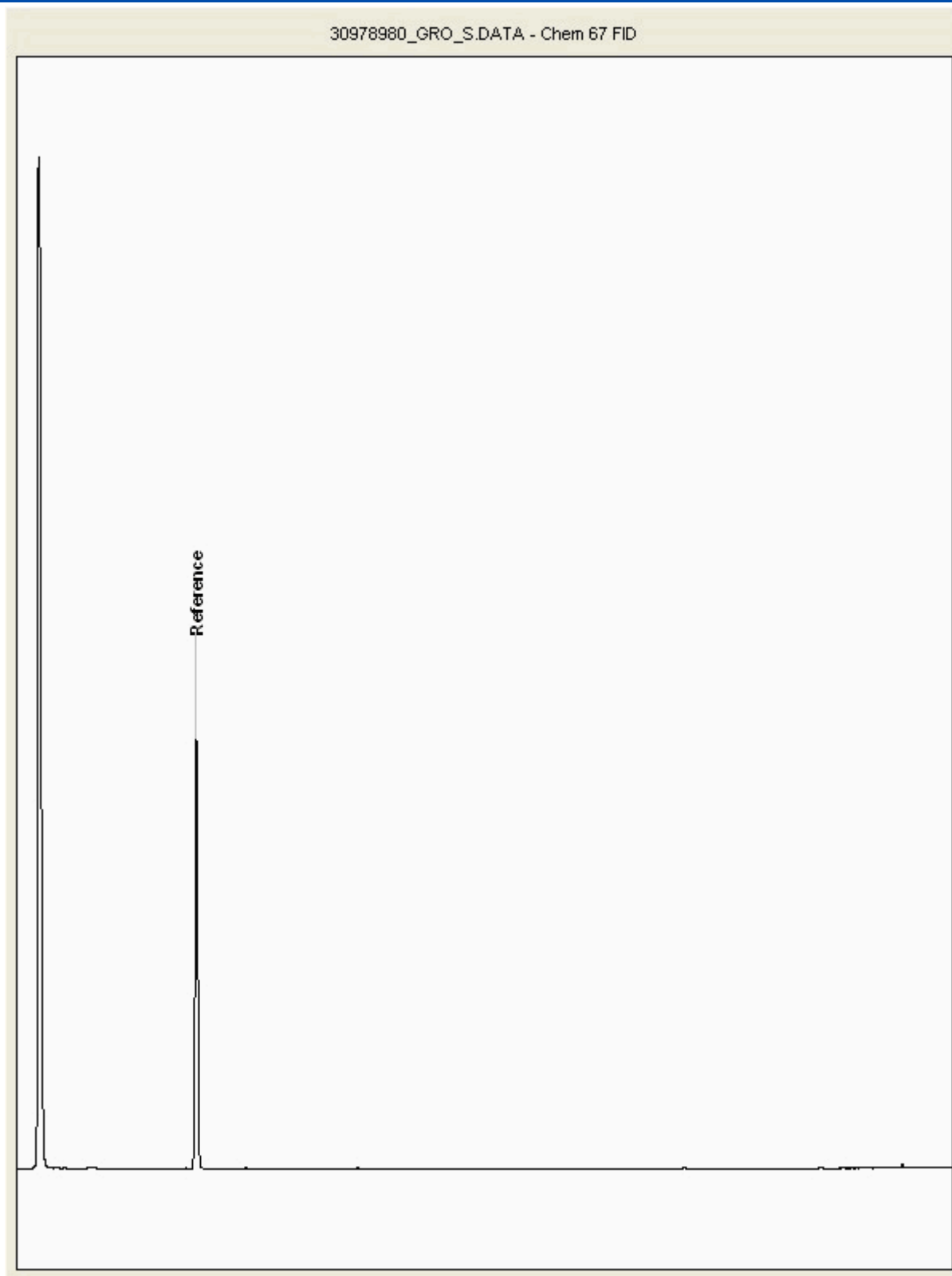
Superseded Report: 753618

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30978980
Sample ID : TP35

Depth : 0.40 - 0.50





CERTIFICATE OF ANALYSIS

SDG: 250122-51
Client Ref: UK0029106.9719

Report Number: 754576
Location: Halewood LUF

Superseded Report: 753618

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur - e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Potentially respirable fibres are identified by using a Phase Contrast Microscope.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

21. 6:2 FTAB

Recovery of 6:2 FTAB in the quality control samples has been observed to be <50% of the target value. Please note the 6:2 FTAB result is supplied as indicative only.



Units 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777

email: hawardencustomerservices@alsglobal.com

Website: www.alsenvironmental.co.uk

WSP UK Limited
8 First Street
Main
Manchester
M15 4RP

Attention: Ellie Hale

CERTIFICATE OF ANALYSIS

Date of report Generation: 10 February 2025
Customer: WSP UK Limited
Sample Delivery Group (SDG): 250124-33
Your Reference: UK0029106.9719
Location: Halewood LUF
Report No: 755654
Order Number: UK0029106.9719 CE3 LC GI

We received 20 samples on Friday January 24, 2025 and 20 of these samples were scheduled for analysis which was completed on Thursday February 06, 2025. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Justin Keeton

Business Unit Leader - Land



1291



CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30985759	TP06	ES	0.80 - 0.90	22/01/2025
30985777	TP08	ES	1.60 - 1.70	23/01/2025
30985767	TP12	ES	0.20 - 0.30	22/01/2025
30985772	TP12	ES	2.90 - 3.00	22/01/2025
30985784	TP15	ES	0.40 - 0.50	23/01/2025
30985795	TP15	ES	1.90 - 2.00	23/01/2025
30985835	TP16	ES	0.70 - 0.80	22/01/2025
30985739	TP18	ES	0.90 - 1.00	22/01/2025
30985746	TP21	ES	0.40 - 0.50	22/01/2025
30985753	TP21	ES	1.40 - 1.50	22/01/2025
30985724	TP23	ES	0.55 - 0.60	22/01/2025
30985730	TP23	ES	2.90 - 3.00	22/01/2025
30985828	TP33	ES	0.30 - 0.40	21/01/2025
30985822	WS01	ES	0.20	22/01/2025
30985812	WS02	ES	0.20	22/01/2025
30985817	WS02	ES	0.60	22/01/2025
30985806	WS03	ES	0.20	22/01/2025
30985801	WS04	ES	0.00 - 0.00	22/01/2025
30985789	WS04	ES	0.20	22/01/2025
30985718	WS05	ES	0.20	22/01/2025

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

Superseded Report:

Results Legend X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
	30985835	TP16	ES	0.70 - 0.80	250g Amber Jar (ALE210)	S
	30985795	TP15	ES	1.90 - 2.00	1kg TUB with Handle (ALE215)	S
	30985784	TP15	ES	0.40 - 0.50	250g Amber Jar (ALE210)	S
	30985772	TP12	ES	2.90 - 3.00	1kg TUB with Handle (ALE210)	S
	30985767	TP12	ES	0.20 - 0.30	250g Amber Jar (ALE210)	S
	30985759	TP06	ES	0.80 - 0.90	250g Amber Jar (ALE210)	S
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 20				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1				
EPH CWG GC (S)	All	NDPs: 0 Tests: 20				
GRO by GC-FID (S)	All	NDPs: 0 Tests: 20				
Metals in solid samples by OES	All	NDPs: 0 Tests: 20				
PAH by GCMS	All	NDPs: 0 Tests: 20				
pH	All	NDPs: 0 Tests: 20				
Sample description	All	NDPs: 0 Tests: 18				
Total Organic Carbon	All	NDPs: 0 Tests: 20				
TPH CWG GC (S)	All	NDPs: 0 Tests: 20				
VOC MS (S)	All	NDPs: 0 Tests: 20				



CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

Superseded Report:

Results Legend X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
	30985718	WS05	ES	0.20	60g VOC (ALE215)	S
	30985789	WS04	ES	0.20	250g Amber Jar (ALE210)	S
	30985801	WS04	ES	0.00 - 0.00	1kg TUB with Handle	S
	30985806	WS03	ES	0.20	250g Amber Jar (ALE210)	S
	30985817	WS02	ES	0.60	1kg TUB with Handle	S
	30985822	WS01	ES	0.20	250g Amber Jar (ALE210)	S
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 20				
EPH CWG GC (S)	All	NDPs: 0 Tests: 20				
GRO by GC-FID (S)	All	NDPs: 0 Tests: 20				
Metals in solid samples by OES	All	NDPs: 0 Tests: 20				
PAH by GCMS	All	NDPs: 0 Tests: 20				
pH	All	NDPs: 0 Tests: 20				
Sample description	All	NDPs: 0 Tests: 18				
Total Organic Carbon	All	NDPs: 0 Tests: 20				
TPH CWG GC (S)	All	NDPs: 0 Tests: 20				
VOC MS (S)	All	NDPs: 0 Tests: 20				



CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30985759	TP06	0.80 - 0.90	Dark Brown	Sandy Clay Loam	Vegetation	Tar
30985777	TP08	1.60 - 1.70	Dark Brown	Sandy Clay	Stones	None
30985767	TP12	0.20 - 0.30	Dark Brown	Sandy Loam	Stones	Vegetation
30985772	TP12	2.90 - 3.00	Dark Brown	Clay	None	None
30985784	TP15	0.40 - 0.50	Dark Brown	Sandy Loam	Vegetation	Brick
30985795	TP15	1.90 - 2.00	Dark Brown	Sandy Clay	Stones	None
30985835	TP16	0.70 - 0.80	Dark Brown	Sandy Clay Loam	Stones	None
30985739	TP18	0.90 - 1.00	Dark Brown	Sandy Clay	Stones	None
30985746	TP21	0.40 - 0.50	Dark Brown	Sandy Clay Loam	None	None
30985753	TP21	1.40 - 1.50	Dark Brown	Sandy Loam	Stones	None
30985724	TP23	0.55 - 0.60	Dark Brown	Sandy Clay Loam	Stones	None
30985730	TP23	2.90 - 3.00	Dark Brown	Sandy Clay	Stones	None
30985828	TP33	0.30 - 0.40	Dark Brown	Sand	Stones	Vegetation
30985822	WS01	0.20	Dark Brown	Sandy Loam	Vegetation	Glass & Stones
30985812	WS02	0.20	Dark Brown	Sandy Clay Loam	Stones	Vegetation
30985817	WS02	0.60	Dark Brown	Sandy Clay	Stones	None
30985806	WS03	0.20	Dark Brown	Sandy Clay Loam	Vegetation	None
30985789	WS04	0.20	Dark Brown	Sandy Clay Loam	Stones	Vegetation
30985801	WS04	0.00 - 0.00	Dark Brown	Sandy Clay	Stones	None
30985718	WS05	0.20	Dark Brown	Sandy Loam	Vegetation	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

Superseded Report:

[illegible]

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

Superseded Report:

[illegible]

SDG: 250124-33

Client Ref.: UK0029106.9719

[illegible]

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

Superseded Report:

[illegible]

SDG: 250124-33

Report Number: 755654

Superseded Report:

Client Ref.: UK0029106.9719

Location: Halewood LUF

PAH by GCMS

[illegible]

SDG: 250124-33

Client Ref.: UK0029106.9719

PAH by GCMS

[illegible]

SDG: 250124-33

Report Number: 755654

Superseded Report:

Client Ref.: UK0029106.9719

Location: Halewood LUF

PAH by GCMS

[illegible]

SDG: 250124-33

Report Number: 755654

Superseded Report:

Client Ref.: UK0029106.9719

Location: Halewood LUF

PAH by GCMS

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719Report Number: 755654
Location: Halewood LUF

Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample Ref.	TP06	TP08	TP12	TP12	TP15	TP15
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.80 - 0.90 Soil/Solid (S) 22/01/2025	1.60 - 1.70 Soil/Solid (S) 23/01/2025	0.20 - 0.30 Soil/Solid (S) 22/01/2025	2.90 - 3.00 Soil/Solid (S) 22/01/2025	0.40 - 0.50 Soil/Solid (S) 23/01/2025	1.90 - 2.00 Soil/Solid (S) 23/01/2025
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		24/01/2025 250124-33 30985759 ES	24/01/2025 250124-33 30985777 ES	24/01/2025 250124-33 30985767 ES	24/01/2025 250124-33 30985772 ES	24/01/2025 250124-33 30985784 ES	24/01/2025 250124-33 30985795 ES
***	6:2 FTAB (see appendix)							
1-4*5@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	82.2	101	83.1	103	91	103
Aliphatics >C5-C6 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aliphatics >C16-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	1.74	<1	9.79	<1	1.14	1.19
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	1.68 #	<1 #	9.21 #	<1 #	1.14 #	1.19 #
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5	<5	10.4	<5	<5	<5
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10 mg/kg	TM414	84.4	<10	194	<10	<10	<10
Aromatics >EC5-EC7 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #	2.51 #	<1 #	<1 #	<1 #
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1 mg/kg	TM414	3.43 #	<1 #	46.6 #	<1 #	1.55 #	<1 #
Aromatics > EC16-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	53.7	1.09	166	<1	6.16	1.14
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	50.2 #	<1 #	119 #	<1 #	4.61 #	<1 #
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	30.7	<1	15.4	<1	<1	<1
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	10.3	<1	2.6	<1	<1	<1
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5 mg/kg	TM414	84.4	<5	184	<5	7.16	<5
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10 mg/kg	TM414	84.4	<10	194	<10	<10	<10
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
GRO >C5-C10 (HS_1D_TOTAL)	<0.02 mg/kg	TM089	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02



CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample Ref.	TP16	TP18	TP21	TP21	TP23	TP23
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.70 - 0.80 Soil/Solid (S) 22/01/2025	0.90 - 1.00 Soil/Solid (S) 22/01/2025	0.40 - 0.50 Soil/Solid (S) 22/01/2025	1.40 - 1.50 Soil/Solid (S) 22/01/2025	0.55 - 0.60 Soil/Solid (S) 22/01/2025	2.90 - 3.00 Soil/Solid (S) 22/01/2025
M	mCERTS accredited.							
aq	Aqueous / filtered sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		24/01/2025 250124-33 30985835 ES	24/01/2025 250124-33 30985739 ES	24/01/2025 250124-33 30985746 ES	24/01/2025 250124-33 30985753 ES	24/01/2025 250124-33 30985724 ES	24/01/2025 250124-33 30985730 ES
***	6:2 FTAB (see appendix)							
1-4*5@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	99.9	99.6	92.8	103	98.4	97.6
Aliphatics >C5-C6 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aliphatics >C16-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	1.13	2.26	<1	<1
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #	1.13 #	2.26 #	<1 #	<1 #
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5	<5	<5	<5	<5	<5
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10 mg/kg	TM414	<10	<10	<10	<10	<10	<10
Aromatics >EC5-EC7 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aromatics > EC16-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	1.8	3.91	1.63	<1
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #	1.47 #	3.38 #	1.39 #	<1 #
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5	<5	<5	<5	<5	<5
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10 mg/kg	TM414	<10	<10	<10	<10	<10	<10
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
GRO >C5-C10 (HS_1D_TOTAL)	<0.02 mg/kg	TM089	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02



CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719Report Number: 755654
Location: Halewood LUF

Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample Ref.	TP33	WS01	WS02	WS02	WS03	WS04
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.30 - 0.40	0.20	0.20	0.60	0.20	0.00 - 0.00
M	mCERTS accredited.		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
aq	Aqueous / settled sample.		21/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		24/01/2025	24/01/2025	24/01/2025	24/01/2025	24/01/2025	24/01/2025
***	6:2 FTAB (see appendix)		250124-33	250124-33	250124-33	250124-33	250124-33	250124-33
1-4*5@	Sample deviation (see appendix)		30985828	30985822	30985812	30985817	30985806	30985801
			ES	ES	ES	ES	ES	ES
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	84.6	127	86.5	103	97.8	104
Aliphatics >C5-C6 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1 mg/kg	TM414	1.01	<1	<1	<1	<1	<1
Aliphatics >C16-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	5.53	1.04	7.31	<1	<1	<1
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	4.52	1.04	7.31	<1	<1	<1
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5 mg/kg	TM414	6.12	<5	7.86	<5	<5	<5
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10 mg/kg	TM414	19.3	<10	18.6	<10	<10	<10
Aromatics >EC5-EC7 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1 mg/kg	TM414	1.17	<1	<1	<1	<1	<1
Aromatics > EC16-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	11.8	1.71	9.07	<1	1.9	1.82
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	10.6	1.61	8.54	<1	1.66	1.63
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	1.1	<1	1.63	<1	<1	<1
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5 mg/kg	TM414	13.2	<5	10.7	<5	<5	<5
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10 mg/kg	TM414	19.3	<10	18.6	<10	<10	<10
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
GRO >C5-C10 (HS_1D_TOTAL)	<0.02 mg/kg	TM089	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02



CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719Report Number: 755654
Location: Halewood LUF

Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample Ref.	WS04	WS05			
# ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.20	0.20			
M mCERTS accredited.			Soil/Solid (S)	Soil/Solid (S)			
aq Aqueous / settled sample.			22/01/2025	22/01/2025			
diss.filt Dissolved / filtered sample.			24/01/2025	24/01/2025			
tot.unfilt Total / unfiltered sample.			250124-33	250124-33			
* Subcontracted - refer to subcontractor report for accreditation status.			30985789	30985718			
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery			ES	ES			
*** 6:2 FTAB (see appendix)							
1-4*5@ Sample deviation (see appendix)							
Component	LOD/Units	Method					
GRO Surrogate % recovery**	%	TM089	101	89.8			
Aliphatics >C5-C6 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01			
Aliphatics >C6-C8 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01			
Aliphatics >C8-C10 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01			
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #			
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #			
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #			
Aliphatics >C16-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	8.05			
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	8.05 #			
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1			
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5	8.33			
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10 mg/kg	TM414	<10	18.5			
Aromatics >EC5-EC7 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01			
Aromatics >EC7-EC8 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01			
Aromatics >EC8-EC10 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01			
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #			
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #			
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #			
Aromatics > EC16-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	1.24	8.96			
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	1.03 #	8.54 #			
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1			
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1			
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5	10.1			
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10 mg/kg	TM414	<10	18.5			
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05			
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05			
GRO >C5-C10 (HS_1D_TOTAL)	<0.02 mg/kg	TM089	<0.02	<0.02			

SDG: 250124-33

Report Number: 755654

Superseded Report:

Client Ref.: UK0029106.9719

Location: Halewood LUF

VOC MS (S)

[illegible]

SDG: 250124-33

Report Number: 755654

Superseded Report:

Client Ref.: UK0029106.9719

Location: Halewood LUF

VOC MS (S)

[illegible]

SDG: 250124-33

Report Number: 755654

Superseded Report:

Client Ref.: UK0029106.9719

Location: Halewood LUF

VOC MS (S)

[illegible]

SDG: 250124-33

Report Number: 755654

Superseded Report:

Client Ref.: UK0029106.9719

Location: Halewood LUF

VOC MS (S)

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
#	ISO17025 accredited.										
M	mCERTS accredited.										
*	Subcontracted test.										
1-5$ Sample deviation (see appendix)											
Cust. Sample Ref.	TP06ES	29/01/2025	Alex Horner	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Depth (m)	0.80 - 0.90										
Sample Type	SOLID										
Date Sampled	22/01/2025 00:00:00										
Date Received	24/01/2025 09:00:00										
SDG	250124-33										
Original Sample	30985759										
Method Number	TM048										
Cust. Sample Ref.	TP08ES	29/01/2025	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Depth (m)	1.60 - 1.70										
Sample Type	SOLID										
Date Sampled	23/01/2025 00:00:00										
Date Received	24/01/2025 09:00:00										
SDG	250124-33										
Original Sample	30985777										
Method Number	TM048										
Cust. Sample Ref.	TP12ES	29/01/2025	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Depth (m)	0.20 - 0.30										
Sample Type	SOLID										
Date Sampled	22/01/2025 00:00:00										
Date Received	24/01/2025 09:00:00										
SDG	250124-33										
Original Sample	30985767										
Method Number	TM048										
Cust. Sample Ref.	TP12ES	29/01/2025	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Depth (m)	2.90 - 3.00										
Sample Type	SOLID										
Date Sampled	22/01/2025 00:00:00										
Date Received	24/01/2025 09:00:00										
SDG	250124-33										
Original Sample	30985772										
Method Number	TM048										
Cust. Sample Ref.	TP15ES	29/01/2025	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Depth (m)	0.40 - 0.50										
Sample Type	SOLID										
Date Sampled	23/01/2025 00:00:00										
Date Received	24/01/2025 09:00:00										
SDG	250124-33										
Original Sample	30985784										
Method Number	TM048										
Cust. Sample Ref.	TP15ES	29/01/2025	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Depth (m)	1.90 - 2.00										
Sample Type	SOLID										
Date Sampled	23/01/2025 00:00:00										
Date Received	24/01/2025 09:00:00										
SDG	250124-33										
Original Sample	30985795										
Method Number	TM048										
Cust. Sample Ref.	TP16ES	29/01/2025	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Depth (m)	0.70 - 0.80										
Sample Type	SOLID										
Date Sampled	22/01/2025 00:00:00										
Date Received	24/01/2025 09:00:00										
SDG	250124-33										
Original Sample	30985835										
Method Number	TM048										
Cust. Sample Ref.	TP18ES	29/01/2025	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Depth (m)	0.90 - 1.00										
Sample Type	SOLID										
Date Sampled	22/01/2025 00:00:00										
Date Received	24/01/2025 09:00:00										
SDG	250124-33										
Original Sample	30985739										
Method Number	TM048										



CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

Superseded Report:

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP21ES 0.40 - 0.50 SOLID 22/01/2025 00:00:00 24/01/2025 09:00:00 250124-33 30985746 TM048	29/01/2025	Alex Horner	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP21ES 1.40 - 1.50 SOLID 22/01/2025 00:00:00 24/01/2025 09:00:00 250124-33 30985753 TM048	29/01/2025	Alex Horner	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP23ES 0.55 - 0.60 SOLID 22/01/2025 00:00:00 24/01/2025 09:00:00 250124-33 30985724 TM048	30/01/2025	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP23ES 2.90 - 3.00 SOLID 22/01/2025 00:00:00 24/01/2025 09:00:00 250124-33 30985730 TM048	29/01/2025	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP33ES 0.30 - 0.40 SOLID 21/01/2025 00:00:00 24/01/2025 09:00:00 250124-33 30985828 TM048	29/01/2025	Alex Horner	Loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS01ES 0.20 SOLID 22/01/2025 00:00:00 24/01/2025 09:00:00 250124-33 30985822 TM048	29/01/2025	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS02ES 0.20 SOLID 22/01/2025 00:00:00 24/01/2025 09:00:00 250124-33 30985812 TM048	29/01/2025	Alex Horner	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS02ES 0.60 SOLID 22/01/2025 00:00:00 24/01/2025 09:00:00 250124-33 30985817 TM048	29/01/2025	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

Superseded Report:

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS03ES 0.20 SOLID 22/01/2025 00:00:00 24/01/2025 09:00:00 250124-33 30985806 TM048	29/01/2025	Alex Horner	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS04ES 0.00 - 0.00 SOLID 22/01/2025 00:00:00 24/01/2025 09:00:00 250124-33 30985801 TM048	29/01/2025	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS04ES 0.20 SOLID 22/01/2025 00:00:00 24/01/2025 09:00:00 250124-33 30985789 TM048	29/01/2025	Alex Horner	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS05ES 0.20 SOLID 22/01/2025 00:00:00 24/01/2025 09:00:00 250124-33 30985718 TM048	29/01/2025	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

Superseded Report:

Asbestos Quantification - Full

Results Legend		Additional Asbestos Components (Not detected through Identification method TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
#						
M	ISO17025 accredited.					
*	mCERTS accredited.					
	Subcontracted test.					
1-5&#\$@ Sample deviation (see appendix)						
Cust. Sample Ref.	TP33ES	Chrysotile (#)	Soil contains material typical of asbestos bitumen.	0.0027 (#)	<0.001 (#)	0.0036 (#)
Depth (m)	0.30 - 0.40					
Sample Type	SOLID					
Sample Date	21/01/2025 00:00:00					
Sample Date Received	24/01/2025 09:00:00					
SDG	250124-33					
Original Sample Number	30985828					
Method Number	TM304					



CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

Superseded Report:

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM304	Asbestos Quantification in Soil: Fibres identified by morphology only
TM048	Identification of Asbestos in Bulk Material
TM218	The determination of PAH in soil samples by GC-MS
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

Superseded Report:

Test Completion Dates

Lab Sample No(s)	30985759	30985777	30985767	30985772		30985784	30985795	30985835	30985739	30985746
Customer Sample Ref.	TP06	TP08	TP12	TP12		TP15	TP15	TP16	TP18	TP21
AGS Ref.	ES	ES	ES	ES		ES	ES	ES	ES	ES
Depth	0.80 - 0.90	1.60 - 1.70	0.20 - 0.30	2.90 - 3.00		0.40 - 0.50	1.90 - 2.00	0.70 - 0.80	0.90 - 1.00	0.40 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Asbestos ID in Solid Samples	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025		29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	30-Jan-2025
EPH CWG GC (S)	29-Jan-2025	29-Jan-2025	29-Jan-2025	28-Jan-2025		29-Jan-2025	29-Jan-2025	28-Jan-2025	29-Jan-2025	28-Jan-2025
GRO by GC-FID (S)	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025		28-Jan-2025	30-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025
Metals in solid samples by OES	30-Jan-2025	31-Jan-2025	30-Jan-2025	31-Jan-2025	30-Jan-2025		30-Jan-2025	30-Jan-2025	30-Jan-2025	30-Jan-2025
PAH by GCMS	30-Jan-2025	30-Jan-2025	29-Jan-2025	30-Jan-2025		30-Jan-2025	30-Jan-2025	28-Jan-2025	30-Jan-2025	30-Jan-2025
pH	30-Jan-2025	30-Jan-2025	30-Jan-2025	31-Jan-2025		30-Jan-2025	30-Jan-2025	31-Jan-2025	30-Jan-2025	31-Jan-2025
Sample description	27-Jan-2025	27-Jan-2025	27-Jan-2025	25-Jan-2025		27-Jan-2025	27-Jan-2025	25-Jan-2025	27-Jan-2025	25-Jan-2025
Total Organic Carbon	29-Jan-2025	29-Jan-2025	29-Jan-2025	31-Jan-2025	31-Jan-2025		29-Jan-2025	31-Jan-2025	31-Jan-2025	29-Jan-2025
TPH CWG GC (S)	29-Jan-2025	29-Jan-2025	29-Jan-2025	28-Jan-2025		29-Jan-2025	30-Jan-2025	28-Jan-2025	29-Jan-2025	28-Jan-2025
VOC MS (S)	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025		28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	27-Jan-2025

Lab Sample No(s)	30985753	30985724	30985730	30985828	30985822	30985812	30985817	30985806	30985789	30985801
Customer Sample Ref.	TP21	TP23	TP23	TP33	WS01	WS02	WS02	WS03	WS04	WS04
AGS Ref.	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
Depth	1.40 - 1.50	0.55 - 0.60	2.90 - 3.00	0.30 - 0.40	0.20	0.20	0.60	0.20	0.20	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Asbestos ID in Solid Samples	30-Jan-2025	30-Jan-2025	29-Jan-2025	30-Jan-2025	29-Jan-2025	30-Jan-2025	29-Jan-2025	29-Jan-2025	30-Jan-2025	29-Jan-2025
Asbestos Quantification - Full				06-Feb-2025						
EPH CWG GC (S)	29-Jan-2025	29-Jan-2025	29-Jan-2025	28-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025
GRO by GC-FID (S)	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	29-Jan-2025	28-Jan-2025
Metals in solid samples by OES	30-Jan-2025	30-Jan-2025	30-Jan-2025	30-Jan-2025	30-Jan-2025	30-Jan-2025	30-Jan-2025	30-Jan-2025	31-Jan-2025	30-Jan-2025
PAH by GCMS	30-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	30-Jan-2025	29-Jan-2025	30-Jan-2025	30-Jan-2025	30-Jan-2025
pH	30-Jan-2025	30-Jan-2025	30-Jan-2025	31-Jan-2025	30-Jan-2025	30-Jan-2025	30-Jan-2025	31-Jan-2025	30-Jan-2025	30-Jan-2025
Sample description	27-Jan-2025	27-Jan-2025	27-Jan-2025	25-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025
Total Organic Carbon	29-Jan-2025	31-Jan-2025	31-Jan-2025	31-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	31-Jan-2025	31-Jan-2025
TPH CWG GC (S)	29-Jan-2025	29-Jan-2025	29-Jan-2025	28-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025
VOC MS (S)	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025

Lab Sample No(s)	30985718
Customer Sample Ref.	WS05
AGS Ref.	ES
Depth	0.20
Type	Soil/Solid (S)
Asbestos ID in Solid Samples	29-Jan-2025
EPH CWG GC (S)	29-Jan-2025
GRO by GC-FID (S)	28-Jan-2025
Metals in solid samples by OES	30-Jan-2025
PAH by GCMS	30-Jan-2025
pH	31-Jan-2025
Sample description	27-Jan-2025
Total Organic Carbon	29-Jan-2025
TPH CWG GC (S)	29-Jan-2025
VOC MS (S)	28-Jan-2025



CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

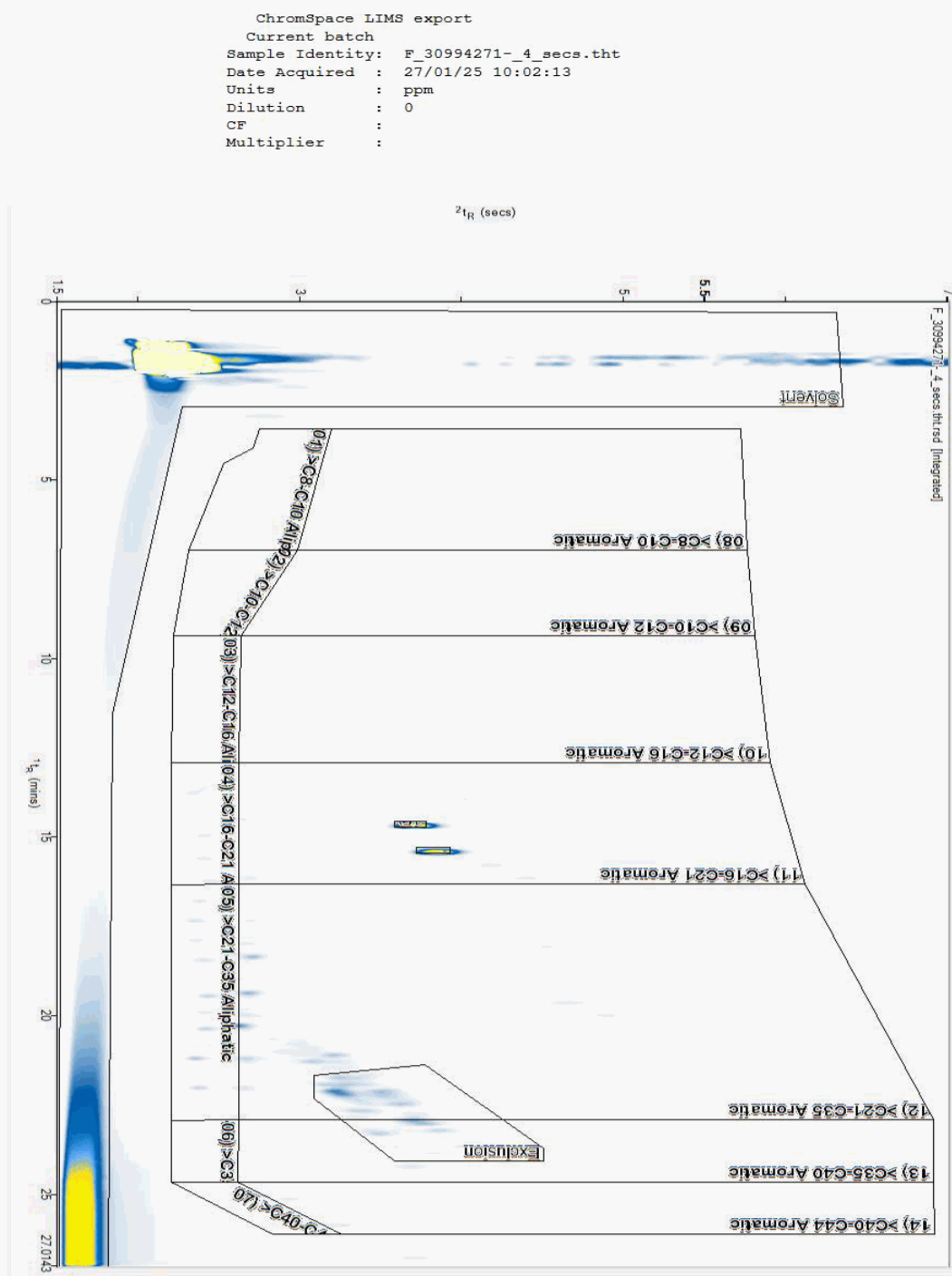
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994271
Sample ID : TP33

Depth : 0.30 - 0.40





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

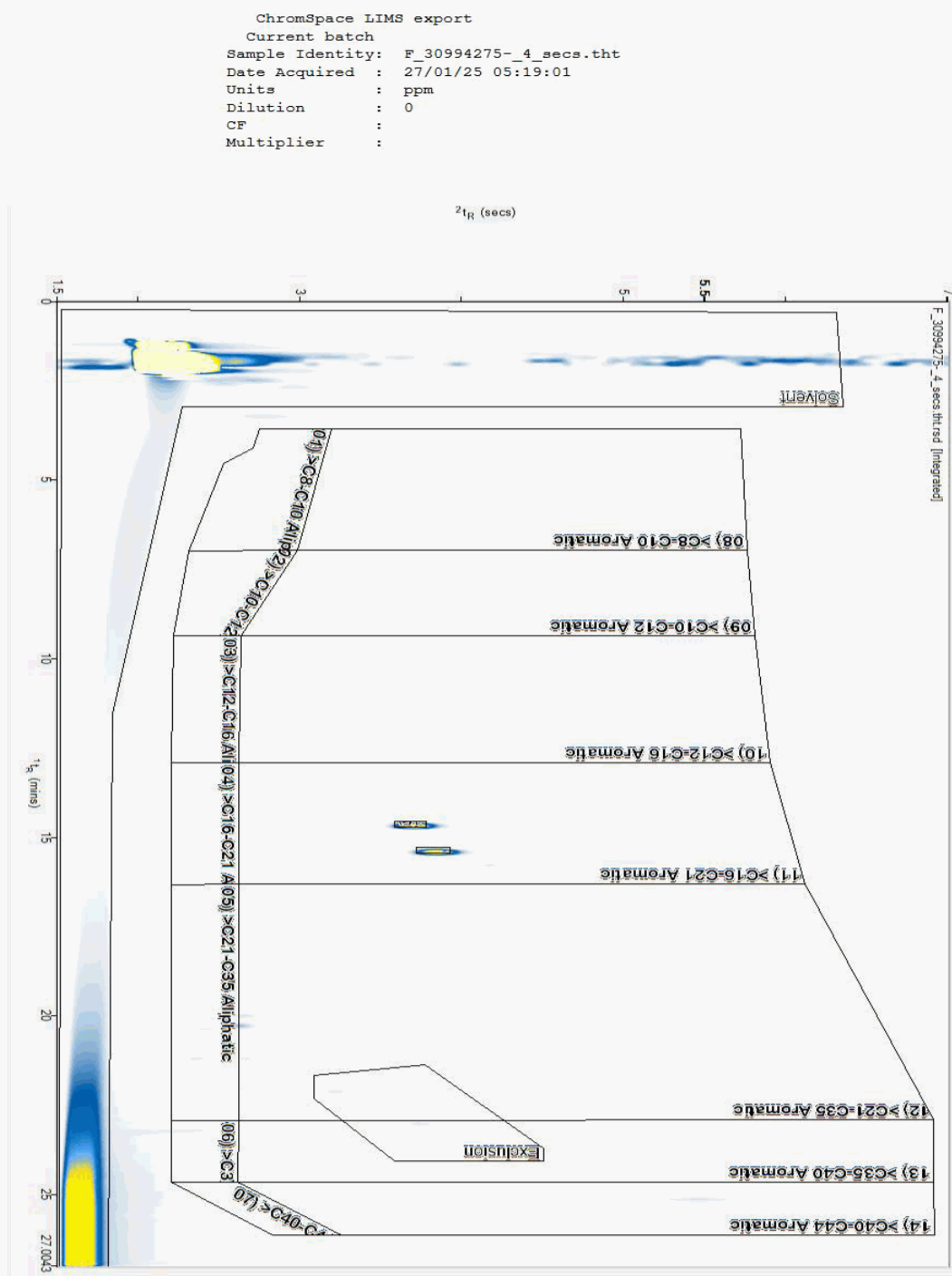
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994275
Sample ID : TP21

Depth : 0.40 - 0.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

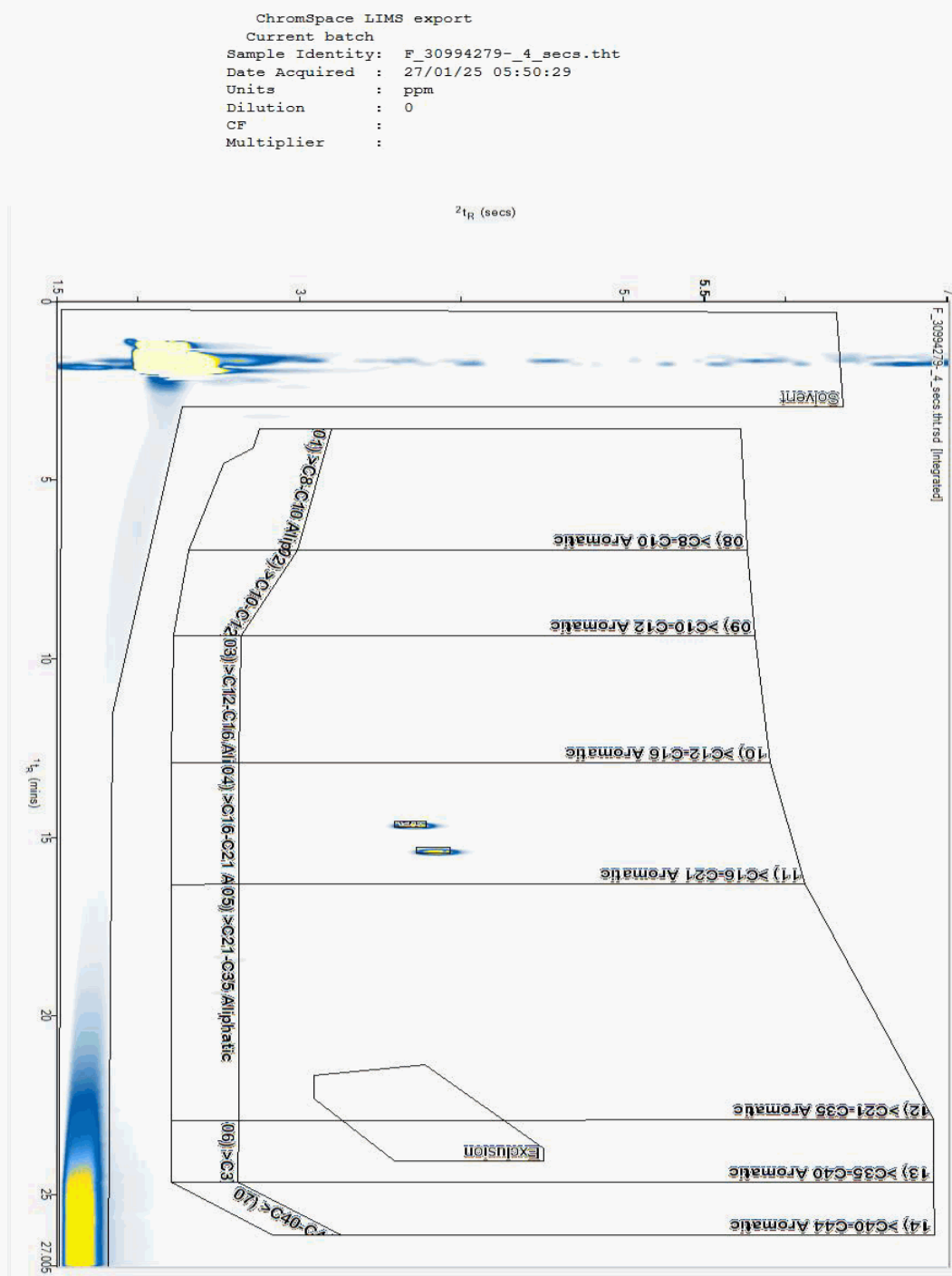
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994279
Sample ID : TP12

Depth : 2.90 - 3.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

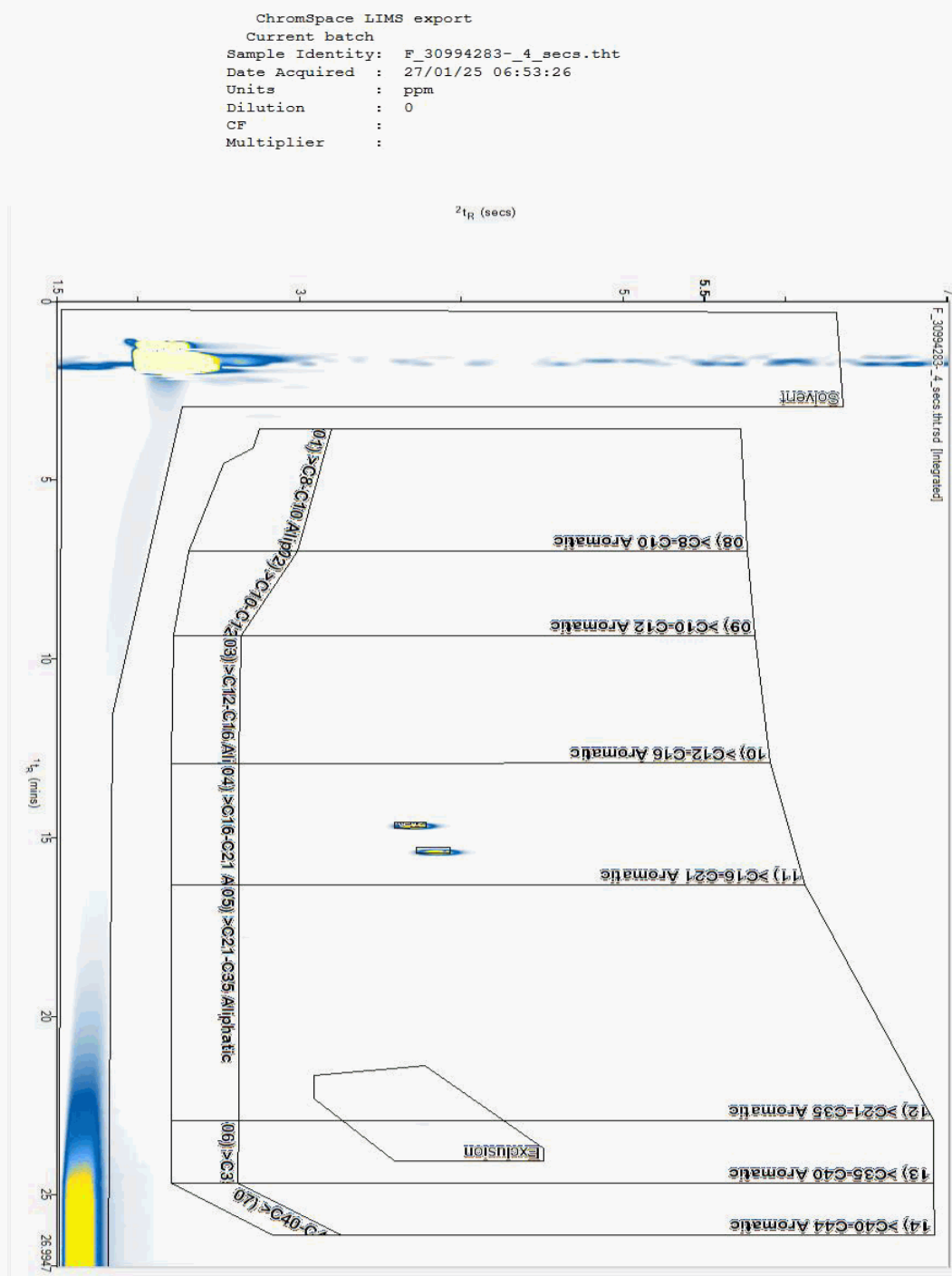
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994283
Sample ID : TP16

Depth : 0.70 - 0.80





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

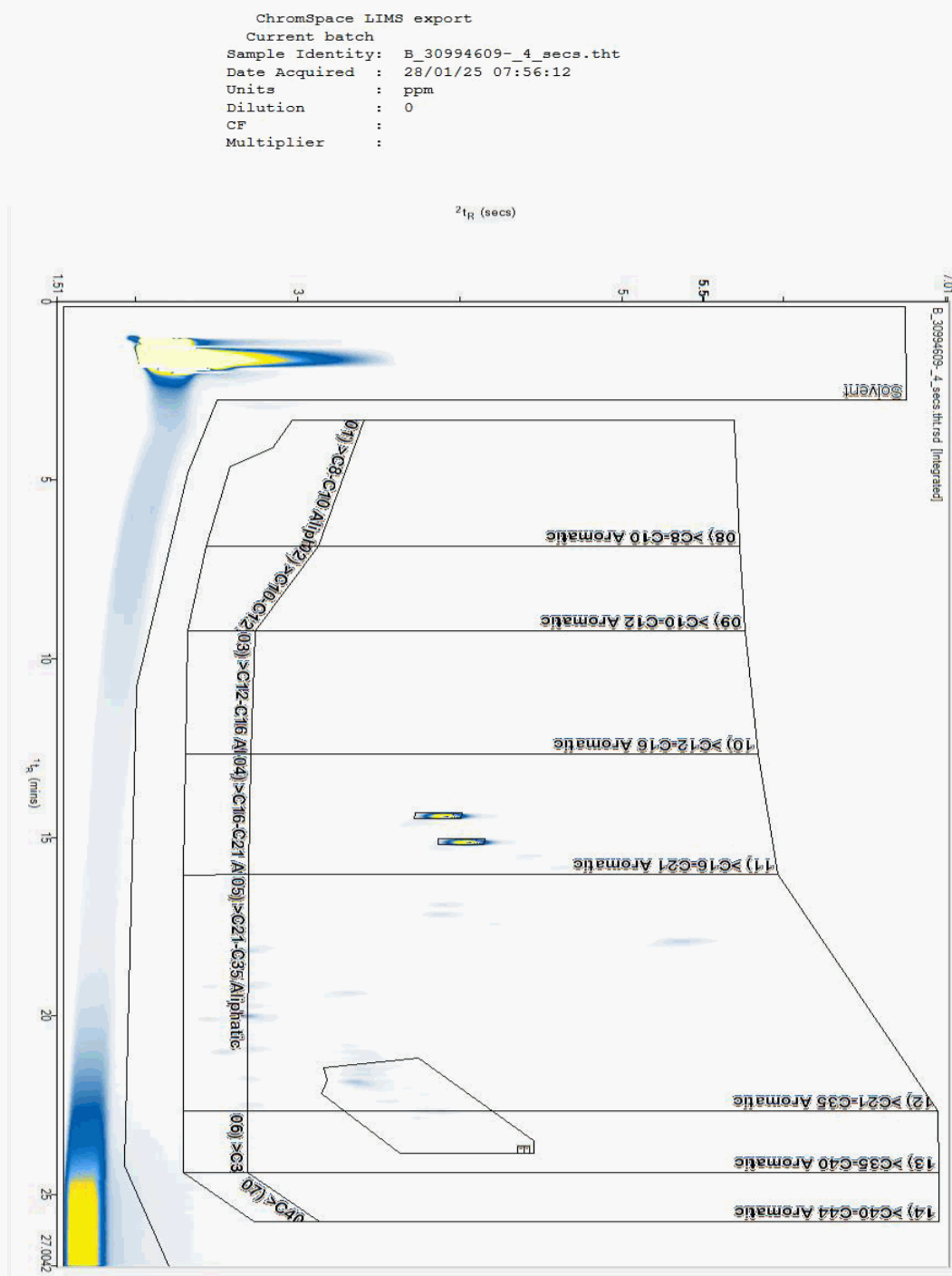
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994609
Sample ID : TP21

Depth : 1.40 - 1.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

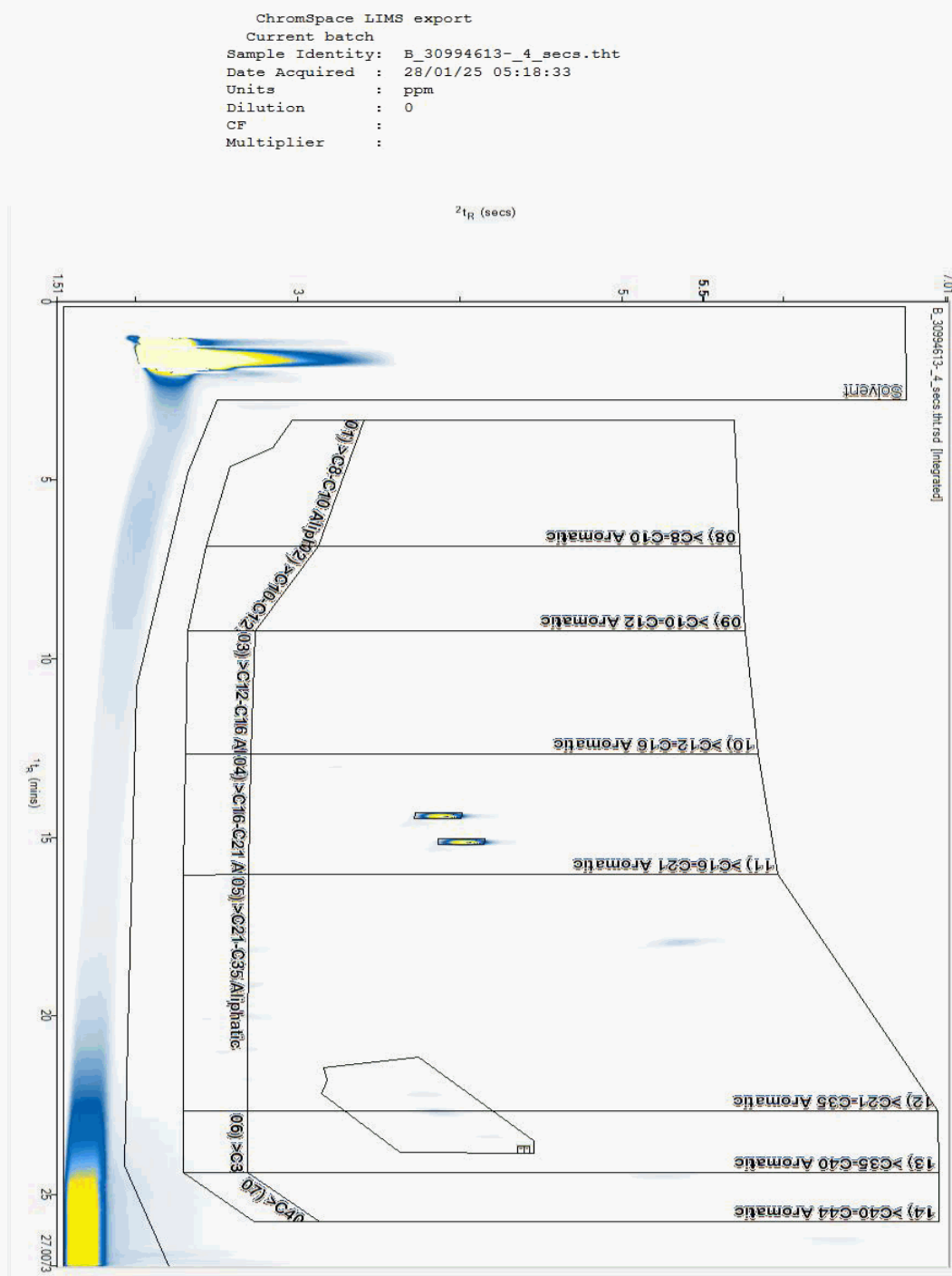
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994613
Sample ID : TP23

Depth : 0.55 - 0.60





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

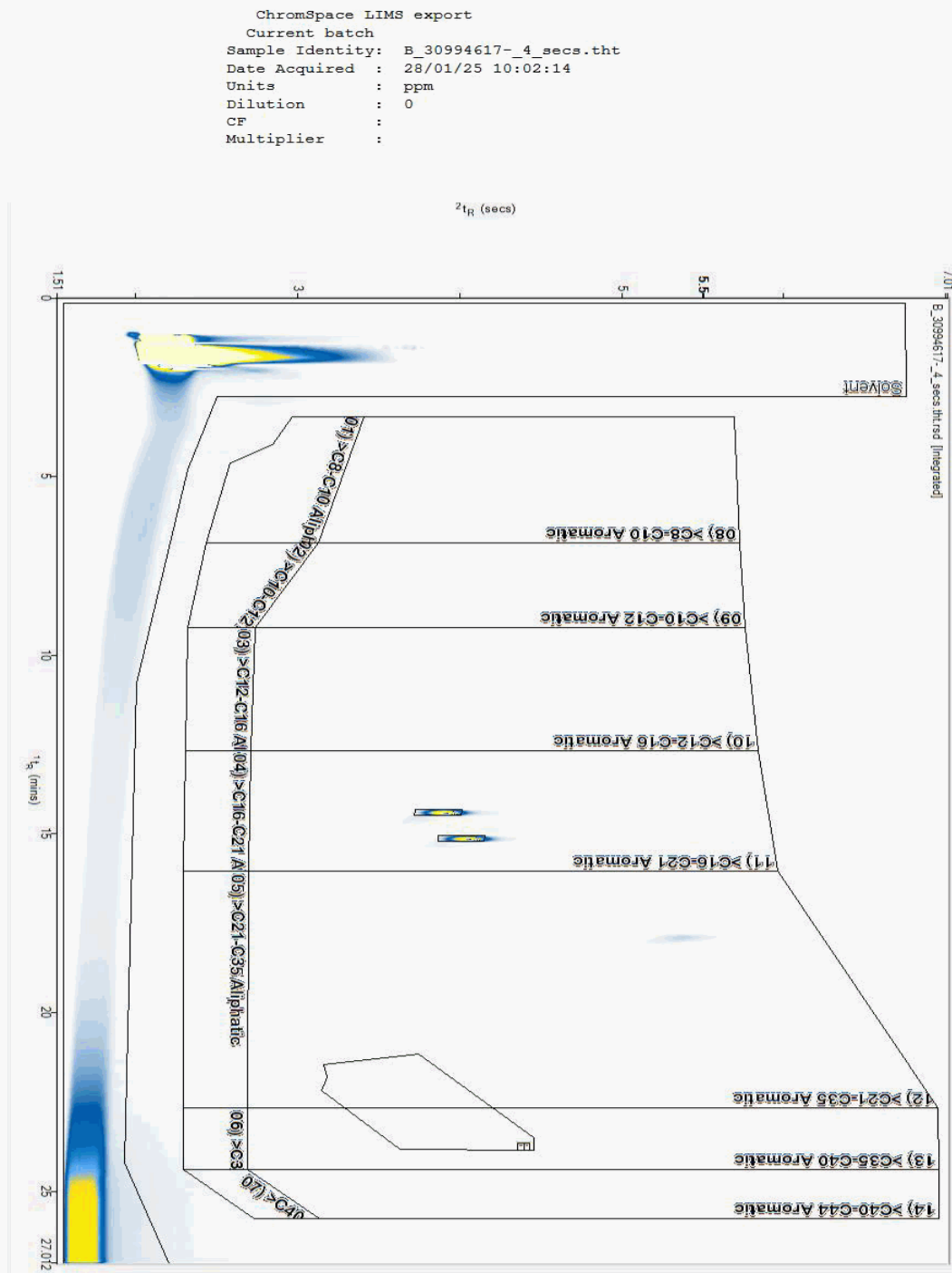
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994617
Sample ID : TP18

Depth : 0.90 - 1.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

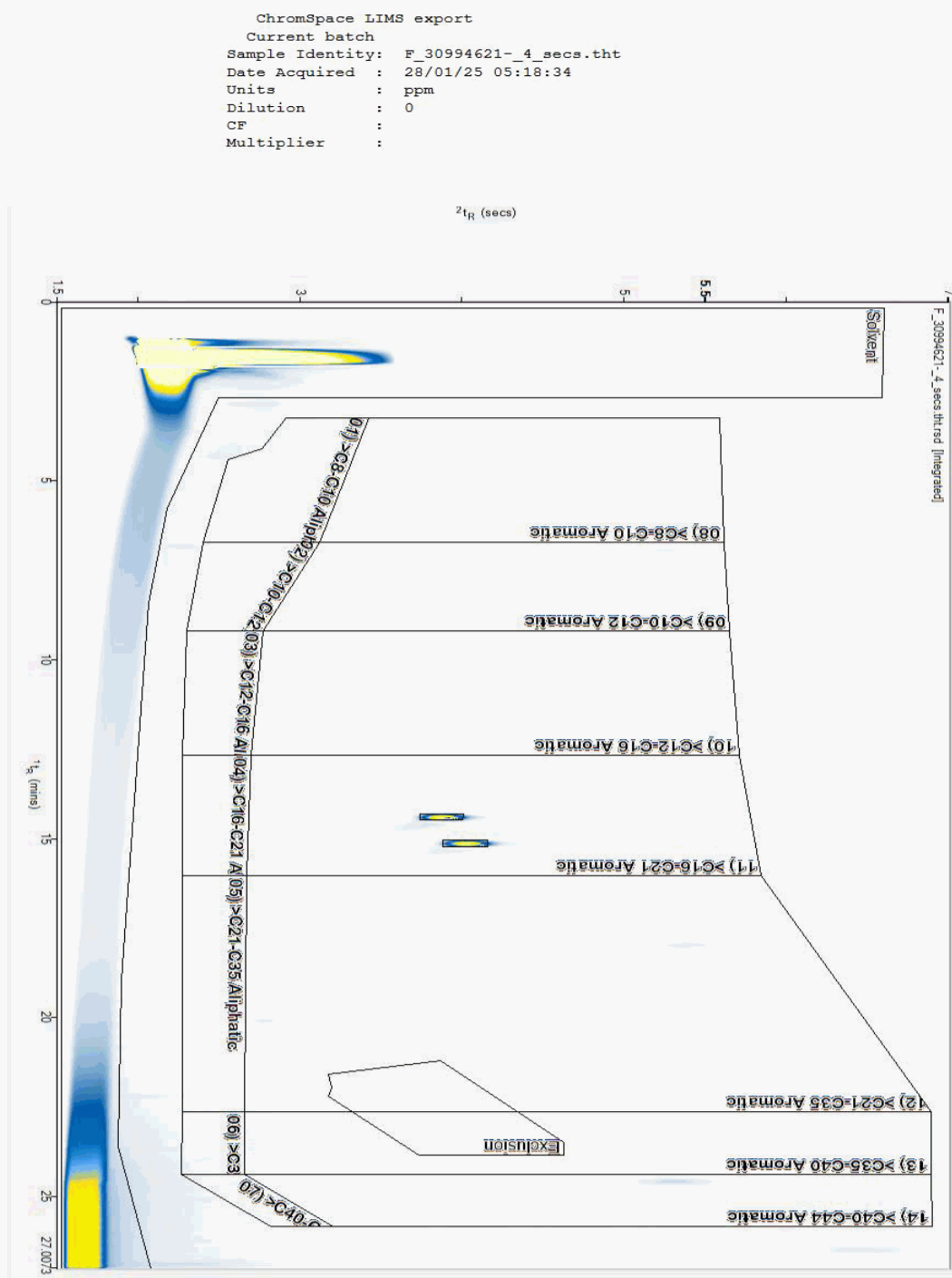
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994621
Sample ID : TP23

Depth : 2.90 - 3.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

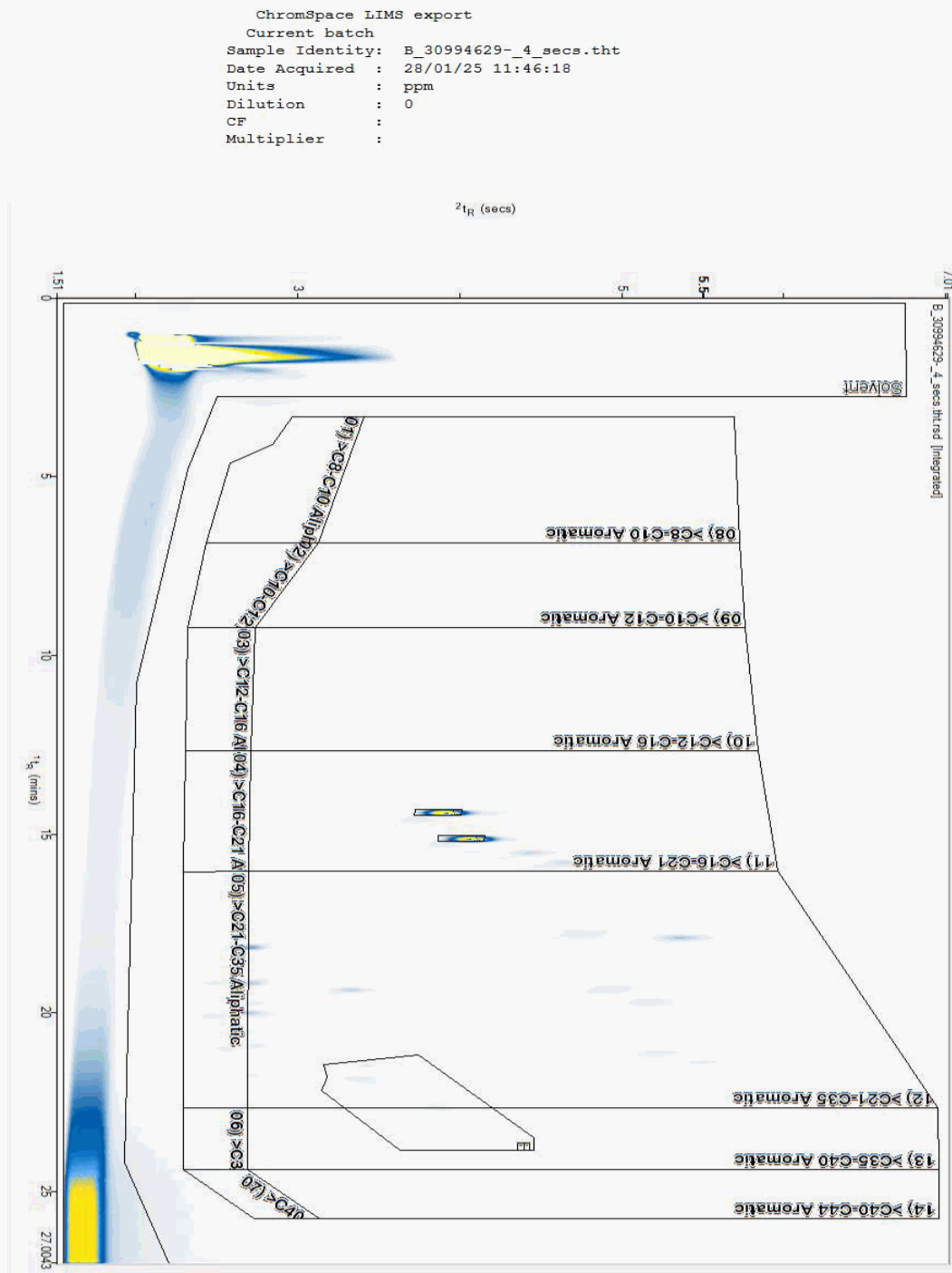
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994629
Sample ID : TP15

Depth : 0.40 - 0.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

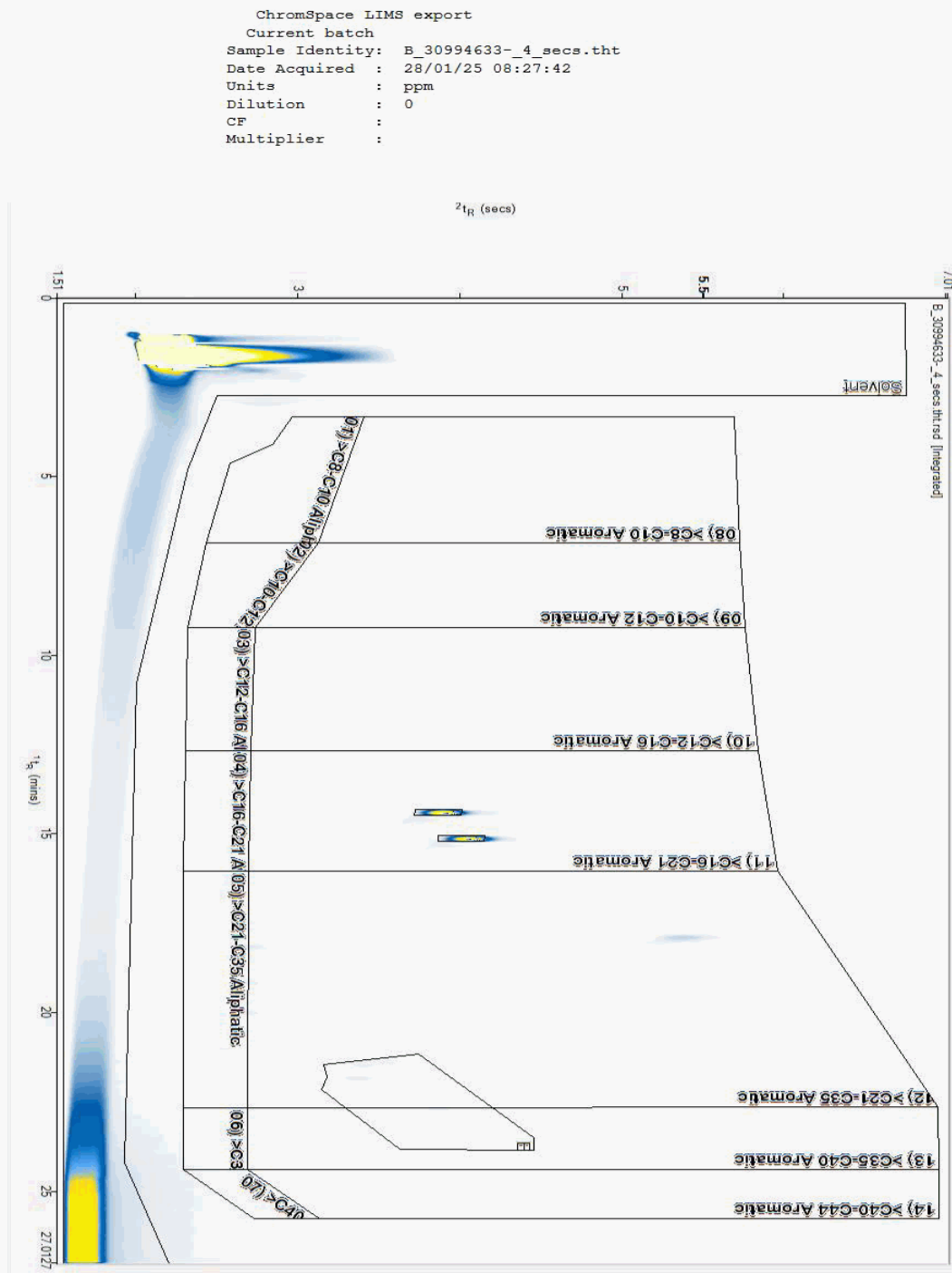
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994633
Sample ID : WS04

Depth : 0.20





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

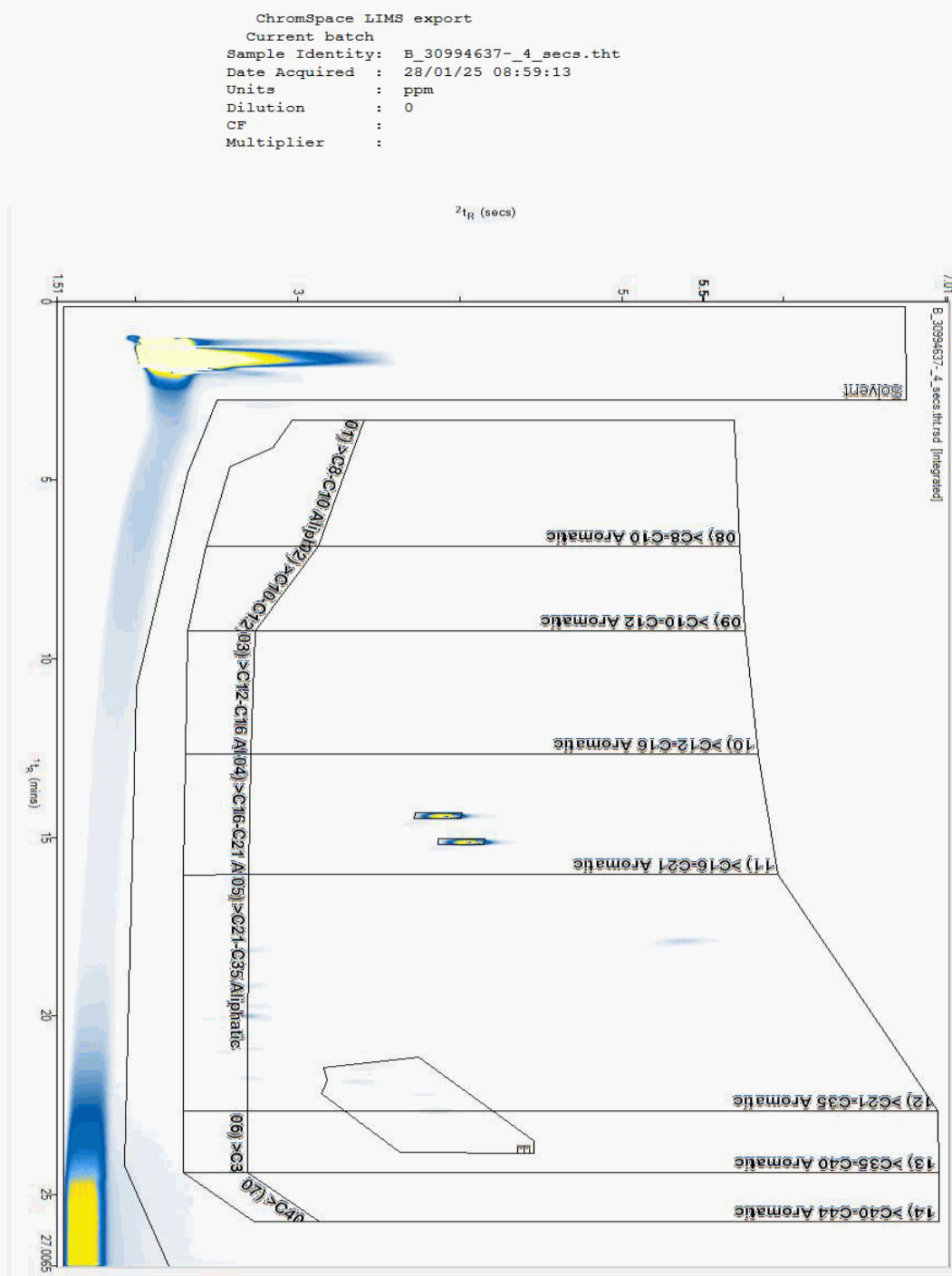
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994637
Sample ID : WS01

Depth : 0.20





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

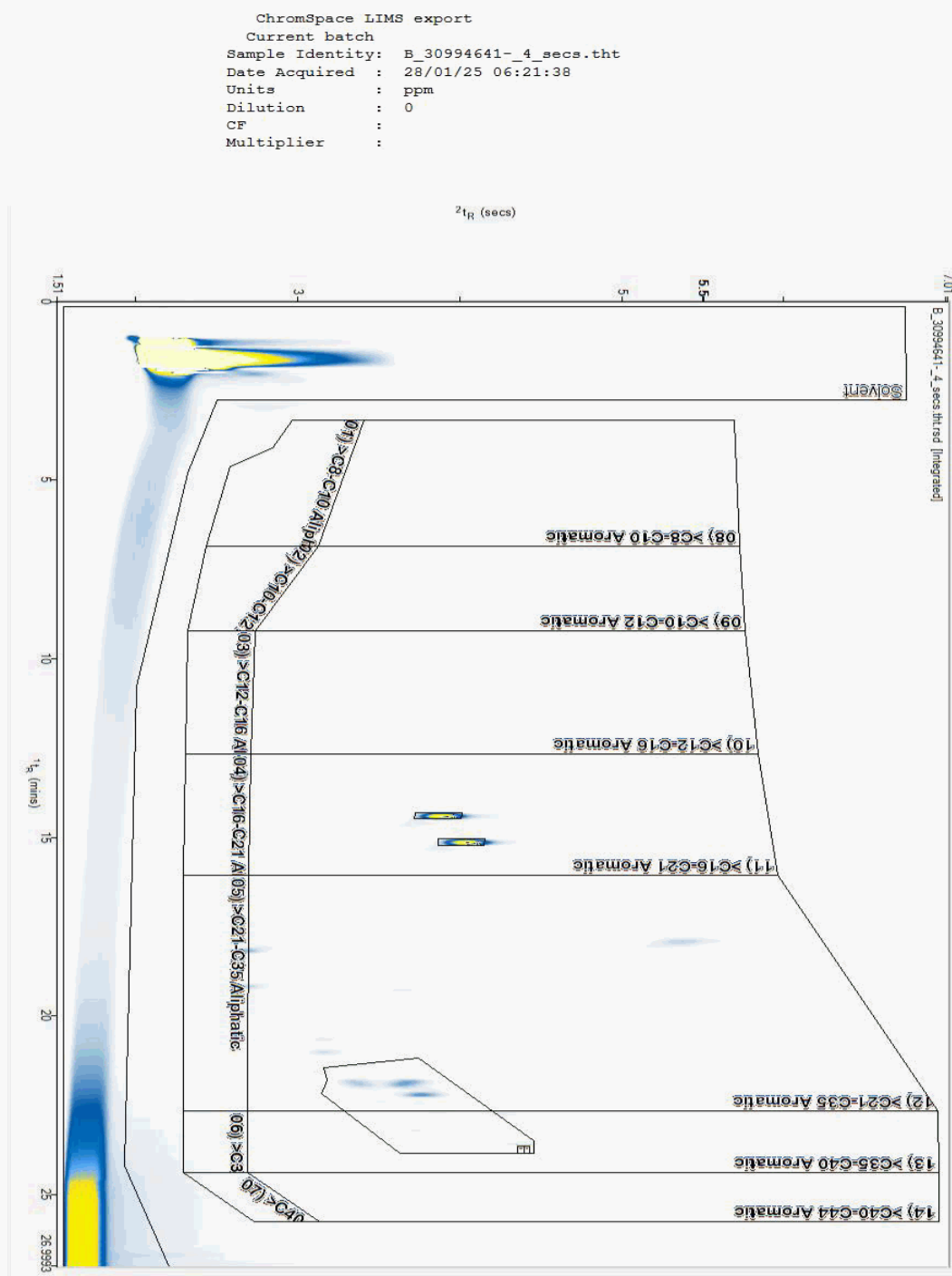
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994641
Sample ID : WS04

Depth : 0.00 - 0.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

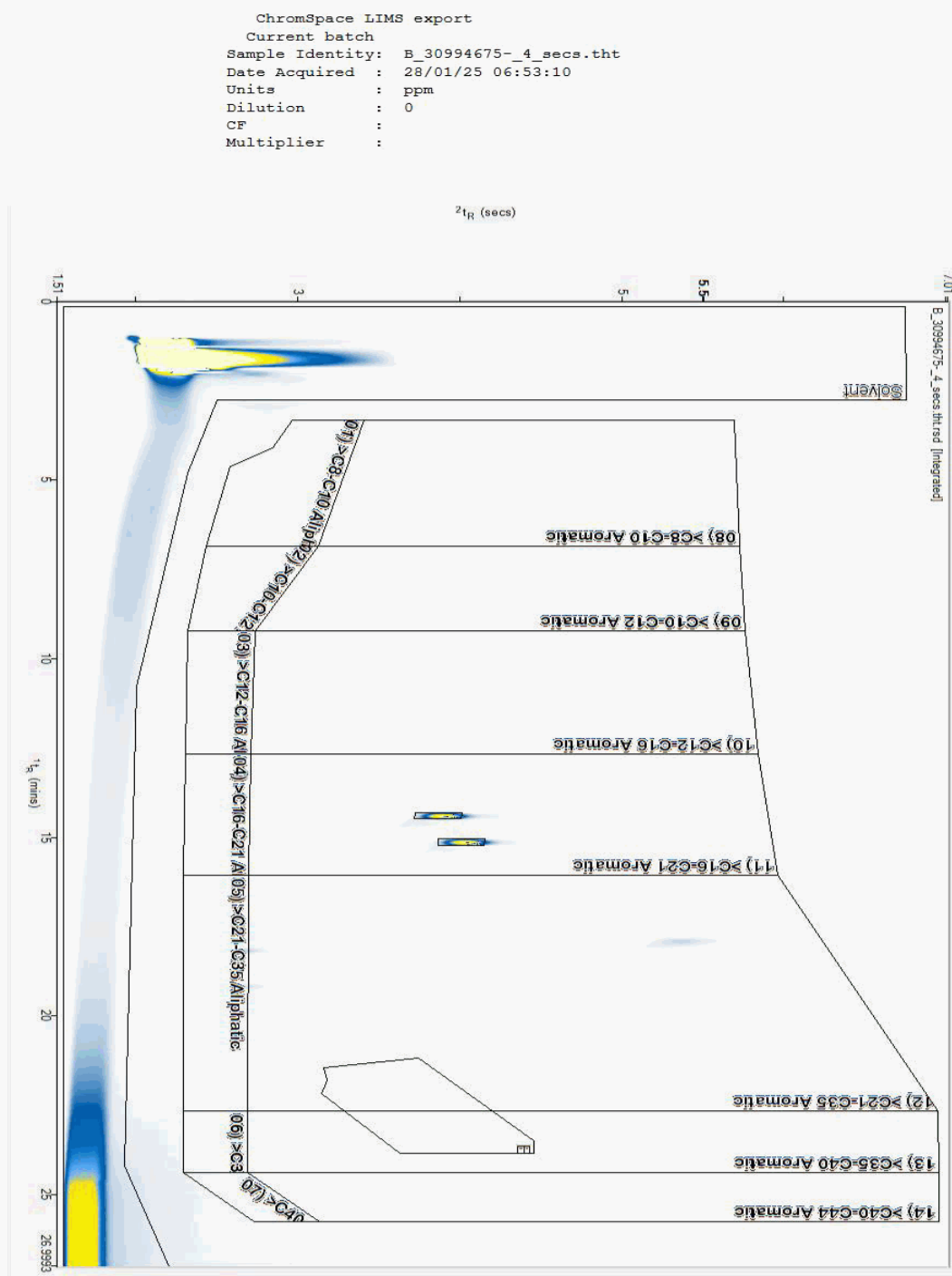
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994675
Sample ID : TP08

Depth : 1.60 - 1.70





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

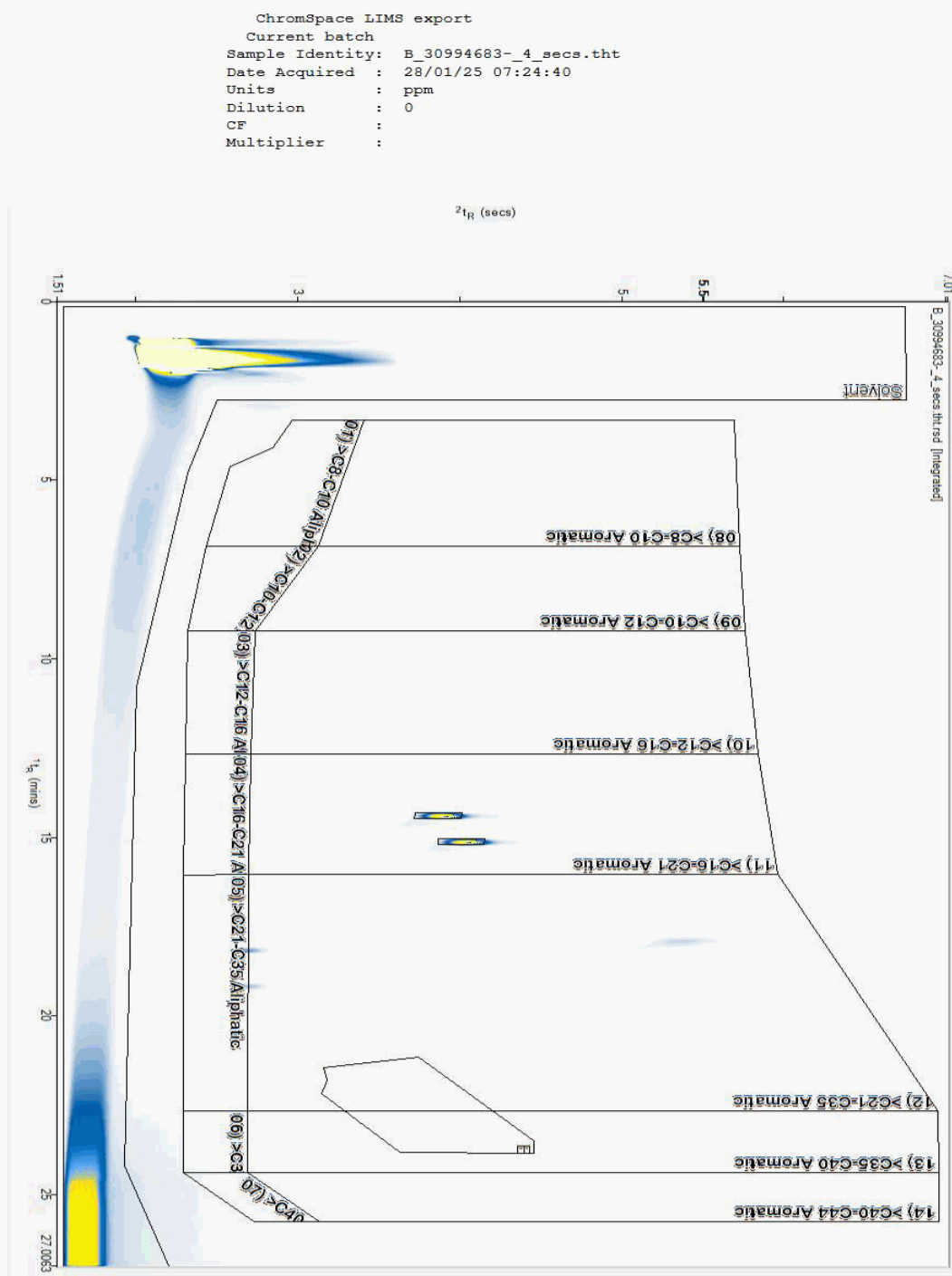
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994683
Sample ID : TP15

Depth : 1.90 - 2.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

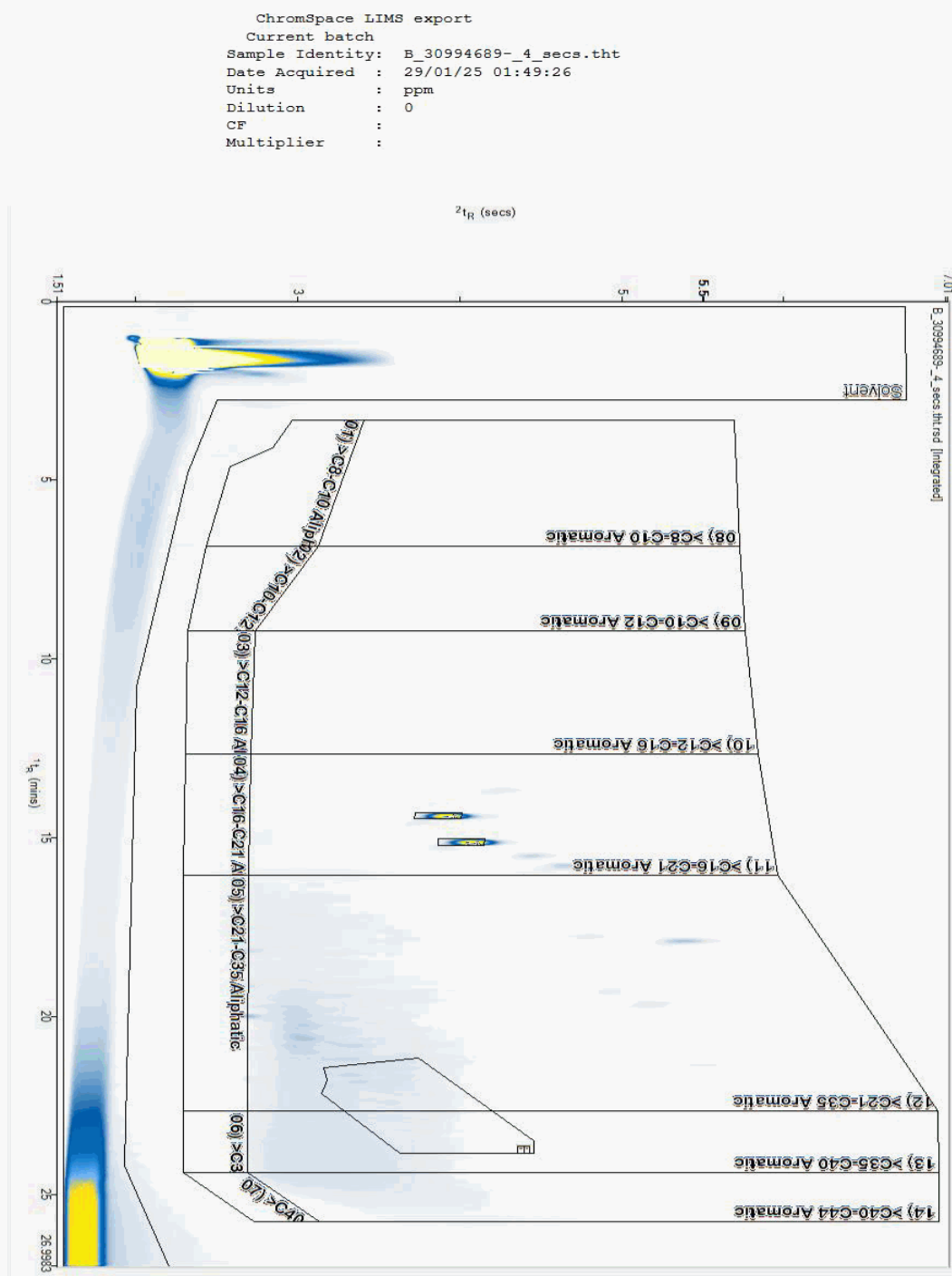
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994689
Sample ID : TP06

Depth : 0.80 - 0.90





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

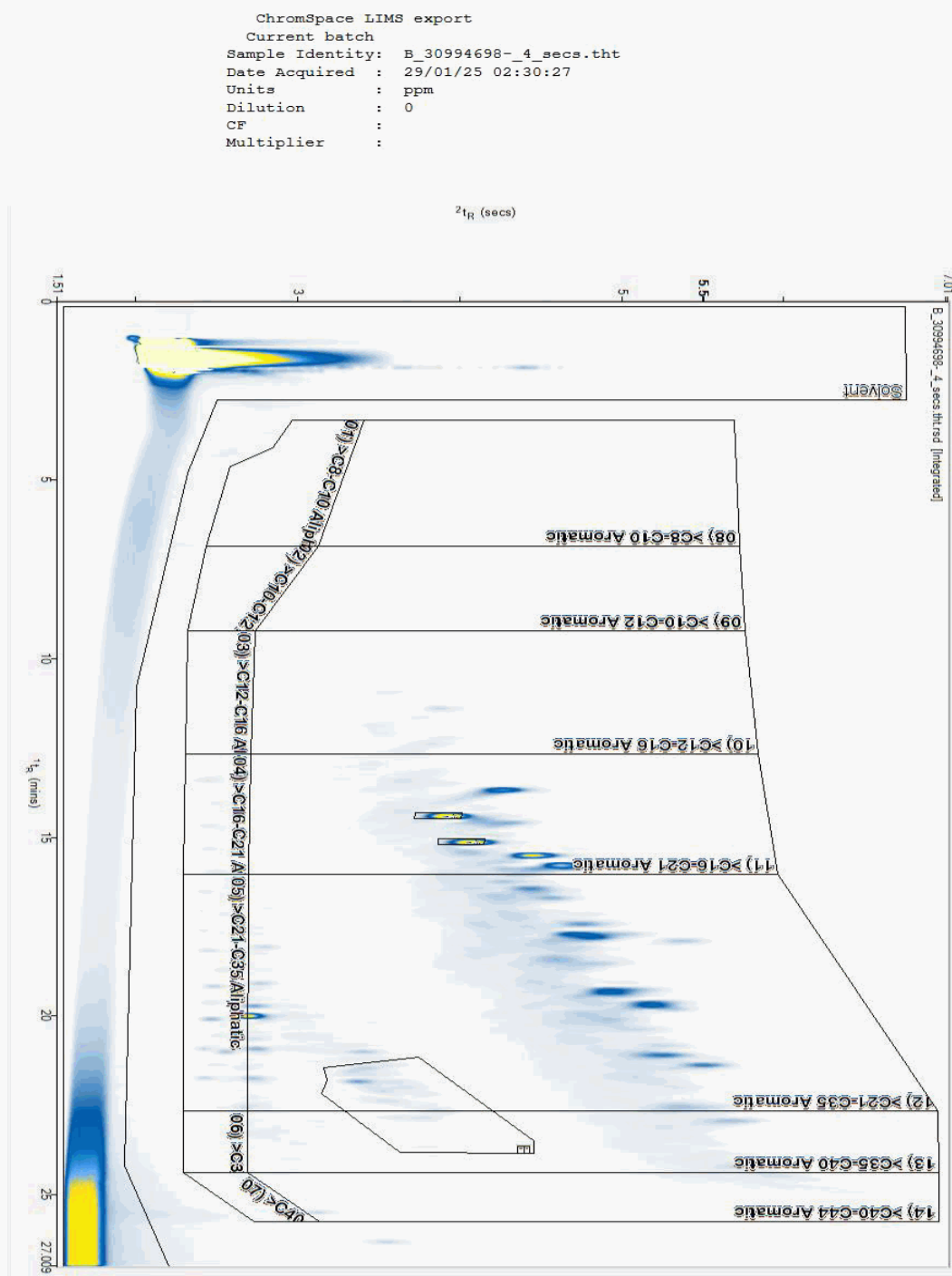
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994698
Sample ID : TP12

Depth : 0.20 - 0.30





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

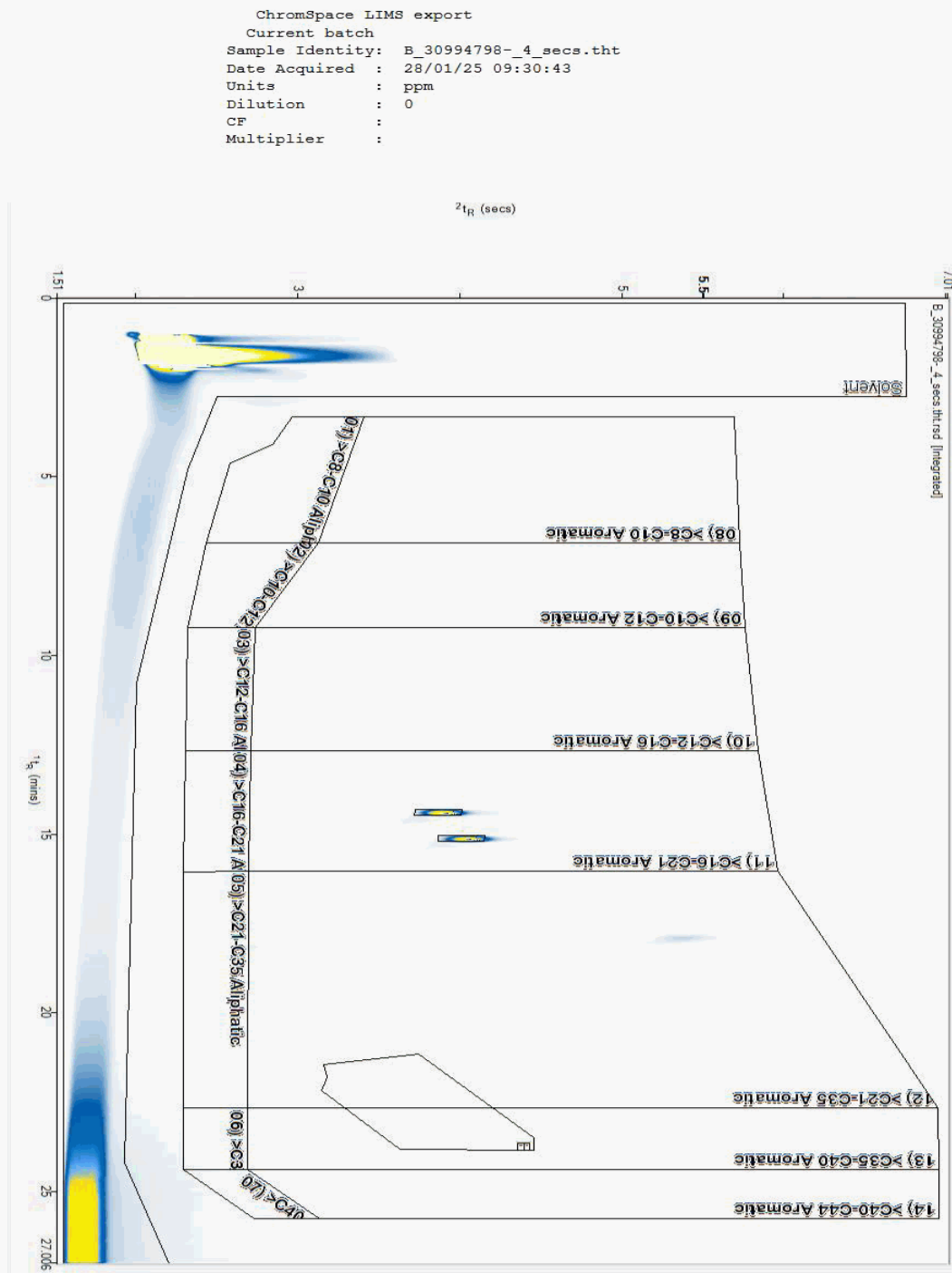
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994798
Sample ID : WS02

Depth : 0.60





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

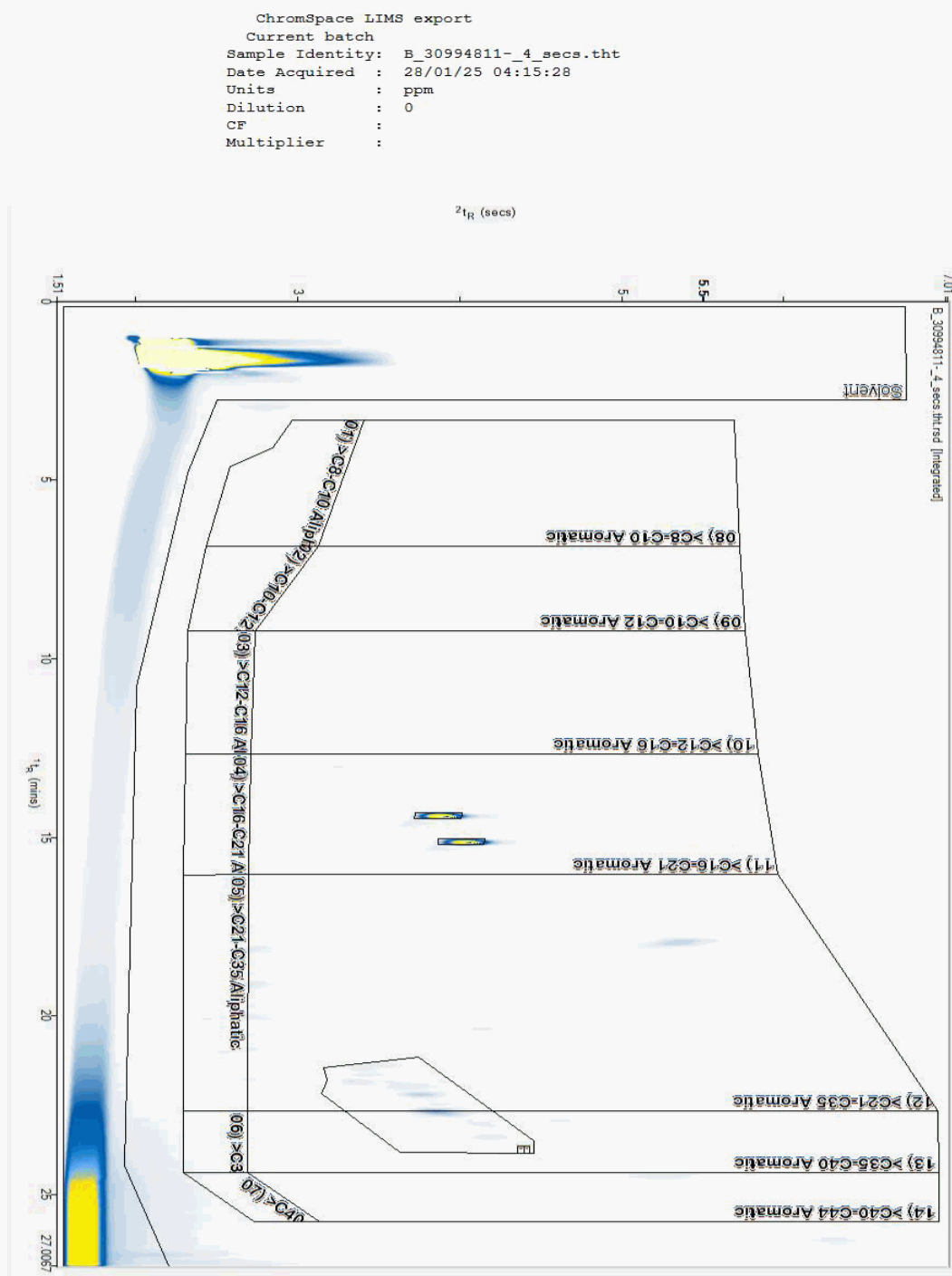
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994811
Sample ID : WS03

Depth : 0.20





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

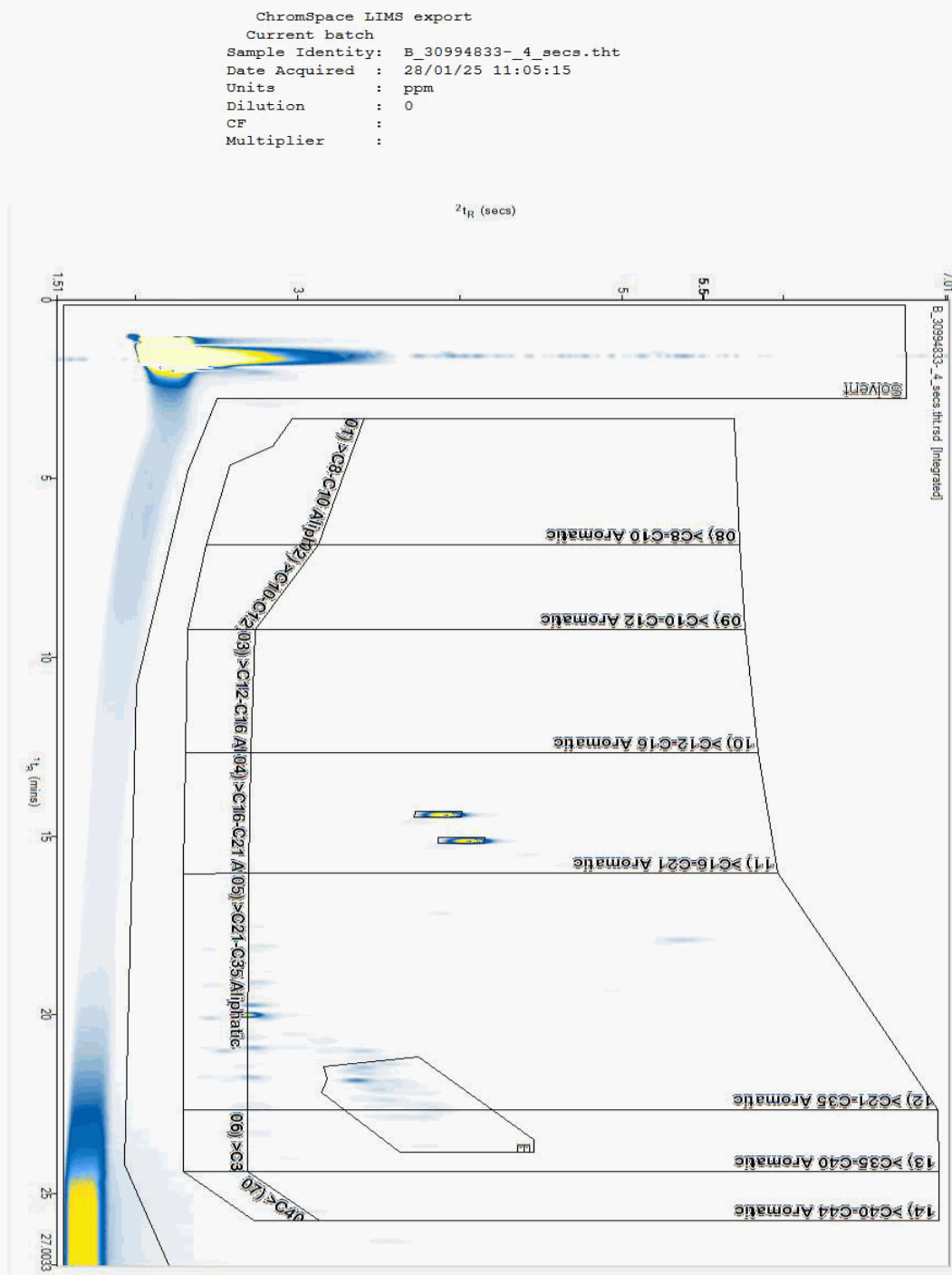
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994833
Sample ID : WS05

Depth : 0.20





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

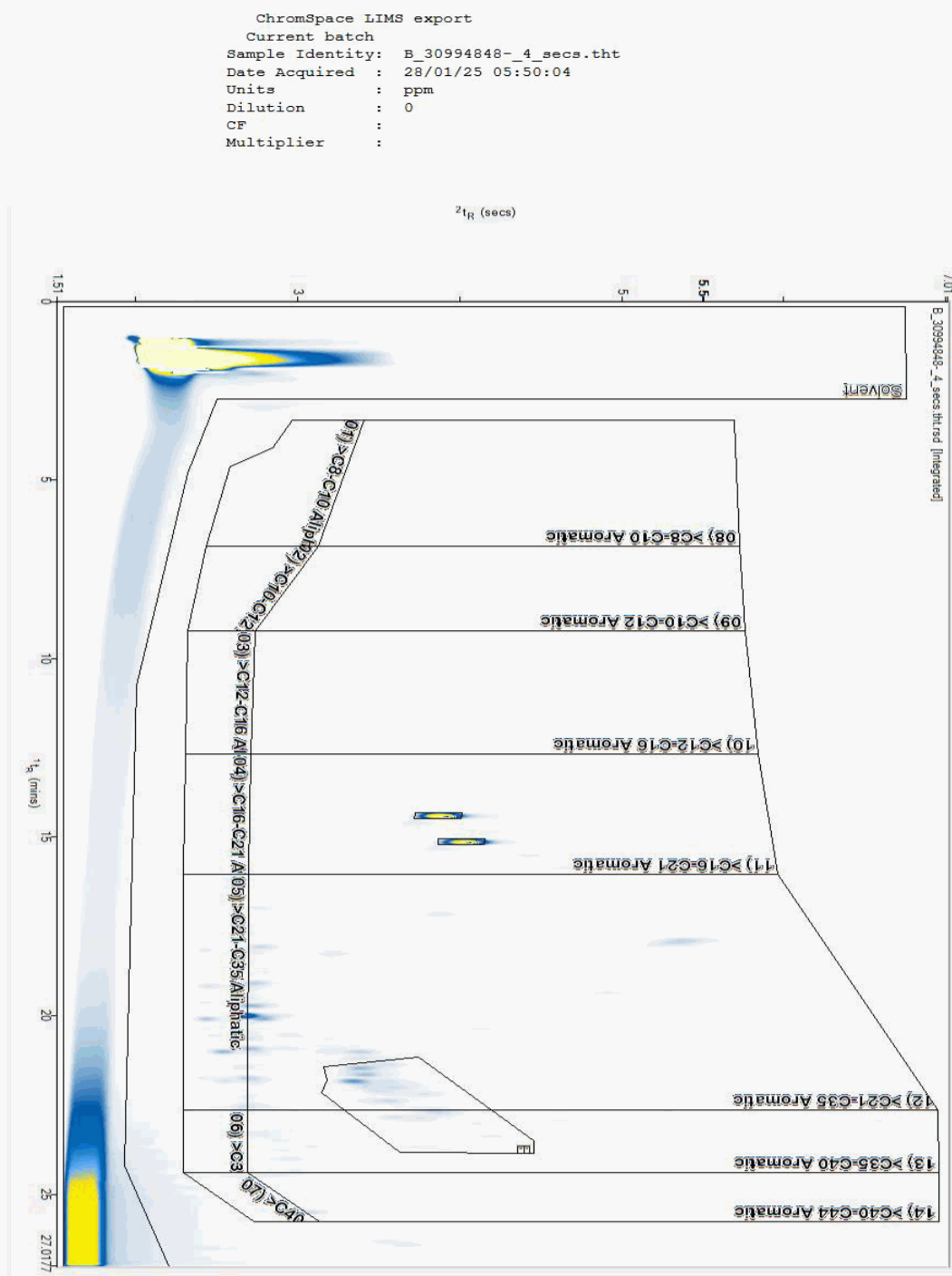
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30994848
Sample ID : WS02

Depth : 0.20





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

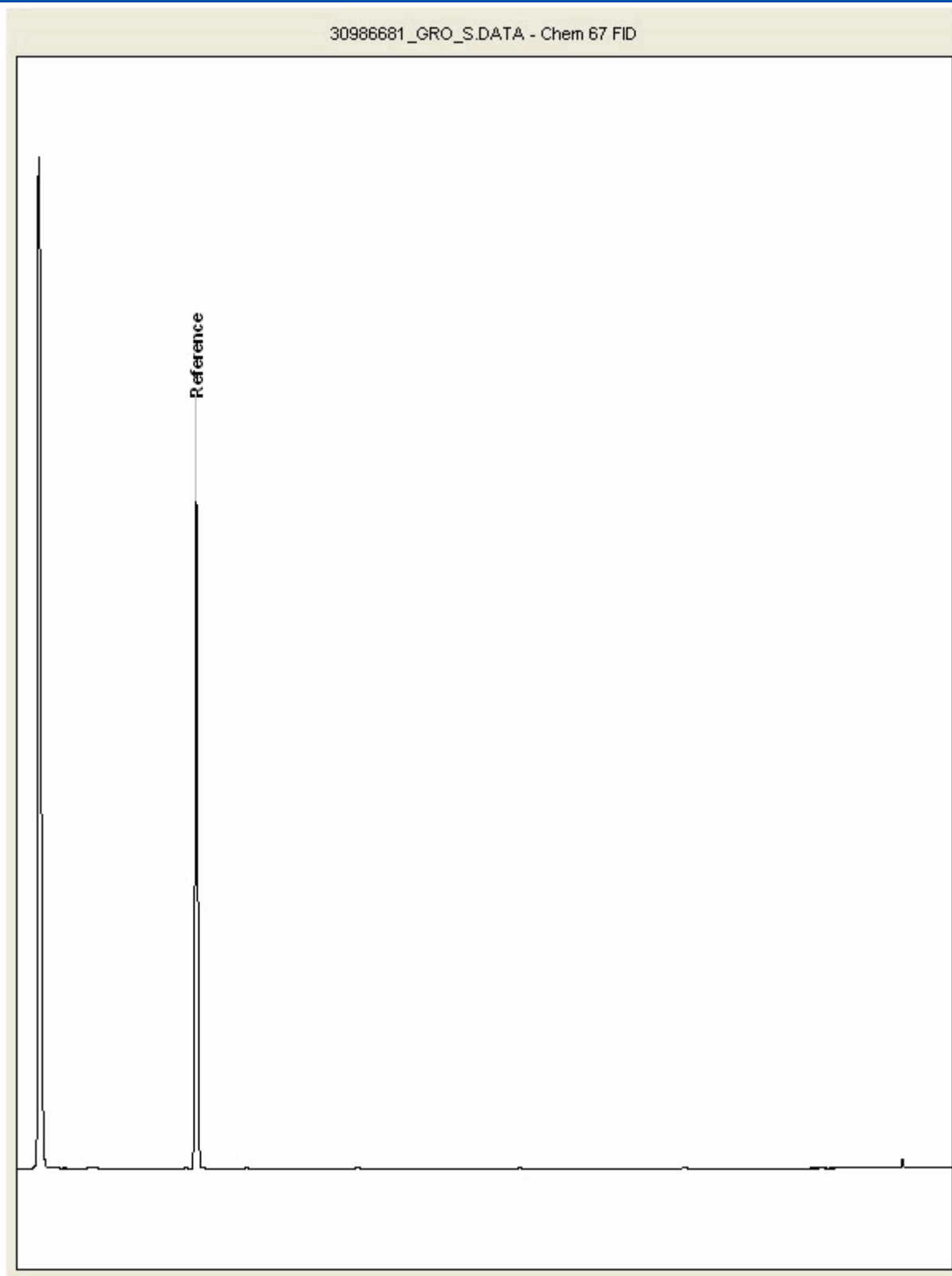
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30986681
Sample ID : TP18

Depth : 0.90 - 1.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

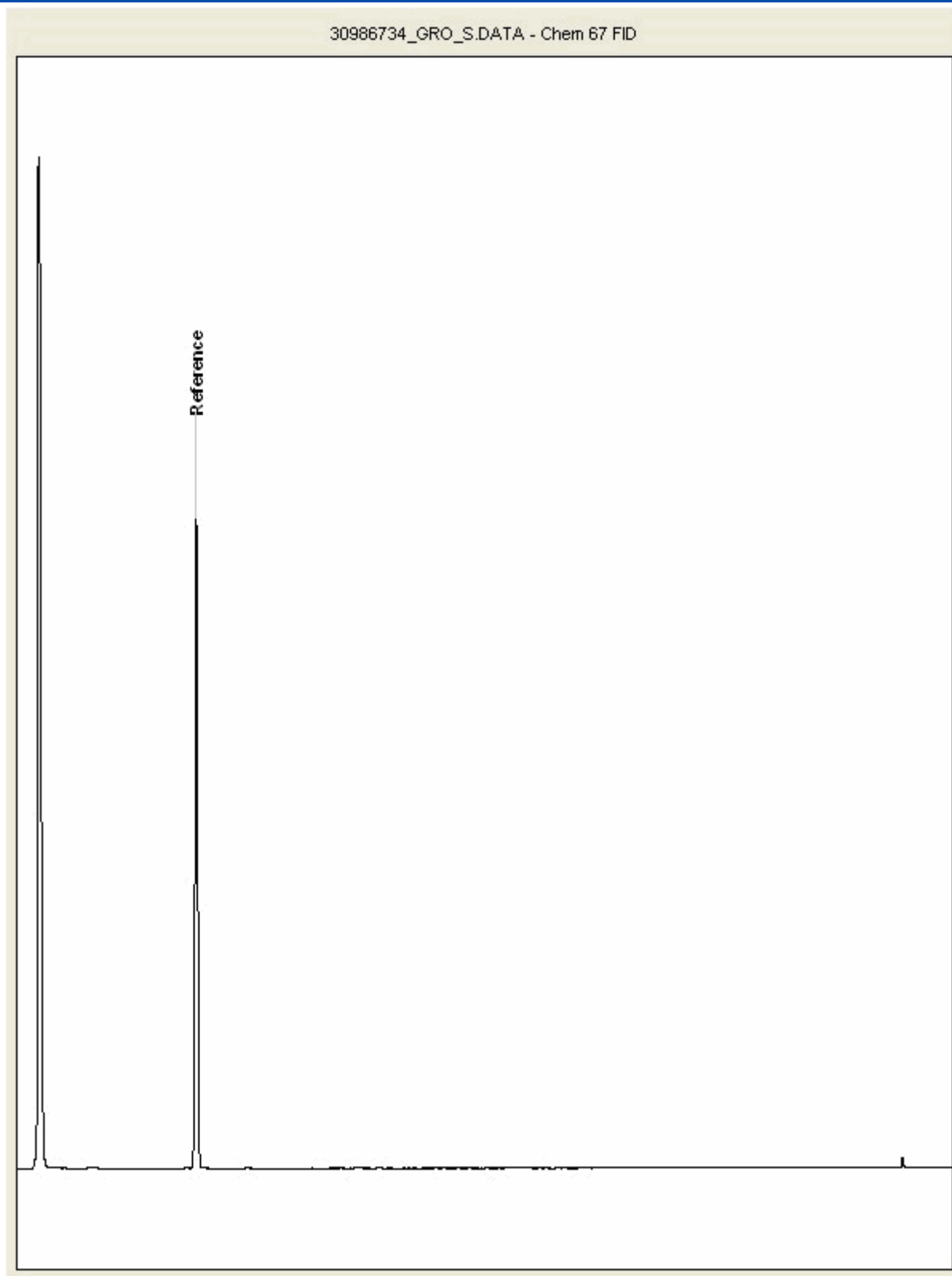
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30986734
Sample ID : TP21

Depth : 1.40 - 1.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

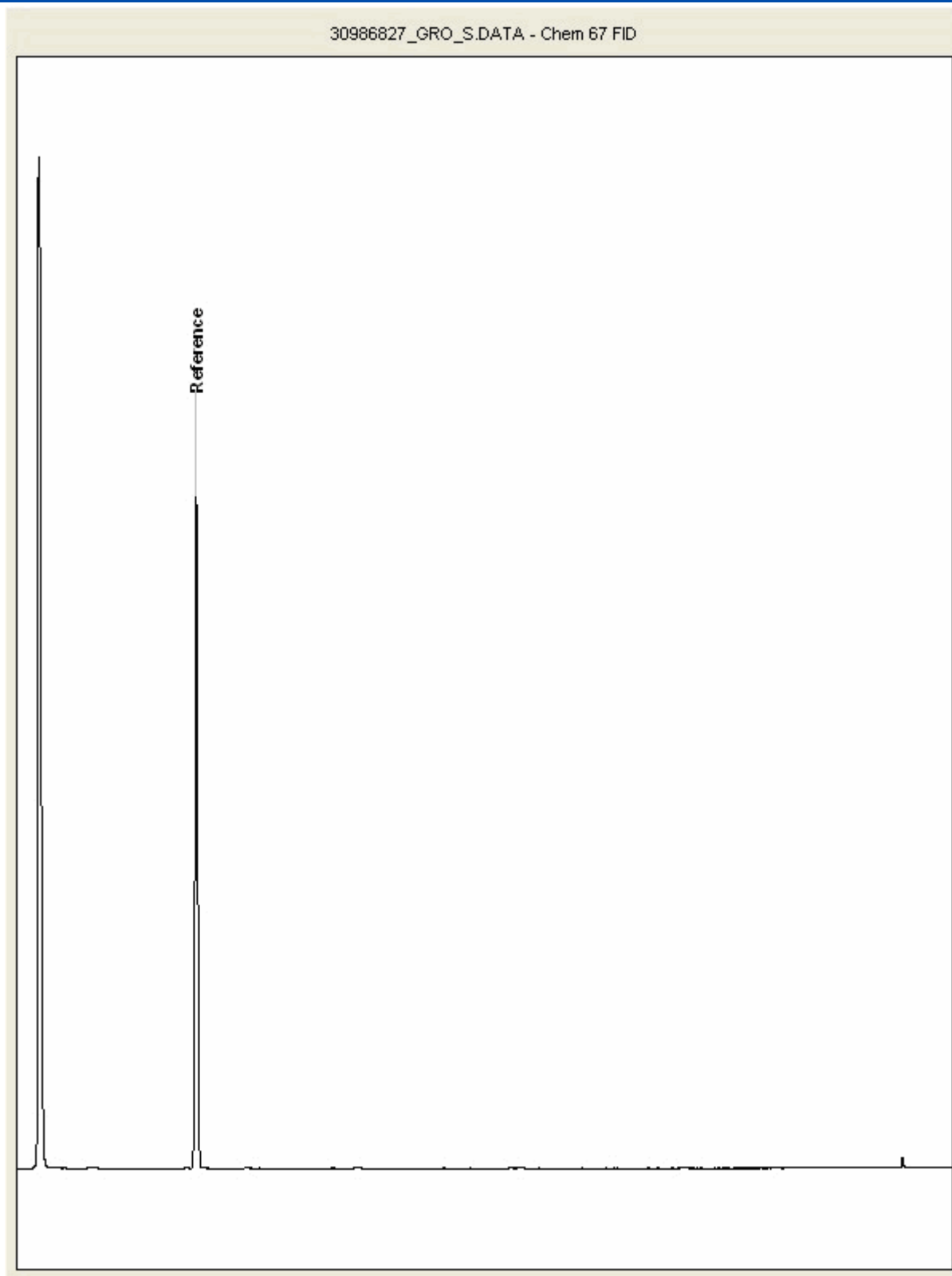
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30986827
Sample ID : TP23

Depth : 0.55 - 0.60





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

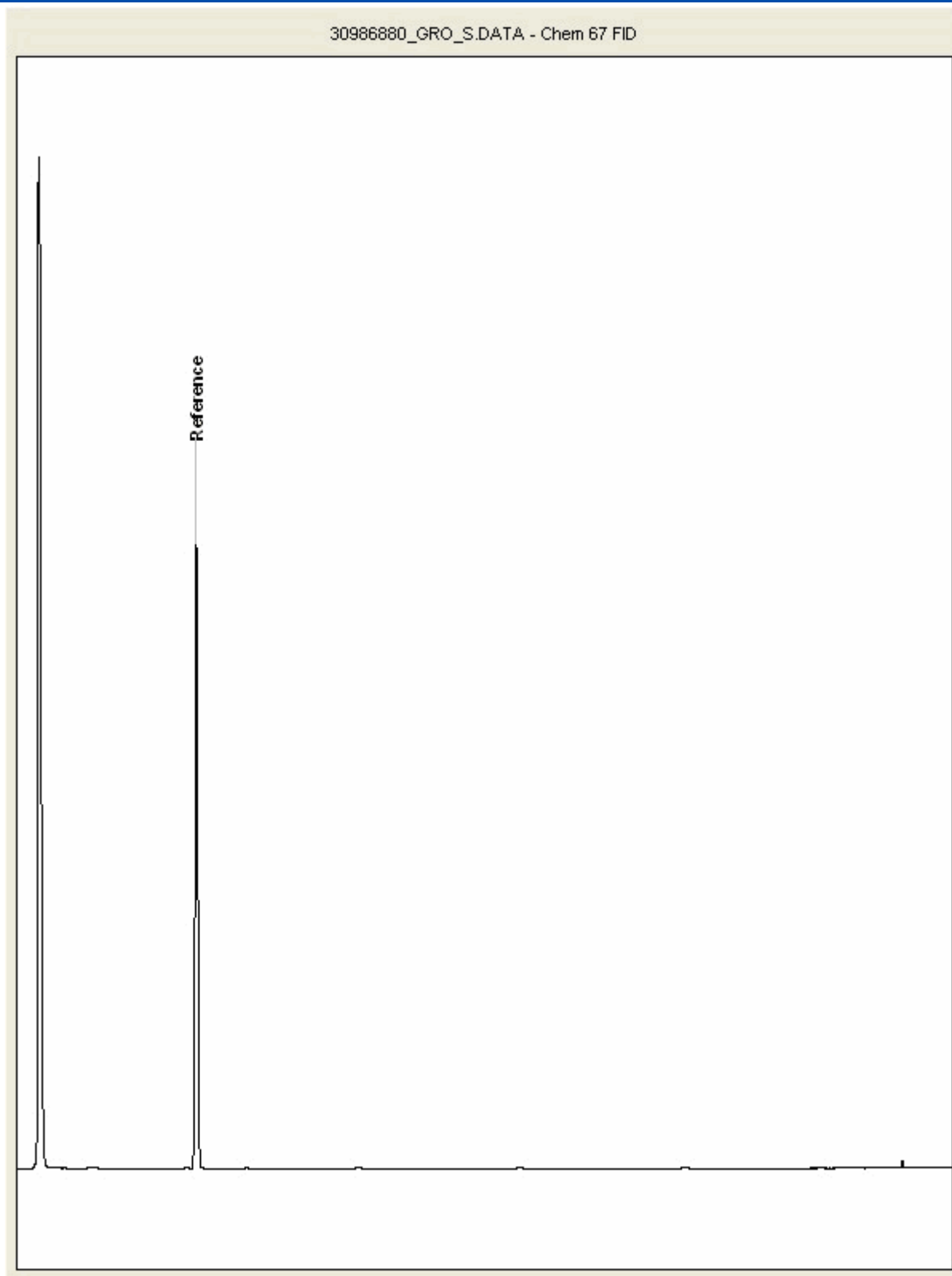
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30986880
Sample ID : TP23

Depth : 2.90 - 3.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

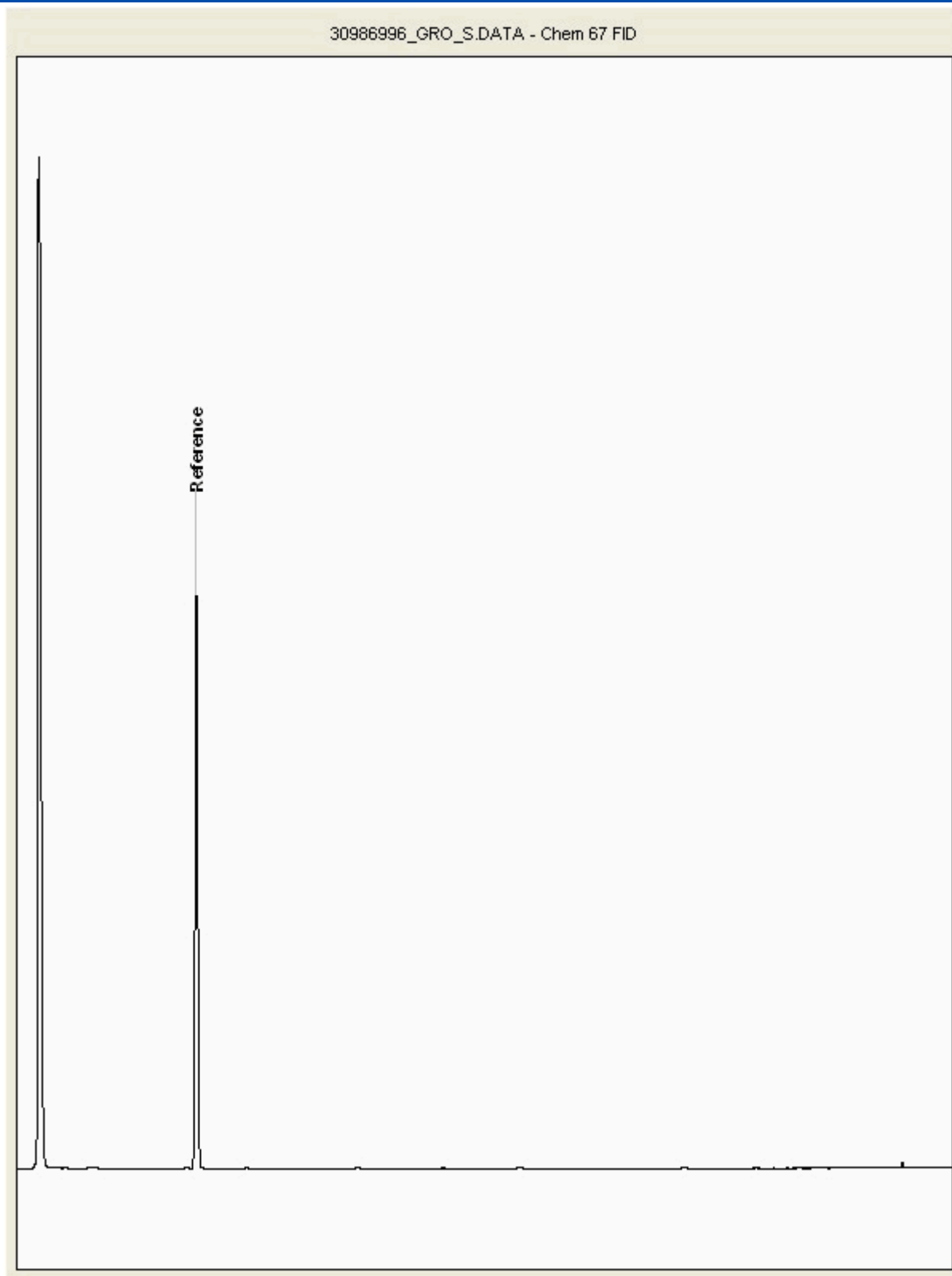
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30986996
Sample ID : TP12

Depth : 0.20 - 0.30





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

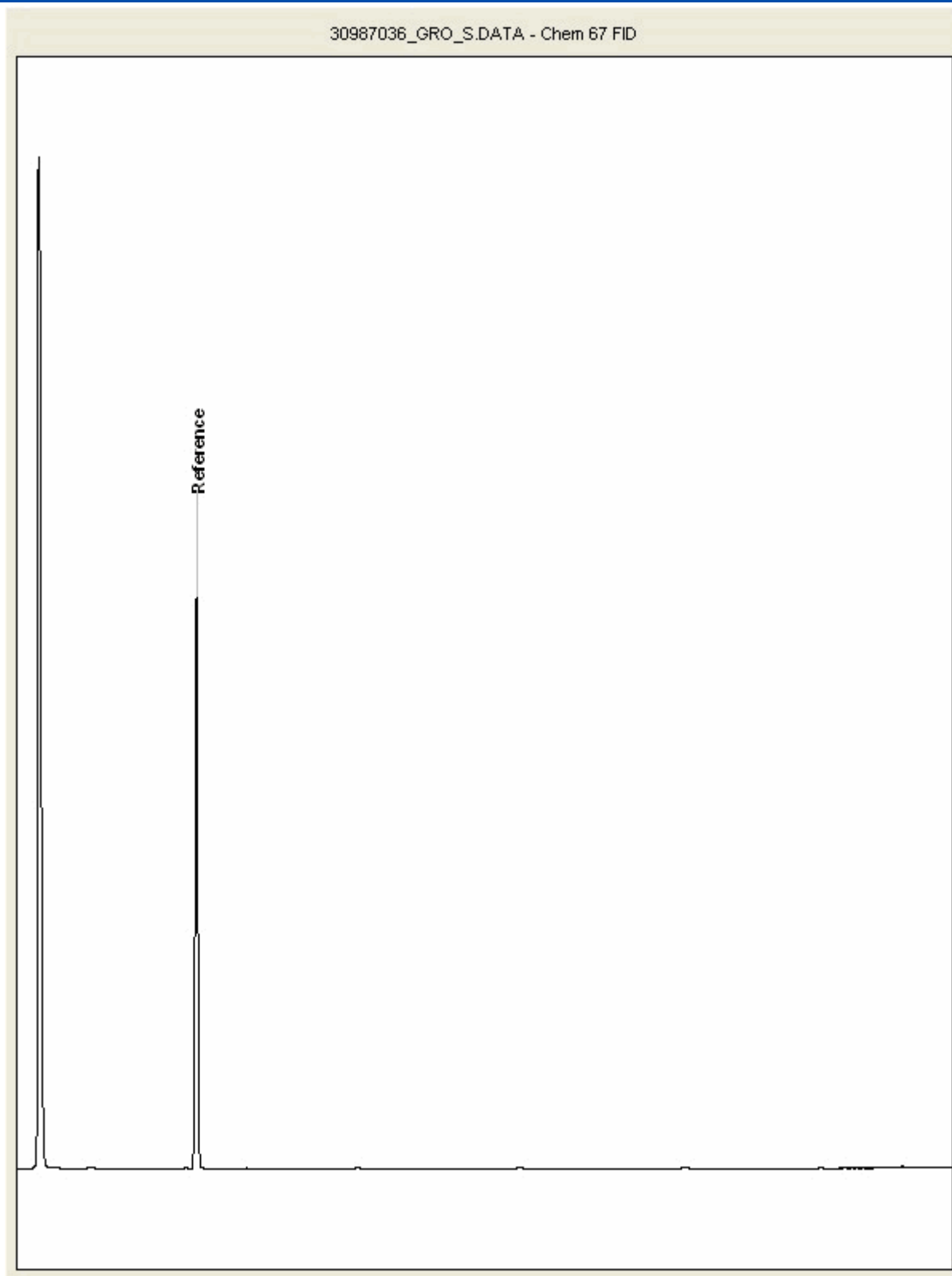
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30987036
Sample ID : WS01

Depth : 0.20





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

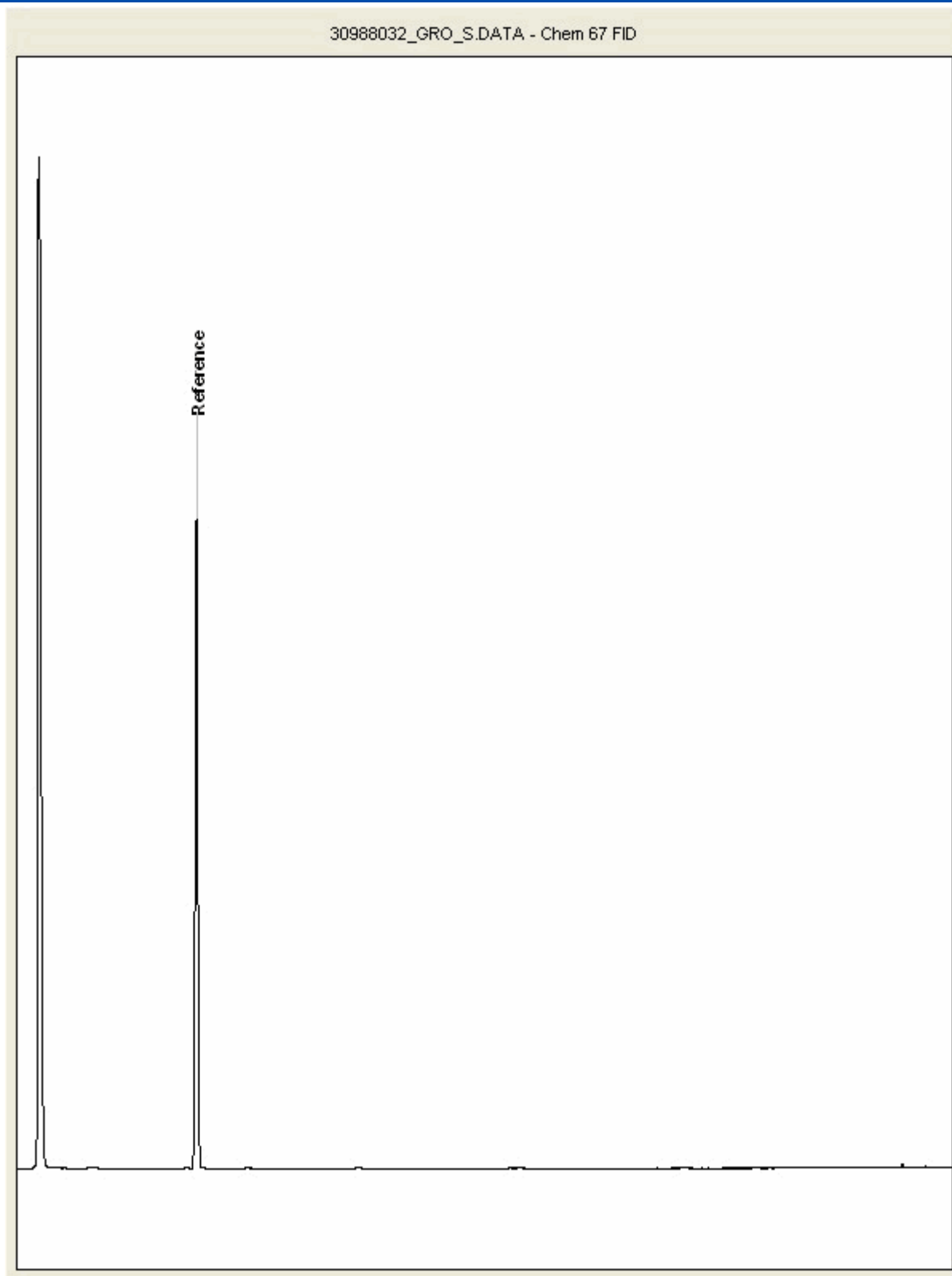
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30988032
Sample ID : TP21

Depth : 0.40 - 0.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

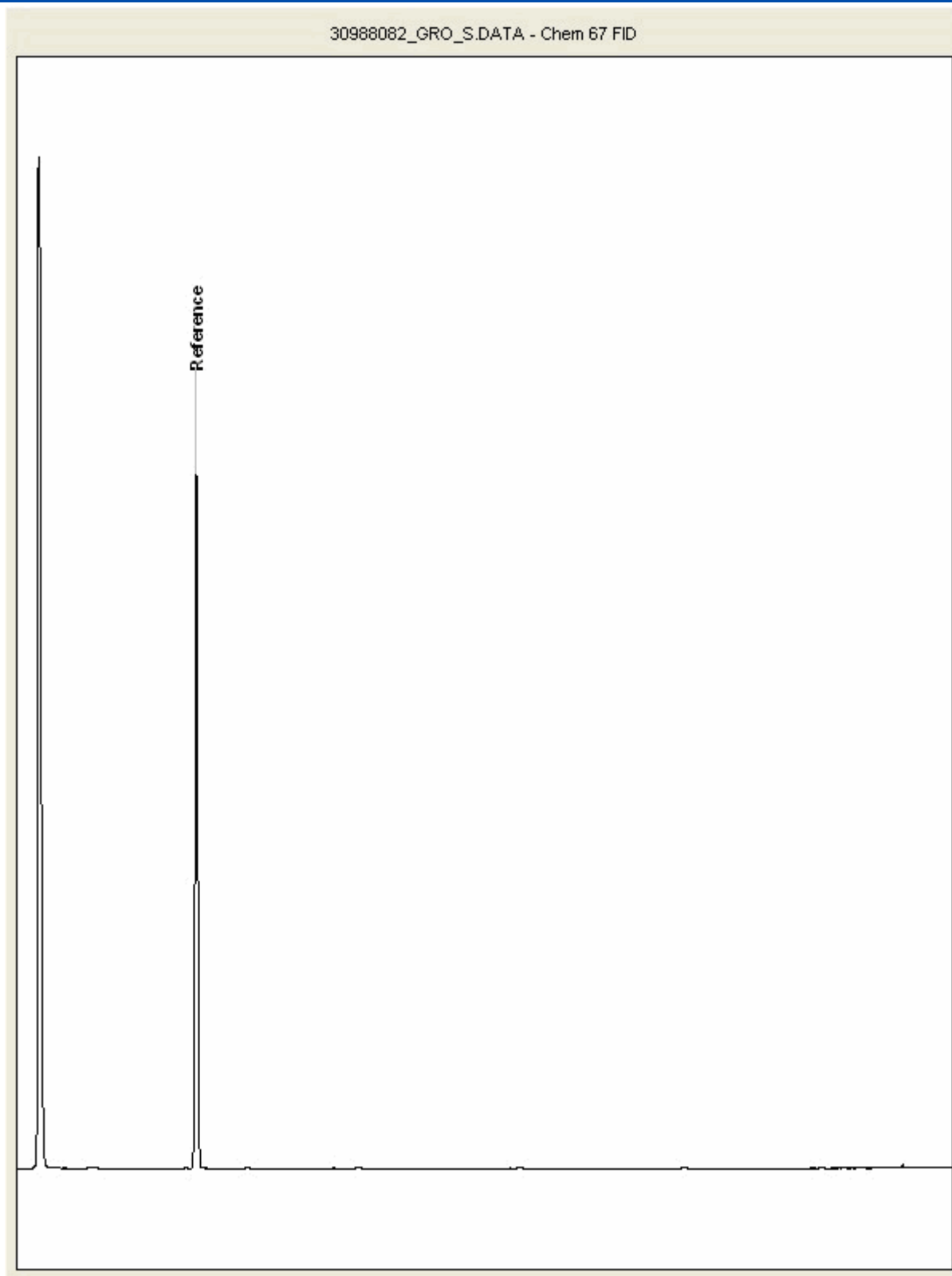
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30988082
Sample ID : TP12

Depth : 2.90 - 3.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

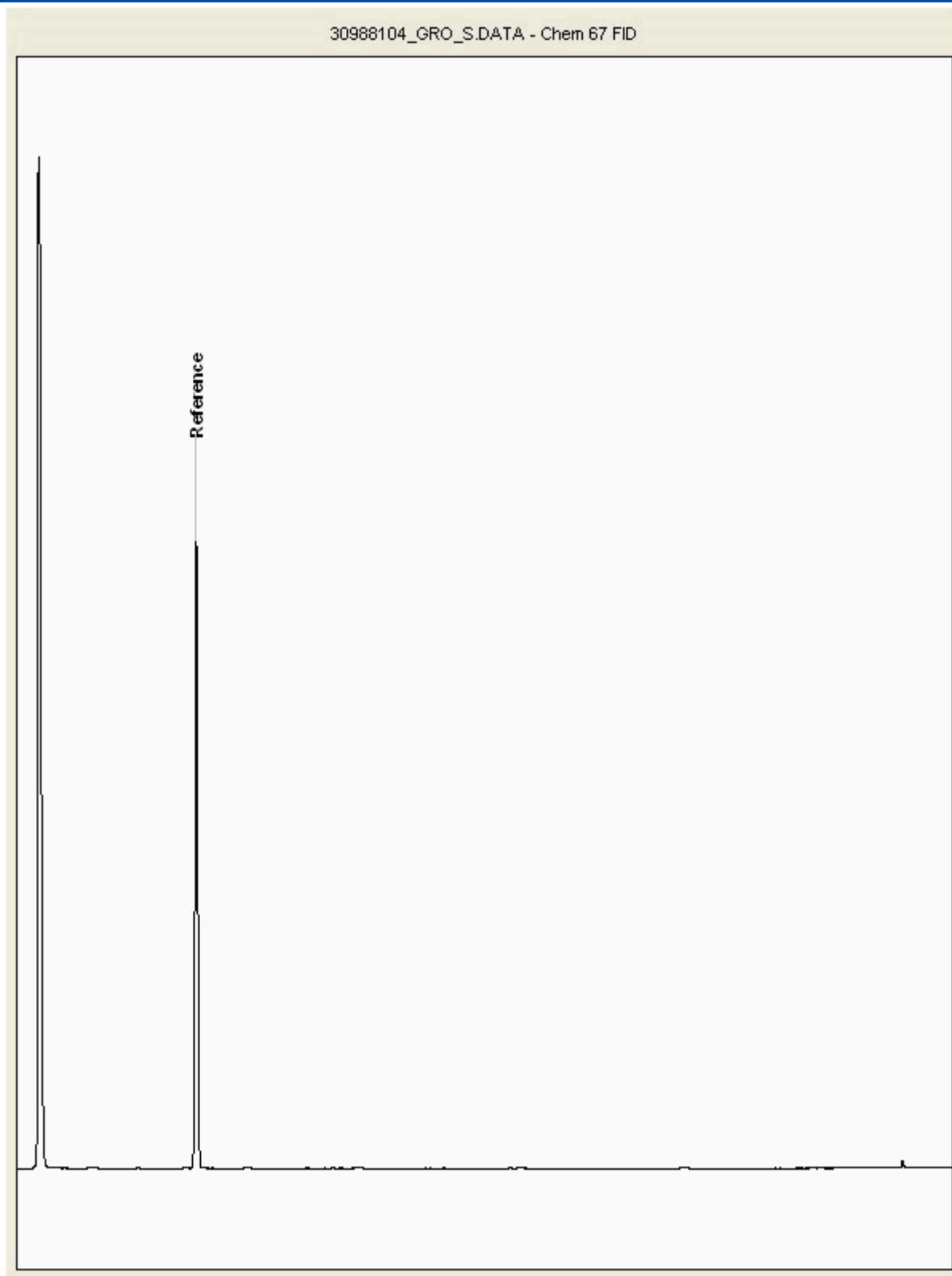
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30988104
Sample ID : TP15

Depth : 0.40 - 0.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

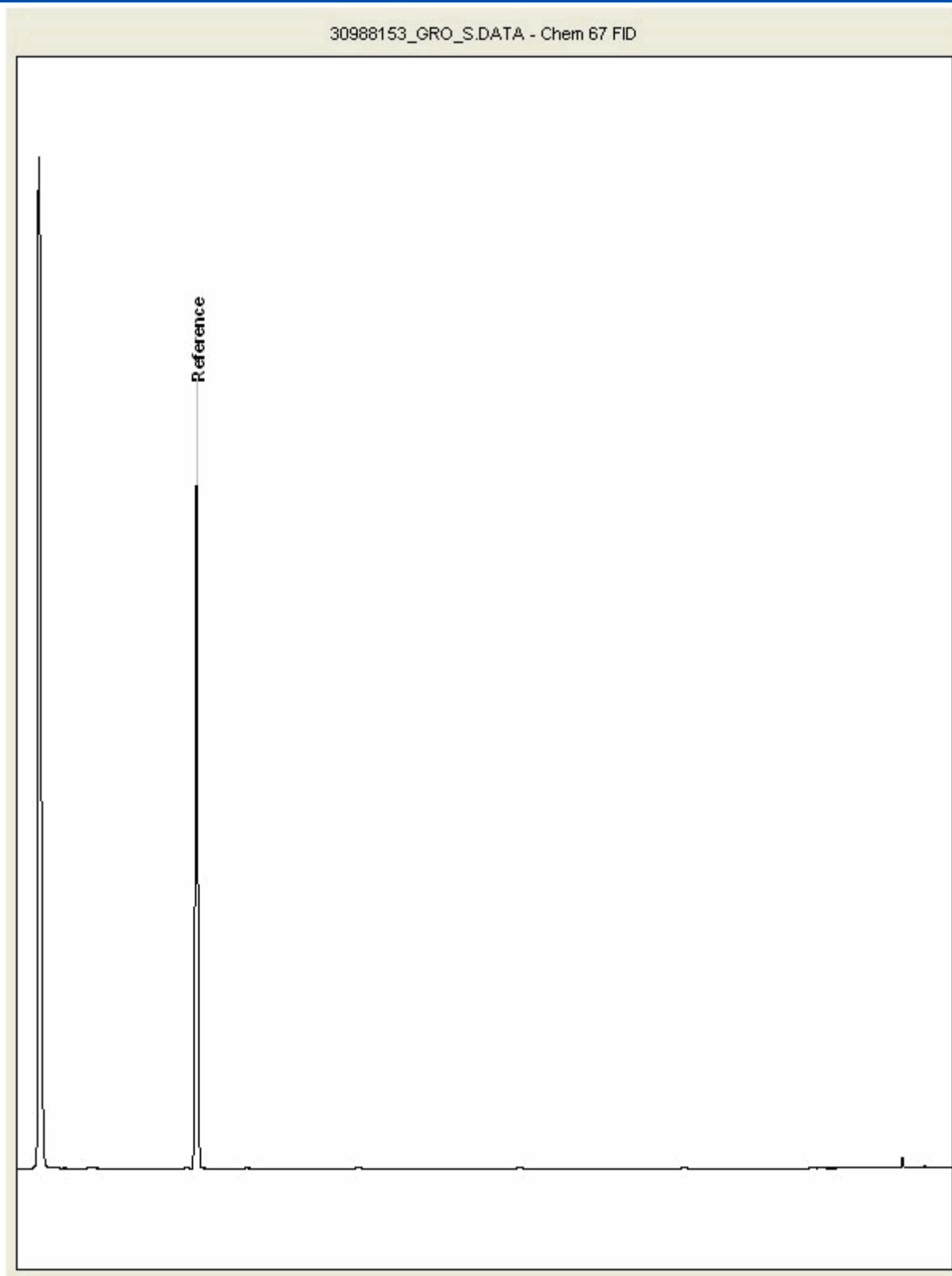
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30988153
Sample ID : TP16

Depth : 0.70 - 0.80





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

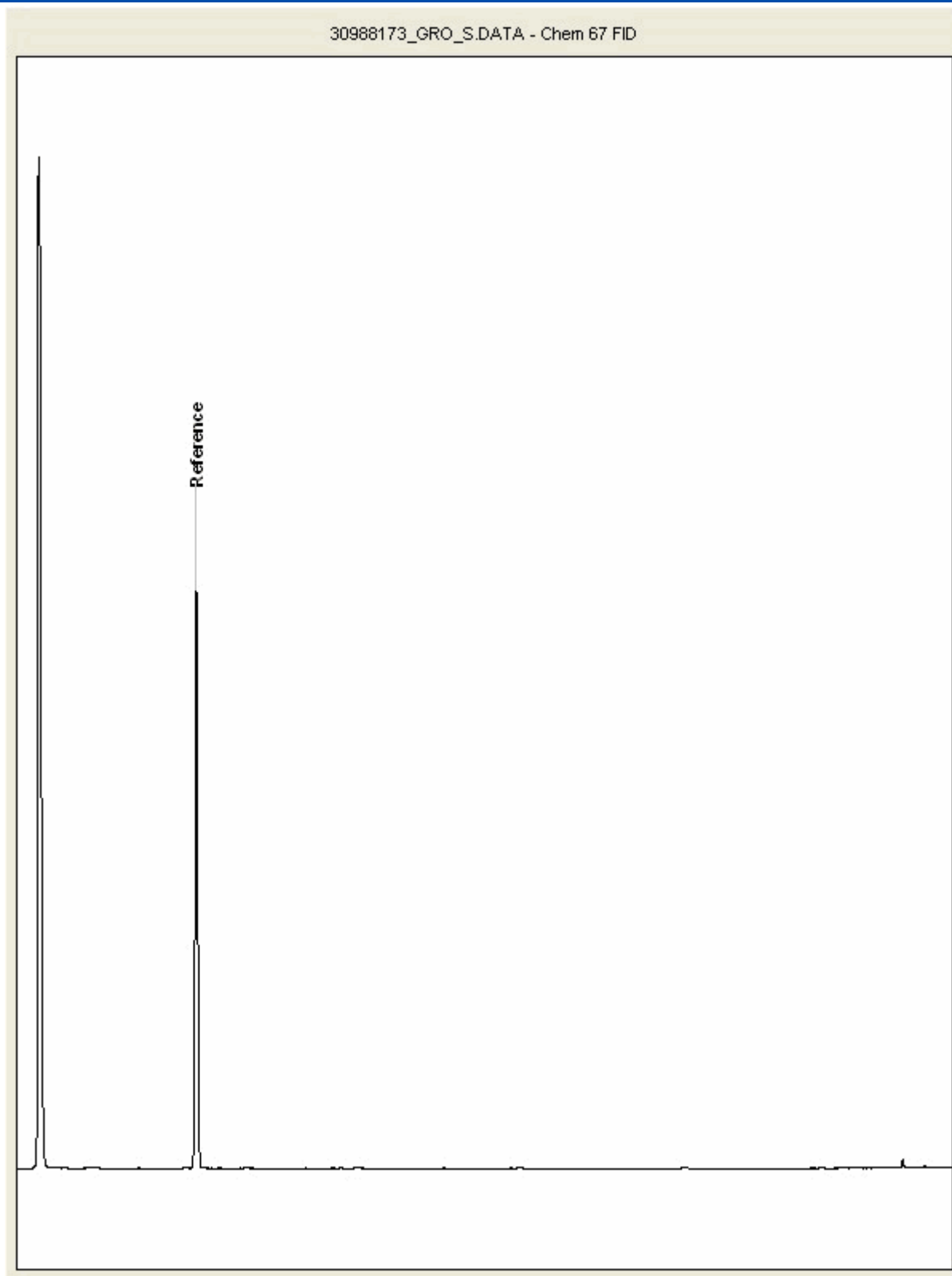
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30988173
Sample ID : TP06

Depth : 0.80 - 0.90





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

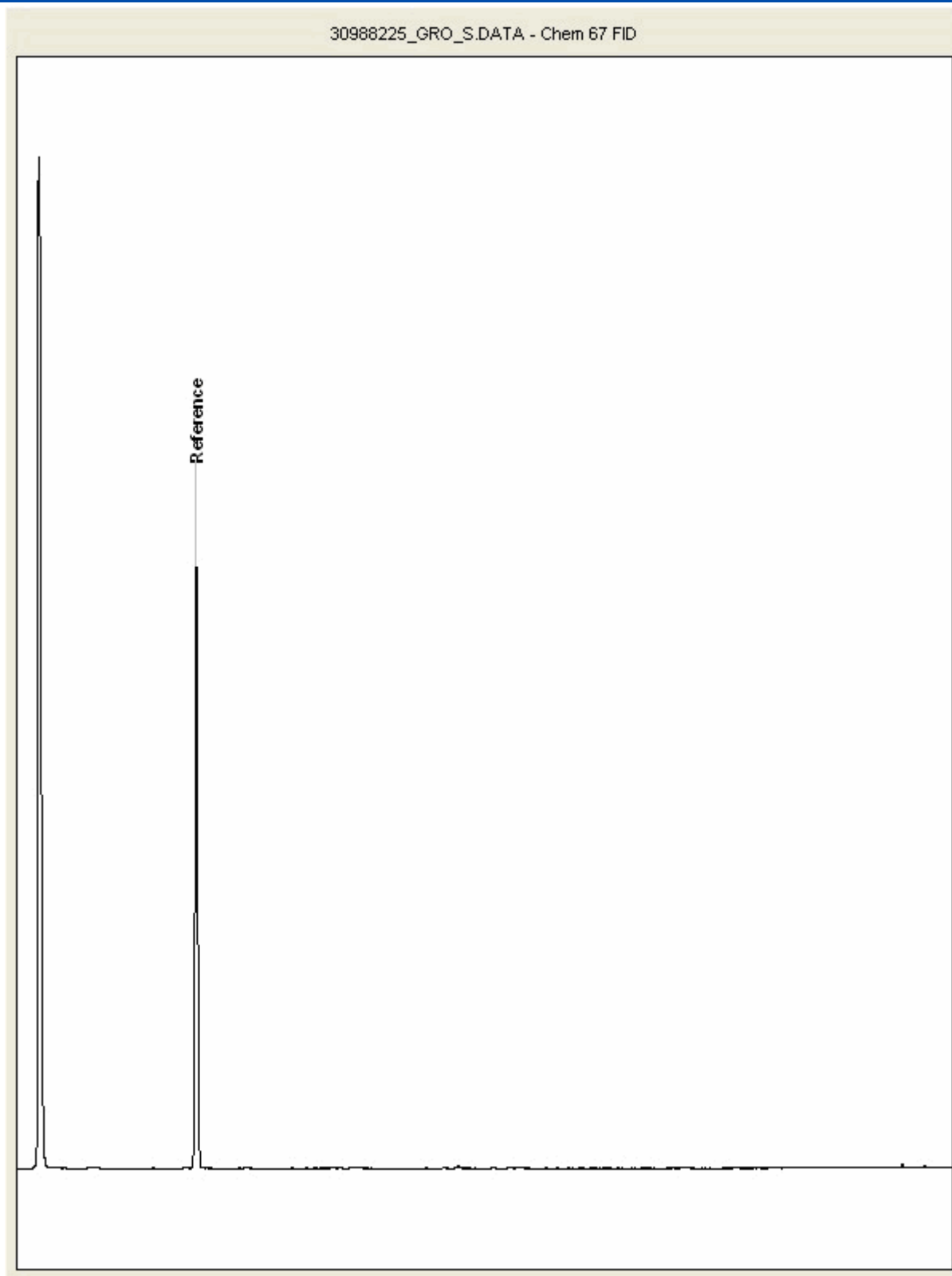
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30988225
Sample ID : TP33

Depth : 0.30 - 0.40





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

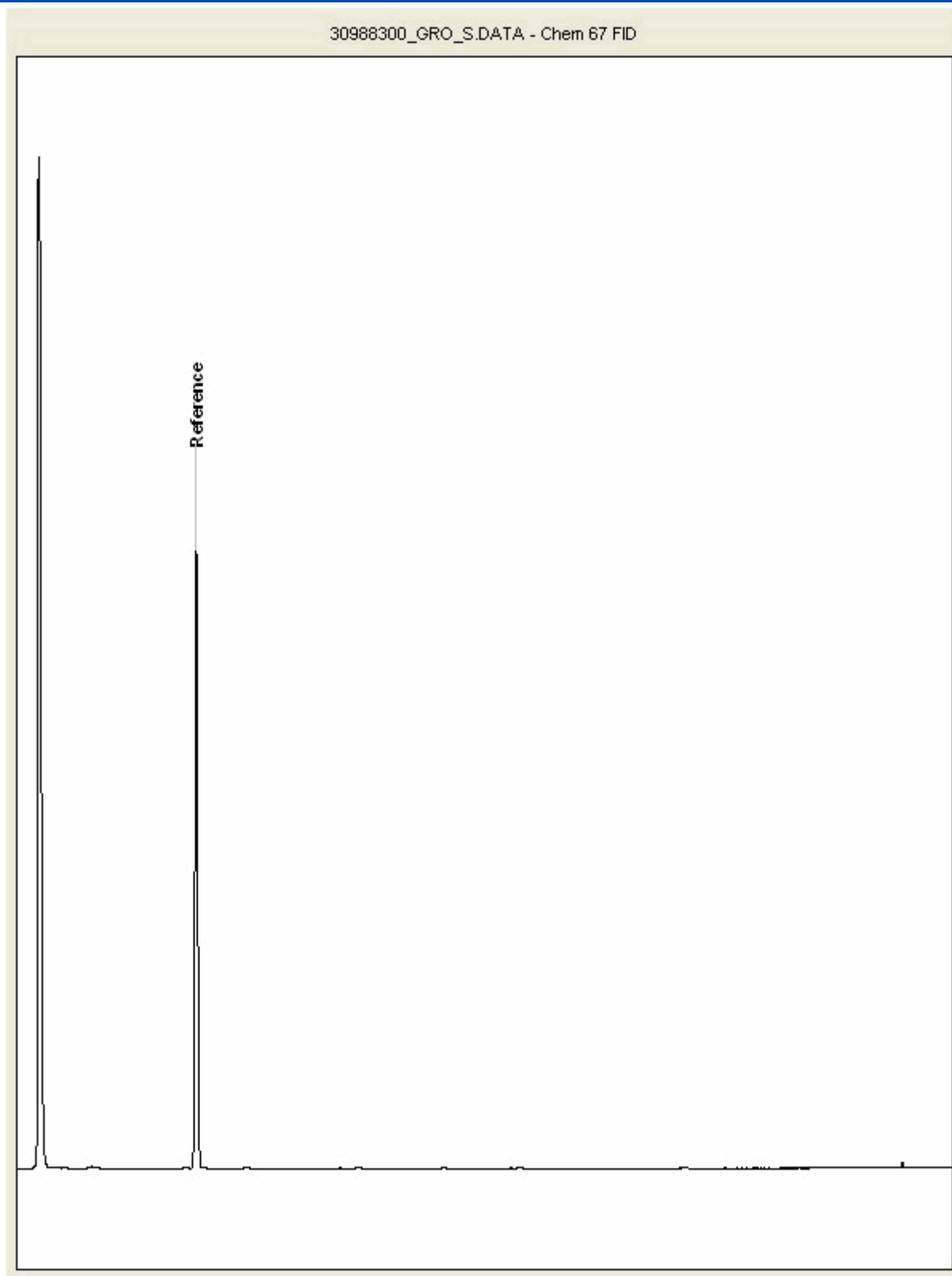
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30988300
Sample ID : WS02

Depth : 0.20





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

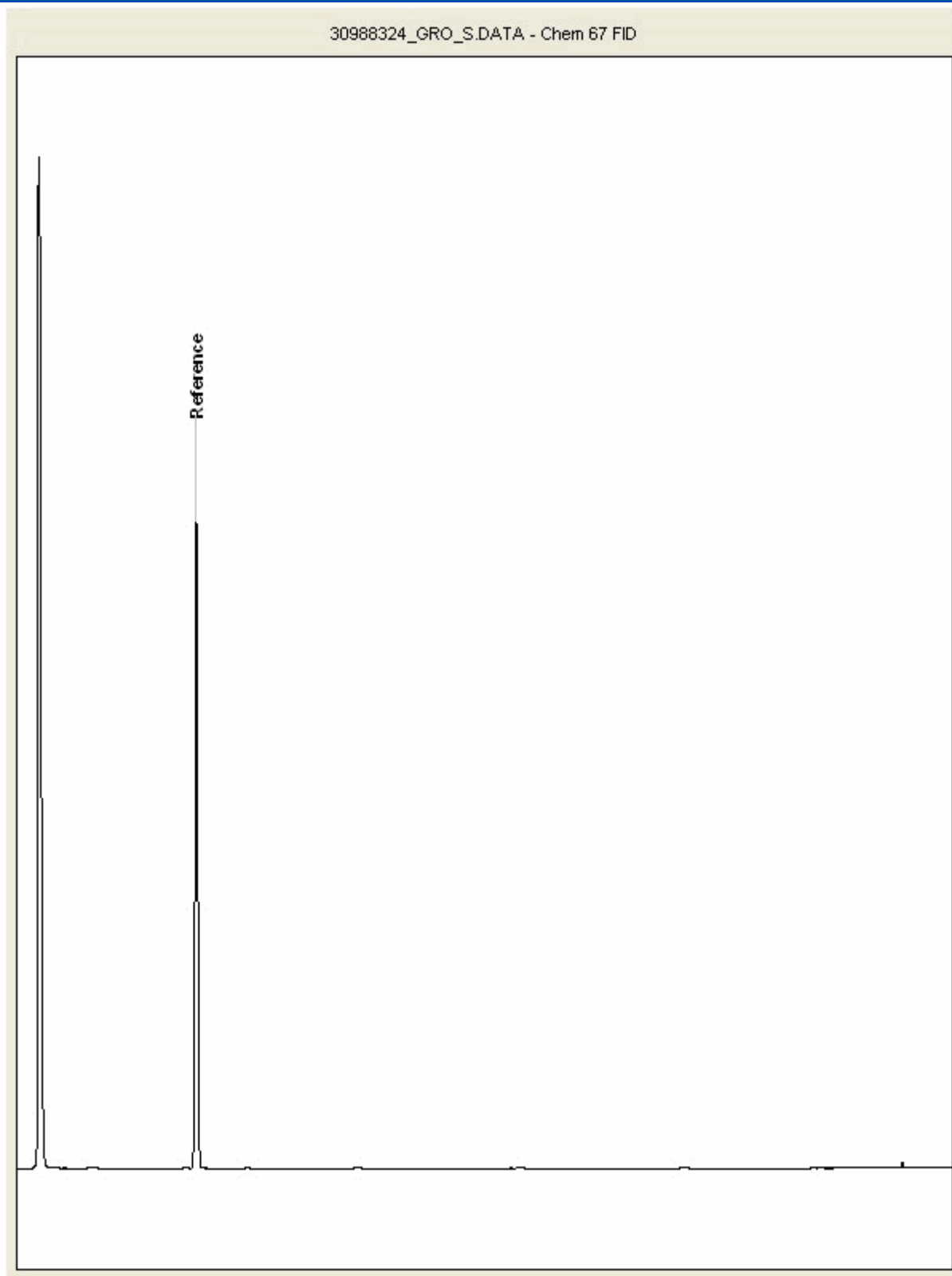
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30988324
Sample ID : TP08

Depth : 1.60 - 1.70





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

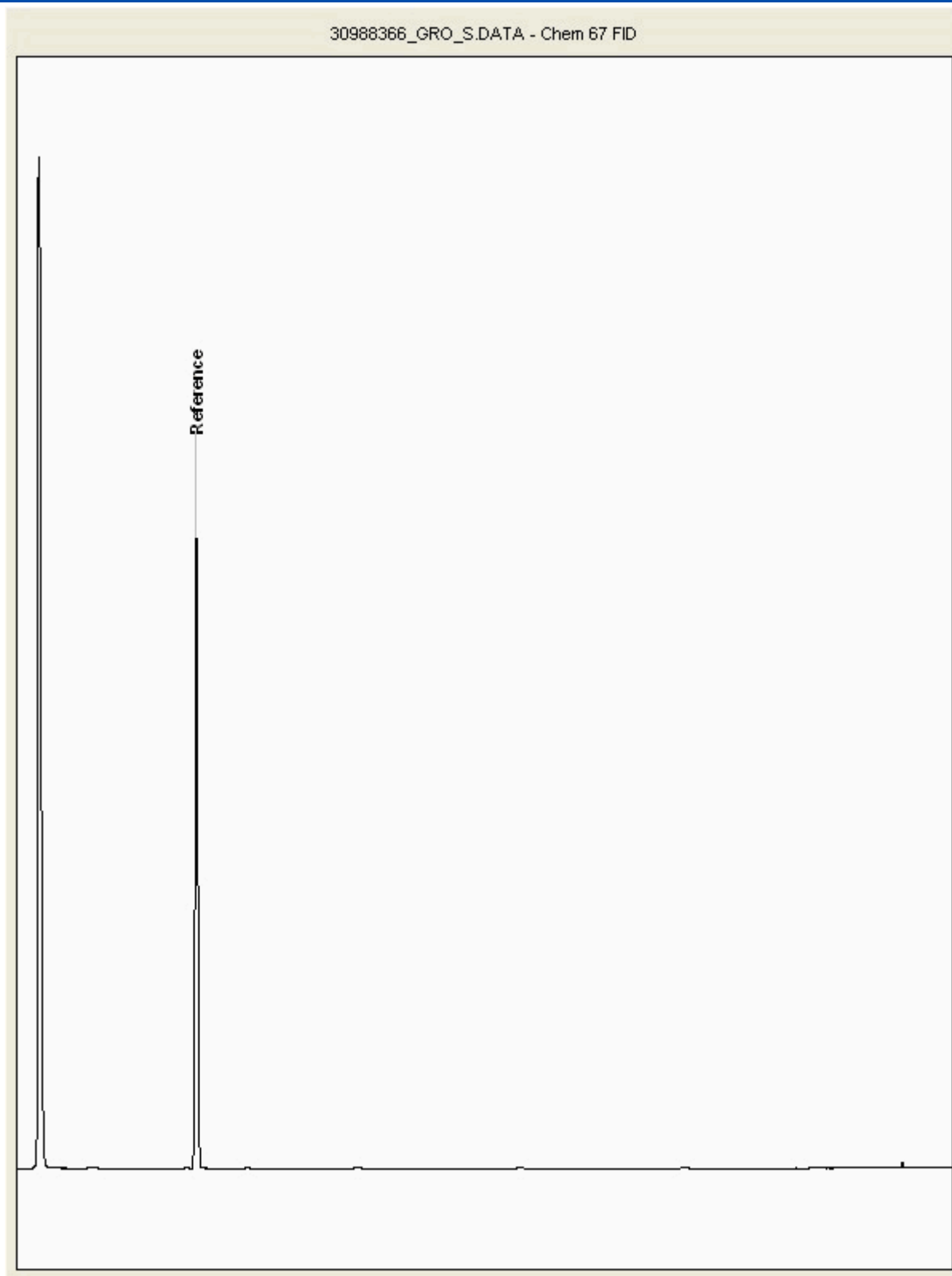
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30988366
Sample ID : WS03

Depth : 0.20





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

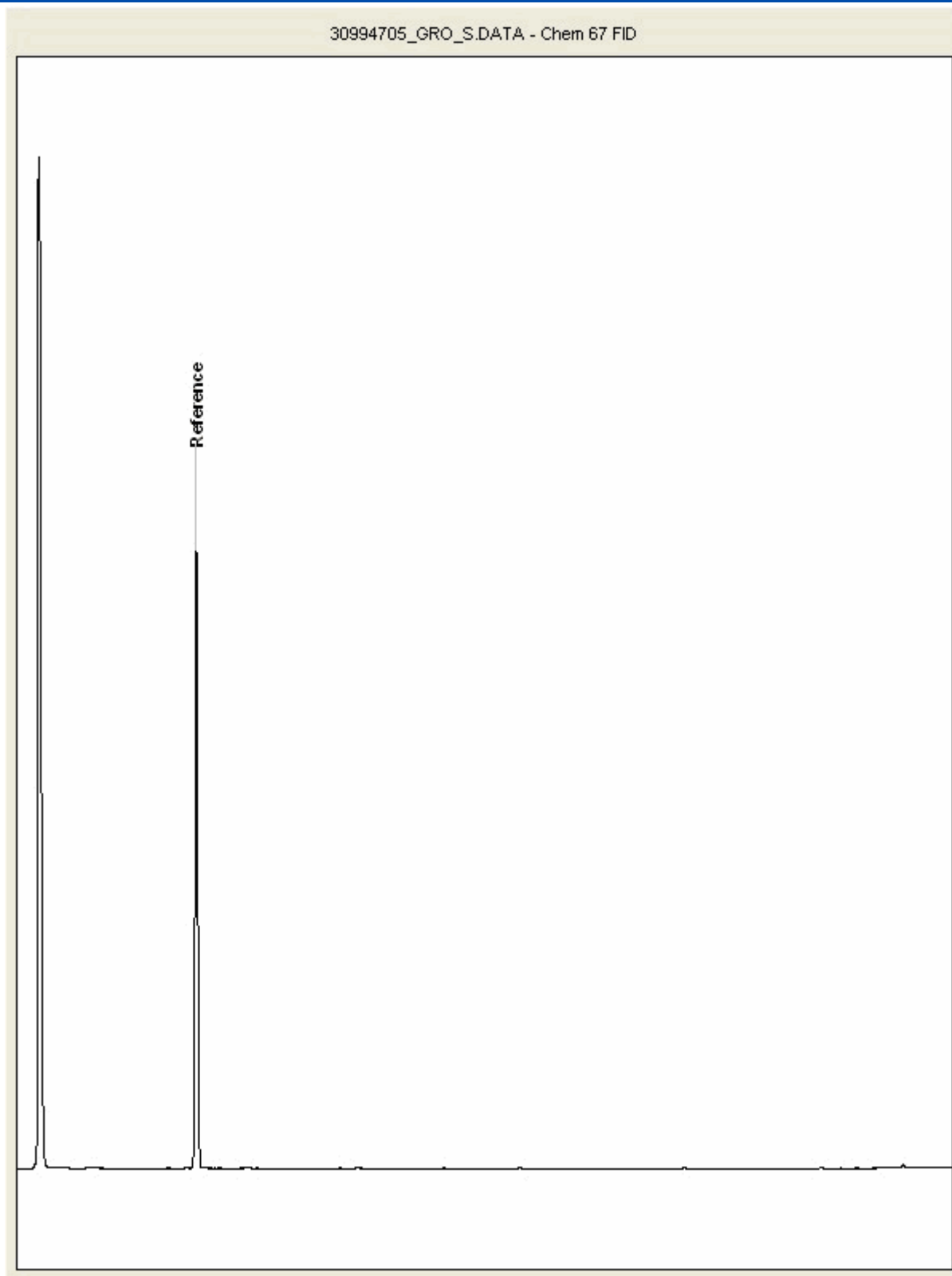
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30994705
Sample ID : WS05

Depth : 0.20





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

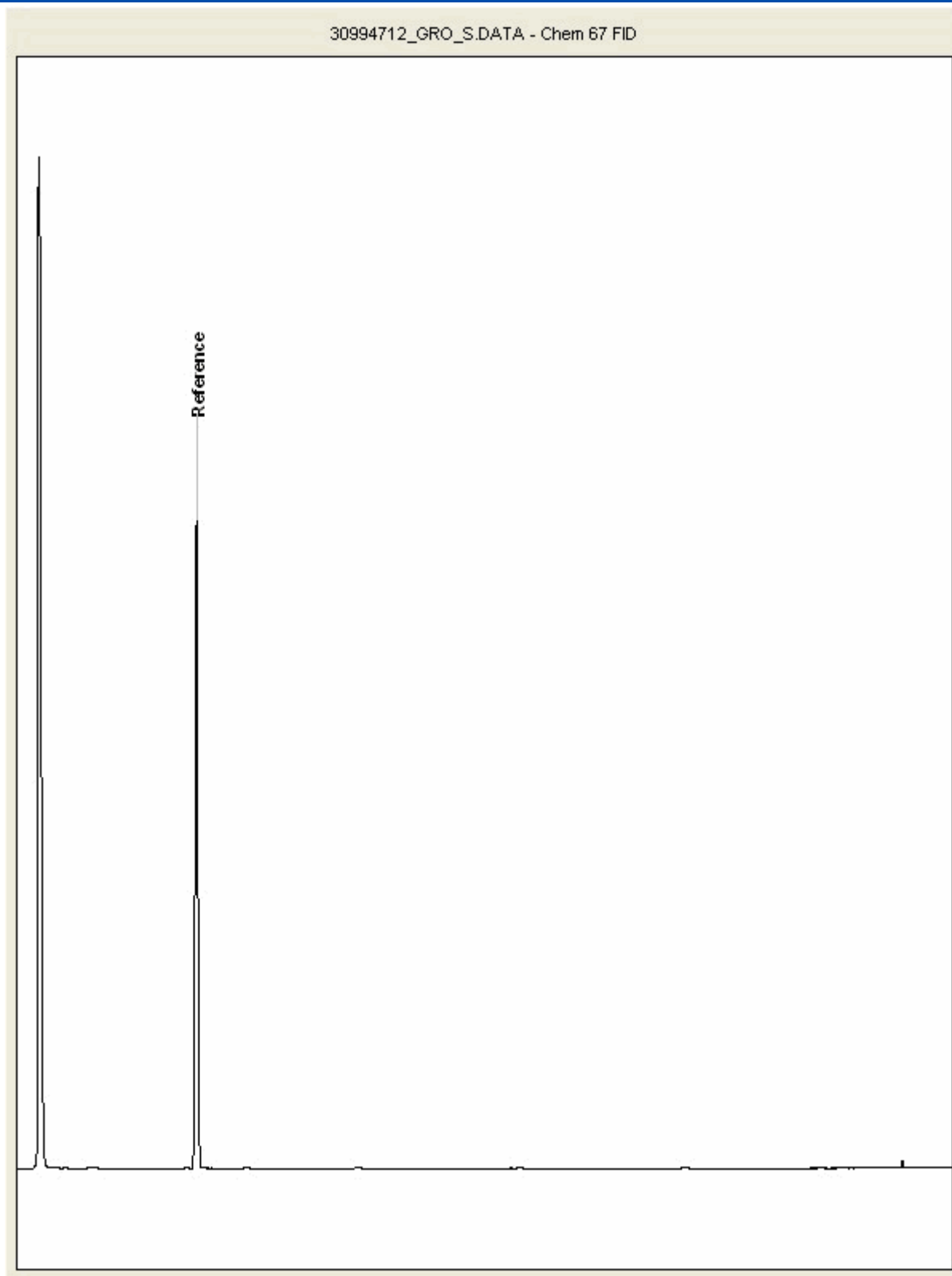
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30994712
Sample ID : WS02

Depth : 0.60





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

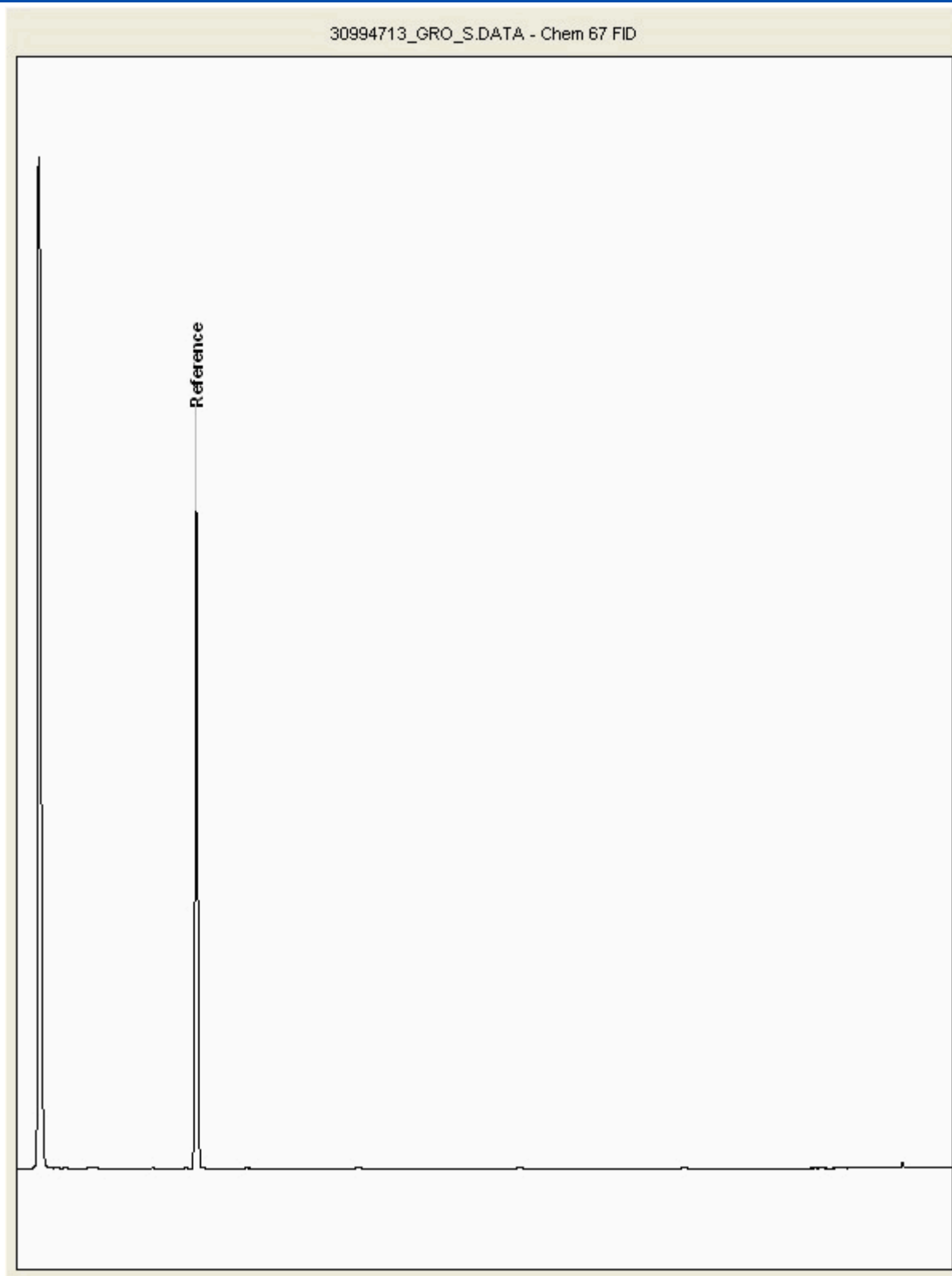
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30994713
Sample ID : WS04

Depth : 0.00 - 0.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

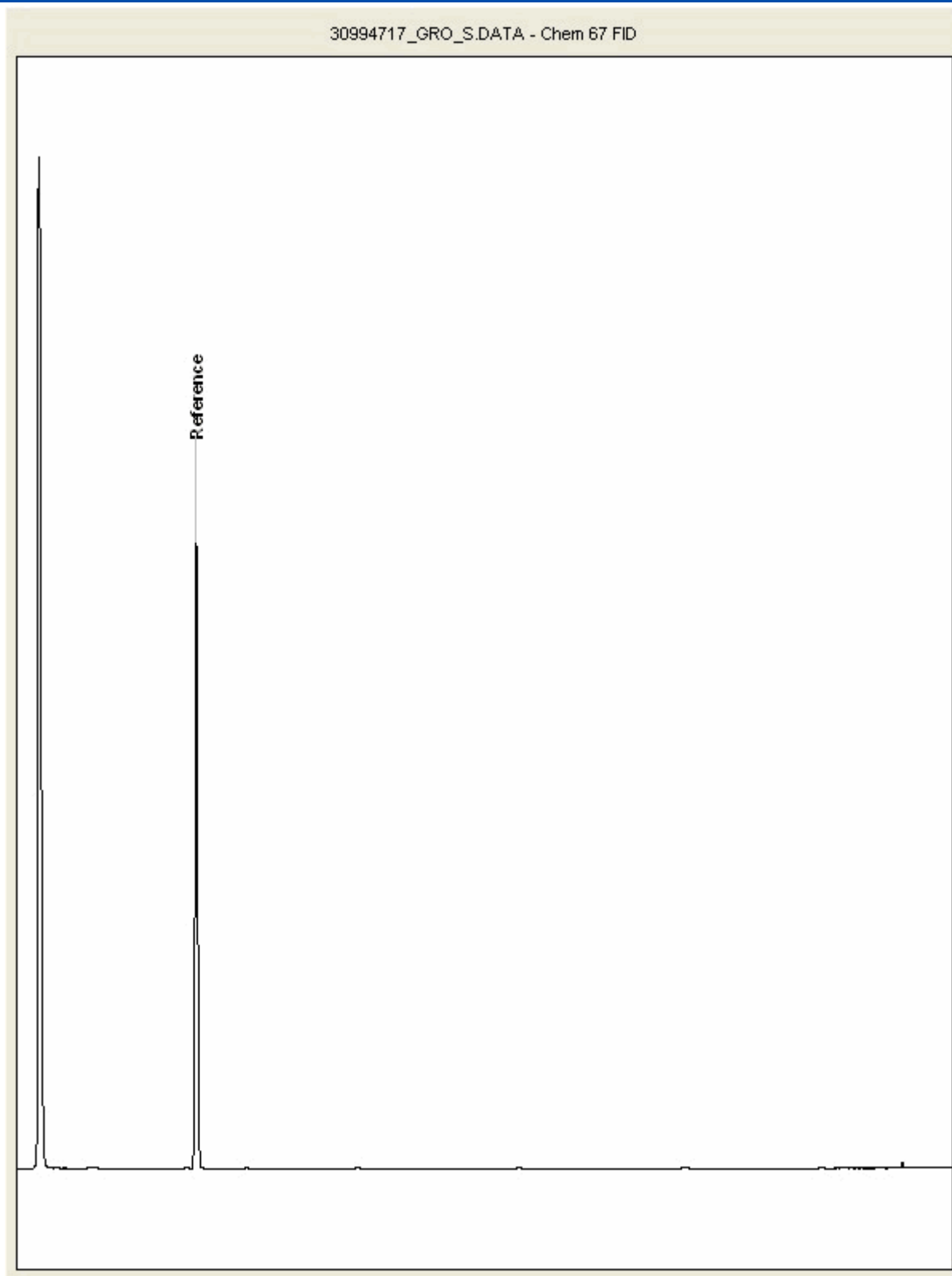
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30994717
Sample ID : TP15

Depth : 1.90 - 2.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250124-33
Client Ref.: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

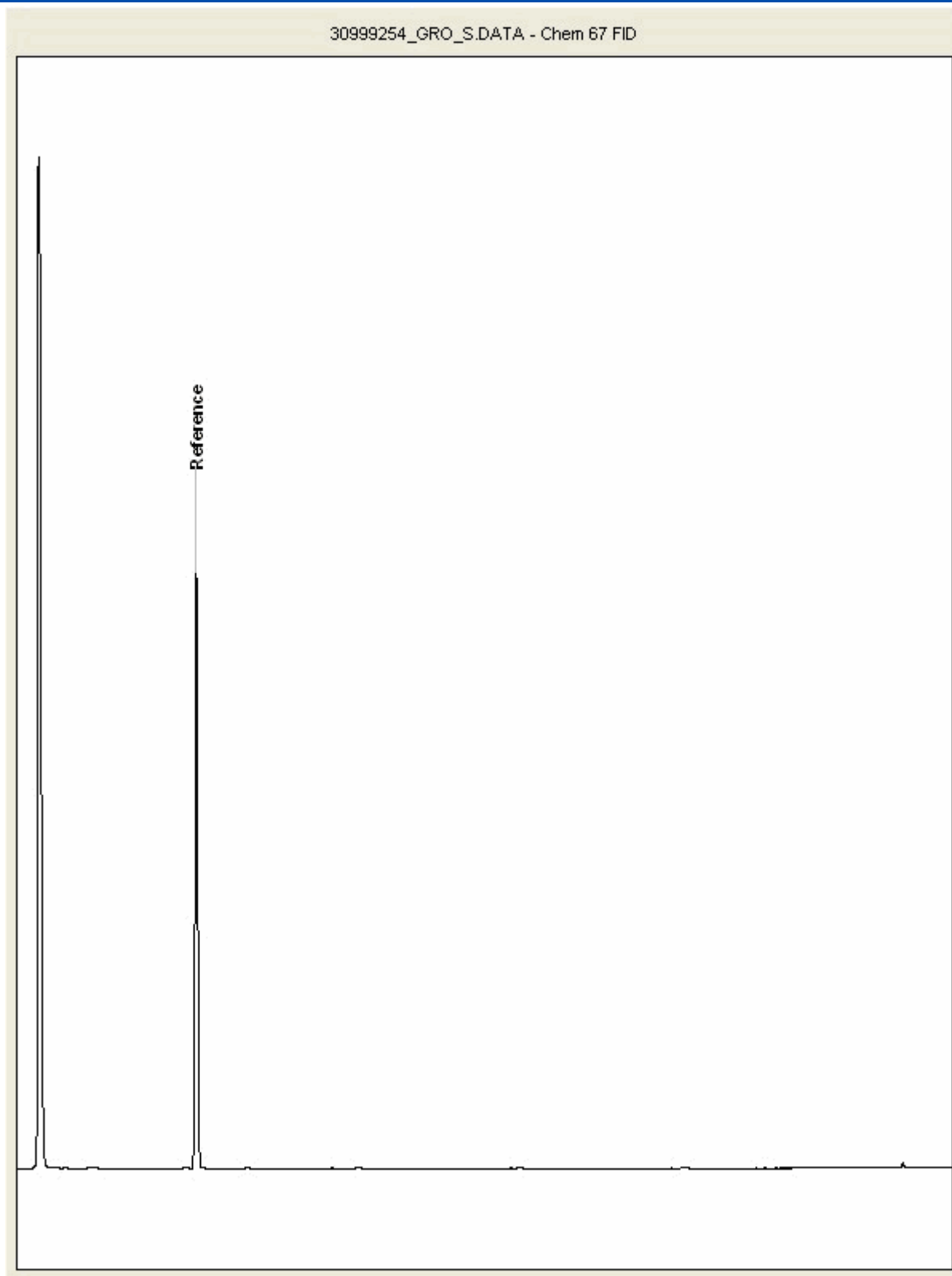
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30999254
Sample ID : WS04

Depth : 0.20





CERTIFICATE OF ANALYSIS

SDG: 250124-33
Client Ref: UK0029106.9719

Report Number: 755654
Location: Halewood LUF

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur - e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

If during the search of the two 'pinch' samples by PLM only 1 or 2 fibres or fibre bundles are seen and identified as asbestos, the term 'trace asbestos identified' is reported.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Potentially respirable fibres are identified by using a Phase Contrast Microscope.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

21. 6:2 FTAB

Recovery of 6:2 FTAB in the quality control samples has been observed to be <50% of the target value. Please note the 6:2 FTAB result is supplied as indicative only.



WSP UK Limited
8 First Street
Main
Manchester
M15 4RP

Attention: Ellie Hale

Units 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

CERTIFICATE OF ANALYSIS

Date of report Generation:	04 February 2025
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	250125-46
Your Reference:	UK0029106.9719
Location:	Halewood LUF
Report No:	755272
Order Number:	UK0029106.9719 CE1 - GI works

We received 7 samples on Saturday January 25, 2025 and 7 of these samples were scheduled for analysis which was completed on Tuesday February 04, 2025. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Justin Keeton

Business Unit Leader - Land



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CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30992096	TP01	ES	0.80 - 0.90	24/01/2025
30992101	TP01	ES	2.60 - 2.70	24/01/2025
30992106	TP02	ES	0.90 - 1.00	24/01/2025
30992111	TP02	ES	1.90 - 2.00	24/01/2025
30992116	TP04	ES	0.70 - 0.80	24/01/2025
30992121	TP13	ES	1.50 - 1.60	23/01/2025
30992128	TP22	ES	2.20 - 2.30	24/01/2025

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

Superseded Report:

Results Legend X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container		Sample Type	
	30992128		TP22		ES		2.20 - 2.30		250g Amber jar (ALE215) 60g VOC 1kg TUB with Handle		S	
	30992121		TP13		ES		1.50 - 1.60		250g Amber jar (ALE215) 60g VOC 1kg TUB with Handle		S	
	30992116		TP04		ES		0.70 - 0.80		250g Amber jar (ALE215) 60g VOC 1kg TUB with Handle		S	
	30992111		TP02		ES		1.90 - 2.00		250g Amber jar (ALE215) 60g VOC 1kg TUB with Handle		S	
	30992106		TP02		ES		0.90 - 1.00		250g Amber jar (ALE215) 60g VOC 1kg TUB with Handle		S	
	30992101		TP01		ES		2.60 - 2.70		250g Amber jar (ALE215) 60g VOC 1kg TUB with Handle		S	
30992096		TP01		ES		0.80 - 0.90		250g Amber jar (ALE215) 60g VOC 1kg TUB with Handle		S		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 7	X		X		X		X			
EPH CWG GC (S)	All	NDPs: 0 Tests: 7		X		X		X		X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 7			X		X		X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 7		X		X		X		X		X
PAH by GCMS	All	NDPs: 0 Tests: 7		X		X		X		X		X
pH	All	NDPs: 0 Tests: 7		X		X		X		X		X
Sample description	All	NDPs: 0 Tests: 7		X		X		X		X		X
Total Organic Carbon	All	NDPs: 0 Tests: 7		X		X		X		X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 7		X		X		X		X		X
VOC MS (S)	All	NDPs: 0 Tests: 7			X		X		X			X



CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
-----------	----------	------	-----------------	--------	-------------	--------	------------	-------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30992096	TP01	0.80 - 0.90	Dark Brown	Sandy Clay	Stones	None
30992101	TP01	2.60 - 2.70	Dark Brown	Sandy Clay	Stones	None
30992106	TP02	0.90 - 1.00	Dark Brown	Sandy Clay	Stones	None
30992111	TP02	1.90 - 2.00	Dark Brown	Sandy Clay	Stones	None
30992116	TP04	0.70 - 0.80	Dark Brown	Sandy Clay	Stones	None
30992121	TP13	1.50 - 1.60	Dark Brown	Sandy Clay	Stones	None
30992128	TP22	2.20 - 2.30	Dark Brown	Sandy Clay	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

SDG: 250125-46

Report Number: 755272

Superseded Report:

Client Ref.: UK0029106.9719

Location: Halewood LUF

[illegible]

SDG: 250125-46

Client Ref.: UK0029106.9719

PAH by GCMS

[illegible]

SDG: 250125-46

Report Number: 755272

Superseded Report:

Client Ref.: UK0029106.9719

Location: Halewood LUF

PAH by GCMS

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample Ref.	TP01	TP01	TP02	TP02	TP04	TP13
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.80 - 0.90 Soil/Solid (S) 24/01/2025	2.60 - 2.70 Soil/Solid (S) 24/01/2025	0.90 - 1.00 Soil/Solid (S) 24/01/2025	1.90 - 2.00 Soil/Solid (S) 24/01/2025	0.70 - 0.80 Soil/Solid (S) 24/01/2025	1.50 - 1.60 Soil/Solid (S) 23/01/2025
M	mCERTS accredited.							
aq	Aqueous / filtered sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		25/01/2025 250125-46 30992096 ES	25/01/2025 250125-46 30992101 ES	25/01/2025 250125-46 30992106 ES	25/01/2025 250125-46 30992111 ES	25/01/2025 250125-46 30992116 ES	25/01/2025 250125-46 30992121 ES
***	6:2 FTAB (see appendix)							
1-4*5@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	97.5	95	98.5	93.5	93.2	110
Aliphatics >C5-C6 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aliphatics >C16-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5	<5	<5	<5	<5	<5
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10 mg/kg	TM414	<10	<10	<10	<10	<10	<10
Aromatics >EC5-EC7 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aromatics > EC16-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5	<5	<5	<5	<5	<5
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10 mg/kg	TM414	<10	<10	<10	<10	<10	<10
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
GRO >C5-C10 (HS_1D_TOTAL)	<0.02 mg/kg	TM089	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02



CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719Report Number: 755272
Location: Halewood LUF

Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample Ref.	TP22				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	2.20 - 2.30				
M	mCERTS accredited.		Soil/Solid (S)				
aq	Aqueous / settled sample.		24/01/2025				
diss.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.		25/01/2025				
*	Subcontracted - refer to subcontractor report for accreditation status.		250125-46				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		30992128				
***	6:2 FTAB (see appendix)		ES				
1-4*5@	Sample deviation (see appendix)						
Component	LOD/Units	Method					
GRO Surrogate % recovery**	%	TM089	94.6				
Aliphatics >C5-C6 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01				
Aliphatics >C6-C8 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01				
Aliphatics >C8-C10 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01				
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	#			
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	#			
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	#			
Aliphatics >C16-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1				
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	#			
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1				
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5				
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10 mg/kg	TM414	<10				
Aromatics >EC5-EC7 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01				
Aromatics >EC7-EC8 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01				
Aromatics >EC8-EC10 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01				
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	#			
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	#			
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	#			
Aromatics > EC16-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1				
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	#			
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1				
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1				
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5				
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10 mg/kg	TM414	<10				
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<0.05 mg/kg	TM089	<0.05				
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<0.05 mg/kg	TM089	<0.05				
GRO >C5-C10 (HS_1D_TOTAL)	<0.02 mg/kg	TM089	<0.02				

SDG: 250125-46

Report Number: 755272

Superseded Report:

Client Ref.: UK0029106.9719

Location: Halewood LUF

VOC MS (S)

[illegible]

SDG: 250125-46

Report Number: 755272

Superseded Report:

Client Ref.: UK0029106.9719

Location: Halewood LUF

VOC MS (S)

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

ISO17025 accredited.
M mCERTS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5	@ Sample deviation (see appendix)

Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP01ES 0.80 - 0.90 SOLID 24/01/2025 00:00:00 25/01/2025 09:00:00 250125-46 30992096 TM048	04/02/2025 Alex Horner -	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP01ES 2.60 - 2.70 SOLID 24/01/2025 00:00:00 25/01/2025 09:00:00 250125-46 30992101 TM048	04/02/25 Danielle Duncan N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP02ES 0.90 - 1.00 SOLID 24/01/2025 00:00:00 25/01/2025 09:00:00 250125-46 30992106 TM048	04/02/2025 Alex Horner -	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP02ES 1.90 - 2.00 SOLID 24/01/2025 00:00:00 25/01/2025 09:00:00 250125-46 30992111 TM048	04/02/25 Danielle Duncan N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP04ES 0.70 - 0.80 SOLID 24/01/2025 00:00:00 25/01/2025 09:00:00 250125-46 30992116 TM048	04/02/2025 Alex Horner -	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP13ES 1.50 - 1.60 SOLID 23/01/2025 00:00:00 25/01/2025 09:00:00 250125-46 30992121 TM048	04/02/2025 Alex Horner -	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP22ES 2.20 - 2.30 SOLID 24/01/2025 00:00:00 25/01/2025 09:00:00 250125-46 30992128 TM048	04/02/2025 Alex Horner -	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

Superseded Report:

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM048	Identification of Asbestos in Bulk Material
TM218	The determination of PAH in soil samples by GC-MS
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

Superseded Report:

Test Completion Dates

Lab Sample No(s)
Customer Sample Ref.

AGS Ref.
Depth
Type

	30992096	30992101	30992106	30992111	30992116	30992121	30992128
	TP01	TP01	TP02	TP02	TP04	TP13	TP22
	ES	ES	ES	ES	ES	ES	ES
	0.80 - 0.90	2.60 - 2.70	0.90 - 1.00	1.90 - 2.00	0.70 - 0.80	1.50 - 1.60	2.20 - 2.30
	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Asbestos ID in Solid Samples	04-Feb-2025	04-Feb-2025	04-Feb-2025	04-Feb-2025	04-Feb-2025	04-Feb-2025	04-Feb-2025
EPH CWG GC (S)	31-Jan-2025	31-Jan-2025	30-Jan-2025	31-Jan-2025	31-Jan-2025	31-Jan-2025	31-Jan-2025
GRO by GC-FID (S)	29-Jan-2025	03-Feb-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025	29-Jan-2025
Metals in solid samples by OES	03-Feb-2025	03-Feb-2025	03-Feb-2025	03-Feb-2025	03-Feb-2025	03-Feb-2025	04-Feb-2025
PAH by GCMS	03-Feb-2025	03-Feb-2025	03-Feb-2025	03-Feb-2025	03-Feb-2025	03-Feb-2025	03-Feb-2025
pH	03-Feb-2025	03-Feb-2025	03-Feb-2025	03-Feb-2025	03-Feb-2025	03-Feb-2025	03-Feb-2025
Sample description	27-Jan-2025	27-Jan-2025	27-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025
Total Organic Carbon	03-Feb-2025	03-Feb-2025	03-Feb-2025	03-Feb-2025	03-Feb-2025	03-Feb-2025	03-Feb-2025
TPH CWG GC (S)	31-Jan-2025	03-Feb-2025	30-Jan-2025	31-Jan-2025	31-Jan-2025	31-Jan-2025	31-Jan-2025
VOC MS (S)	30-Jan-2025	30-Jan-2025	30-Jan-2025	30-Jan-2025	30-Jan-2025	30-Jan-2025	30-Jan-2025



CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

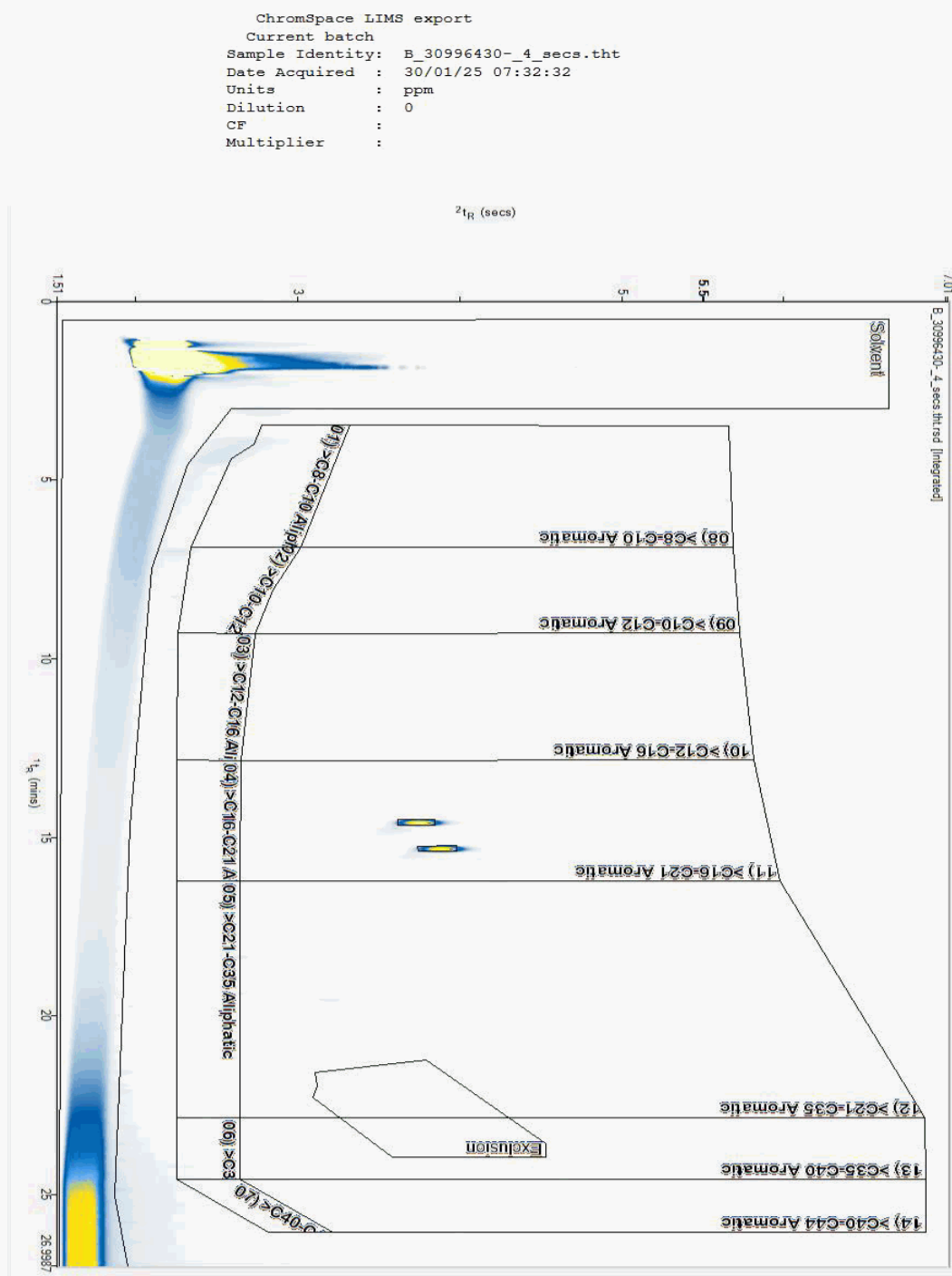
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30996430
Sample ID : TP01

Depth : 0.80 - 0.90





CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

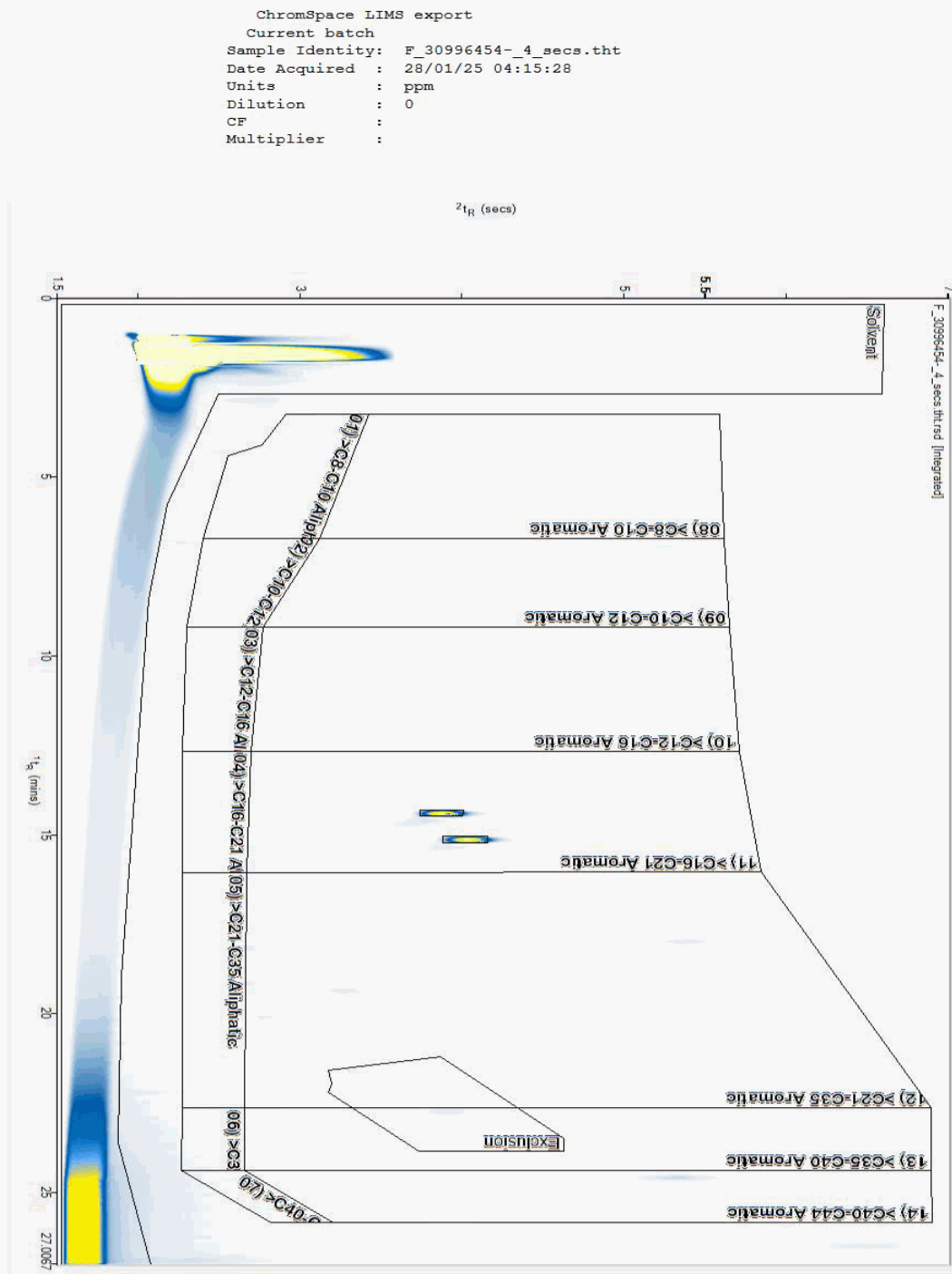
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30996454
Sample ID : TP02

Depth : 0.90 - 1.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

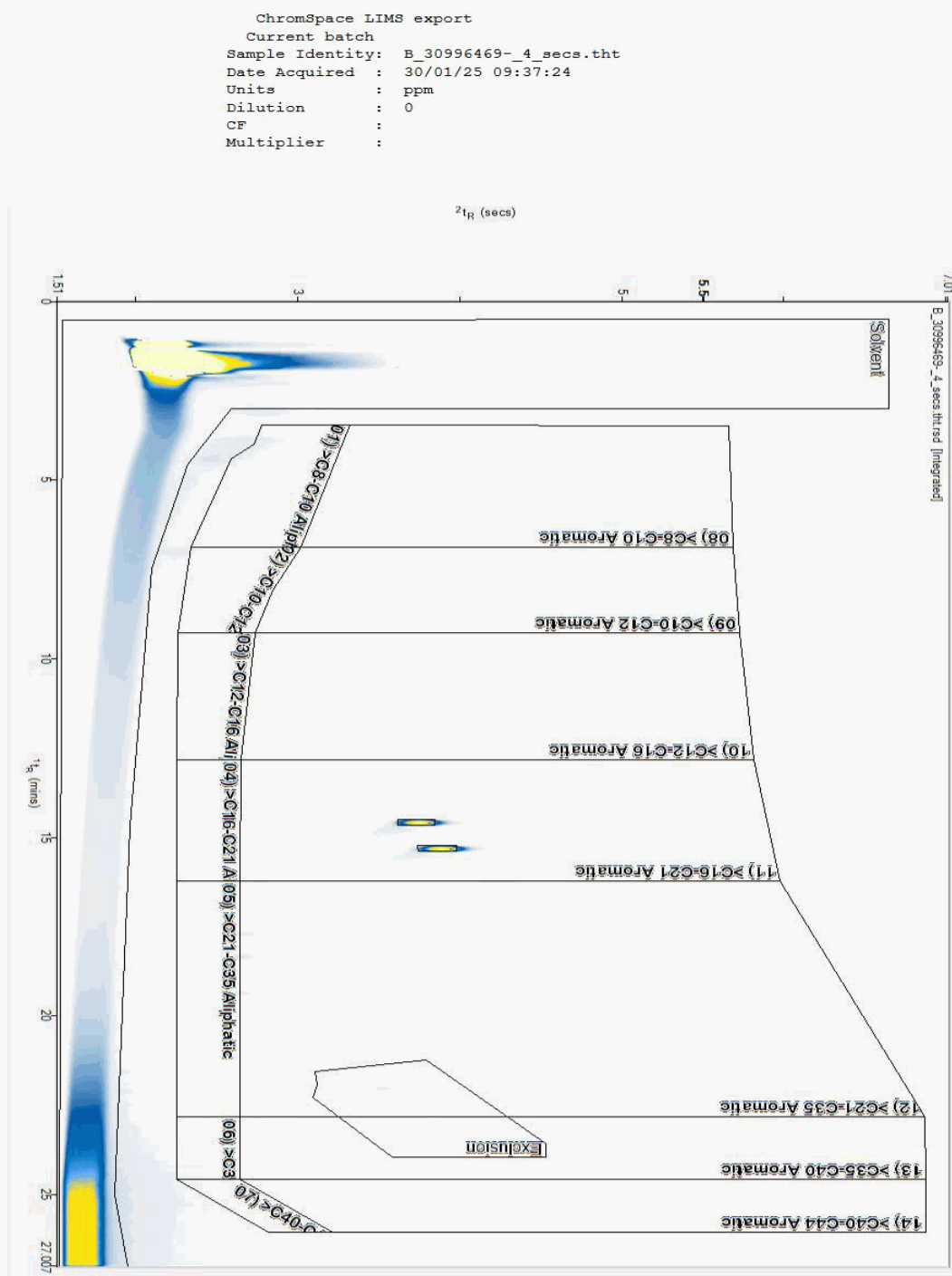
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30996469
Sample ID : TP01

Depth : 2.60 - 2.70





CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

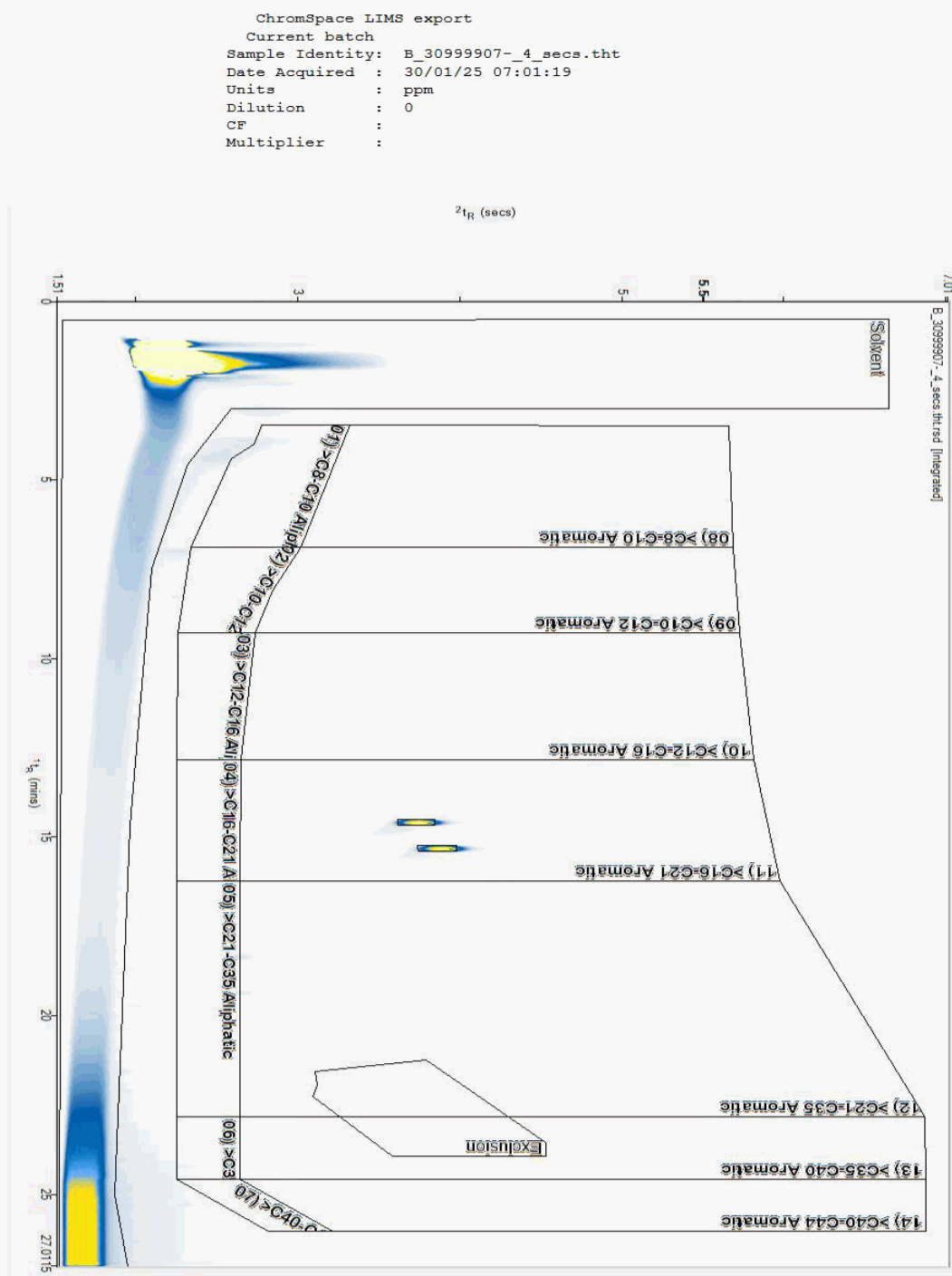
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30999907
Sample ID : TP13

Depth : 1.50 - 1.60





CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

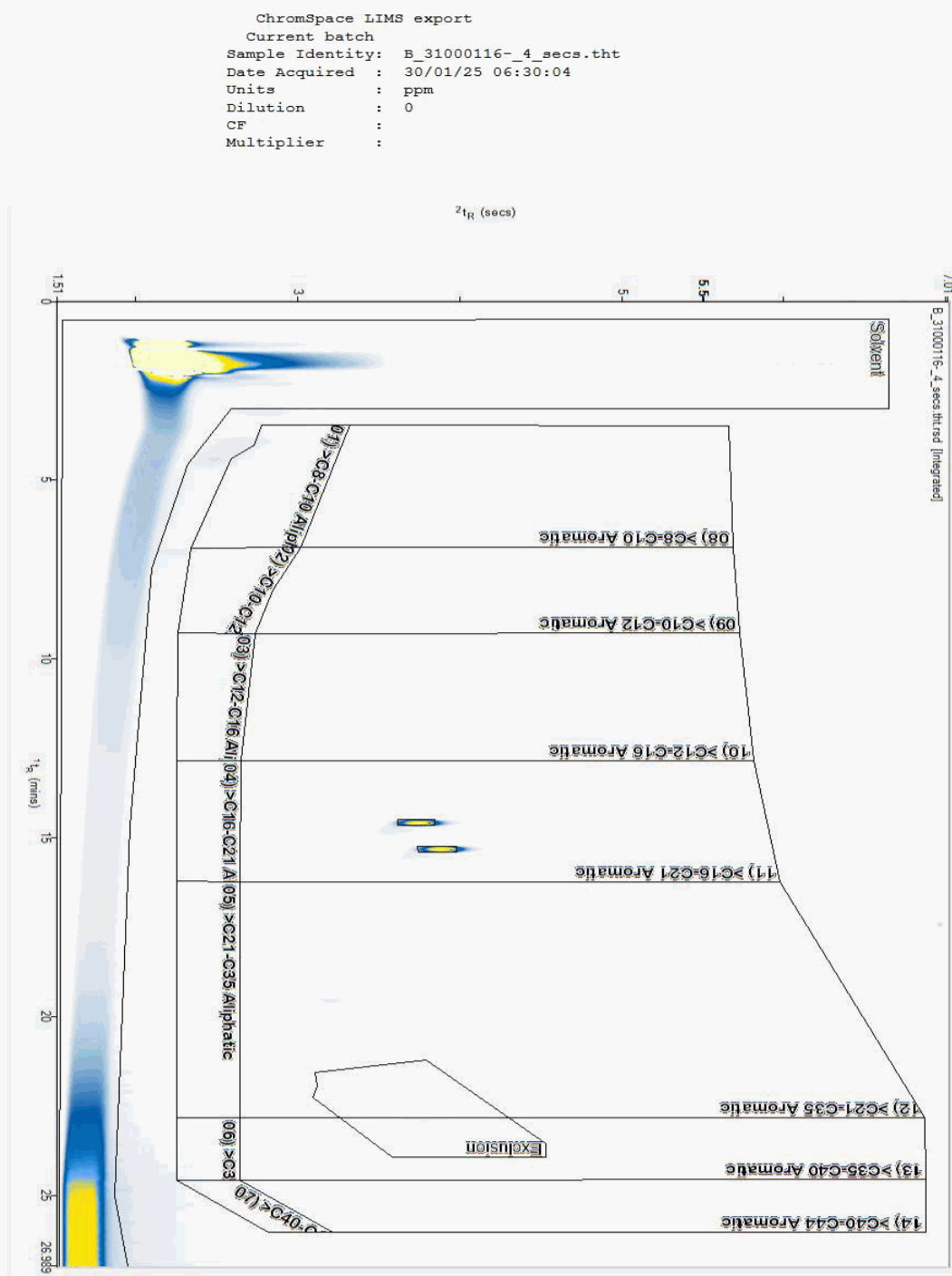
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 31000116
Sample ID : TP22

Depth : 2.20 - 2.30



SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

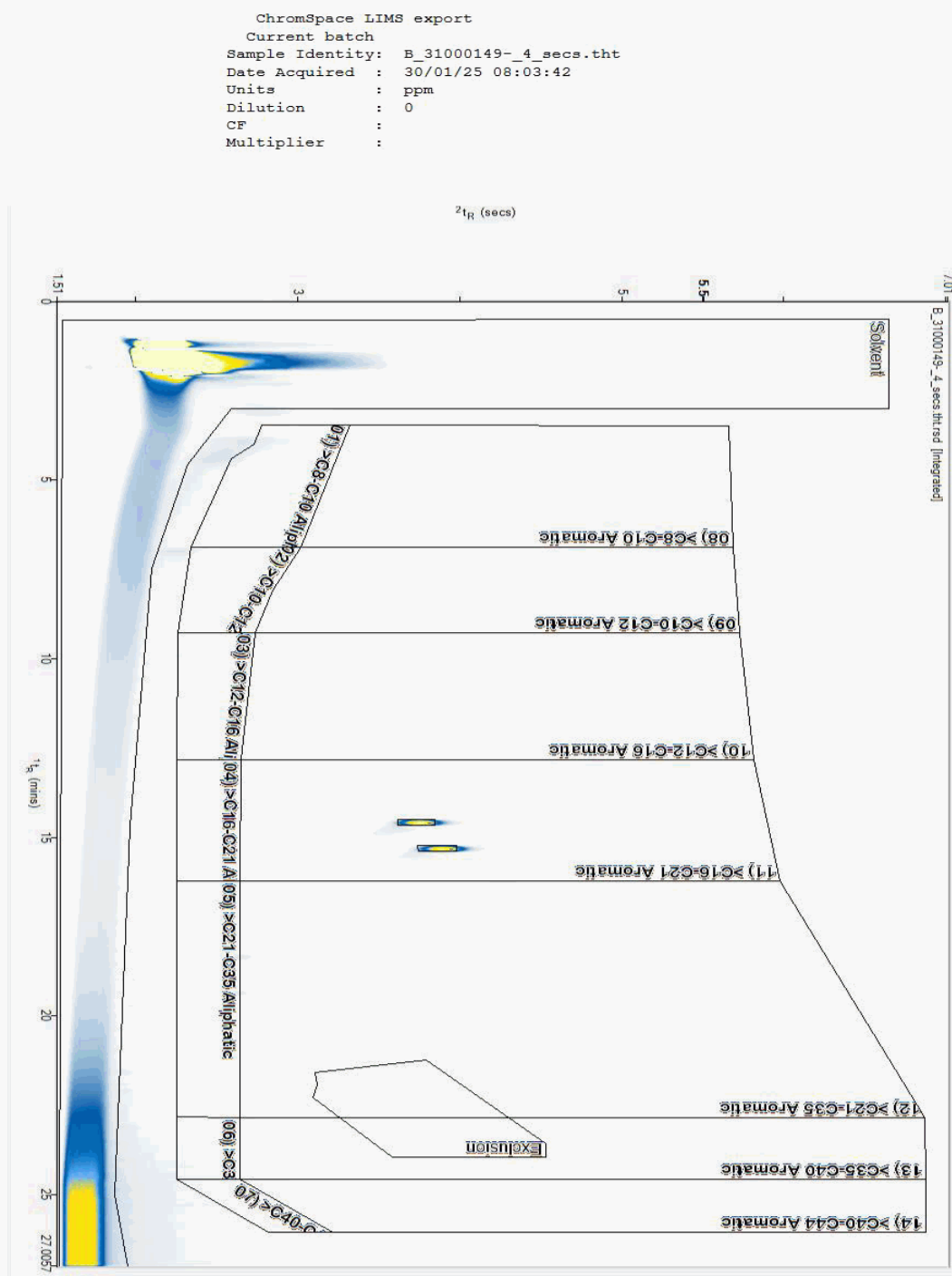
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 31000149
Sample ID : TP02

Depth : 1.90 - 2.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

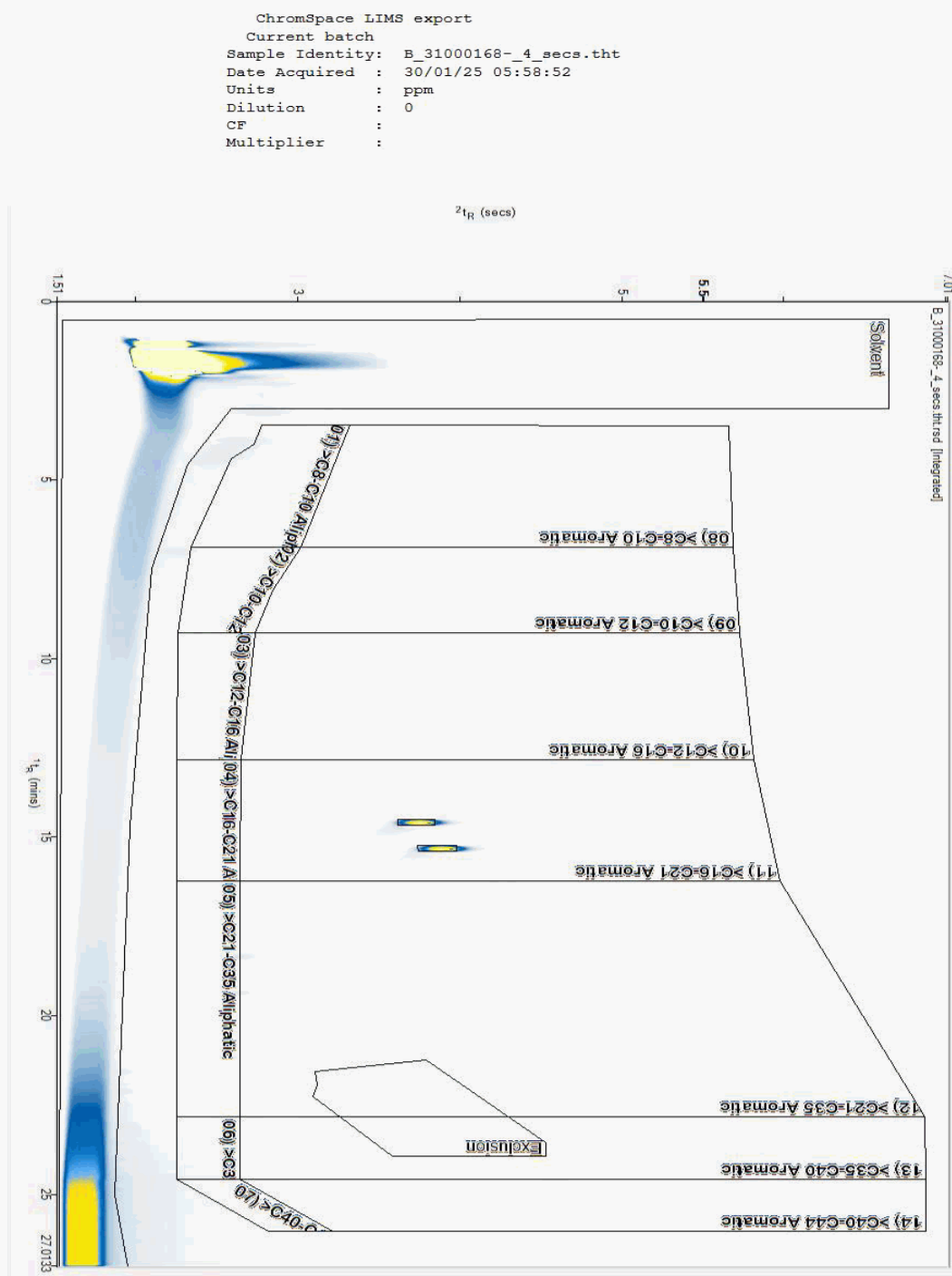
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 31000168
Sample ID : TP04

Depth : 0.70 - 0.80





CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

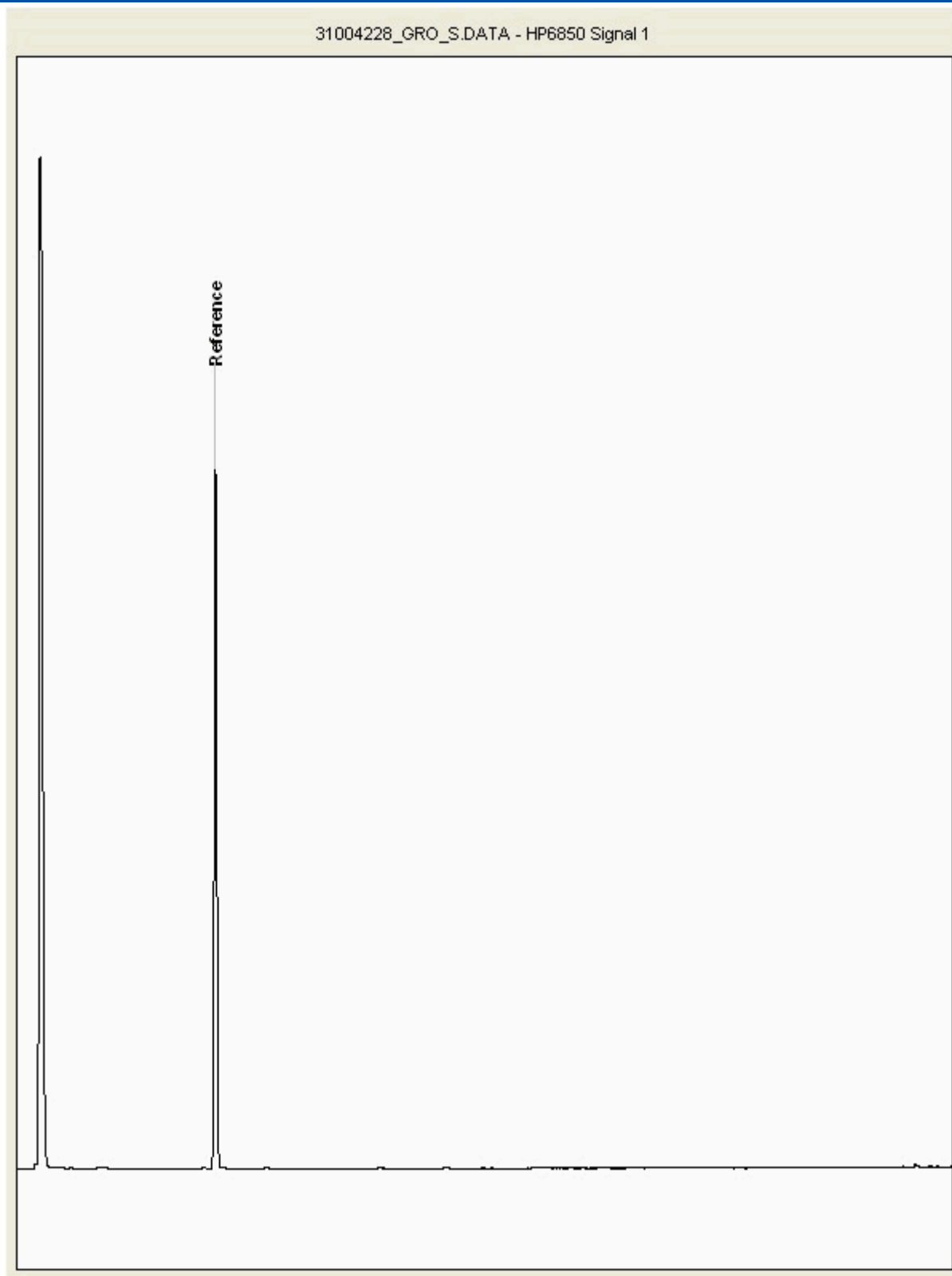
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 31004228
Sample ID : TP01

Depth : 0.80 - 0.90





CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

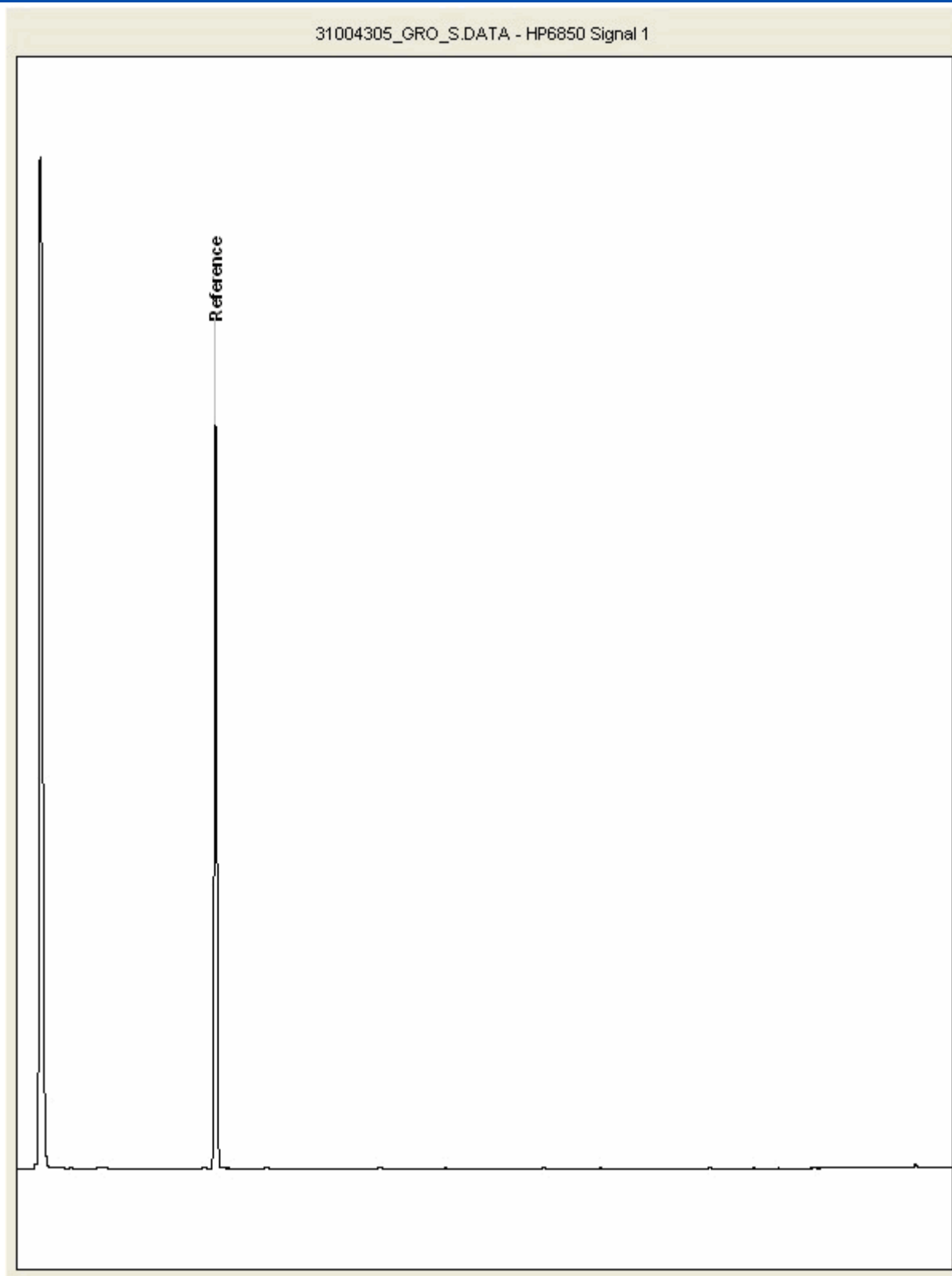
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 31004305
Sample ID : TP02

Depth : 0.90 - 1.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

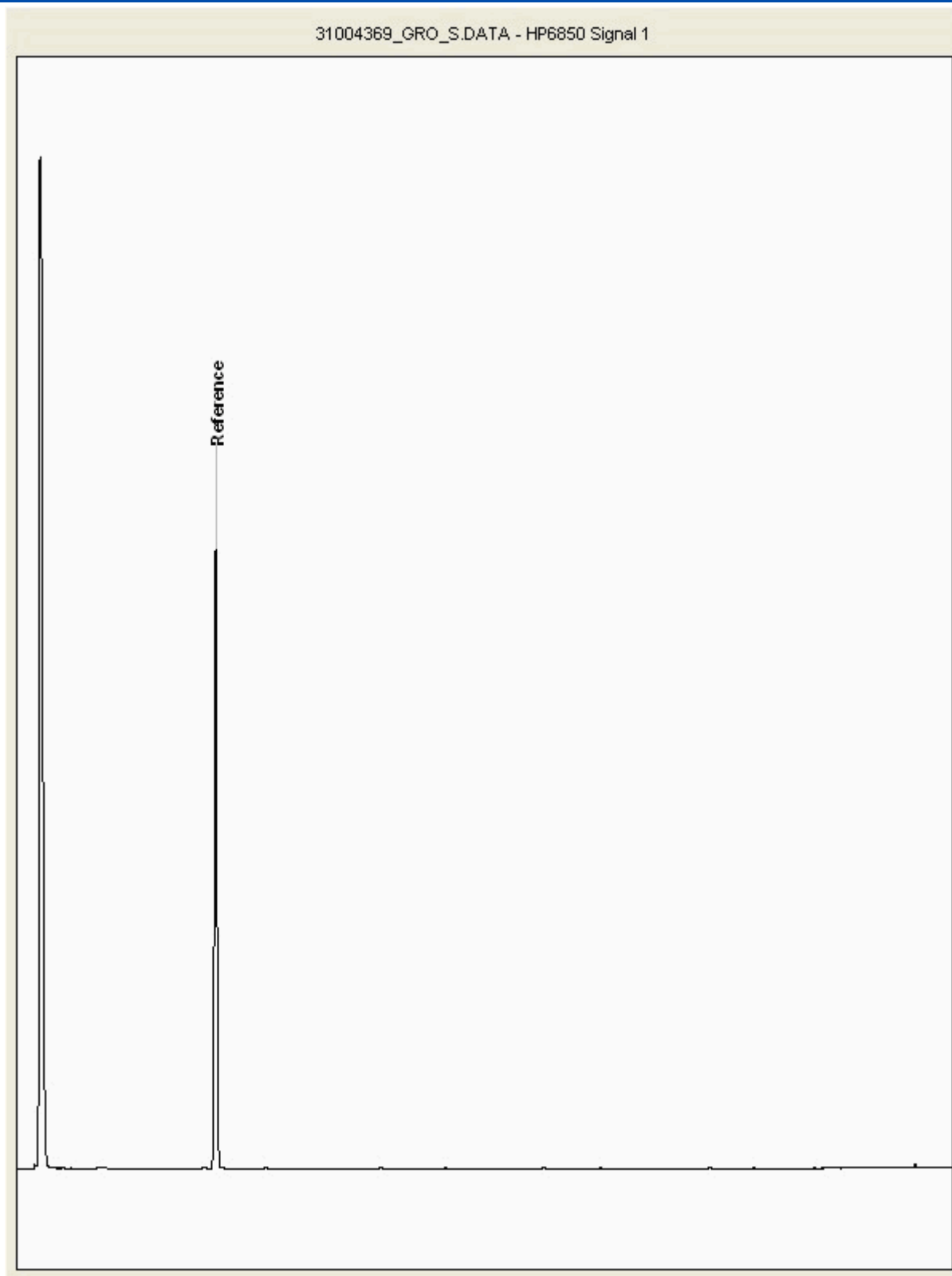
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 31004369
Sample ID : TP13

Depth : 1.50 - 1.60





CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

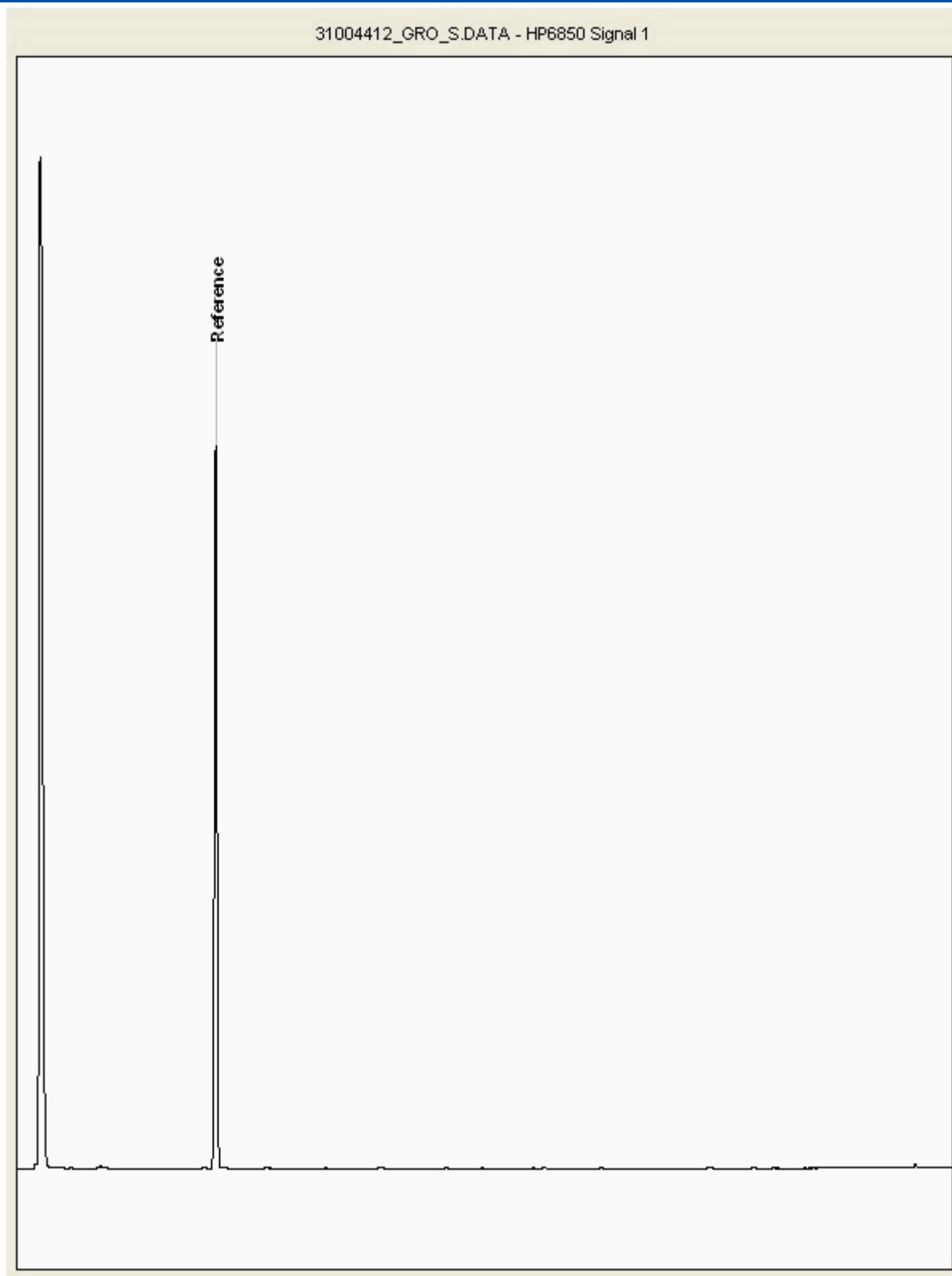
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 31004412
Sample ID : TP22

Depth : 2.20 - 2.30





CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

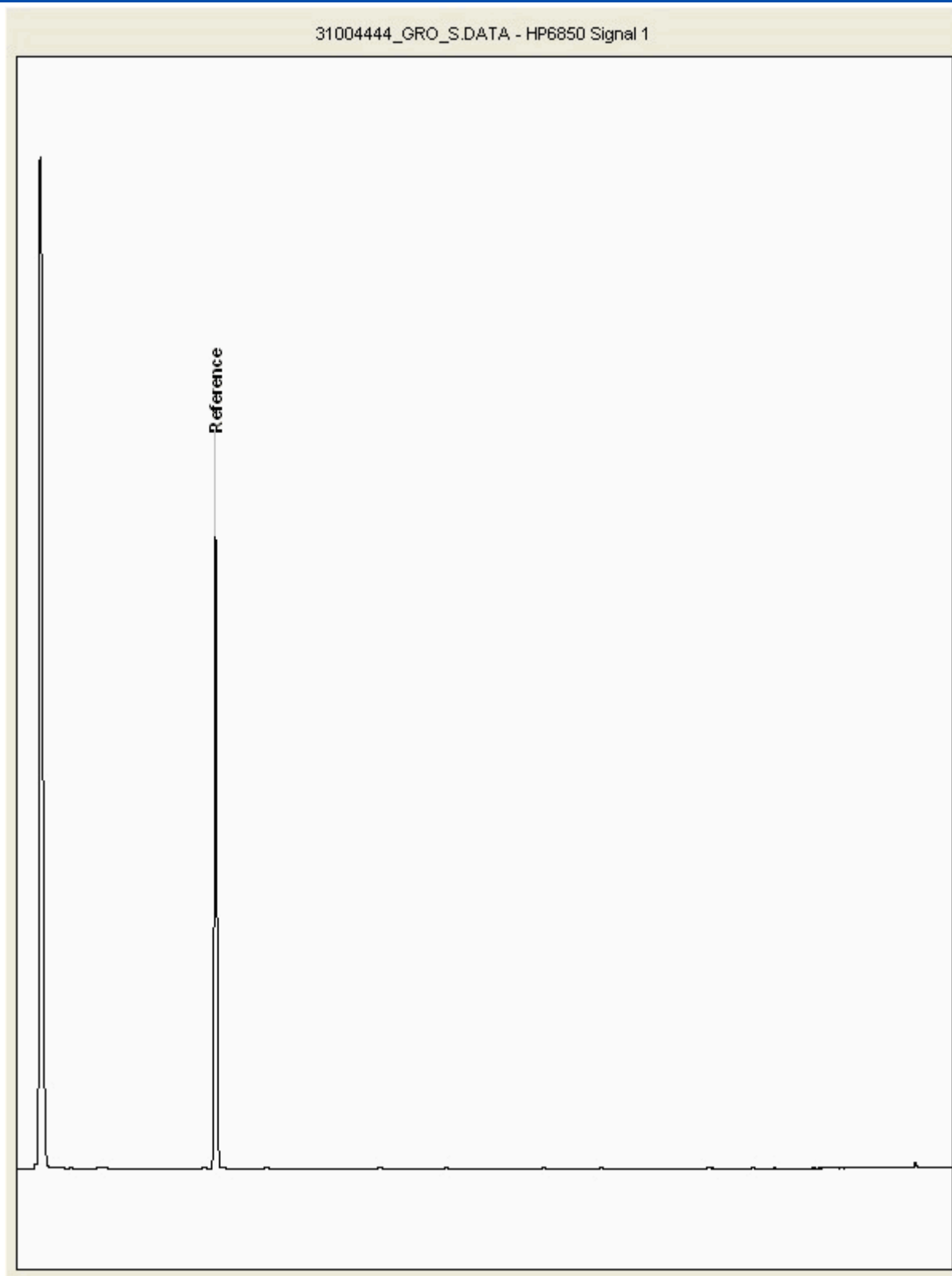
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 31004444
Sample ID : TP02

Depth : 1.90 - 2.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

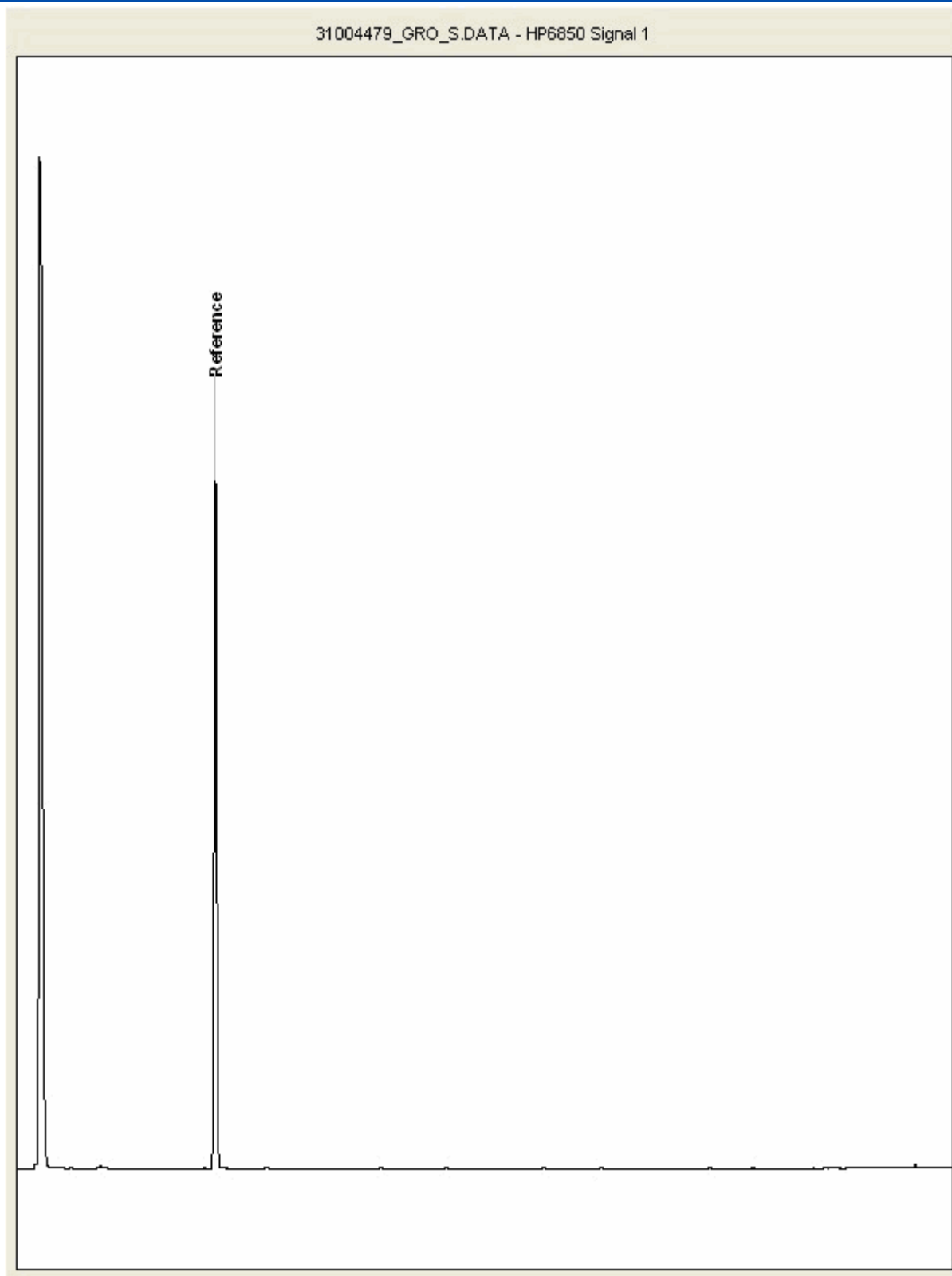
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 31004479
Sample ID : TP04

Depth : 0.70 - 0.80





CERTIFICATE OF ANALYSIS

Validated

SDG: 250125-46
Client Ref.: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

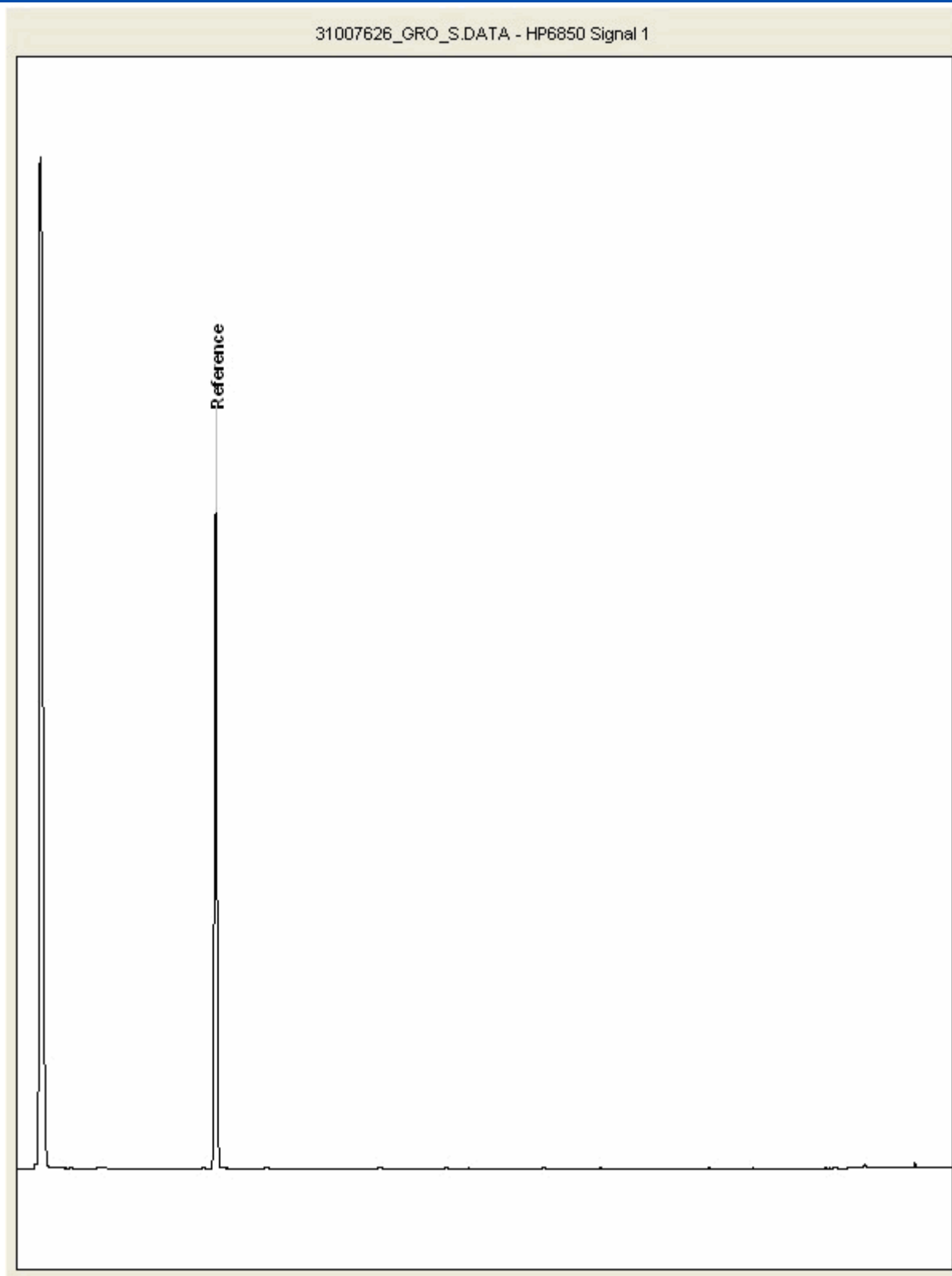
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 31007626
Sample ID : TP01

Depth : 2.60 - 2.70





CERTIFICATE OF ANALYSIS

SDG: 250125-46
Client Ref: UK0029106.9719

Report Number: 755272
Location: Halewood LUF

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur - e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

If during the search of the two 'pinch' samples by PLM only 1 or 2 fibres or fibre bundles are seen and identified as asbestos, the term 'trace asbestos identified' is reported.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Potentially respirable fibres are identified by using a Phase Contrast Microscope.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

21. 6:2 FTAB

Recovery of 6:2 FTAB in the quality control samples has been observed to be <50% of the target value. Please note the 6:2 FTAB result is supplied as indicative only.



WSP UK Limited
8 First Street
Main
Manchester
M15 4RP

Attention: Henry Race

Units 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

CERTIFICATE OF ANALYSIS

Date of report Generation: 10 November 2025
Customer: WSP UK Limited
Sample Delivery Group (SDG): 251031-95
Your Reference: Halewood LUF
Location: Grace Park, Halewood
Report No: 782593
Order Number:

We received 5 samples on Friday October 31, 2025 and 5 of these samples were scheduled for analysis which was completed on Monday November 10, 2025. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Justin Keeton

Business Unit Leader - Land



1291



CERTIFICATE OF ANALYSIS

Validated

SDG: 251031-95
Client Ref.: Halewood LUF

Report Number: 782593
Location: Grace Park, Halewood

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
32381750	WS01	EW20251031	1.00 - 3.00	31/10/2025
32381756	WS02	EW20251031	1.00 - 3.00	31/10/2025
32381762	WS03	EW20251031	1.00 - 5.00	31/10/2025
32381768	WS04	EW20251031	1.00 - 5.00	31/10/2025
32381774	WS05	EW20251031	1.00 - 5.00	31/10/2025

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 251031-95
Client Ref.: Halewood LUF

Report Number: 782593
Location: Grace Park, Halewood

Superseded Report:

Results Legend X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other			Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container		Sample Type																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
			32381774		WS05		EW202510 31		1.00 - 5.00		Vial (ALE297)		GW																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
			32381768		WS04		EW202510 31		1.00 - 5.00		HNO3 Filtered (ALE204) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227) Vial (ALE297)		GW																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
			32381756		WS02		EW202510 31		1.00 - 3.00		HNO3 Filtered (ALE204) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227) Vial (ALE297)		GW																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
			32381762		WS03		EW202510 31		1.00 - 5.00		HNO3 Filtered (ALE204) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227) Vial (ALE297)		GW																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
			32381750		WS01		EW202510 31		1.00 - 3.00		HNO3 Filtered (ALE204) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227) Vial (ALE297)		GW																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
			32381750		WS01		EW202510 31		1.00 - 3.00		HNO3 Filtered (ALE204) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227) Vial (ALE297)		GW																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
Dissolved Metals by ICP-MS			All	NDPs: 0 Tests: 5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

SDG: 251031-95

Report Number: 782593

Superseded Report:

Client Ref.: Halewood LUF

Location: Grace Park, Halewood

[illegible]

SDG: 251031-95

Report Number: 782593

Superseded Report:

Client Ref.: Halewood LUF

Location: Grace Park, Halewood

PAH Spec MS - Aqueous (W)

[illegible]

SDG: 251031-95

Report Number: 782593

Superseded Report:

Client Ref.: Halewood LUF

Location: Grace Park, Halewood

TPH CWG (W)

[illegible]

SDG: 251031-95

Report Number: 782593

Superseded Report:

Client Ref.: Halewood LUF

Location: Grace Park, Halewood

VOC MS (W)

[illegible]



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Validated

SDG: 251031-95
Client Ref.: Halewood LUF

Report Number: 782593
Location: Grace Park, Halewood

Superseded Report:

Table of Results - Appendix

Method No	Description
TM152	Analysis of Aqueous Samples by ICP-MS
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM208	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM245	Determination of GRO by Headspace in waters
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM178	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM439	Determination of Extractable Petroleum Hydrocarbons (EPH) CWG banding by GC-FID on liquids

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 251031-95
Client Ref.: Halewood LUF

Report Number: 782593
Location: Grace Park, Halewood

Superseded Report:

Test Completion Dates

Lab Sample No(s)	32381750	32381756	32381762	32381768	32381774
Customer Sample Ref.	WS01	WS02	WS03	WS04	WS05
AGS Ref.	EW20251031	EW20251031	EW20251031	EW20251031	EW20251031
Depth	1.00 - 3.00	1.00 - 3.00	1.00 - 5.00	1.00 - 5.00	1.00 - 5.00
Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Dissolved Metals by ICP-MS	10-Nov-2025	10-Nov-2025	07-Nov-2025	07-Nov-2025	07-Nov-2025
EPH and CWG by FID	07-Nov-2025	07-Nov-2025	07-Nov-2025	07-Nov-2025	07-Nov-2025
GRO by GC-FID (W)	05-Nov-2025	05-Nov-2025	05-Nov-2025	05-Nov-2025	05-Nov-2025
Mercury Dissolved	10-Nov-2025	10-Nov-2025	10-Nov-2025	10-Nov-2025	10-Nov-2025
PAH Spec MS - Aqueous (W)	07-Nov-2025	07-Nov-2025	10-Nov-2025	07-Nov-2025	07-Nov-2025
pH Value	06-Nov-2025	06-Nov-2025	06-Nov-2025	06-Nov-2025	06-Nov-2025
TPH CWG (W)	07-Nov-2025	07-Nov-2025	07-Nov-2025	07-Nov-2025	07-Nov-2025
VOC MS (W)	05-Nov-2025	05-Nov-2025	05-Nov-2025	05-Nov-2025	05-Nov-2025



CERTIFICATE OF ANALYSIS

Validated

SDG: 251031-95
Client Ref.: Halewood LUFReport Number: 782593
Location: Grace Park, Halewood

Superseded Report:

ASSOCIATED AQC DATA

Dissolved Metals by ICP-MS

Component	Method Code	QC 3241	QC 3257	QC 3259
Aluminium	TM152	101.36 96.29 : 111.36	102.13 96.29 : 111.36	102.53 96.29 : 111.36
Antimony	TM152	103.39 95.87 : 111.07	103.31 95.87 : 111.07	107.55 95.87 : 111.07
Arsenic	TM152	100.3 97.55 : 110.65	100.96 97.55 : 110.65	104.28 97.55 : 110.65
Barium	TM152	102.04 95.20 : 110.50	102.77 95.20 : 110.50	103.21 95.20 : 110.50
Beryllium	TM152	105.06 96.85 : 112.45	103.18 96.85 : 112.45	104.47 96.85 : 112.45
Bismuth	TM152	107.19 97.83 : 111.23	106.4 97.83 : 111.23	105.23 97.83 : 111.23
Borate	TM152	104.55 88.00 : 112.00	104.32 88.00 : 112.00	105.46 88.00 : 112.00
Boron	TM152	104.55 92.57 : 115.00	104.32 92.57 : 115.00	105.46 92.57 : 115.00
Cadmium	TM152	102.71 97.48 : 110.88	102.21 97.48 : 110.88	103.17 97.48 : 110.88
Calcium	TM152	102.29 97.68 : 109.38	103.88 97.68 : 109.38	106.24 97.68 : 109.38
Chromium	TM152	99.37 96.27 : 109.04	98.92 96.27 : 109.04	102.67 96.27 : 109.04
Cobalt	TM152	98.39 92.39 : 111.11	99.23 92.39 : 111.11	102.01 92.39 : 111.11
Copper	TM152	99.78 97.35 : 110.57	100.25 97.35 : 110.57	104.05 97.35 : 110.57
Iron	TM152	98.93 97.26 : 109.03	99.19 97.26 : 109.03	101.86 97.26 : 109.03
Lead	TM152	104.33 94.28 : 110.83	102.83 94.28 : 110.83	103.39 94.28 : 110.83
Lithium	TM152	104.09 93.83 : 112.33	103.06 93.83 : 112.33	102.44 93.83 : 112.33
Magnesium	TM152	101.38 95.15 : 108.57	101.89 95.15 : 108.57	103.77 95.15 : 108.57
Manganese	TM152	100.89 97.38 : 109.22	100.75 97.38 : 109.22	102.88 97.38 : 109.22
Molybdenum	TM152	102.77 96.03 : 108.83	101.11 96.03 : 108.83	105.21 96.03 : 108.83
Nickel	TM152	99.32 97.74 : 109.83	99.22 97.74 : 109.83	103.54 97.74 : 109.83
Phosphorus	TM152	101.28 96.19 : 110.42	102.72 96.19 : 110.42	103.69 96.19 : 110.42
Potassium	TM152	103.64 97.69 : 109.01	103.61 97.69 : 109.01	106.77 97.69 : 109.01
Selenium	TM152	100.37 97.20 : 112.90	100.97 97.20 : 112.90	107.27 97.20 : 112.90
Silver	TM152	106.5 92.98 : 113.08	104.44 92.98 : 113.08	106.92 92.98 : 113.08
Sodium	TM152	100.41 94.87 : 108.38	100.87 94.87 : 108.38	102.89 94.87 : 108.38
Strontium	TM152	101.38 98.04 : 109.54	101.13 98.04 : 109.54	105.54 98.04 : 109.54



CERTIFICATE OF ANALYSIS

Validated

SDG: 251031-95
Client Ref.: Halewood LUFReport Number: 782593
Location: Grace Park, Halewood

Superseded Report:

Dissolved Metals by ICP-MS

		QC 3241	QC 3257	QC 3259
Tellurium	TM152	106.26 96.08 : 114.68	107.84 96.08 : 114.68	107.75 96.08 : 114.68
Thallium	TM152	115.42 77.38 : 126.18	114.1 77.38 : 126.18	111.62 77.38 : 126.18
Tin	TM152	104.66 94.83 : 110.56	104.67 94.83 : 110.56	108.28 94.83 : 110.56
Titanium	TM152	105.26 95.20 : 111.60	103.18 95.20 : 111.60	104.12 95.20 : 111.60
Tungsten	TM152	102.16 93.93 : 109.73	102.28 93.93 : 109.73	105.02 93.93 : 109.73
Uranium	TM152	104.72 93.52 : 111.02	102.51 93.52 : 111.02	103.77 93.52 : 111.02
Vanadium	TM152	100.93 93.39 : 111.02	98.86 93.39 : 111.02	102.36 93.39 : 111.02
Zinc	TM152	100.92 98.01 : 111.94	100.32 98.01 : 111.94	105.13 98.01 : 111.94

EPH and CWG by FID

Component	Method Code	QC 3241	QC 3274
Total Aliphatics >C12-C35 (a)	TM439	117.74 82.65 : 130.46	112.91 83.35 : 119.27
Total Aromatics >C12-C35 (a)	TM439	115.58 79.36 : 119.91	115.77 79.82 : 126.88
Total EPH >C10-C40	TM439	99.53 72.07 : 109.10	99.07 69.36 : 112.84

GRO by GC-FID (W)

Component	Method Code	QC 3261
Benzene by GC	TM245	103.75 81.54 : 119.70
Ethylbenzene by GC	TM245	102.55 86.02 : 113.28
m & p Xylene by GC	TM245	102.9 85.75 : 113.40
MTBE GC-FID	TM245	106.15 72.18 : 121.73
o Xylene by GC	TM245	103.0 86.30 : 112.93
QC	TM245	104.42 74.52 : 122.16
Toluene by GC	TM245	104.35 85.35 : 109.97

Mercury Dissolved

Component	Method Code	QC 3244	QC 3202
Mercury Dissolved (CVAf)	TM183	86.61 74.00 : 116.00	85.89 74.00 : 116.00

PAH Spec MS - Aqueous (W)



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Validated

SDG: 251031-95
Client Ref.: Halewood LUFReport Number: 782593
Location: Grace Park, Halewood

Superseded Report:

PAH Spec MS - Aqueous (W)

Component	Method Code	QC 3224	QC 3238
Acenaphthene by GCMS	TM178	106.74 92.40 : 118.80	107.73 92.40 : 118.80
Acenaphthylene by GCMS	TM178	105.04 88.40 : 114.80	103.54 88.40 : 114.80
Anthracene by GCMS	TM178	100.02 89.60 : 116.00	110.95 89.60 : 116.00
Benz(a)anthracene by GCMS	TM178	96.14 85.60 : 114.40	99.52 85.60 : 114.40
Benzo(a)pyrene by GCMS	TM178	98.95 86.80 : 115.60	103.81 86.80 : 115.60
Benzo(b)fluoranthene by GCMS	TM178	103.68 84.80 : 118.40	101.96 84.80 : 118.40
Benzo(ghi)perylene by GCMS	TM178	94.63 89.20 : 113.20	106.95 89.20 : 113.20
Benzo(k)fluoranthene by GCMS	TM178	122.0 91.60 : 125.20	102.14 91.60 : 125.20
Chrysene by GCMS	TM178	112.06 90.80 : 114.80	102.83 90.80 : 114.80
Dibenzo(ah)anthracene by GCMS	TM178	93.97 87.20 : 116.00	102.55 87.20 : 116.00
Fluoranthene by GCMS	TM178	98.74 88.00 : 124.00	103.13 88.00 : 124.00
Fluorene by GCMS	TM178	104.26 89.20 : 120.40	103.59 89.20 : 120.40
Indeno(123cd)pyrene by GCMS	TM178	97.29 83.60 : 114.80	101.5 83.60 : 114.80
Naphthalene by GCMS	TM178	104.23 90.40 : 116.80	107.16 90.40 : 116.80
Phenanthrene by GCMS	TM178	99.38 89.60 : 116.00	98.61 89.60 : 116.00
Pyrene by GCMS	TM178	108.31 92.00 : 123.20	106.89 92.00 : 123.20

pH Value

Component	Method Code	QC 3218
EC QC	TM256	106.71 102.40 : 109.21
pH	TM256	100.4 98.26 : 103.07
TDS QC	TM256	99.68 97.27 : 101.83

VOC MS (W)

Component	Method Code	QC 3262
1,1,1,2-Tetrachloroethane	TM208	101.84 85.64 : 109.52
1,1,1-Trichloroethane	TM208	98.99 85.15 : 110.17
1,1,2,2-Tetrachloroethane	TM208	106.66 80.39 : 122.78
1,1,2-Trichloroethane	TM208	107.03 82.42 : 119.50



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SDG: 251031-95
Client Ref.: Halewood LUFReport Number: 782593
Location: Grace Park, Halewood

Superseded Report:

VOC MS (W)

		QC 3262
1,1-Dichloroethane	TM208	99.03 88.59 : 117.06
1,1-Dichloroethene	TM208	102.27 82.74 : 115.02
1,1-Dichloropropene	TM208	100.24 83.37 : 114.33
1,2,3-Trichlorobenzene	TM208	108.14 73.85 : 117.08
1,2,3-Trichloropropane	TM208	108.91 79.92 : 123.93
1,2,4-Trichlorobenzene	TM208	109.15 72.00 : 111.27
1,2,4-Trimethylbenzene	TM208	96.55 79.06 : 114.52
1,2-Dibromoethane	TM208	107.99 80.87 : 120.98
1,2-Dichlorobenzene	TM208	105.32 85.25 : 116.06
1,2-Dichloroethane	TM208	102.06 80.28 : 123.63
1,2-Dichloropropane	TM208	101.58 85.33 : 115.66
1,3,5-Trimethylbenzene	TM208	97.46 80.44 : 112.60
1,3-Dichlorobenzene	TM208	105.72 82.43 : 120.23
1,3-Dichloropropane	TM208	104.37 82.33 : 118.96
1,4-Dichlorobenzene	TM208	106.42 81.09 : 121.95
2-Chlorotoluene	TM208	103.25 83.31 : 110.91
4-Chlorotoluene	TM208	102.82 84.01 : 111.46
4-Isopropyltoluene	TM208	101.59 80.63 : 117.35
Benzene	TM208	101.56 87.46 : 118.30
Bromobenzene	TM208	107.25 83.58 : 118.68
Bromochloromethane	TM208	109.78 81.89 : 123.26
Bromodichloromethane	TM208	104.12 86.83 : 117.76
Bromoform	TM208	109.37 80.74 : 122.98
Bromomethane	TM208	105.45 73.35 : 126.60
Carbon Disulphide	TM208	104.54 83.12 : 115.25
Carbontetrachloride	TM208	101.72 88.33 : 113.50
Chlorobenzene	TM208	103.02 86.52 : 113.46



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Superseded Report:

VOC MS (W)

		QC 3262
Chloroethane	TM208	102.78 82.32 : 120.39
Chloroform	TM208	102.23 83.67 : 118.08
Chloromethane	TM208	101.48 70.42 : 127.06
Cis-1,2-Dichloroethene	TM208	104.3 85.68 : 116.79
Cis-1,3-Dichloropropene	TM208	101.99 70.67 : 114.38
Dibromochloromethane	TM208	110.07 80.94 : 120.99
Dibromomethane	TM208	105.83 80.63 : 124.25
Dichloromethane	TM208	103.97 81.65 : 120.83
Ethylbenzene	TM208	97.22 85.96 : 106.48
Hexachlorobutadiene	TM208	108.88 72.63 : 106.38
Isopropylbenzene	TM208	97.1 79.82 : 110.48
Naphthalene	TM208	105.83 74.08 : 118.27
n-Butylbenzene	TM208	97.97 78.00 : 107.79
o-Xylene	TM208	99.43 86.38 : 107.14
p/m-Xylene	TM208	99.35 84.84 : 109.49
Propylbenzene	TM208	97.34 80.08 : 111.61
Sec-Butylbenzene	TM208	101.8 82.34 : 116.90
Styrene	TM208	98.66 81.17 : 113.12
Tert-amyl methyl ether	TM208	90.33 62.38 : 123.55
Tert-butyl methyl ether	TM208	94.77 68.23 : 127.69
Tert-Butylbenzene	TM208	98.91 79.57 : 112.03
Tetrachloroethene	TM208	102.55 84.37 : 107.75
Toluene	TM208	100.52 87.40 : 109.78
Trans-1,2-Dichloroethene	TM208	102.78 85.90 : 116.56
Trans-1,3-Dichloropropene	TM208	97.14 69.09 : 119.25
Trichloroethene	TM208	101.74 85.28 : 111.95
Trichlorofluoromethane	TM208	103.72 82.04 : 120.35



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Client Ref.: Halewood LUF

Report Number: 782593
Location: Grace Park, Halewood

Superseded Report:

VOC MS (W)

		QC 3262
Vinyl Chloride	TM208	101.67 72.73 : 123.40

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.

The figure detailed is the percentage recovery result for the AQC.

The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.



CERTIFICATE OF ANALYSIS

Validated

SDG: 251031-95
Client Ref.: Halewood LUF

Report Number: 782593
Location: Grace Park, Halewood

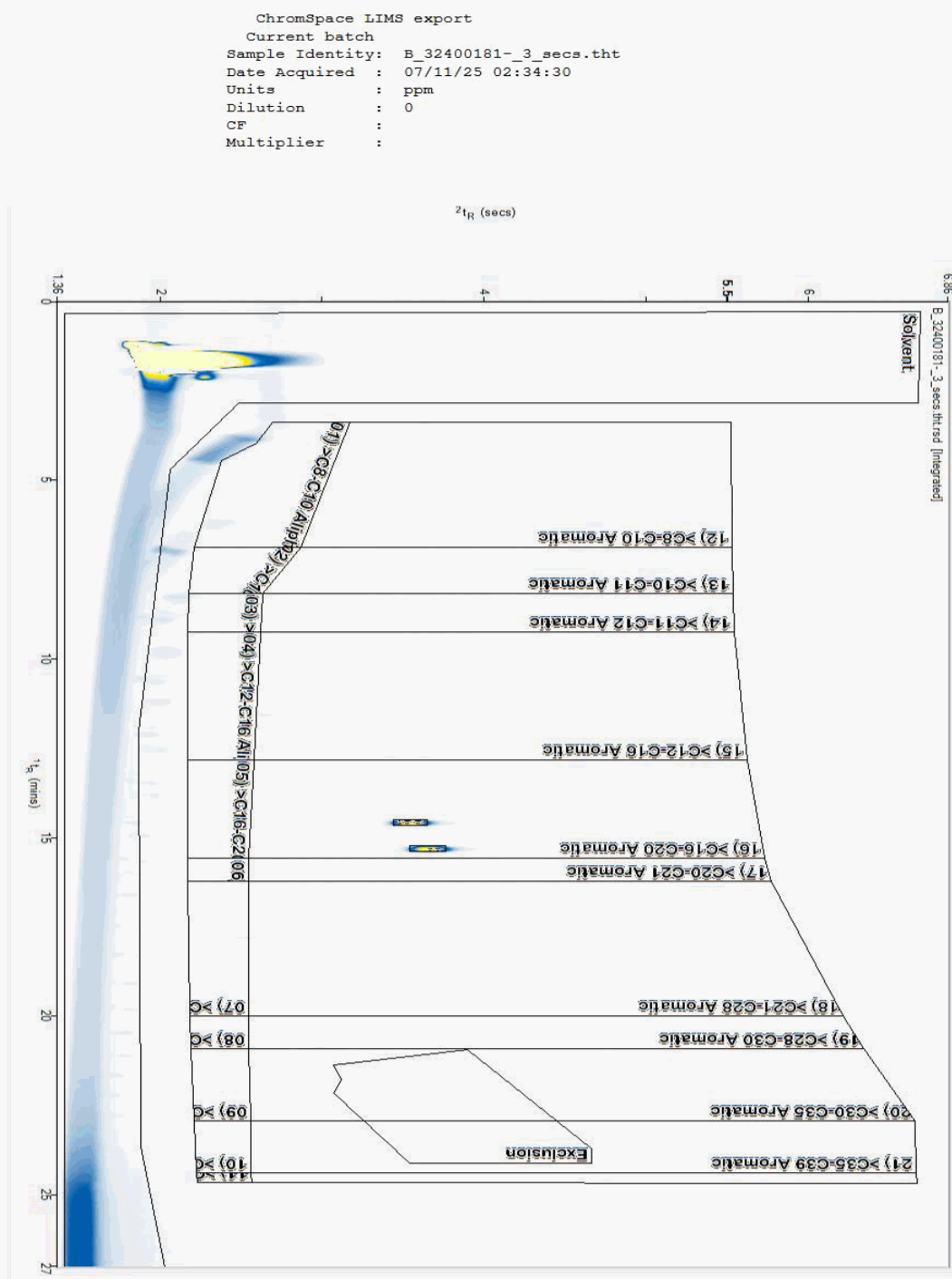
Superseded Report:

Chromatogram

Analysis: EPH and CWG by FID

Sample No : 32400181
Sample ID : WS03

Depth : 1.00 - 5.00





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SDG: 251031-95
Client Ref.: Halewood LUF

Report Number: 782593
Location: Grace Park, Halewood

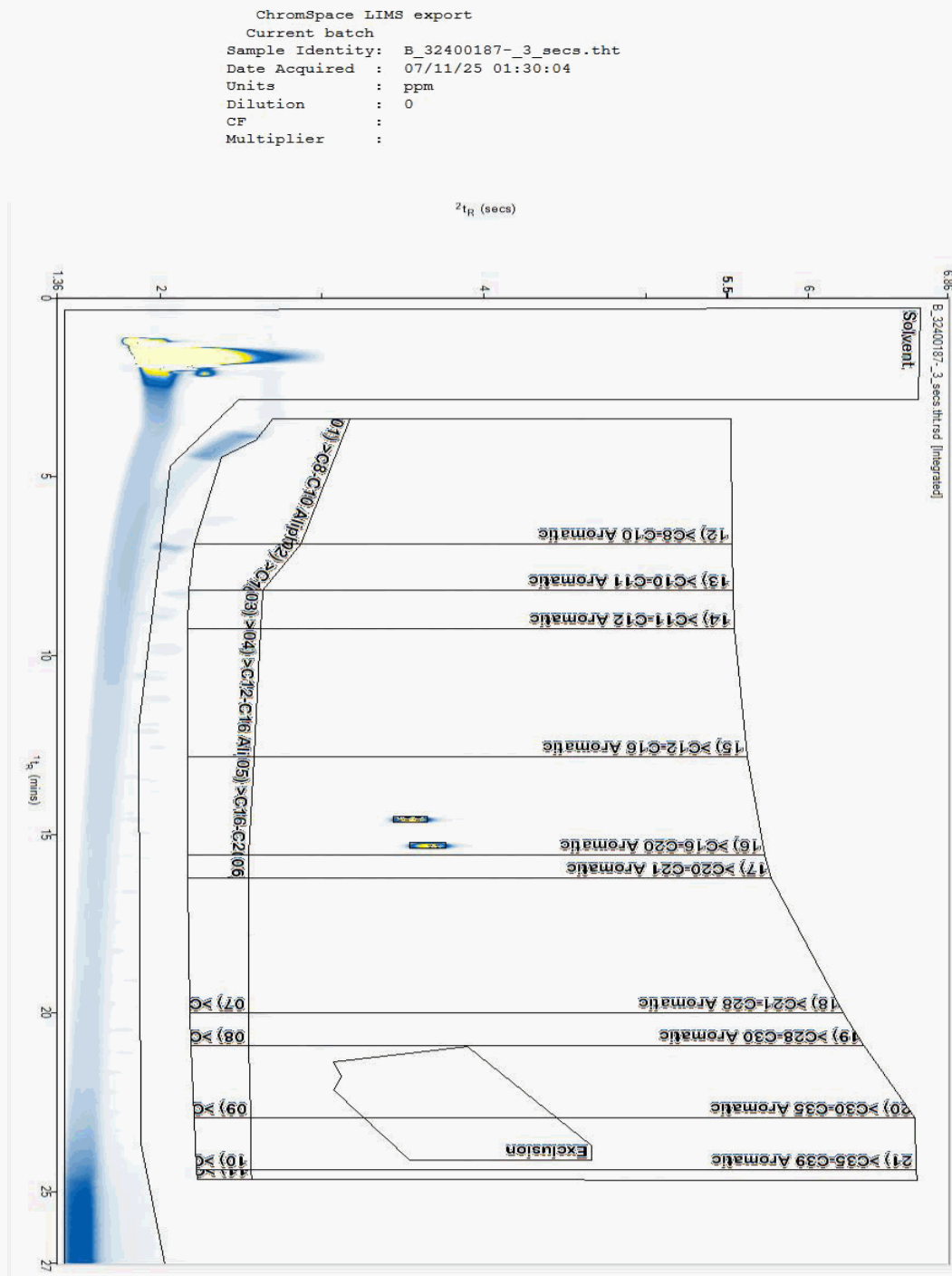
Superseded Report:

Chromatogram

Analysis: EPH and CWG by FID

Sample No : 32400187
Sample ID : WS05

Depth : 1.00 - 5.00





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Validated

SDG: 251031-95
Client Ref.: Halewood LUF

Report Number: 782593
Location: Grace Park, Halewood

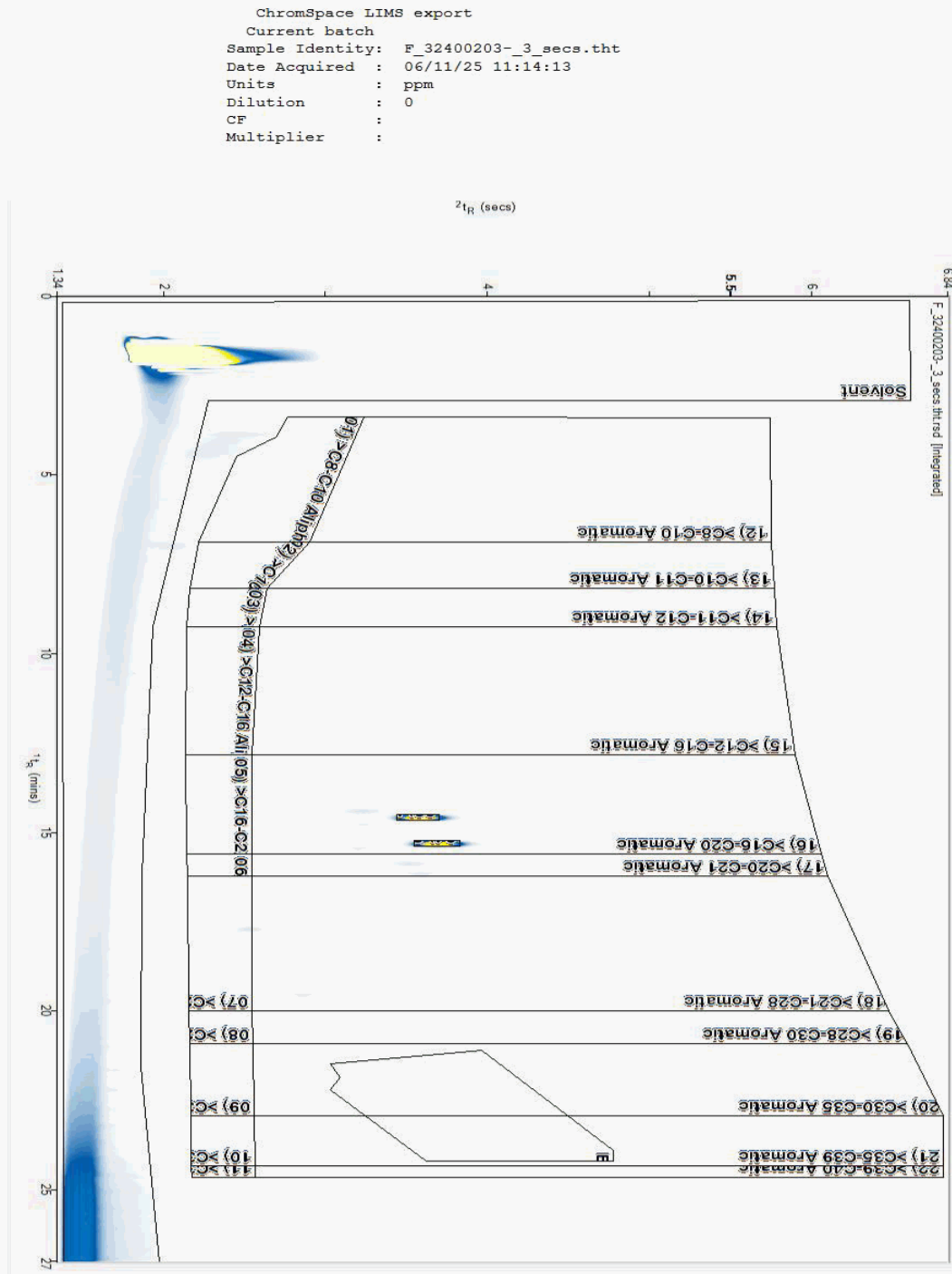
Superseded Report:

Chromatogram

Analysis: EPH and CWG by FID

Sample No : 32400203
Sample ID : WS04

Depth : 1.00 - 5.00





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SDG: 251031-95
Client Ref.: Halewood LUF

Report Number: 782593
Location: Grace Park, Halewood

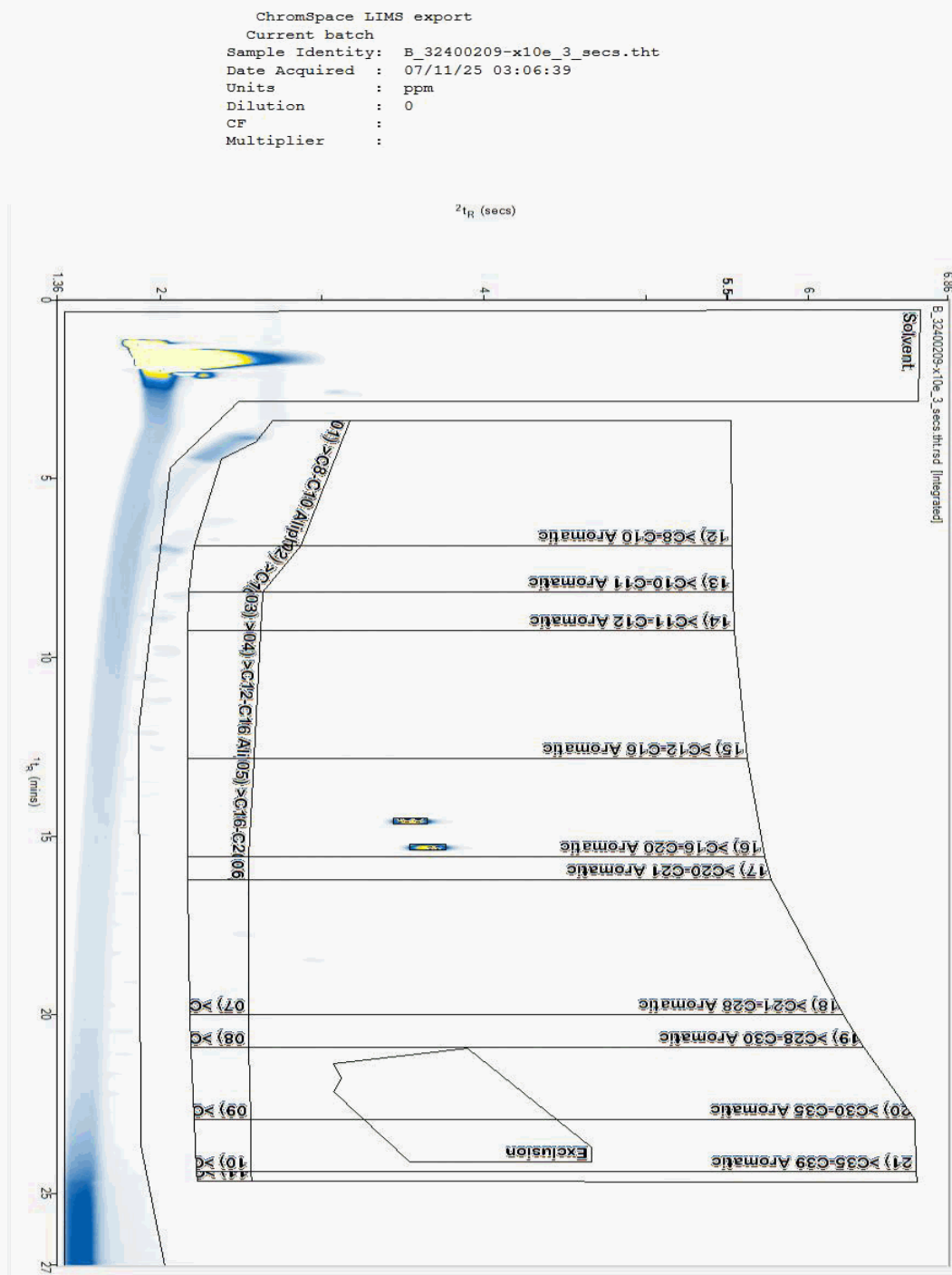
Superseded Report:

Chromatogram

Analysis: EPH and CWG by FID

Sample No : 32400209
Sample ID : WS01

Depth : 1.00 - 3.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 251031-95
Client Ref.: Halewood LUF

Report Number: 782593
Location: Grace Park, Halewood

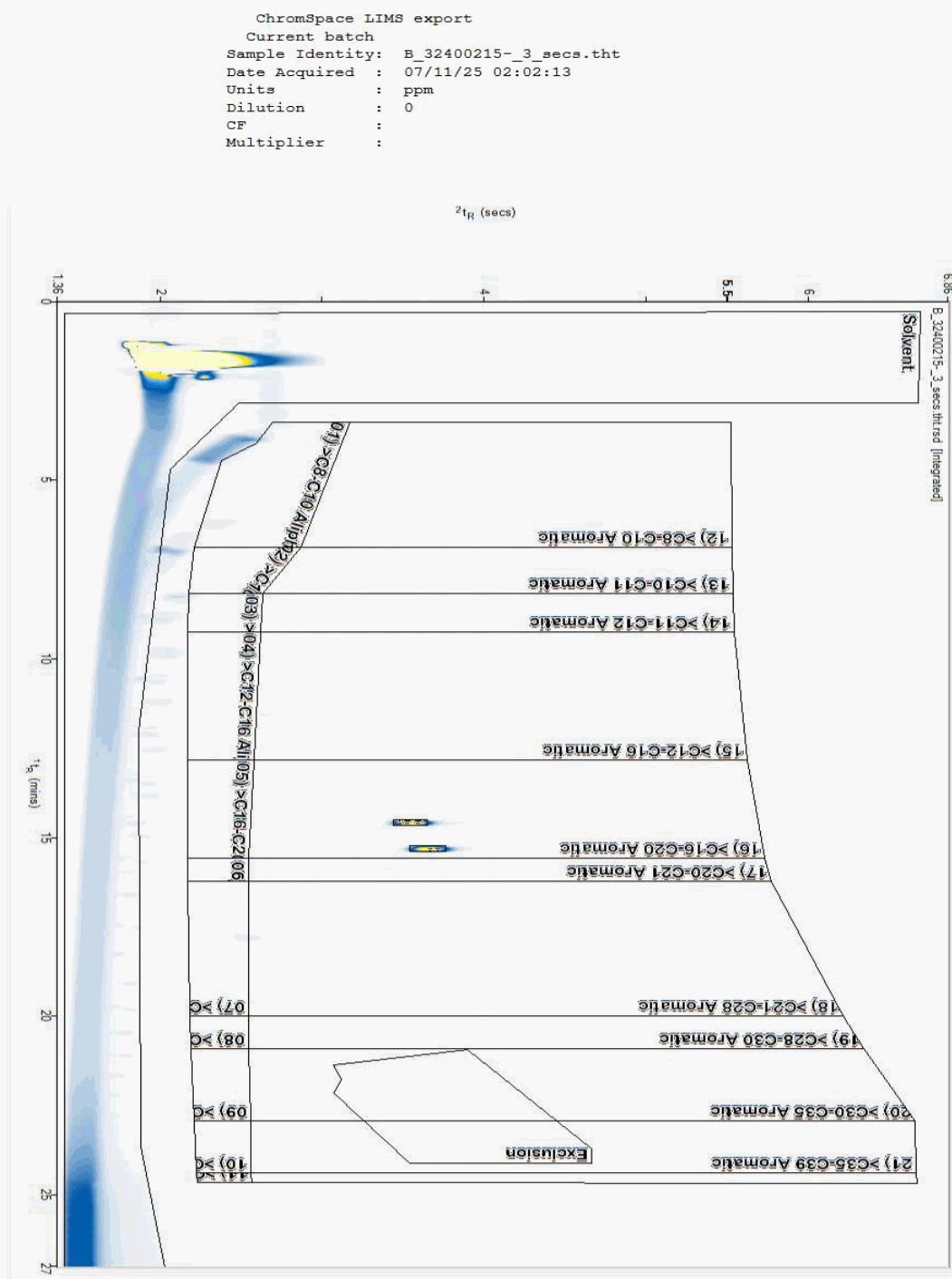
Superseded Report:

Chromatogram

Analysis: EPH and CWG by FID

Sample No : 32400215
Sample ID : WS02

Depth : 1.00 - 3.00





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Validated

SDG: 251031-95
Client Ref.: Halewood LUF

Report Number: 782593
Location: Grace Park, Halewood

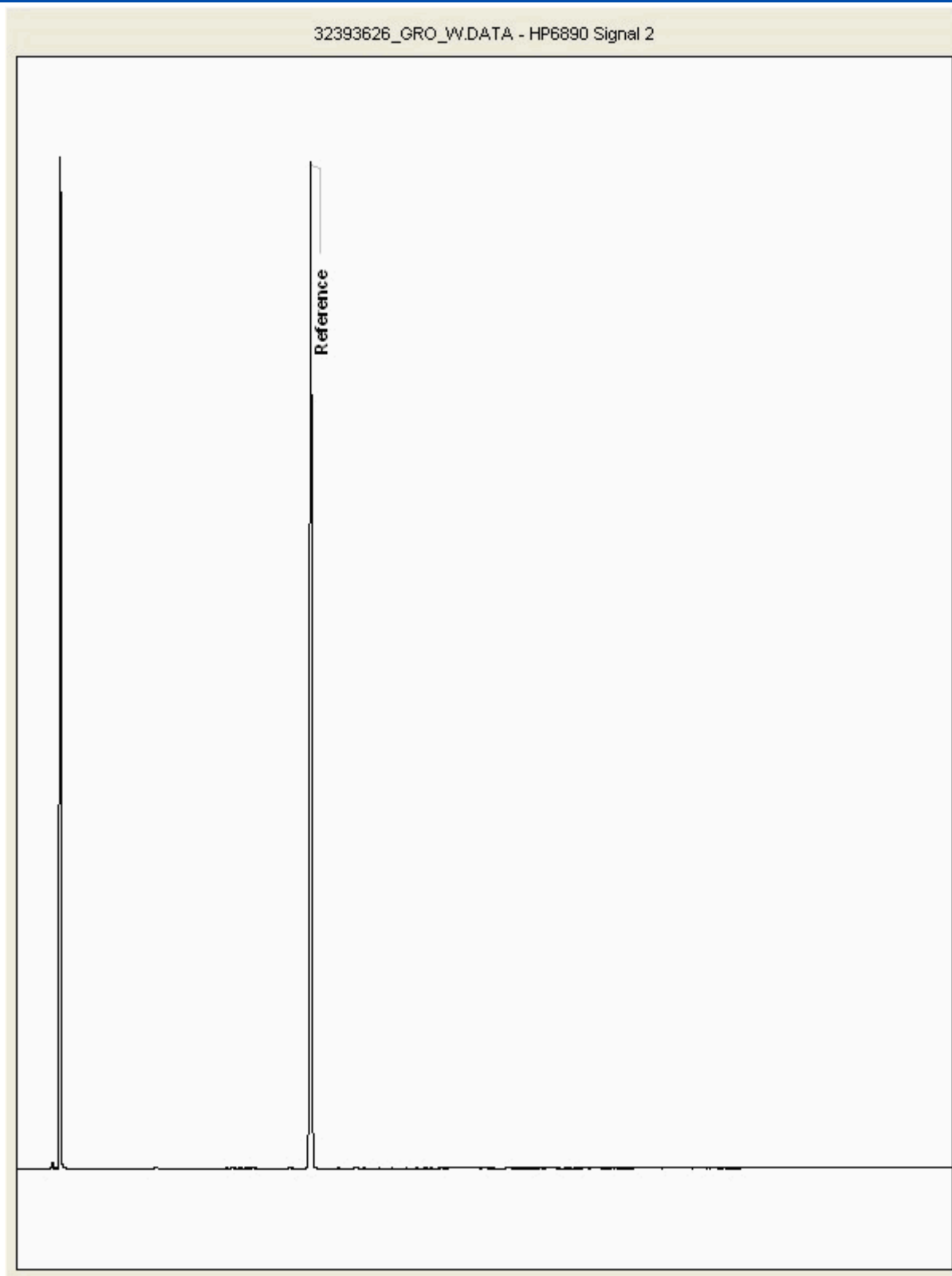
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 32393626
Sample ID : WS05

Depth : 1.00 - 5.00





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Validated

SDG: 251031-95
Client Ref.: Halewood LUF

Report Number: 782593
Location: Grace Park, Halewood

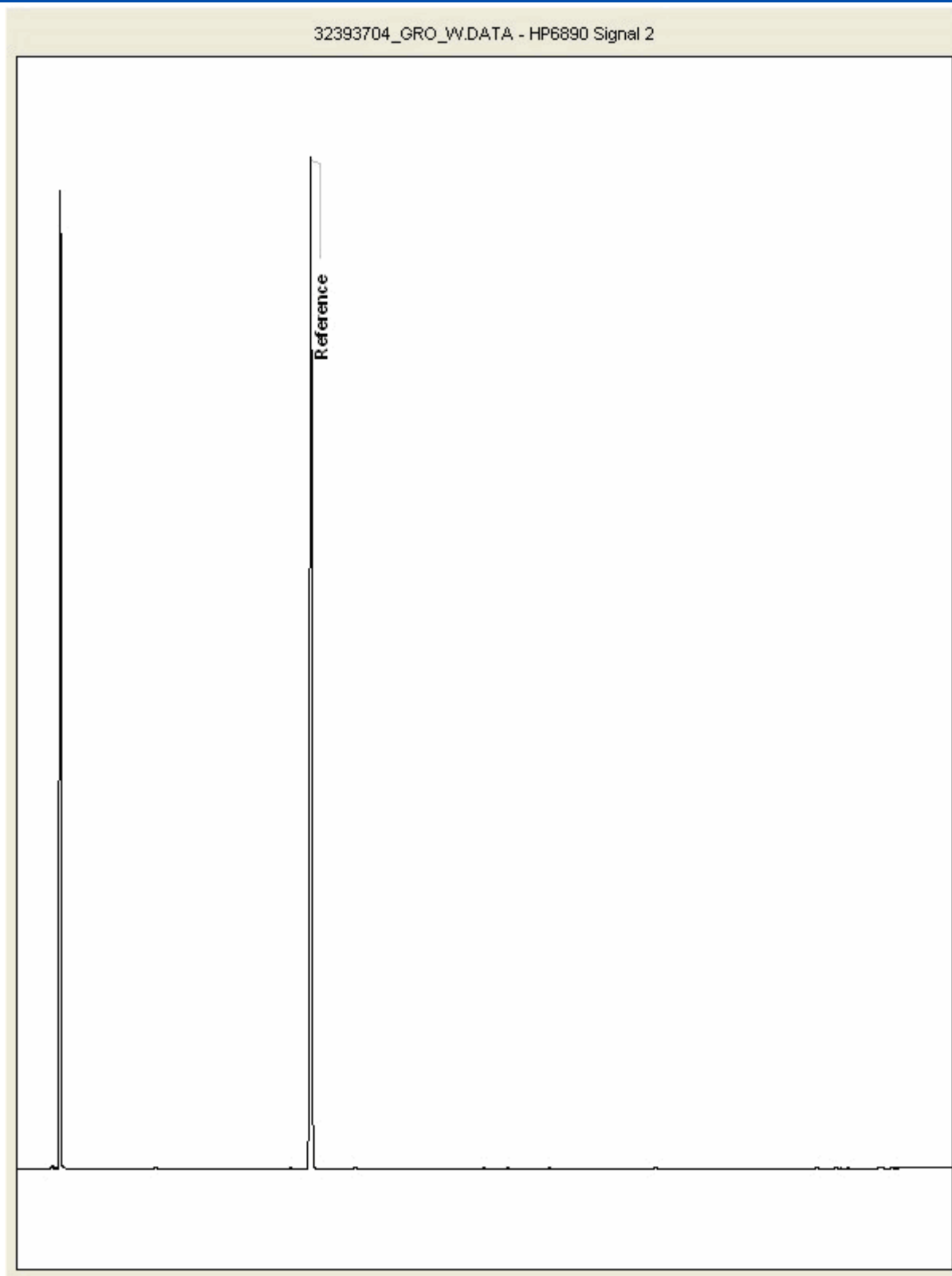
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 32393704
Sample ID : WS01

Depth : 1.00 - 3.00





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Validated

SDG: 251031-95
Client Ref.: Halewood LUF

Report Number: 782593
Location: Grace Park, Halewood

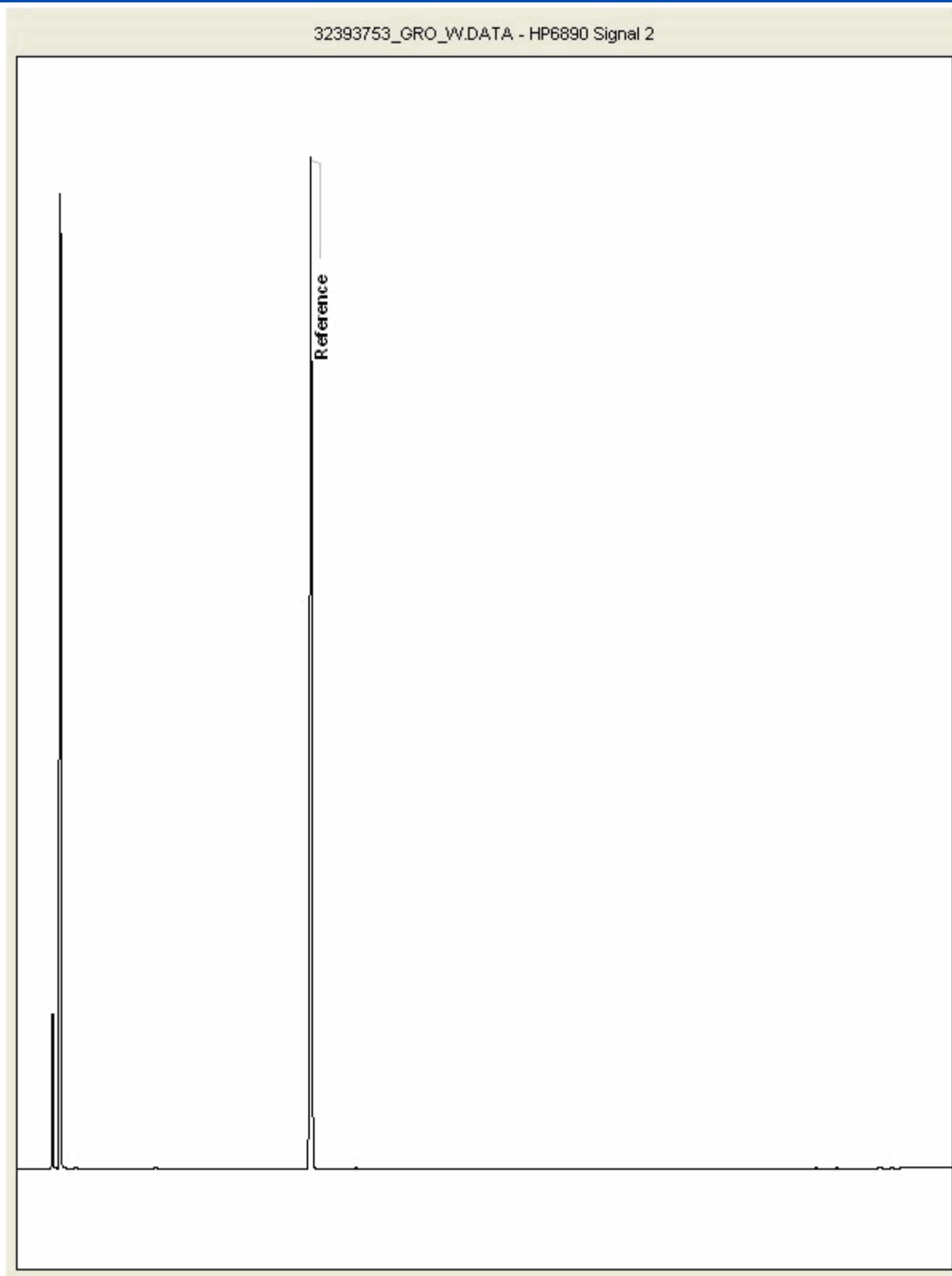
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 32393753
Sample ID : WS03

Depth : 1.00 - 5.00





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Report Number: 782593
Location: Grace Park, Halewood

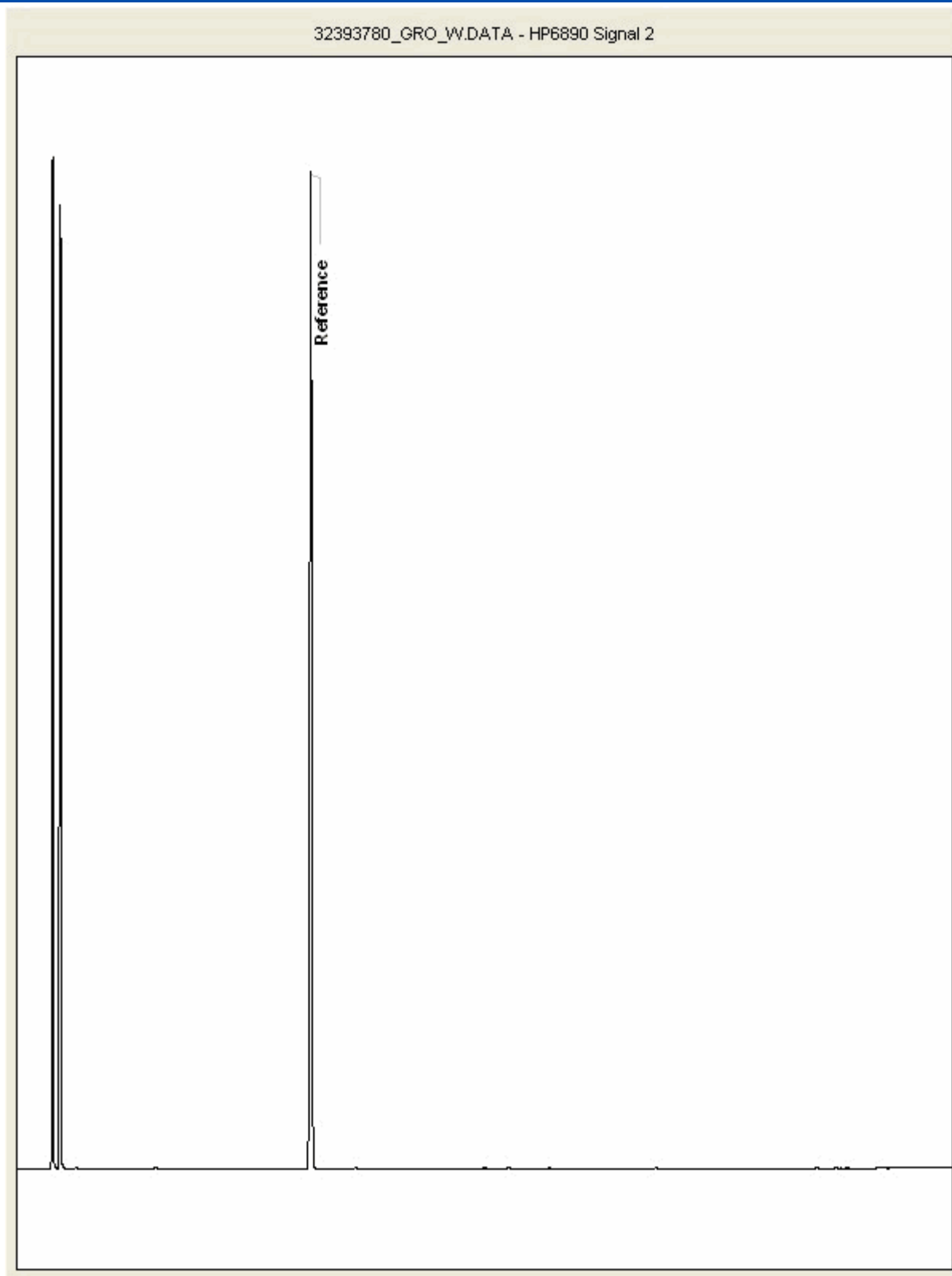
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 32393780
Sample ID : WS04

Depth : 1.00 - 5.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 251031-95
Client Ref.: Halewood LUF

Report Number: 782593
Location: Grace Park, Halewood

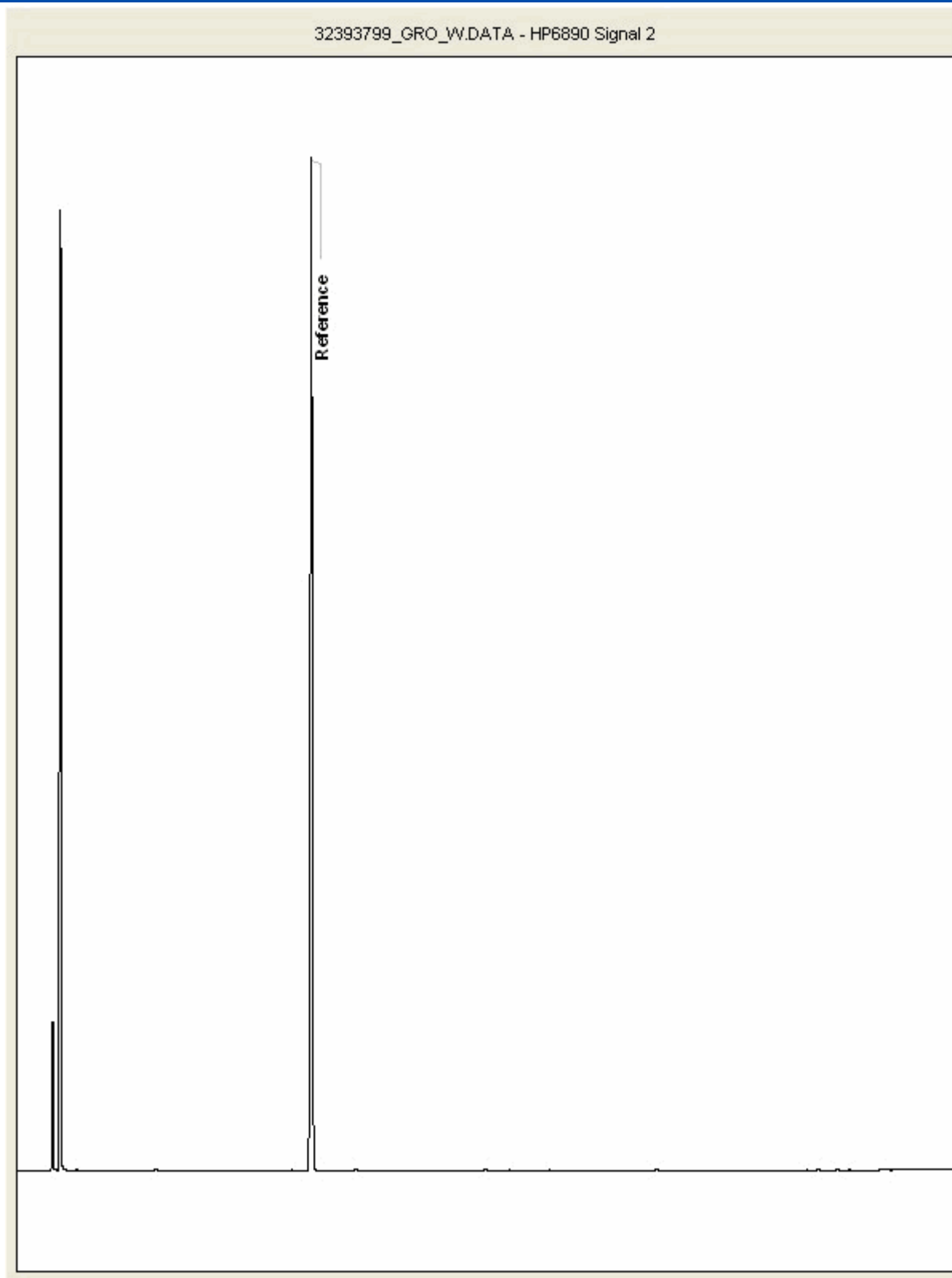
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 32393799
Sample ID : WS02

Depth : 1.00 - 3.00





CERTIFICATE OF ANALYSIS

SDG: 251031-95
Client Ref: Halewood LUF

Report Number: 782593
Location: Grace Park, Halewood

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur - e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis.

The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

If during the search of the two 'pinch' samples by PLM only 1 or 2 fibres or fibre bundles are seen and identified as asbestos, the term 'trace asbestos identified' is reported.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Potentially respirable fibres are identified by using a Phase Contrast Microscope.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

21. 6:2 FTAB

Recovery of 6:2 FTAB in the quality control samples has been observed to be <50% of the target value. Please note the 6:2 FTAB result is supplied as indicative only.

Appendix B.3

SCREENED RESULTS



PRE-REPORT DATA CHECK

	All GEOL_GEO2 codes are complete.
	All GEOL_GEO2 codes are recognised and suitable for this report.
	All Test Types are valid and Sample Matrix can be calculated.



Result > Assessment Criteria Limit of detection > Assessment Criteria Analyte Units LOD GAC				PointID	TP27	TP28		TP30	TP38		TP39	TP40	TP42	TP45	TP46	TP49		WS07
				Depth (m bgl)	1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	2.4-2.5	1.0-1.1	0.1-0.2	2.5-2.6	2.2-2.3
				Sample Date	16/01/25	20/01/25	20/01/25	20/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	21/01/25
				Geology (at top depth of sample)				Made Ground Cohesive	Made Ground Cohesive		Made Ground Cohesive		Made Ground Cohesive		Made Ground Granular	Topsail		
					Till	Till	Till			Till		Till		Till			Till	Till
WAC (Unrecognised code)					10	10	10	10	10	10	10	10	10	10	10	10	10	10



Aliphatics and Aromatics

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23	
Depth (m bgl)					0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0
Sample Date					24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25
Geology (at top depth of sample)					Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Till	Topsoil	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC																				
Aliphatic C05-C06	mg/kg	0.010	3,200		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C05-C10	mg/kg	0.050			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aliphatic C06-C08	mg/kg	0.010	7,800		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C08-C10	mg/kg	0.010	2,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C10-C12	mg/kg	1.00	9,700		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic C10-C44	mg/kg	5.00			<5	<5	<5	<5	<5	<5	<5	10.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Aliphatic C12-C16	mg/kg	1.00	59,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic C16-C21	mg/kg	1.00			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic C16-C35	mg/kg	1.00	1,600,000		<1	<1	<1	<1	<1	1.74	<1	9.79	<1	<1	1.14	1.19	<1	<1	1.13	2.26	<1	<1	<1
Aliphatic C21-C35	mg/kg	1.00			<1	<1	<1	<1	<1	1.68	<1	9.21	<1	<1	1.14	1.19	<1	<1	1.13	2.26	<1	<1	<1
Aliphatic C35-C44	mg/kg	1.00	1,600,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic C05-C10	mg/kg	0.050			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aromatic C06-C07	mg/kg	0.010			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C07-C08	mg/kg	0.010	56,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C08-C10	mg/kg	0.010	3,500		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C10-C12	mg/kg	1.00	16,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1



Aliphatics and Aromatics

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP27	TP28		TP30	TP33	TP35		TP38		TP39	TP40	TP42		TP45		TP46	TP47		TP48
Depth (m bgl)					1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0
Sample Date					16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25
Geology (at top depth of sample)					Till	Till	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Granular	Made Ground Cohesive	Till	Made Ground Cohesive
Analyte	Units	LOD	GAC																				
Aliphatic C05-C06	mg/kg	0.010	3,200		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C05-C10	mg/kg	0.050			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aliphatic C06-C08	mg/kg	0.010	7,800		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C08-C10	mg/kg	0.010	2,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C10-C12	mg/kg	1.00	9,700		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic C10-C44	mg/kg	5.00			<5	<5	<5	<5	6.12	<5	<5	<5	<5	<5	<5	13.9	<5	<5	<5	<5	<5	<5	<5
Aliphatic C12-C16	mg/kg	1.00	59,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic C16-C21	mg/kg	1.00			<1	<1	<1	<1	1.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic C16-C35	mg/kg	1.00	1,600,000		<1	<1	<1	<1	5.53	2.1	1.34	1.48	<1	2.7	<1	7.59	1.41	<1	1.69	3.7	1.01	<1	<1
Aliphatic C21-C35	mg/kg	1.00			<1	<1	<1	<1	4.52	2.1	1.34	1.48	<1	2.7	<1	7.59	1.41	<1	1.69	3.61	1.01	<1	<1
Aliphatic C35-C44	mg/kg	1.00	1,600,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	6.29	<1	<1	<1	<1	<1	<1	<1
Aromatic C05-C10	mg/kg	0.050			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aromatic C06-C07	mg/kg	0.010			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C07-C08	mg/kg	0.010	56,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C08-C10	mg/kg	0.010	3,500		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C10-C12	mg/kg	1.00	16,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Aliphatics and Aromatics

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP49		WS01	WS02		WS03	WS04		WS05	WS06		WS07
				Depth (m bgl)	0.1-0.2	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
				Sample Date	17/01/25	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
				Geology (at top depth of sample)	Topsol	Till	Topsol	Topsol	Till	Topsol	Topsol	Topsol	Topsol	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC													
Aliphatic C05-C06	mg/kg	0.010	3,200		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C05-C10	mg/kg	0.050			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aliphatic C06-C08	mg/kg	0.010	7,800		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C08-C10	mg/kg	0.010	2,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C10-C12	mg/kg	1.00	9,700		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic C10-C44	mg/kg	5.00			<5	<5	<5	7.86	<5	<5	<5	<5	8.33	<5	13.1	<5
Aliphatic C12-C16	mg/kg	1.00	59,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic C16-C21	mg/kg	1.00			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2.72	<1
Aliphatic C16-C35	mg/kg	1.00	1,600,000		4.72	<1	1.04	7.31	<1	<1	<1	<1	8.05	2.82	12.3	1.45
Aliphatic C21-C35	mg/kg	1.00			4.72	<1	1.04	7.31	<1	<1	<1	<1	8.05	2.82	9.54	1.45
Aliphatic C35-C44	mg/kg	1.00	1,600,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic C05-C10	mg/kg	0.050			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aromatic C06-C07	mg/kg	0.010			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C07-C08	mg/kg	0.010	56,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C08-C10	mg/kg	0.010	3,500		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C10-C12	mg/kg	1.00	16,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1



Aliphatics and Aromatics

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23	
				Depth (m bgl)	0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0
				Sample Date	24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25
				Geology (at top depth of sample)	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Till	Topsoil	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC																				
Aromatic C10-C44	mg/kg	5.00			<5	<5	<5	<5	<5	84.4	<5	184	<5	<5	7.16	<5	<5	<5	<5	<5	<5	<5	<5
Aromatic C12-C16	mg/kg	1.00	36,000		<1	<1	<1	<1	<1	<1	<1	2.51	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic C16-C21	mg/kg	1.00	28,000		<1	<1	<1	<1	<1	3.43	<1	46.6	<1	<1	1.55	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic C16-C35	mg/kg	1.00			<1	<1	<1	<1	<1	53.7	1.09	166	<1	<1	6.16	1.14	<1	<1	1.8	3.91	<1	1.63	<1
Aromatic C21-C35	mg/kg	1.00	28,000		<1	<1	<1	<1	<1	50.2	<1	119	<1	<1	4.61	<1	<1	<1	1.47	3.38	<1	1.39	<1
Aromatic C35-C44	mg/kg	1.00	28,000		<1	<1	<1	<1	<1	30.7	<1	15.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic C40-C44	mg/kg	1.00			<1	<1	<1	<1	<1	10.3	<1	2.6	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Aliphatics and Aromatics (C05-C44)	mg/kg	10.0			<10	<10	<10	<10	<10	84.4	<10	194	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total Aliphatics and Aromatics (C10-C44)	mg/kg	10.0			<10	<10	<10	<10	<10	84.4	<10	194	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10



Aliphatics and Aromatics

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP27	TP28		TP30	TP33	TP35		TP38		TP39	TP40	TP42		TP45		TP46	TP47		TP48
Depth (m bgl)					1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0
Sample Date					16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25
Geology (at top depth of sample)					Till	Till	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Granular	Made Ground Cohesive	Till	Made Ground Cohesive
Analyte	Units	LOD	GAC																				
Aromatic C10-C44	mg/kg	5.00			<5	<5	<5	<5	13.2	<5	<5	<5	<5	<5	<5	48	<5	<5	<5	7.39	<5	<5	<5
Aromatic C12-C16	mg/kg	1.00	36,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic C16-C21	mg/kg	1.00	28,000		<1	<1	<1	<1	1.17	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.5	<1	<1	<1
Aromatic C16-C35	mg/kg	1.00			<1	<1	<1	1.1	11.8	2.1	<1	2.1	<1	2.34	<1	29	<1	<1	<1	6.34	1.94	<1	<1
Aromatic C21-C35	mg/kg	1.00	28,000		<1	<1	<1	<1	10.6	1.66	<1	1.43	<1	2.03	<1	28.9	<1	<1	<1	4.84	1.88	<1	<1
Aromatic C35-C44	mg/kg	1.00	28,000		<1	<1	<1	<1	1.1	<1	<1	<1	<1	<1	<1	19	<1	<1	<1	<1	<1	<1	<1
Aromatic C40-C44	mg/kg	1.00			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.2	<1	<1	<1	<1	<1	<1	<1
Total Aliphatics and Aromatics (C05-C44)	mg/kg	10.0			<10	<10	<10	<10	19.3	<10	<10	<10	<10	<10	<10	61.9	<10	<10	<10	<10	<10	<10	<10
Total Aliphatics and Aromatics (C10-C44)	mg/kg	10.0			<10	<10	<10	<10	19.3	<10	<10	<10	<10	<10	<10	61.9	<10	<10	<10	<10	<10	<10	<10



Aliphatics and Aromatics

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP49		WS01	WS02		WS03	WS04		WS05	WS06		WS07
				Depth (m bgl)	0.1-0.2	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
				Sample Date	17/01/25	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
				Geology (at top depth of sample)												
					Topsol	Till	Topsol	Topsol	Till	Topsol	Topsol	Topsol	Topsol	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC													
Aromatic C10-C44	mg/kg	5.00			11	<5	<5	10.7	<5	<5	<5	<5	10.1	<5	18.1	<5
Aromatic C12-C16	mg/kg	1.00	36,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic C16-C21	mg/kg	1.00	28,000		1.81	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.43	<1
Aromatic C16-C35	mg/kg	1.00			9.74	<1	1.71	9.07	<1	1.9	1.82	1.24	8.96	3.12	16	<1
Aromatic C21-C35	mg/kg	1.00	28,000		7.93	<1	1.61	8.54	<1	1.66	1.63	1.03	8.54	2.63	14.5	<1
Aromatic C35-C44	mg/kg	1.00	28,000		1.12	<1	<1	1.63	<1	<1	<1	<1	<1	<1	2.11	<1
Aromatic C40-C44	mg/kg	1.00			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Aliphatics and Aromatics (C05-C44)	mg/kg	10.0			11	<10	<10	18.6	<10	<10	<10	<10	18.5	<10	31.2	<10
Total Aliphatics and Aromatics (C10-C44)	mg/kg	10.0			11	<10	<10	18.6	<10	<10	<10	<10	18.5	<10	31.2	<10



Asbestos

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP33
				Depth (m bgl)	0.3-0.4
				Sample Date	21/01/25
				Geology (at top depth of sample)	Made Ground Granular
Analyte	Units	LOD	GAC		
Asbestos Quantification - Gravimetric	%	0.001		0.0027	
Asbestos Quantification - PCM Evaluation	%	0.001		<0.001	
Asbestos Quantification - Total %	%	0.001		0.0036	



BTEX and Fuel Additives

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23	
Depth (m bgl)					0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0
Sample Date					24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25
Geology (at top depth of sample)					Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Till	Topsoil	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC																				
Benzene	mg/kg	0.010	27.0		<0.01	0.0637	<0.01	0.0615	<0.01	<0.01	0.0416	<0.01	0.0418	0.0561	<0.01	<0.01	<0.01	<0.01	<0.01	<0.015	0.0629	<0.01	0.0474
BTEX	mg/kg	0.070			<0.07	0.0811	<0.07	0.08	<0.07	<0.105	<0.145	<0.07	<0.145	0.0702	<0.135	<0.105	<0.105	<0.07	<0.15	<0.075	0.0804	<0.07	<0.215
Ethylbenzene	mg/kg	0.010	5,700		<0.01	<0.02	<0.01	<0.02	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.01	<0.02
Methyl t-butylether (MTBE)	mg/kg	0.005	7,500		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TAME	mg/kg	0.010			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Toluene	mg/kg	0.010	56,000		<0.01	0.0175	<0.01	0.0185	<0.01	<0.01	<0.015	<0.01	<0.015	0.0141	0.0408	<0.01	<0.01	<0.01	<0.01	<0.01	0.0175	<0.01	<0.015
Xylene - Total (Summed)	mg/kg	-999	5,900		0.02	0.06	0.02	0.06	0.02	0.055	0.06	0.02	0.06	0.06	0.055	0.055	0.055	0.02	0.06	0.02	0.06	0.02	0.055
Xylene-m	mg/kg	0.020	6,200		<0.02	<0.06	<0.02	<0.06	<0.02	<0.055	<0.06	<0.02	<0.06	<0.06	<0.055	<0.055	<0.055	<0.02	<0.06	<0.02	<0.06	<0.02	<0.055
Xylene-o	mg/kg	0.020	6,600		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.04	<0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.045



BTEX and Fuel Additives

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP27	TP28		TP30	TP33	TP35		TP38		TP39	TP40	TP42		TP45		TP46	TP47		TP48
Depth (m bgl)					1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0
Sample Date					16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25
Geology (at top depth of sample)					Till	Till	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Granular	Made Ground Cohesive	Till	Made Ground Cohesive
Analyte	Units	LOD	GAC																				
Benzene	mg/kg	0.010	27.0		0.0321	0.0183	0.0244	<0.01	<0.015	<0.01	<0.01	<0.01	0.0461	<0.01	<0.01	<0.015	<0.01	0.0207	0.0363	<0.01	<0.015	0.034	<0.01
BTEX	mg/kg	0.070			<0.075	<0.12	<0.12	<0.08	<0.165	<0.135	<0.07	<0.135	<0.15	<0.135	<0.07	<0.165	<0.145	<0.125	<0.12	<0.07	<0.075	<0.12	<0.07
Ethylbenzene	mg/kg	0.010	5,700		<0.025	<0.015	<0.015	<0.01	<0.02	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.025	<0.01	<0.025	<0.025	<0.01	<0.01	<0.025	<0.01
Methyl t-butylether (MTBE)	mg/kg	0.005	7,500		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TAME	mg/kg	0.010			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Toluene	mg/kg	0.010	56,000		<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.015	<0.02	<0.015	<0.015	<0.01	<0.01	<0.015	<0.01
Xylene - Total (Summed)	mg/kg	-999	5,900		0.02	0.055	0.055	0.02	0.06	0.055	0.02	0.055	0.06	0.055	0.02	0.065	0.055	0.065	0.06	0.02	0.02	0.06	0.02
Xylene-m	mg/kg	0.020	6,200		<0.02	<0.055	<0.055	<0.02	<0.06	<0.055	<0.02	<0.055	<0.06	<0.055	<0.02	<0.065	<0.055	<0.065	<0.06	<0.02	<0.02	<0.06	<0.02
Xylene-o	mg/kg	0.020	6,600		<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.045	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02



BTEX and Fuel Additives

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP49		WS01	WS02		WS03	WS04		WS05	WS06		WS07
				Depth (m bgl)	0.1-0.2	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
				Sample Date	17/01/25	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
				Geology (at top depth of sample)	Topsol	Till	Topsol	Topsol	Till	Topsol	Topsol	Topsol	Topsol	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC													
Benzene	mg/kg	0.010	27.0		<0.01	0.0289	<0.01	<0.01	<0.01	<0.01	0.0373	<0.01	<0.01	<0.01	<0.01	0.0262
BTEX	mg/kg	0.070			<0.07	<0.115	<0.07	<0.105	<0.105	<0.07	<0.145	<0.105	<0.105	<0.135	<0.07	<0.14
Ethylbenzene	mg/kg	0.010	5,700		<0.01	<0.025	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.025
Methyl t-butylether (MTBE)	mg/kg	0.005	7,500		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TAME	mg/kg	0.010			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Toluene	mg/kg	0.010	56,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.015	<0.01	<0.01	<0.01	<0.01	<0.01
Xylene - Total (Summed)	mg/kg	-999	5,900		0.02	0.06	0.02	0.055	0.055	0.02	0.06	0.055	0.055	0.06	0.02	0.06
Xylene-m	mg/kg	0.020	6,200		<0.02	<0.06	<0.02	<0.055	<0.055	<0.02	<0.06	<0.055	<0.055	<0.06	<0.02	<0.06
Xylene-o	mg/kg	0.020	6,600		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.045	<0.02	<0.045



General Chemistry

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23	
				Depth (m bgl)	0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0
				Sample Date	24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25
				Geology (at top depth of sample)	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Till	Topsail	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC																				
Acid Neutralisation Capacity at pH 6	mol/kg																						
Acid Neutralisation Capacity pH4	mol/kg																						
pH	pH units	1.00			7.96	8.75	7.48	8.85	7.15	8.59	8.89	6.28	8.79	8.73	7.83	7.96	8.44	8.8	8.43	7.93	8.9	6.86	8.76



General Chemistry

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP27	TP28		TP30	TP33	TP35		TP38		TP39	TP40	TP42		TP45		TP46	TP47		TP48
Depth (m bgl)					1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0
Sample Date					16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25
Geology (at top depth of sample)																							
					Till	Till	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Till	Made Ground Cohesive	
Analyte	Units	LOD	GAC																				
Acid Neutralisation Capacity at pH 6	mol/kg				0.0714	0.05	0.0634							<0.03	<0.03	0.0406	<0.03			<0.03			
Acid Neutralisation Capacity pH4	mol/kg				0.331	0.254	0.226							0.0916	0.0719	0.172	0.0954			0.0577			
pH	pH units	1.00			8.76	8.66	8.93	8.48	8.65	8.62	8.3	8.45	8.66	7.92	7.54	8.75	7.51	8.65	8.94	8.36	8.49	8.96	7.81

General Chemistry

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP49		WS01	WS02		WS03	WS04		WS05	WS06		WS07
				Depth (m bgl)	0.1-0.2	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
				Sample Date	17/01/25	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
				Geology (at top depth of sample)	Topsail	Till	Topsail	Topsail	Till	Topsail	Topsail	Topsail	Topsail	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC													
Acid Neutralisation Capacity at pH 6	mol/kg			<0.03	0.0783											0.129
Acid Neutralisation Capacity pH4	mol/kg			0.0479	0.275											0.318
pH	pH units	1.00		6.45	8.94	7.72	6.24	8.32	6.69	8.82	7.94	5.89	7.82	7.44		8.9



Metals

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23	
				Depth (m bgl)	0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0
				Sample Date	24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25
				Geology (at top depth of sample)	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Till	Topsoil	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC																				
Arsenic	mg/kg	0.60	640		8.94	6.52	7.41	5.71	6.75	10.2	6.34	14.1	7.28	6.32	9.12	8.14	6.04	6.07	9.26	7.55	5.74	4.43	6.94
Cadmium	mg/kg	0.020	410		<0.02	<0.02	<0.02	<0.02	<0.02	0.294	<0.02	0.548	<0.02	<0.02	0.179	0.0353	0.0393	0.0465	0.19	0.129	<0.02	0.0836	0.0419
Chromium	mg/kg	0.90			28	19.7	24.2	20.2	30.9	22.8	23.5	15	22.2	21.1	20.7	29.5	33	21.1	20.1	21.5	21.7	14.9	18.6
Copper	mg/kg	1.40	68,000		17.2	13.2	12.5	18.2	16.7	31.7	14.2	51.2	17.2	15.2	24.3	16.1	8.91	15.3	21.9	21.3	14.5	9.88	14.3
Lead	mg/kg	0.70	2,300		21.3	6.28	11.6	6.6	9.1	38.1	6.33	119	6.58	7.16	30.4	8.18	8.93	6.6	32	26.1	6.4	13.3	6.07
Mercury	mg/kg	0.10	5,100		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.276	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	0.20	980		34.3	31.2	27.8	37.1	39.8	26	31.2	20.4	31.2	29.1	27.2	39.1	24.6	28.4	23.2	27.5	29.5	14.2	29.4
Selenium	mg/kg	1.00	12,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	mg/kg	1.90	730,000		35.4	36.9	33.4	36.4	35.4	90.5	37.8	140	38.7	31.9	59.3	36.1	30.6	33	52.9	49.8	36.6	27	37.6



Metals

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP27	TP28		TP30	TP33	TP35		TP38		TP39	TP40	TP42		TP45		TP46	TP47		TP48
				Depth (m bgl)	1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0
				Sample Date	16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25
				Geology (at top depth of sample)	Till	Till	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Granular	Made Ground Cohesive	Till	Made Ground Cohesive
Analyte	Units	LOD	GAC																				
Arsenic	mg/kg	0.60	640		4.93	7.57	7.13	11.5	9.4	9.32	10.9	12.8	6.08	12.3	8.03	9.05	7.81	6.53	6.3	11.5	9.64	4.34	9.05
Cadmium	mg/kg	0.020	410		0.117	0.175	0.141	0.272	0.291	0.071	0.209	0.144	0.162	0.0615	0.0785	0.13	0.112	0.152	0.139	0.344	0.107	0.14	0.14
Chromium	mg/kg	0.90			20.9	20.1	18.2	16.9	10.7	20.7	23.1	18.1	21.6	13.3	28.7	17.2	18	19.2	20.2	19.1	24.6	23.6	31.1
Copper	mg/kg	1.40	68,000		14.6	15.7	14.4	54.2	18.3	22.7	26	31.1	15.3	21.9	13.1	21.3	18.6	16.1	14.8	30.7	19.5	16.6	13.9
Lead	mg/kg	0.70	2,300		5.54	11	5.71	39.5	148	29.9	35	59.1	6.81	32	9.62	24.3	26	10.1	5.94	52.8	12.5	7.81	9.57
Mercury	mg/kg	0.10	5,100		<0.1	<0.1	<0.1	<0.1	0.109	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	0.20	980		28.3	27	27.6	27.6	13.4	24	26	21.9	31.3	24.4	29.7	24.8	18.7	28.3	29	22.5	35.5	29.5	27
Selenium	mg/kg	1.00	12,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	mg/kg	1.90	730,000		35.3	39.9	34.6	70.5	107	47.2	68.1	63.1	38.3	65.1	33.2	50.1	41.6	41.5	37.8	97.2	47.4	43.6	37.3



Metals

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP49		WS01	WS02		WS03	WS04		WS05	WS06		WS07
				Depth (m bgl)	0.1-0.2	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
				Sample Date	17/01/25	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
				Geology (at top depth of sample)												
					Topsol	Till	Topsol	Topsol	Till	Topsol	Topsol	Topsol	Topsol	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC													
Arsenic	mg/kg	0.60	640		17.1	4.76	8.25	12.9	5.97	5.84	4.16	10.3	9.3	16.5	7.19	7.05
Cadmium	mg/kg	0.020	410		0.288	0.0934	0.153	0.273	0.0347	0.13	0.0578	<0.02	0.175	0.181	0.0526	<0.02
Chromium	mg/kg	0.90			18.7	20	17.7	14	27.4	17.5	19.3	19.5	18	22.5	20.5	26.2
Copper	mg/kg	1.40	68,000		32.2	15.4	20.4	29.2	14.8	15.7	15.3	24	22.5	36.8	20.2	17.8
Lead	mg/kg	0.70	2,300		53.8	5.34	43.9	71.4	7.93	29.4	5.4	39.3	38.2	39.9	42	7.7
Mercury	mg/kg	0.10	5,100		<0.1	<0.1	<0.1	0.205	<0.1	0.142	<0.1	<0.1	0.166	<0.1	<0.1	<0.1
Nickel	mg/kg	0.20	980		21.8	28.9	19.5	17.1	29.9	11.3	28.4	21.2	17.8	27.2	21.7	33.9
Selenium	mg/kg	1.00	12,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	mg/kg	1.90	730,000		68.7	37.4	55.4	70.4	35	38.3	37.4	58.3	57.4	66.4	45.4	50.3

PAHs

				PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23	
				Depth (m bgl)	0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0
				Sample Date	24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25
				Geology (at top depth of sample)			Made Ground Cohesive		Made Ground Cohesive	Made Ground Cohesive					Made Ground Cohesive		Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive		Made Ground Cohesive	
					Till	Till		Till				Topsail	Till	Till		Till	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC																				
Acenaphthene	mg/kg	0.008 - 0.040			<0.008	<0.008	<0.008	<0.008	<0.008	<0.04	<0.008	0.574	<0.008	<0.008	0.0164	<0.008	<0.008	<0.008	<0.008	0.0198	0.0301	<0.008	<0.008
Acenaphthylene	mg/kg	0.012 - 0.060			<0.012	<0.012	<0.012	<0.012	<0.012	<0.06	<0.012	0.0654	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Anthracene	mg/kg	0.016 - 0.080			<0.016	<0.016	<0.016	<0.016	<0.016	<0.08	<0.016	1.35	<0.016	<0.016	0.0923	<0.016	<0.016	<0.016	<0.016	0.0354	0.0841	<0.016	<0.016
Benzo (a) anthracene	mg/kg	0.014 - 0.070			<0.014	<0.014	<0.014	<0.014	<0.014	0.0917	<0.014	3.61	<0.014	<0.014	0.266	<0.014	<0.014	<0.014	0.064	0.156	0.228	0.0185	<0.014
Benzo (a) pyrene	mg/kg	0.015 - 0.075	77.0		<0.015	<0.015	<0.015	<0.015	<0.015	<0.075	<0.015	3.34	<0.015	<0.015	0.226	<0.015	<0.015	<0.015	0.065	0.156	0.197	<0.015	<0.015
Benzo (b) fluoranthene	mg/kg	0.015 - 0.075			<0.015	<0.015	<0.015	<0.015	<0.015	0.115	<0.015	4.45	<0.015	<0.015	0.301	<0.015	<0.015	<0.015	0.0858	0.23	0.239	0.0241	<0.015
Benzo (ghi) perylene	mg/kg	0.024 - 0.12			<0.024	<0.024	<0.024	<0.024	<0.024	<0.12	<0.024	2.05	<0.024	<0.024	0.135	<0.024	<0.024	<0.024	0.0457	0.107	0.122	<0.024	<0.024
Benzo (k) fluoranthene	mg/kg	0.014 - 0.070			<0.014	<0.014	<0.014	<0.014	<0.014	<0.07	<0.014	1.54	<0.014	<0.014	0.112	<0.014	<0.014	<0.014	0.0284	0.0771	0.0936	<0.014	<0.014
Chrysene	mg/kg	0.010 - 0.050			<0.01	<0.01	<0.01	<0.01	<0.01	0.0854	<0.01	3.48	<0.01	<0.01	0.27	<0.01	<0.01	<0.01	0.0605	0.17	0.196	0.0187	<0.01
Coronene	mg/kg	0.20																					
Dibenzo (ah) anthracene	mg/kg	0.023 - 0.12			<0.023	<0.023	<0.023	<0.023	<0.023	<0.115	<0.023	0.332	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023
Fluoranthene	mg/kg	0.017 - 0.085			<0.017	<0.017	<0.017	<0.017	<0.017	0.239	<0.017	8.24	<0.017	<0.017	0.705	<0.017	<0.017	<0.017	0.137	0.344	0.642	0.0415	<0.017
Fluorene	mg/kg	0.010 - 0.050			<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	0.42	<0.01	<0.01	0.0187	<0.01	<0.01	<0.01	<0.01	0.0137	0.0172	<0.01	<0.01
Indeno (1,2,3-cd) pyrene	mg/kg	0.018 - 0.090			<0.018	<0.018	<0.018	<0.018	<0.018	<0.09	<0.018	1.83	<0.018	<0.018	0.122	<0.018	<0.018	<0.018	0.0368	0.109	0.107	<0.018	<0.018
Naphthalene	mg/kg	0.009 - 0.045	1,600		<0.009	<0.009	<0.009	<0.009	<0.009	<0.045	<0.009	0.126	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
PAH Total (EPA 16)	mg/kg	0.12 - 0.59			<0.118	<0.118	<0.118	<0.118	<0.118	0.925	<0.118	44.5	<0.118	<0.118	3.26	<0.118	<0.118	<0.118	0.704	1.89	2.78	0.167	<0.118



PAHs

				PointID	TP27	TP28		TP30	TP33	TP35		TP38		TP39	TP40	TP42		TP45		TP46	TP47		TP48
				Depth (m bgl)	1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0
				Sample Date	16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25
				Geology (at top depth of sample)				Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive		Made Ground Cohesive		Made Ground Cohesive		Made Ground Cohesive		Made Ground Granular	Made Ground Cohesive		Made Ground Cohesive
Analyte	Units	LOD	GAC																				
Acenaphthene	mg/kg	0.008 - 0.040			<0.008	<0.008	<0.008	<0.008	<0.008	0.0145	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.0413	<0.008	<0.008	<0.008
Acenaphthylene	mg/kg	0.012 - 0.060			<0.012	<0.012	<0.012	<0.012	<0.012	0.0136	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Anthracene	mg/kg	0.016 - 0.080			<0.016	<0.016	<0.016	0.0191	0.0248	0.0439	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	0.0944	<0.016	<0.016	<0.016
Benzo (a) anthracene	mg/kg	0.014 - 0.070			<0.014	<0.014	<0.014	0.0966	0.117	0.0726	0.0164	0.1	<0.014	0.067	<0.014	0.0183	<0.014	<0.014	<0.014	0.351	<0.014	<0.014	0.0421
Benzo (a) pyrene	mg/kg	0.015 - 0.075	77.0		<0.015	<0.015	<0.015	0.0977	0.147	0.0671	0.0174	0.106	<0.015	0.0661	<0.015	0.0176	<0.015	<0.015	<0.015	0.339	<0.015	<0.015	0.0456
Benzo (b) fluoranthene	mg/kg	0.015 - 0.075			<0.015	<0.015	<0.015	0.134	0.18	0.0874	0.0231	0.142	<0.015	0.0904	<0.015	0.0269	<0.015	0.0182	<0.015	0.426	<0.015	<0.015	0.057
Benzo (ghi) perylene	mg/kg	0.024 - 0.12			<0.024	<0.024	<0.024	0.0666	0.124	0.0486	<0.024	0.0709	<0.024	0.0464	<0.024	<0.024	<0.024	<0.024	<0.024	0.218	<0.024	<0.024	0.0335
Benzo (k) fluoranthene	mg/kg	0.014 - 0.070			<0.014	<0.014	<0.014	0.0474	0.0606	0.029	<0.014	0.052	<0.014	0.0303	<0.014	<0.014	<0.014	<0.014	<0.014	0.154	<0.014	<0.014	0.0194
Chrysene	mg/kg	0.010 - 0.050			<0.01	<0.01	<0.01	0.0923	0.106	0.0678	0.0148	0.0983	<0.01	0.0642	<0.01	0.0186	<0.01	0.0114	<0.01	0.313	<0.01	<0.01	0.04
Coronene	mg/kg	0.20			<0.2	<0.2	<0.2							<0.2	<0.2	<0.2	<0.2			<0.2			
Dibenzo (ah) anthracene	mg/kg	0.023 - 0.12			<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	0.0331	<0.023	<0.023	<0.023
Fluoranthene	mg/kg	0.017 - 0.085			<0.017	<0.017	<0.017	0.186	0.223	0.171	0.0298	0.195	<0.017	0.129	<0.017	0.0344	<0.017	0.0209	<0.017	0.803	<0.017	<0.017	0.0643
Fluorene	mg/kg	0.010 - 0.050			<0.01	<0.01	<0.01	<0.01	<0.01	0.0212	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0297	<0.01	<0.01	<0.01
Indeno (1,2,3-cd) pyrene	mg/kg	0.018 - 0.090			<0.018	<0.018	<0.018	0.066	0.095	0.0395	<0.018	0.0694	<0.018	0.0448	<0.018	<0.018	<0.018	<0.018	<0.018	0.217	<0.018	<0.018	0.0275
Naphthalene	mg/kg	0.009 - 0.045	1,600		<0.009	<0.009	<0.009	<0.009	<0.009	0.0165	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
PAH Total (EPA 16)	mg/kg	0.12 - 0.59			<0.118	<0.118	<0.118	1.06	1.41	1.01	0.131	1.1	<0.118	0.721	<0.118	0.171	<0.118	<0.118	<0.118	4.16	<0.118	<0.118	0.393



PAHs

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP49		WS01	WS02		WS03	WS04		WS05	WS06		WS07
				Depth (m bgl)	0.1-0.2	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
				Sample Date	17/01/25	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
				Geology (at top depth of sample)	Topsol	Till	Topsol	Topsol	Till	Topsol	Topsol	Topsol	Topsol	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC													
Acenaphthene	mg/kg	0.008 - 0.040			0.0191	<0.008	0.0978	<0.008	<0.008	<0.008	<0.008	<0.008	0.019	0.017	<0.008	<0.008
Acenaphthylene	mg/kg	0.012 - 0.060			<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Anthracene	mg/kg	0.016 - 0.080			0.0513	<0.016	0.101	0.0221	<0.016	<0.016	<0.016	<0.016	0.0344	0.0553	<0.016	<0.016
Benzo (a) anthracene	mg/kg	0.014 - 0.070			0.194	<0.014	0.297	0.104	<0.014	<0.014	<0.014	0.0203	0.138	0.165	0.0191	<0.014
Benzo (a) pyrene	mg/kg	0.015 - 0.075	77.0		0.197	<0.015	0.236	0.108	<0.015	<0.015	<0.015	0.0186	0.133	0.151	<0.015	<0.015
Benzo (b) fluoranthene	mg/kg	0.015 - 0.075			0.257	<0.015	0.322	0.147	<0.015	0.0214	<0.015	0.0261	0.181	0.2	0.0234	<0.015
Benzo (ghi) perylene	mg/kg	0.024 - 0.12			0.13	<0.024	0.133	0.0766	<0.024	<0.024	<0.024	<0.024	0.0922	0.0943	<0.024	<0.024
Benzo (k) fluoranthene	mg/kg	0.014 - 0.070			0.0888	<0.014	0.121	0.0474	<0.014	<0.014	<0.014	<0.014	0.0625	0.0702	<0.014	<0.014
Chrysene	mg/kg	0.010 - 0.050			0.187	<0.01	0.267	0.126	<0.01	0.0153	<0.01	0.0222	0.15	0.15	0.0175	<0.01
Coronene	mg/kg	0.20			<0.2	<0.2										<0.2
Dibenzo (ah) anthracene	mg/kg	0.023 - 0.12			<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023
Fluoranthene	mg/kg	0.017 - 0.085			0.416	<0.017	0.591	0.225	<0.017	0.0271	<0.017	0.0422	0.326	0.363	0.0424	<0.017
Fluorene	mg/kg	0.010 - 0.050			0.0132	<0.01	0.106	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0219	<0.01	<0.01
Indeno (1,2,3-cd) pyrene	mg/kg	0.018 - 0.090			0.13	<0.018	0.12	0.0672	<0.018	<0.018	<0.018	<0.018	0.0808	0.0816	<0.018	<0.018
Naphthalene	mg/kg	0.009 - 0.045	1,600		<0.009	<0.009	0.0258	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	0.0109	<0.009	<0.009
PAH Total (EPA 16)	mg/kg	0.12 - 0.59			2.27	<0.118	3.46	1.26	<0.118	<0.118	<0.118	0.173	1.71	1.98	0.184	<0.118



PAHs

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23	
				Depth (m bgl)	0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0
				Sample Date	24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25
				Geology (at top depth of sample)	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Till	Topsail	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC																				
PAH Total (EPA 17)	mg/kg	10.0																					
Phenanthrene	mg/kg	0.015 - 0.075			<0.015	<0.015	<0.015	<0.015	<0.015	0.15	<0.015	5.43	<0.015	<0.015	0.364	<0.015	<0.015	<0.015	0.0512	0.159	0.284	0.0225	<0.015
Phenanthrene D10 % Recovery**	%				94.9	94.9	95.6	93.9	94.7	93.1	88.1	95.1	89	97.2	90.9	89.2	89.3	90	90.8	91.1	91.7	89	90.6
Pyrene	mg/kg	0.015 - 0.075			<0.015	<0.015	<0.015	<0.015	<0.015	0.244	<0.015	7.69	<0.015	<0.015	0.633	<0.015	<0.015	<0.015	0.13	0.318	0.543	0.0416	<0.015



PAHs

Result > Assessment Criteria Limit of detection > Assessment Criteria	PointID			TP27	TP28		TP30	TP33	TP35		TP38		TP39	TP40	TP42		TP45		TP46	TP47		TP48	
	Depth (m bgl)			1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0	
	Sample Date			16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	
	Geology (at top depth of sample)																						
				Till	Till	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Granular	Made Ground Cohesive	Till	Made Ground Cohesive	
Analyte	Units	LOD	GAC																				
PAH Total (EPA 17)		mg/kg	10.0		<10	<10	<10						<10	<10	<10	<10			<10				
Phenanthrene		mg/kg	0.015 - 0.075		<0.015	<0.015	<0.015	0.0776	0.0908	0.16	<0.015	0.0747	<0.015	0.0552	<0.015	0.0208	<0.015	<0.015	<0.015	0.394	<0.015	<0.015	<0.015
Phenanthrene D10 % Recovery**		%			93.6	94.4	93.2	93	90.6	92.2	92.9	96	93.7	95.8	95.2	94.2	86.7	87.5	91.8	94.8	91.2	94.2	84.5
Pyrene		mg/kg	0.015 - 0.075		<0.015	<0.015	<0.015	0.178	0.239	0.155	0.0297	0.187	<0.015	0.127	<0.015	0.0343	<0.015	0.0219	<0.015	0.751	<0.015	<0.015	0.0634



PAHs

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP49		WS01	WS02		WS03	WS04		WS05	WS06		WS07
				Depth (m bgl)	0.1-0.2	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
				Sample Date	17/01/25	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
				Geology (at top depth of sample)	Topsol	Till	Topsol	Topsol	Till	Topsol	Topsol	Topsol	Topsol	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC													
PAH Total (EPA 17)	mg/kg	10.0			< 10	< 10										< 10
Phenanthrene	mg/kg	0.015 - 0.075			0.196	<0.015	0.572	0.107	<0.015	<0.015	<0.015	<0.015	0.179	0.278	0.0414	<0.015
Phenanthrene D10 % Recovery**	%				96.8	94.2	92.7	91.1	90	89.4	90.8	90	91.7	91.9	97	92.6
Pyrene	mg/kg	0.015 - 0.075			0.389	<0.015	0.471	0.232	<0.015	0.0269	<0.015	0.0435	0.311	0.326	0.0402	<0.015



PCBs

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP27	TP28		TP39	TP40	TP42		TP46	TP49		WS07
				Depth (m bgl)	1.4-1.5	1.6-1.7	3.0-3.0	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	1.0-1.1	0.1-0.2	2.5-2.6	2.2-2.3
				Sample Date	16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	21/01/25
				Geology (at top depth of sample)											
					Till	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Granular	Topsoil	Till	Till
Analyte	Units	LOD	GAC												
PCB101	mg/kg	0.003			<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
PCB118	mg/kg	0.003			<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
PCB138	mg/kg	0.003			<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
PCB153	mg/kg	0.003			<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
PCB180	mg/kg	0.003			<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
PCB28	mg/kg	0.003			<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
PCB52	mg/kg	0.003			<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Total PCB Congeners ICES 7	mg/kg	0.021	9.53		<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021



Physical

Result > Assessment Criteria	PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23			
Limit of detection > Assessment Criteria		Depth (m bgl)	0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0	
		Sample Date	24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25	
		Geology (at top depth of sample)																				
Analyte	Units	LOD	GAC																			
Loss on ignition	%	0.70																				
Soil Organic Matter	%	0.35		0.421	<0.35	0.671	<0.35	<0.35	2.1	<0.35	6.65	<0.35	<0.35	2.02	<0.35	0.44	<0.35	1.7	1.37	<0.35	0.94	<0.35
Total organic carbon (TOC)	%	0.20																				



Physical

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP27	TP28		TP30	TP33	TP35		TP38	TP39	TP40	TP42		TP45		TP46	TP47		TP48	TP49
				Depth (m bgl)	1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0	0.1-0.2
				Sample Date	16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25
				Geology (at top depth of sample)																			
					Till	Till	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Till	Made Ground Cohesive	Topsoil	
Analyte	Units	LOD	GAC																				
Loss on ignition	%	0.70			2.14	2.19	1.83					5.02	3.3	3.06	2.79			4				7.71	
Soil Organic Matter	%	0.35			<0.35	0.598	<0.35	3.72	4.14	1.21	1.5	<0.35	2.34	0.572	1.69	1.51	0.386	<0.35	2.69	0.488	<0.35	0.493	4.34
Total organic carbon (TOC)	%	0.20			<0.2	0.347	<0.2						1.36	0.332	0.979	0.878		1.56				2.52	



Physical

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP49	WS01	WS02		WS03	WS04		WS05	WS06		WS07
				Depth (m bgl)	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
				Sample Date	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
				Geology (at top depth of sample)	Till	Topsail	Topsail	Till	Topsail	Topsail	Topsail	Topsail	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC												
Loss on ignition	%	0.70		2.62											2.14
Soil Organic Matter	%	0.35		<0.35	2.17	4.86	<0.35	1.37	0.359	1.81	5.07	1.86	4.26	0.397	
Total organic carbon (TOC)	%	0.20		<0.2										0.23	



QA Standard

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23	
Depth (m bgl)					0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0
Sample Date					24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25
Geology (at top depth of sample)					Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Till	Topsoil	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC																				
4-Bromofluorobenzene	%																						
Acenaphthene-d10	%				90.9	91.5	91.8	91	91.8	90.3	84.5	89.7	84.9	95.3	84.8	84	86.1	86.1	86.7	86.2	89.5	85.3	85.9
Chrysene-d12	%				91.5	89.3	85.7	90.2	90.3	84.8	78.9	91.3	82.8	85.8	85.3	82.2	90.2	89.3	88	92.5	89	87.5	88.4
Dibromofluoromethane	%																						
EPH Surrogate % recovery**	%																						
Naphthalene-d8	%				92.8	92.5	89.7	93	93.1	90.9	87.5	90.6	88	89.7	87.4	86.2	90.2	90.2	89.9	89.8	91.8	88.5	89
Perylene-d12**	%				93.4	92.5	87.1	93	91.3	79.2	76.7	89.7	82.5	86.8	82.1	79.5	96.6	93.1	88.1	97	90.9	87	89.8
Toluene-d8 Surrogate	%																						



QA Standard

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP27	TP28		TP30	TP33	TP35		TP38		TP39	TP40	TP42		TP45		TP46	TP47		TP48
				Depth (m bgl)	1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0
				Sample Date	16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25
				Geology (at top depth of sample)																			
					Till	Till	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Granular	Made Ground Cohesive	Till	Made Ground Cohesive
Analyte	Units	LOD	GAC																				
4-Bromofluorobenzene	%			98.1	96.5	96.2	93			104	94.1	97.6	94.4	105	104	91.6	94.2	95.2	92.4	97.7	95.2	97.5	
Acenaphthene-d10	%			90.6	91.2	90.3	89.8	85.4	89.6	89.5	91.9	90.5	90.8	91.8	90.4	85.8	85.3	89.7	90.8	85.8	91.1	83.1	
Chrysene-d12	%			94.5	93.8	91.5	93.2	85.4	87.4	88.7	94.9	92.4	97.2	91.4	91	83.3	85	85.9	93.8	92.3	89	85.5	
Dibromofluoromethane	%			107	111	113	114			105	108	107	103	106	105	104	106	106	106	108	107	106	
EPH Surrogate % recovery**	%			95.5	98.7	104							87.9	90.1	93.3	91.1			97.2				
Naphthalene-d8	%			95.4	95.7	95.5	93.9	88.1	91.3	90.8	96.1	95.3	94.9	93.4	93.9	91.2	90.3	92	94.6	88.9	94	87.6	
Perylene-d12**	%			105	97.8	96.7	97.8	82.5	90.5	91.4	98.4	95	99.7	95.7	92	86.5	86.8	88.9	95.9	97.8	92.3	89.6	
Toluene-d8 Surrogate	%			101	102	102	101			98.8	102	97.9	100	101	100	99.2	101	102	101	102	101	102	



QA Standard

Result > Assessment Criteria Limit of detection > Assessment Criteria	PointID			TP49		WS01	WS02		WS03	WS04		WS05	WS06		WS07
	Depth (m bgl)			0.1-0.2	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
	Sample Date			17/01/25	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
	Geology (at top depth of sample)			Topsoil	Till	Topsoil	Topsoil	Till	Topsoil	Topsoil	Topsoil	Topsoil	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC												
4-Bromofluorobenzene	%			91.9	95.6	98.5	96.8	102	100	99.1	99.1	92.1	102	96.5	102
Acenaphthene-d10	%			91.5	90.6	86.8	86.8	85	85.5	86.1	85.1	85.8	89.4	93.2	90.4
Chrysene-d12	%			99.4	90.9	93.4	83.6	88.7	87.9	83.6	83.1	83	86.2	93	88.1
Dibromofluoromethane	%			106	106	108	105	106	106	107	106	110	106	106	107
EPH Surrogate % recovery**	%			94.2	93.2										94.9
Naphthalene-d8	%			95.2	95.3	89.5	89.7	88	89.1	89.3	88.5	87.7	92.6	95.4	92.1
Perylene-d12**	%			104	94.8	94.4	81.2	89	92.2	82.4	79.4	79.4	88.1	96	91
Toluene-d8 Surrogate	%			100	101	101	99	99.1	100	99.8	98.7	95.8	100	100	102



TPH/EPH

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23	
				Depth (m bgl)	0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0
				Sample Date	24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25
				Geology (at top depth of sample)																			
					Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Till	Topsoil	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC																				
GRO Surrogate		%			97.5	95	98.5	93.5	93.2	82.2	101	83.1	103	110	91	103	99.9	99.6	92.8	103	94.6	98.4	97.6
Mineral oils		mg/kg	5.00																				
PRO (>C05-C10)		mg/kg	0.020		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	



TPH/EPH

	Result > Assessment Criteria	PointID	TP27	TP28		TP30	TP33	TP35		TP38		TP39	TP40	TP42		TP45		TP46	TP47		TP48	
	Limit of detection > Assessment Criteria		Depth (m bgl)	1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0
			Sample Date	16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25
			Geology (at top depth of sample)																			
				Till	Till	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Granular	Made Ground Cohesive	Till	Made Ground Cohesive
Analyte	Units	LOD	GAC																			
GRO Surrogate		%		99.7	100	100	93.4	84.6	88.5	97.8	87.8	95.7	129	101	72	90.1	95.5	100	92.7	99.5	103	100
Mineral oils		mg/kg	5.00	<5	<5	<5							<5	<5	<5	<5		<5				
PRO (>C05-C10)		mg/kg	0.020	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02



TPH/EPH

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP49		WS01	WS02		WS03	WS04		WS05	WS06		WS07
				Depth (m bgl)	0.1-0.2	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
				Sample Date	17/01/25	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
				Geology (at top depth of sample)	Topsail	Till	Topsail	Topsail	Till	Topsail	Topsail	Topsail	Topsail	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC													
GRO Surrogate	%			87.1	96.6	127	86.5	103	97.8	104	101	89.8	91.4	84.6	98.4	
Mineral oils	mg/kg	5.00		12.4	<5											<5
PRO (>C05-C10)	mg/kg	0.020		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

PRE-REPORT DATA CHECK

	All GEOL_GEO2 codes are complete.
	All GEOL_GEO2 codes are recognised and suitable for this report.
	All Test Types are valid and Sample Matrix can be calculated.



Result > Assessment Criteria Limit of detection > Assessment Criteria AnalyteUnitsLODGAC				PointID	TP27	TP28		TP30	TP38		TP39	TP40	TP42	TP45	TP46	TP49		WS07
				Depth (m bgl)	1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	2.4-2.5	1.0-1.1	0.1-0.2	2.5-2.6	2.2-2.3
				Sample Date	16/01/25	20/01/25	20/01/25	20/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	21/01/25
				Geology (at top depth of sample)				Made Ground Cohesive	Made Ground Cohesive		Made Ground Cohesive		Made Ground Cohesive		Made Ground Granular	Topsail		
					Till	Till	Till			Till		Till		Till			Till	Till
WAC (Unrecognised code)					10	10	10	10	10	10	10	10	10	10	10	10	10	10



Aliphatics and Aromatics

				PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23	
				Depth (m bgl)	0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0
				Sample Date	24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25
				Geology (at top depth of sample)			Made Ground Cohesive		Made Ground Cohesive	Made Ground Cohesive					Made Ground Cohesive		Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive		Made Ground Cohesive	
					Till	Till		Till				Topsail		Till	Till		Made Ground Cohesive	Till		Made Ground Cohesive		Made Ground Cohesive	Till
Analyte	Units	LOD	GAC																				
Aliphatic C05-C06	mg/kg	0.010	95,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C05-C10	mg/kg	0.050			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aliphatic C06-C08	mg/kg	0.010	150,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C08-C10	mg/kg	0.010	14,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C10-C12	mg/kg	1.00	21,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic C10-C44	mg/kg	5.00			<5	<5	<5	<5	<5	<5		10.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Aliphatic C12-C16	mg/kg	1.00	25,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic C16-C21	mg/kg	1.00			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic C16-C35	mg/kg	1.00	450,000		<1	<1	<1	<1	<1	1.74	<1	9.79	<1	<1	1.14	1.19	<1	<1	1.13	2.26	<1	<1	<1
Aliphatic C21-C35	mg/kg	1.00			<1	<1	<1	<1	<1	1.68	<1	9.21	<1	<1	1.14	1.19	<1	<1	1.13	2.26	<1	<1	<1
Aliphatic C35-C44	mg/kg	1.00	450,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic C05-C10	mg/kg	0.050			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aromatic C06-C07	mg/kg	0.010			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C07-C08	mg/kg	0.010	87,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C08-C10	mg/kg	0.010	7,200		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C10-C12	mg/kg	1.00	9,200		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1



Aliphatics and Aromatics

				PointID	TP27	TP28		TP30	TP33	TP35		TP38		TP39	TP40	TP42		TP45		TP46	TP47		TP48
				Depth (m bgl)	1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0
				Sample Date	16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25
				Geology (at top depth of sample)				Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive		Made Ground Cohesive		Made Ground Cohesive		Made Ground Cohesive		Made Ground Granular	Made Ground Cohesive		Made Ground Cohesive
					Till	Till	Till						Till		Till		Till			Made Ground Granular		Till	
Analyte	Units	LOD	GAC																				
Aliphatic C05-C06	mg/kg	0.010	95,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C05-C10	mg/kg	0.050			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aliphatic C06-C08	mg/kg	0.010	150,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C08-C10	mg/kg	0.010	14,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C10-C12	mg/kg	1.00	21,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic C10-C44	mg/kg	5.00			<5	<5	<5	<5	6.12	<5	<5	<5	<5	<5	<5	13.9	<5	<5	<5	<5	<5	<5	<5
Aliphatic C12-C16	mg/kg	1.00	25,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic C16-C21	mg/kg	1.00			<1	<1	<1	<1	1.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic C16-C35	mg/kg	1.00	450,000		<1	<1	<1	<1	5.53	2.1	1.34	1.48	<1	2.7	<1	7.59	1.41	<1	1.69	3.7	1.01	<1	<1
Aliphatic C21-C35	mg/kg	1.00			<1	<1	<1	<1	4.52	2.1	1.34	1.48	<1	2.7	<1	7.59	1.41	<1	1.69	3.61	1.01	<1	<1
Aliphatic C35-C44	mg/kg	1.00	450,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	6.29	<1	<1	<1	<1	<1	<1	<1
Aromatic C05-C10	mg/kg	0.050			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aromatic C06-C07	mg/kg	0.010			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C07-C08	mg/kg	0.010	87,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C08-C10	mg/kg	0.010	7,200		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C10-C12	mg/kg	1.00	9,200		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1



Aliphatics and Aromatics

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP49		WS01	WS02		WS03	WS04		WS05	WS06		WS07
				Depth (m bgl)	0.1-0.2	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
				Sample Date	17/01/25	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
				Geology (at top depth of sample)	Topsol	Till	Topsol	Topsol	Till	Topsol	Topsol	Topsol	Topsol	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC													
Aliphatic C05-C06	mg/kg	0.010	95,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C05-C10	mg/kg	0.050			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aliphatic C06-C08	mg/kg	0.010	150,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C08-C10	mg/kg	0.010	14,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C10-C12	mg/kg	1.00	21,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic C10-C44	mg/kg	5.00			<5	<5	<5	7.86	<5	<5	<5	<5	8.33	<5	13.1	<5
Aliphatic C12-C16	mg/kg	1.00	25,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic C16-C21	mg/kg	1.00			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2.72	<1
Aliphatic C16-C35	mg/kg	1.00	450,000		4.72	<1	1.04	7.31	<1	<1	<1	<1	8.05	2.82	12.3	1.45
Aliphatic C21-C35	mg/kg	1.00			4.72	<1	1.04	7.31	<1	<1	<1	<1	8.05	2.82	9.54	1.45
Aliphatic C35-C44	mg/kg	1.00	450,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic C05-C10	mg/kg	0.050			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aromatic C06-C07	mg/kg	0.010			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C07-C08	mg/kg	0.010	87,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C08-C10	mg/kg	0.010	7,200		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C10-C12	mg/kg	1.00	9,200		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1



Aliphatics and Aromatics

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23	
				Depth (m bgl)	0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0
				Sample Date	24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25
				Geology (at top depth of sample)	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Till	Topsoil	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC																				
Aromatic C10-C44	mg/kg	5.00			<5	<5	<5	<5	<5	84.4	<5	184	<5	<5	7.16	<5	<5	<5	<5	<5	<5	<5	<5
Aromatic C12-C16	mg/kg	1.00	10,000		<1	<1	<1	<1	<1	<1	<1	2.51	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic C16-C21	mg/kg	1.00	7,600		<1	<1	<1	<1	<1	3.43	<1	46.6	<1	<1	1.55	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic C16-C35	mg/kg	1.00			<1	<1	<1	<1	<1	53.7	1.09	166	<1	<1	6.16	1.14	<1	<1	1.8	3.91	<1	1.63	<1
Aromatic C21-C35	mg/kg	1.00	7,800		<1	<1	<1	<1	<1	50.2	<1	119	<1	<1	4.61	<1	<1	<1	1.47	3.38	<1	1.39	<1
Aromatic C35-C44	mg/kg	1.00	7,800		<1	<1	<1	<1	<1	30.7	<1	15.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic C40-C44	mg/kg	1.00			<1	<1	<1	<1	<1	10.3	<1	2.6	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Aliphatics and Aromatics (C05-C44)	mg/kg	10.0			<10	<10	<10	<10	<10	84.4	<10	194	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total Aliphatics and Aromatics (C10-C44)	mg/kg	10.0			<10	<10	<10	<10	<10	84.4	<10	194	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Aliphatics and Aromatics

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP27	TP28		TP30	TP33	TP35		TP38		TP39	TP40	TP42		TP45		TP46	TP47		TP48
				Depth (m bgl)	1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0
				Sample Date	16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25
				Geology (at top depth of sample)	Till	Till	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Granular	Made Ground Cohesive	Till	Made Ground Cohesive
Analyte	Units	LOD	GAC																				
Aromatic C10-C44	mg/kg	5.00			<5	<5	<5	<5	13.2	<5	<5	<5	<5	<5	<5	48	<5	<5	<5	7.39	<5	<5	<5
Aromatic C12-C16	mg/kg	1.00	10,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic C16-C21	mg/kg	1.00	7,600		<1	<1	<1	<1	1.17	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.5	<1	<1	<1
Aromatic C16-C35	mg/kg	1.00			<1	<1	<1	1.1	11.8	2.1	<1	2.1	<1	2.34	<1	29	<1	<1	<1	6.34	1.94	<1	<1
Aromatic C21-C35	mg/kg	1.00	7,800		<1	<1	<1	<1	10.6	1.66	<1	1.43	<1	2.03	<1	28.9	<1	<1	<1	4.84	1.88	<1	<1
Aromatic C35-C44	mg/kg	1.00	7,800		<1	<1	<1	<1	1.1	<1	<1	<1	<1	<1	<1	19	<1	<1	<1	<1	<1	<1	<1
Aromatic C40-C44	mg/kg	1.00			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.2	<1	<1	<1	<1	<1	<1	<1
Total Aliphatics and Aromatics (C05-C44)	mg/kg	10.0			<10	<10	<10	<10	19.3	<10	<10	<10	<10	<10	<10	61.9	<10	<10	<10	<10	<10	<10	<10
Total Aliphatics and Aromatics (C10-C44)	mg/kg	10.0			<10	<10	<10	<10	19.3	<10	<10	<10	<10	<10	<10	61.9	<10	<10	<10	<10	<10	<10	<10

Aliphatics and Aromatics

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP49		WS01	WS02		WS03	WS04		WS05	WS06		WS07
				Depth (m bgl)	0.1-0.2	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
				Sample Date	17/01/25	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
				Geology (at top depth of sample)	Topsol	Till	Topsol	Topsol	Till	Topsol	Topsol	Topsol	Topsol	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC													
Aromatic C10-C44	mg/kg	5.00			11	<5	<5	10.7	<5	<5	<5	<5	10.1	<5	18.1	<5
Aromatic C12-C16	mg/kg	1.00	10,000		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic C16-C21	mg/kg	1.00	7,600		1.81	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.43	<1
Aromatic C16-C35	mg/kg	1.00			9.74	<1	1.71	9.07	<1	1.9	1.82	1.24	8.96	3.12	16	<1
Aromatic C21-C35	mg/kg	1.00	7,800		7.93	<1	1.61	8.54	<1	1.66	1.63	1.03	8.54	2.63	14.5	<1
Aromatic C35-C44	mg/kg	1.00	7,800		1.12	<1	<1	1.63	<1	<1	<1	<1	<1	<1	2.11	<1
Aromatic C40-C44	mg/kg	1.00			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Aliphatics and Aromatics (C05-C44)	mg/kg	10.0			11	<10	<10	18.6	<10	<10	<10	<10	18.5	<10	31.2	<10
Total Aliphatics and Aromatics (C10-C44)	mg/kg	10.0			11	<10	<10	18.6	<10	<10	<10	<10	18.5	<10	31.2	<10

Asbestos

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP33
				Depth (m bgl)	0.3-0.4
				Sample Date	21/01/25
				Geology (at top depth of sample)	Made Ground Granular
Analyte	Units	LOD	GAC		
Asbestos Quantification - Gravimetric	%	0.001		0.0027	
Asbestos Quantification - PCM Evaluation	%	0.001		<0.001	
Asbestos Quantification - Total %	%	0.001		0.0036	



BTEX and Fuel Additives

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23	
				Depth (m bgl)	0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0
				Sample Date	24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25
				Geology (at top depth of sample)	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Till	Topsoil	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC																				
Benzene	mg/kg	0.010	190		<0.01	0.0637	<0.01	0.0615	<0.01	<0.01	0.0416	<0.01	0.0418	0.0561	<0.01	<0.01	<0.01	<0.01	<0.01	<0.015	0.0629	<0.01	0.0474
BTEX	mg/kg	0.070			<0.07	0.0811	<0.07	0.08	<0.07	<0.105	<0.145	<0.07	<0.145	0.0702	<0.135	<0.105	<0.105	<0.07	<0.15	<0.075	0.0804	<0.07	<0.215
Ethylbenzene	mg/kg	0.010	17,000		<0.01	<0.02	<0.01	<0.02	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.01	<0.02
Methyl t-butylether (MTBE)	mg/kg	0.005	98,400		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TAME	mg/kg	0.010			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Toluene	mg/kg	0.010	87,000		<0.01	0.0175	<0.01	0.0185	<0.01	<0.01	<0.015	<0.01	<0.015	0.0141	0.0408	<0.01	<0.01	<0.01	<0.01	<0.01	0.0175	<0.01	<0.015
Xylene - Total (Summed)	mg/kg	-999	17,000		0.02	0.06	0.02	0.06	0.02	0.055	0.06	0.02	0.06	0.06	0.055	0.055	0.055	0.02	0.06	0.02	0.06	0.02	0.055
Xylene-m	mg/kg	0.020	17,000		<0.02	<0.06	<0.02	<0.06	<0.02	<0.055	<0.06	<0.02	<0.06	<0.06	<0.055	<0.055	<0.055	<0.02	<0.06	<0.02	<0.06	<0.02	<0.055
Xylene-o	mg/kg	0.020	17,000		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.04	<0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.045



BTEX and Fuel Additives

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP27	TP28		TP30	TP33	TP35		TP38		TP39	TP40	TP42		TP45		TP46	TP47		TP48
Depth (m bgl)					1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0
Sample Date					16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25
Geology (at top depth of sample)					Till	Till	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Granular	Made Ground Cohesive	Till	Made Ground Cohesive
Analyte	Units	LOD	GAC																				
Benzene	mg/kg	0.010	190		0.0321	0.0183	0.0244	<0.01	<0.015	<0.01	<0.01	<0.01	0.0461	<0.01	<0.01	<0.015	<0.01	0.0207	0.0363	<0.01	<0.015	0.034	<0.01
BTEX	mg/kg	0.070			<0.075	<0.12	<0.12	<0.08	<0.165	<0.135	<0.07	<0.135	<0.15	<0.135	<0.07	<0.165	<0.145	<0.125	<0.12	<0.07	<0.075	<0.12	<0.07
Ethylbenzene	mg/kg	0.010	17,000		<0.025	<0.015	<0.015	<0.01	<0.02	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.025	<0.01	<0.025	<0.025	<0.01	<0.01	<0.025	<0.01
Methyl t-butylether (MTBE)	mg/kg	0.005	98,400		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TAME	mg/kg	0.010			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Toluene	mg/kg	0.010	87,000		<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.015	<0.02	<0.015	<0.015	<0.01	<0.01	<0.015	<0.01
Xylene - Total (Summed)	mg/kg	-999	17,000		0.02	0.055	0.055	0.02	0.06	0.055	0.02	0.055	0.06	0.055	0.02	0.065	0.055	0.065	0.06	0.02	0.02	0.06	0.02
Xylene-m	mg/kg	0.020	17,000		<0.02	<0.055	<0.055	<0.02	<0.06	<0.055	<0.02	<0.055	<0.06	<0.055	<0.02	<0.065	<0.055	<0.065	<0.06	<0.02	<0.02	<0.06	<0.02
Xylene-o	mg/kg	0.020	17,000		<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.045	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02



BTEX and Fuel Additives

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP49		WS01	WS02		WS03	WS04		WS05	WS06		WS07
				Depth (m bgl)	0.1-0.2	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
				Sample Date	17/01/25	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
				Geology (at top depth of sample)												
					Topsoli	Till	Topsoli	Topsoli	Till	Topsoli	Topsoli	Topsoli	Topsoli	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC													
Benzene	mg/kg	0.010	190		<0.01	0.0289	<0.01	<0.01	<0.01	<0.01	0.0373	<0.01	<0.01	<0.01	<0.01	0.0262
BTEX	mg/kg	0.070			<0.07	<0.115	<0.07	<0.105	<0.105	<0.07	<0.145	<0.105	<0.105	<0.135	<0.07	<0.14
Ethylbenzene	mg/kg	0.010	17,000		<0.01	<0.025	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.025
Methyl t-butylether (MTBE)	mg/kg	0.005	98,400		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TAME	mg/kg	0.010			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Toluene	mg/kg	0.010	87,000		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.015	<0.01	<0.01	<0.01	<0.01	<0.01
Xylene - Total (Summed)	mg/kg	-999	17,000		0.02	0.06	0.02	0.055	0.055	0.02	0.06	0.055	0.055	0.06	0.02	0.06
Xylene-m	mg/kg	0.020	17,000		<0.02	<0.06	<0.02	<0.055	<0.055	<0.02	<0.06	<0.055	<0.055	<0.06	<0.02	<0.06
Xylene-o	mg/kg	0.020	17,000		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.045	<0.02	<0.045



General Chemistry

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23	
				Depth (m bgl)	0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0
				Sample Date	24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25
				Geology (at top depth of sample)	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Till	Topsail	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC																				
Acid Neutralisation Capacity at pH 6	mol/kg																						
Acid Neutralisation Capacity pH4	mol/kg																						
pH	pH units	1.00			7.96	8.75	7.48	8.85	7.15	8.59	8.89	6.28	8.79	8.73	7.83	7.96	8.44	8.8	8.43	7.93	8.9	6.86	8.76



General Chemistry

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP27	TP28		TP30	TP33	TP35		TP38		TP39	TP40	TP42		TP45		TP46	TP47		TP48
				Depth (m bgl)	1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0
				Sample Date	16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25
				Geology (at top depth of sample)																			
					Till	Till	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Till	Made Ground Cohesive	
Analyte	Units	LOD	GAC																				
Acid Neutralisation Capacity at pH 6	mol/kg				0.0714	0.05	0.0634							<0.03	<0.03	0.0406	<0.03			<0.03			
Acid Neutralisation Capacity pH4	mol/kg				0.331	0.254	0.226							0.0916	0.0719	0.172	0.0954			0.0577			
pH	pH units	1.00			8.76	8.66	8.93	8.48	8.65	8.62	8.3	8.45	8.66	7.92	7.54	8.75	7.51	8.65	8.94	8.36	8.49	8.96	7.81

General Chemistry

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP49		WS01	WS02		WS03	WS04		WS05	WS06		WS07
				Depth (m bgl)	0.1-0.2	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
				Sample Date	17/01/25	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
				Geology (at top depth of sample)	Topsail	Till	Topsail	Topsail	Till	Topsail	Topsail	Topsail	Topsail	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC													
Acid Neutralisation Capacity at pH 6	mol/kg				<0.03	0.0783										0.129
Acid Neutralisation Capacity pH4	mol/kg				0.0479	0.275										0.318
pH	pH units	1.00			6.45	8.94	7.72	6.24	8.32	6.69	8.82	7.94	5.89	7.82	7.44	8.9



Metals

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23	
				Depth (m bgl)	0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0
				Sample Date	24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25
				Geology (at top depth of sample)	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Till	Topsoil	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC																				
Arsenic	mg/kg	0.60	170		8.94	6.52	7.41	5.71	6.75	10.2	6.34	14.1	7.28	6.32	9.12	8.14	6.04	6.07	9.26	7.55	5.74	4.43	6.94
Cadmium	mg/kg	0.020	880		<0.02	<0.02	<0.02	<0.02	<0.02	0.294	<0.02	0.548	<0.02	<0.02	0.179	0.0353	0.0393	0.0465	0.19	0.129	<0.02	0.0836	0.0419
Chromium	mg/kg	0.90			28	19.7	24.2	20.2	30.9	22.8	23.5	15	22.2	21.1	20.7	29.5	33	21.1	20.1	21.5	21.7	14.9	18.6
Copper	mg/kg	1.40	44,000		17.2	13.2	12.5	18.2	16.7	31.7	14.2	51.2	17.2	15.2	24.3	16.1	8.91	15.3	21.9	21.3	14.5	9.88	14.3
Lead	mg/kg	0.70	1,300		21.3	6.28	11.6	6.6	9.1	38.1	6.33	119	6.58	7.16	30.4	8.18	8.93	6.6	32	26.1	6.4	13.3	6.07
Mercury	mg/kg	0.10	1,300		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.276	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	0.20	800		34.3	31.2	27.8	37.1	39.8	26	31.2	20.4	31.2	29.1	27.2	39.1	24.6	28.4	23.2	27.5	29.5	14.2	29.4
Selenium	mg/kg	1.00	1,800		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	mg/kg	1.90	170,000		35.4	36.9	33.4	36.4	35.4	90.5	37.8	140	38.7	31.9	59.3	36.1	30.6	33	52.9	49.8	36.6	27	37.6



Metals

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP27	TP28		TP30	TP33	TP35		TP38		TP39	TP40	TP42		TP45		TP46	TP47		TP48
				Depth (m bgl)	1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0
				Sample Date	16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25
				Geology (at top depth of sample)	Till	Till	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Granular	Made Ground Cohesive	Till	Made Ground Cohesive
Analyte	Units	LOD	GAC																				
Arsenic	mg/kg	0.60	170		4.93	7.57	7.13	11.5	9.4	9.32	10.9	12.8	6.08	12.3	8.03	9.05	7.81	6.53	6.3	11.5	9.64	4.34	9.05
Cadmium	mg/kg	0.020	880		0.117	0.175	0.141	0.272	0.291	0.071	0.209	0.144	0.162	0.0615	0.0785	0.13	0.112	0.152	0.139	0.344	0.107	0.14	0.14
Chromium	mg/kg	0.90			20.9	20.1	18.2	16.9	10.7	20.7	23.1	18.1	21.6	13.3	28.7	17.2	18	19.2	20.2	19.1	24.6	23.6	31.1
Copper	mg/kg	1.40	44,000		14.6	15.7	14.4	54.2	18.3	22.7	26	31.1	15.3	21.9	13.1	21.3	18.6	16.1	14.8	30.7	19.5	16.6	13.9
Lead	mg/kg	0.70	1,300		5.54	11	5.71	39.5	148	29.9	35	59.1	6.81	32	9.62	24.3	26	10.1	5.94	52.8	12.5	7.81	9.57
Mercury	mg/kg	0.10	1,300		<0.1	<0.1	<0.1	<0.1	0.109	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	0.20	800		28.3	27	27.6	27.6	13.4	24	26	21.9	31.3	24.4	29.7	24.8	18.7	28.3	29	22.5	35.5	29.5	27
Selenium	mg/kg	1.00	1,800		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	mg/kg	1.90	170,000		35.3	39.9	34.6	70.5	107	47.2	68.1	63.1	38.3	65.1	33.2	50.1	41.6	41.5	37.8	97.2	47.4	43.6	37.3

Metals

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP49		WS01	WS02		WS03	WS04		WS05	WS06		WS07
				Depth (m bgl)	0.1-0.2	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
				Sample Date	17/01/25	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
				Geology (at top depth of sample)												
					Topsoli	Till	Topsoli	Topsoli	Till	Topsoli	Topsoli	Topsoli	Topsoli	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC													
Arsenic	mg/kg	0.60	170		17.1	4.76	8.25	12.9	5.97	5.84	4.16	10.3	9.3	16.5	7.19	7.05
Cadmium	mg/kg	0.020	880		0.288	0.0934	0.153	0.273	0.0347	0.13	0.0578	<0.02	0.175	0.181	0.0526	<0.02
Chromium	mg/kg	0.90			18.7	20	17.7	14	27.4	17.5	19.3	19.5	18	22.5	20.5	26.2
Copper	mg/kg	1.40	44,000		32.2	15.4	20.4	29.2	14.8	15.7	15.3	24	22.5	36.8	20.2	17.8
Lead	mg/kg	0.70	1,300		53.8	5.34	43.9	71.4	7.93	29.4	5.4	39.3	38.2	39.9	42	7.7
Mercury	mg/kg	0.10	1,300		<0.1	<0.1	<0.1	0.205	<0.1	0.142	<0.1	<0.1	0.166	<0.1	<0.1	<0.1
Nickel	mg/kg	0.20	800		21.8	28.9	19.5	17.1	29.9	11.3	28.4	21.2	17.8	27.2	21.7	33.9
Selenium	mg/kg	1.00	1,800		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	mg/kg	1.90	170,000		68.7	37.4	55.4	70.4	35	38.3	37.4	58.3	57.4	66.4	45.4	50.3

PAHs

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23	
				Depth (m bgl)	0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0
				Sample Date	24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25
				Geology (at top depth of sample)	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Till	Topsoil	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC																				
Acenaphthene	mg/kg	0.008 - 0.040			<0.008	<0.008	<0.008	<0.008	<0.008	<0.04	<0.008	0.574	<0.008	<0.008	0.0164	<0.008	<0.008	<0.008	<0.008	0.0198	0.0301	<0.008	<0.008
Acenaphthylene	mg/kg	0.012 - 0.060			<0.012	<0.012	<0.012	<0.012	<0.012	<0.06	<0.012	0.0654	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Anthracene	mg/kg	0.016 - 0.080			<0.016	<0.016	<0.016	<0.016	<0.016	<0.08	<0.016	1.35	<0.016	<0.016	0.0923	<0.016	<0.016	<0.016	<0.016	0.0354	0.0841	<0.016	<0.016
Benzo (a) anthracene	mg/kg	0.014 - 0.070			<0.014	<0.014	<0.014	<0.014	<0.014	0.0917	<0.014	3.61	<0.014	<0.014	0.266	<0.014	<0.014	<0.014	0.064	0.156	0.228	0.0185	<0.014
Benzo (a) pyrene	mg/kg	0.015 - 0.075	21.0		<0.015	<0.015	<0.015	<0.015	<0.015	<0.075	<0.015	3.34	<0.015	<0.015	0.226	<0.015	<0.015	<0.015	0.065	0.156	0.197	<0.015	<0.015
Benzo (b) fluoranthene	mg/kg	0.015 - 0.075			<0.015	<0.015	<0.015	<0.015	<0.015	0.115	<0.015	4.45	<0.015	<0.015	0.301	<0.015	<0.015	<0.015	0.0858	0.23	0.239	0.0241	<0.015
Benzo (ghi) perylene	mg/kg	0.024 - 0.12			<0.024	<0.024	<0.024	<0.024	<0.024	<0.12	<0.024	2.05	<0.024	<0.024	0.135	<0.024	<0.024	<0.024	0.0457	0.107	0.122	<0.024	<0.024
Benzo (k) fluoranthene	mg/kg	0.014 - 0.070			<0.014	<0.014	<0.014	<0.014	<0.014	<0.07	<0.014	1.54	<0.014	<0.014	0.112	<0.014	<0.014	<0.014	0.0284	0.0771	0.0936	<0.014	<0.014
Chrysene	mg/kg	0.010 - 0.050			<0.01	<0.01	<0.01	<0.01	<0.01	0.0854	<0.01	3.48	<0.01	<0.01	0.27	<0.01	<0.01	<0.01	0.0605	0.17	0.196	0.0187	<0.01
Coronene	mg/kg	0.20																					
Dibenzo (ah) anthracene	mg/kg	0.023 - 0.12			<0.023	<0.023	<0.023	<0.023	<0.023	<0.115	<0.023	0.332	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023
Fluoranthene	mg/kg	0.017 - 0.085			<0.017	<0.017	<0.017	<0.017	<0.017	0.239	<0.017	8.24	<0.017	<0.017	0.705	<0.017	<0.017	<0.017	0.137	0.344	0.642	0.0415	<0.017
Fluorene	mg/kg	0.010 - 0.050			<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	0.42	<0.01	<0.01	0.0187	<0.01	<0.01	<0.01	<0.01	0.0137	0.0172	<0.01	<0.01
Indeno (1,2,3-cd) pyrene	mg/kg	0.018 - 0.090			<0.018	<0.018	<0.018	<0.018	<0.018	<0.09	<0.018	1.83	<0.018	<0.018	0.122	<0.018	<0.018	<0.018	0.0368	0.109	0.107	<0.018	<0.018
Naphthalene	mg/kg	0.009 - 0.045	800		<0.009	<0.009	<0.009	<0.009	<0.009	<0.045	<0.009	0.126	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
PAH Total (EPA 16)	mg/kg	0.12 - 0.59			<0.118	<0.118	<0.118	<0.118	<0.118	0.925	<0.118	44.5	<0.118	<0.118	3.26	<0.118	<0.118	<0.118	0.704	1.89	2.78	0.167	<0.118

PAHs

				PointID	TP27	TP28		TP30	TP33	TP35		TP38		TP39	TP40	TP42		TP45		TP46	TP47		TP48
				Depth (m bgl)	1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0
				Sample Date	16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25
				Geology (at top depth of sample)	Till	Till	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Granular	Made Ground Cohesive	Till	Made Ground Cohesive
Analyte	Units	LOD	GAC																				
Acenaphthene	mg/kg	0.008 - 0.040			<0.008	<0.008	<0.008	<0.008	<0.008	0.0145	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.0413	<0.008	<0.008	<0.008
Acenaphthylene	mg/kg	0.012 - 0.060			<0.012	<0.012	<0.012	<0.012	<0.012	0.0136	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Anthracene	mg/kg	0.016 - 0.080			<0.016	<0.016	<0.016	0.0191	0.0248	0.0439	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	0.0944	<0.016	<0.016	<0.016
Benzo (a) anthracene	mg/kg	0.014 - 0.070			<0.014	<0.014	<0.014	0.0966	0.117	0.0726	0.0164	0.1	<0.014	0.067	<0.014	0.0183	<0.014	<0.014	<0.014	0.351	<0.014	<0.014	0.0421
Benzo (a) pyrene	mg/kg	0.015 - 0.075	21.0		<0.015	<0.015	<0.015	0.0977	0.147	0.0671	0.0174	0.106	<0.015	0.0661	<0.015	0.0176	<0.015	<0.015	<0.015	0.339	<0.015	<0.015	0.0456
Benzo (b) fluoranthene	mg/kg	0.015 - 0.075			<0.015	<0.015	<0.015	0.134	0.18	0.0874	0.0231	0.142	<0.015	0.0904	<0.015	0.0269	<0.015	0.0182	<0.015	0.426	<0.015	<0.015	0.057
Benzo (ghi) perylene	mg/kg	0.024 - 0.12			<0.024	<0.024	<0.024	0.0666	0.124	0.0486	<0.024	0.0709	<0.024	0.0464	<0.024	<0.024	<0.024	<0.024	<0.024	0.218	<0.024	<0.024	0.0335
Benzo (k) fluoranthene	mg/kg	0.014 - 0.070			<0.014	<0.014	<0.014	0.0474	0.0606	0.029	<0.014	0.052	<0.014	0.0303	<0.014	<0.014	<0.014	<0.014	<0.014	0.154	<0.014	<0.014	0.0194
Chrysene	mg/kg	0.010 - 0.050			<0.01	<0.01	<0.01	0.0923	0.106	0.0678	0.0148	0.0983	<0.01	0.0642	<0.01	0.0186	<0.01	0.0114	<0.01	0.313	<0.01	<0.01	0.04
Coronene	mg/kg	0.20			<0.2	<0.2	<0.2							<0.2	<0.2	<0.2	<0.2			<0.2			
Dibenzo (ah) anthracene	mg/kg	0.023 - 0.12			<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	0.0331	<0.023	<0.023	<0.023
Fluoranthene	mg/kg	0.017 - 0.085			<0.017	<0.017	<0.017	0.186	0.223	0.171	0.0298	0.195	<0.017	0.129	<0.017	0.0344	<0.017	0.0209	<0.017	0.803	<0.017	<0.017	0.0643
Fluorene	mg/kg	0.010 - 0.050			<0.01	<0.01	<0.01	<0.01	<0.01	0.0212	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0297	<0.01	<0.01	<0.01
Indeno (1,2,3-cd) pyrene	mg/kg	0.018 - 0.090			<0.018	<0.018	<0.018	0.066	0.095	0.0395	<0.018	0.0694	<0.018	0.0448	<0.018	<0.018	<0.018	<0.018	<0.018	0.217	<0.018	<0.018	0.0275
Naphthalene	mg/kg	0.009 - 0.045	800		<0.009	<0.009	<0.009	<0.009	<0.009	0.0165	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
PAH Total (EPA 16)	mg/kg	0.12 - 0.59			<0.118	<0.118	<0.118	1.06	1.41	1.01	0.131	1.1	<0.118	0.721	<0.118	0.171	<0.118	<0.118	<0.118	4.16	<0.118	<0.118	0.393

PAHs

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP49		WS01	WS02		WS03	WS04		WS05	WS06		WS07
				Depth (m bgl)	0.1-0.2	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
				Sample Date	17/01/25	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
				Geology (at top depth of sample)	Topsol	Till	Topsol	Topsol	Till	Topsol	Topsol	Topsol	Topsol	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC													
Acenaphthene	mg/kg	0.008 - 0.040			0.0191	<0.008	0.0978	<0.008	<0.008	<0.008	<0.008	<0.008	0.019	0.017	<0.008	<0.008
Acenaphthylene	mg/kg	0.012 - 0.060			<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Anthracene	mg/kg	0.016 - 0.080			0.0513	<0.016	0.101	0.0221	<0.016	<0.016	<0.016	<0.016	0.0344	0.0553	<0.016	<0.016
Benzo (a) anthracene	mg/kg	0.014 - 0.070			0.194	<0.014	0.297	0.104	<0.014	<0.014	<0.014	0.0203	0.138	0.165	0.0191	<0.014
Benzo (a) pyrene	mg/kg	0.015 - 0.075	21.0		0.197	<0.015	0.236	0.108	<0.015	<0.015	<0.015	0.0186	0.133	0.151	<0.015	<0.015
Benzo (b) fluoranthene	mg/kg	0.015 - 0.075			0.257	<0.015	0.322	0.147	<0.015	0.0214	<0.015	0.0261	0.181	0.2	0.0234	<0.015
Benzo (ghi) perylene	mg/kg	0.024 - 0.12			0.13	<0.024	0.133	0.0766	<0.024	<0.024	<0.024	<0.024	0.0922	0.0943	<0.024	<0.024
Benzo (k) fluoranthene	mg/kg	0.014 - 0.070			0.0888	<0.014	0.121	0.0474	<0.014	<0.014	<0.014	<0.014	0.0625	0.0702	<0.014	<0.014
Chrysene	mg/kg	0.010 - 0.050			0.187	<0.01	0.267	0.126	<0.01	0.0153	<0.01	0.0222	0.15	0.15	0.0175	<0.01
Coronene	mg/kg	0.20			<0.2	<0.2										<0.2
Dibenzo (ah) anthracene	mg/kg	0.023 - 0.12			<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023
Fluoranthene	mg/kg	0.017 - 0.085			0.416	<0.017	0.591	0.225	<0.017	0.0271	<0.017	0.0422	0.326	0.363	0.0424	<0.017
Fluorene	mg/kg	0.010 - 0.050			0.0132	<0.01	0.106	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0219	<0.01	<0.01
Indeno (1,2,3-cd) pyrene	mg/kg	0.018 - 0.090			0.13	<0.018	0.12	0.0672	<0.018	<0.018	<0.018	<0.018	0.0808	0.0816	<0.018	<0.018
Naphthalene	mg/kg	0.009 - 0.045	800		<0.009	<0.009	0.0258	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	0.0109	<0.009	<0.009
PAH Total (EPA 16)	mg/kg	0.12 - 0.59			2.27	<0.118	3.46	1.26	<0.118	<0.118	<0.118	0.173	1.71	1.98	0.184	<0.118



PAHs

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23	
				Depth (m bgl)	0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0
				Sample Date	24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25
				Geology (at top depth of sample)	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Till	Topsoil	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC																				
PAH Total (EPA 17)	mg/kg	10.0																					
Phenanthrene	mg/kg	0.015 - 0.075			<0.015	<0.015	<0.015	<0.015	<0.015	0.15	<0.015	5.43	<0.015	<0.015	0.364	<0.015	<0.015	<0.015	0.0512	0.159	0.284	0.0225	<0.015
Phenanthrene D10 % Recovery**	%				94.9	94.9	95.6	93.9	94.7	93.1	88.1	95.1	89	97.2	90.9	89.2	89.3	90	90.8	91.1	91.7	89	90.6
Pyrene	mg/kg	0.015 - 0.075			<0.015	<0.015	<0.015	<0.015	<0.015	0.244	<0.015	7.69	<0.015	<0.015	0.633	<0.015	<0.015	<0.015	0.13	0.318	0.543	0.0416	<0.015

PAHs

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP27	TP28		TP30	TP33	TP35		TP38		TP39	TP40	TP42		TP45		TP46	TP47		TP48
Depth (m bgl)					1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0
Sample Date					16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25
Geology (at top depth of sample)					Till	Till	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Granular	Made Ground Cohesive	Till	Made Ground Cohesive
Analyte	Units	LOD	GAC																				
PAH Total (EPA 17)	mg/kg	10.0			< 10	< 10	< 10							< 10	< 10	< 10	< 10			< 10			
Phenanthrene	mg/kg	0.015 - 0.075			<0.015	<0.015	<0.015	0.0776	0.0908	0.16	<0.015	0.0747	<0.015	0.0552	<0.015	0.0208	<0.015	<0.015	<0.015	0.394	<0.015	<0.015	<0.015
Phenanthrene D10 % Recovery**	%				93.6	94.4	93.2	93	90.6	92.2	92.9	96	93.7	95.8	95.2	94.2	86.7	87.5	91.8	94.8	91.2	94.2	84.5
Pyrene	mg/kg	0.015 - 0.075			<0.015	<0.015	<0.015	0.178	0.239	0.155	0.0297	0.187	<0.015	0.127	<0.015	0.0343	<0.015	0.0219	<0.015	0.751	<0.015	<0.015	0.0634



PAHs

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP49		WS01	WS02		WS03	WS04		WS05	WS06		WS07
				Depth (m bgl)	0.1-0.2	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
				Sample Date	17/01/25	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
				Geology (at top depth of sample)	Topsail	Till	Topsail	Topsail	Till	Topsail	Topsail	Topsail	Topsail	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC													
PAH Total (EPA 17)	mg/kg	10.0			< 10	< 10										< 10
Phenanthrene	mg/kg	0.015 - 0.075			0.196	<0.015	0.572	0.107	<0.015	<0.015	<0.015	<0.015	0.179	0.278	0.0414	<0.015
Phenanthrene D10 % Recovery**	%				96.8	94.2	92.7	91.1	90	89.4	90.8	90	91.7	91.9	97	92.6
Pyrene	mg/kg	0.015 - 0.075			0.389	<0.015	0.471	0.232	<0.015	0.0269	<0.015	0.0435	0.311	0.326	0.0402	<0.015



PCBs

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP27	TP28		TP39	TP40	TP42		TP46	TP49		WS07
				Depth (m bgl)	1.4-1.5	1.6-1.7	3.0-3.0	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	1.0-1.1	0.1-0.2	2.5-2.6	2.2-2.3
				Sample Date	16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	21/01/25
				Geology (at top depth of sample)				Made Ground Cohesive		Made Ground Cohesive		Made Ground Granular			
					Till	Till	Till		Till		Till		Topsoil		Till
Analyte	Units	LOD	GAC												
PCB101	mg/kg	0.003			<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
PCB118	mg/kg	0.003			<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
PCB138	mg/kg	0.003			<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
PCB153	mg/kg	0.003			<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
PCB180	mg/kg	0.003			<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
PCB28	mg/kg	0.003			<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
PCB52	mg/kg	0.003			<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Total PCB Congeners ICES 7	mg/kg	0.021	2.63		<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021



Physical

Result > Assessment Criteria Limit of detection > Assessment Criteria			PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23	
Depth (m bgl)				0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0
Sample Date				24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25
Geology (at top depth of sample)																						
				Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Till	Topsoil	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC																			
Loss on ignition				%	0.70																	
Soil Organic Matter				%	0.35																	
Total organic carbon (TOC)				%	0.20																	



Physical

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP27	TP28		TP30	TP33	TP35		TP38	TP39	TP40	TP42		TP45		TP46	TP47		TP48	TP49
				Depth (m bgl)	1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0	0.1-0.2
				Sample Date	16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25
				Geology (at top depth of sample)																			
					Till	Till	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Till	Made Ground Cohesive	Topsoil	
Analyte	Units	LOD	GAC																				
Loss on ignition	%	0.70			2.14	2.19	1.83					5.02	3.3	3.06	2.79			4				7.71	
Soil Organic Matter	%	0.35			<0.35	0.598	<0.35	3.72	4.14	1.21	1.5	<0.35	2.34	0.572	1.69	1.51	0.386	<0.35	2.69	0.488	<0.35	0.493	4.34
Total organic carbon (TOC)	%	0.20			<0.2	0.347	<0.2						1.36	0.332	0.979	0.878		1.56				2.52	

Physical

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP49	WS01	WS02		WS03	WS04		WS05	WS06		WS07
				Depth (m bgl)	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
				Sample Date	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
				Geology (at top depth of sample)	Till	Topsail	Topsail	Till	Topsail	Topsail	Topsail	Topsail	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC												
Loss on ignition	%	0.70		2.62											2.14
Soil Organic Matter	%	0.35		<0.35	2.17	4.86	<0.35	1.37	0.359	1.81	5.07	1.86	4.26	0.397	
Total organic carbon (TOC)	%	0.20		<0.2										0.23	



QA Standard

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23	
				Depth (m bgl)	0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0
				Sample Date	24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25
				Geology (at top depth of sample)	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Till	Topsail	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC																				
4-Bromofluorobenzene	%																						
Acenaphthene-d10	%				90.9	91.5	91.8	91	91.8	90.3	84.5	89.7	84.9	95.3	84.8	84	86.1	86.1	86.7	86.2	89.5	85.3	85.9
Chrysene-d12	%				91.5	89.3	85.7	90.2	90.3	84.8	78.9	91.3	82.8	85.8	85.3	82.2	90.2	89.3	88	92.5	89	87.5	88.4
Dibromofluoromethane	%																						
EPH Surrogate % recovery**	%																						
Naphthalene-d8	%				92.8	92.5	89.7	93	93.1	90.9	87.5	90.6	88	89.7	87.4	86.2	90.2	90.2	89.9	89.8	91.8	88.5	89
Perylene-d12**	%				93.4	92.5	87.1	93	91.3	79.2	76.7	89.7	82.5	86.8	82.1	79.5	96.6	93.1	88.1	97	90.9	87	89.8
Toluene-d8 Surrogate	%																						



QA Standard

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP27	TP28		TP30	TP33	TP35		TP38		TP39	TP40	TP42		TP45		TP46	TP47		TP48
				Depth (m bgl)	1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0
				Sample Date	16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25
				Geology (at top depth of sample)																			
					Till	Till	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Granular	Made Ground Cohesive	Till	Made Ground Cohesive
Analyte	Units	LOD	GAC																				
4-Bromofluorobenzene	%			98.1	96.5	96.2	93			104	94.1	97.6	94.4	105	104	91.6	94.2	95.2	92.4	97.7	95.2	97.5	
Acenaphthene-d10	%			90.6	91.2	90.3	89.8	85.4	89.6	89.5	91.9	90.5	90.8	91.8	90.4	85.8	85.3	89.7	90.8	85.8	91.1	83.1	
Chrysene-d12	%			94.5	93.8	91.5	93.2	85.4	87.4	88.7	94.9	92.4	97.2	91.4	91	83.3	85	85.9	93.8	92.3	89	85.5	
Dibromofluoromethane	%			107	111	113	114			105	108	107	103	106	105	104	106	106	106	108	107	106	
EPH Surrogate % recovery**	%			95.5	98.7	104							87.9	90.1	93.3	91.1			97.2				
Naphthalene-d8	%			95.4	95.7	95.5	93.9	88.1	91.3	90.8	96.1	95.3	94.9	93.4	93.9	91.2	90.3	92	94.6	88.9	94	87.6	
Perylene-d12**	%			105	97.8	96.7	97.8	82.5	90.5	91.4	98.4	95	99.7	95.7	92	86.5	86.8	88.9	95.9	97.8	92.3	89.6	
Toluene-d8 Surrogate	%			101	102	102	101			98.8	102	97.9	100	101	100	99.2	101	102	101	102	101	102	



QA Standard

Result > Assessment Criteria Limit of detection > Assessment Criteria	PointID Depth (m bgl) Sample Date Geology (at top depth of sample)			TP49		WS01	WS02		WS03	WS04		WS05	WS06		WS07
				0.1-0.2	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
				17/01/25	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
				Topsoil	Till	Topsoil	Topsoil	Till	Topsoil	Topsoil	Topsoil	Topsoil	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC												
4-Bromofluorobenzene	%			91.9	95.6	98.5	96.8	102	100	99.1	99.1	92.1	102	96.5	102
Acenaphthene-d10	%			91.5	90.6	86.8	86.8	85	85.5	86.1	85.1	85.8	89.4	93.2	90.4
Chrysene-d12	%			99.4	90.9	93.4	83.6	88.7	87.9	83.6	83.1	83	86.2	93	88.1
Dibromofluoromethane	%			106	106	108	105	106	106	107	106	110	106	106	107
EPH Surrogate % recovery**	%			94.2	93.2										94.9
Naphthalene-d8	%			95.2	95.3	89.5	89.7	88	89.1	89.3	88.5	87.7	92.6	95.4	92.1
Perylene-d12**	%			104	94.8	94.4	81.2	89	92.2	82.4	79.4	79.4	88.1	96	91
Toluene-d8 Surrogate	%			100	101	101	99	99.1	100	99.8	98.7	95.8	100	100	102



TPH/EPH

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP01		TP02		TP04	TP06	TP08	TP12		TP13	TP15		TP16	TP18	TP21		TP22	TP23	
				Depth (m bgl)	0.8-0.9	2.6-2.7	0.9-1.0	1.9-2.0	0.7-0.8	0.8-0.9	1.6-1.7	0.2-0.3	2.9-3.0	1.5-1.6	0.4-0.5	1.9-2.0	0.7-0.8	0.9-1.0	0.4-0.5	1.4-1.5	2.2-2.3	0.6-0.6	2.9-3.0
				Sample Date	24/01/25	24/01/25	24/01/25	24/01/25	24/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	23/01/25	22/01/25	22/01/25	22/01/25	22/01/25	24/01/25	22/01/25	22/01/25
				Geology (at top depth of sample)																			
					Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Till	Topsoil	Till	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC																				
GRO Surrogate		%			97.5	95	98.5	93.5	93.2	82.2	101	83.1	103	110	91	103	99.9	99.6	92.8	103	94.6	98.4	97.6
Mineral oils		mg/kg	5.00																				
PRO (>C05-C10)		mg/kg	0.020		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	



TPH/EPH

	Result > Assessment Criteria	PointID	TP27	TP28		TP30	TP33	TP35		TP38		TP39	TP40	TP42		TP45		TP46	TP47		TP48	
	Limit of detection > Assessment Criteria		Depth (m bgl)	1.4-1.5	1.6-1.7	3.0-3.0	1.3-1.3	0.3-0.4	0.4-0.5	1.9-2.0	0.8-0.8	1.5-1.5	0.3-0.4	1.2-1.3	0.5-0.5	1.4-1.5	0.4-0.5	2.4-2.5	1.0-1.1	0.6-0.7	1.8-1.9	0.9-10.0
			Sample Date	16/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	20/01/25	20/01/25	20/01/25	21/01/25	21/01/25	21/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25	17/01/25
			Geology (at top depth of sample)																			
				Till	Till	Till	Made Ground Cohesive	Made Ground Granular	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Cohesive	Till	Made Ground Granular	Made Ground Cohesive	Till	Made Ground Cohesive
Analyte	Units	LOD	GAC																			
GRO Surrogate		%		99.7	100	100	93.4	84.6	88.5	97.8	87.8	95.7	129	101	72	90.1	95.5	100	92.7	99.5	103	100
Mineral oils		mg/kg	5.00	<5	<5	<5							<5	<5	<5	<5		<5				
PRO (>C05-C10)		mg/kg	0.020	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02



TPH/EPH

Result > Assessment Criteria Limit of detection > Assessment Criteria				PointID	TP49		WS01	WS02		WS03	WS04		WS05	WS06		WS07
				Depth (m bgl)	0.1-0.2	2.5-2.6	0.2-0.0	0.2-0.0	0.6-0.0	0.2-0.0	0.0	0.2-0.0	0.2-0.0	1.6-1.7	4.5-4.6	2.2-2.3
				Sample Date	17/01/25	17/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	22/01/25	21/01/25	21/01/25	21/01/25
				Geology (at top depth of sample)	Topsail	Till	Topsail	Topsail	Till	Topsail	Topsail	Topsail	Topsail	Made Ground Cohesive	Made Ground Cohesive	Till
Analyte	Units	LOD	GAC													
GRO Surrogate	%			87.1	96.6	127	86.5	103	97.8	104	101	89.8	91.4	84.6	98.4	
Mineral oils	mg/kg	5.00		12.4	<5											<5
PRO (>C05-C10)	mg/kg	0.020		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02



WATER

Site Area(s) selected:Whole site
Event(s) selected:Round 2

Aliphatics and Aromatics

Aquifer: No aquifer entered

Current event: Round 2

Result > Assessment Criteria Limit of detection > Assessment Criteria					PointID	WS01	WS02	WS03	WS04	WS05
					Response Zone Depth (m bgl)	1.0-3.0	1.0-3.0	1.0-5.0	1.0-5.0	1.0-5.0
					Sample Date	31/10/25	31/10/25	31/10/25	31/10/25	31/10/25
Analyte	Units	LOD	Reference	GAC						
Aliphatic C05-C06	ug/l	10.0	WHO 2008	15,000		<10	<10	<10	<10	<10
Aliphatic C06-C08	ug/l	10.0	WHO 2008	15,000		<10	<10	<10	<10	<10
Aliphatic C08-C10	ug/l	10.0	WHO 2008	300		<10	<10	<10	<10	<10
Aliphatic C10-C12	ug/l	10.0	WHO 2008	300		<10	<10	<10	<10	<10
Aliphatic C12-C16	ug/l	10.0 - 100	WHO 2008	300		<100	<10	<10	<10	<10
Aliphatic C12-C35	ug/l	10.0 - 100				<100	<10	<10	<10	<10
Aliphatic C16-C21	ug/l	10.0 - 100				<100	<10	<10	<10	<10
Aliphatic C21-C35	ug/l	10.0 - 100				<100	<10	<10	<10	<10
Aromatic C06-C07	ug/l	10.0				<10	<10	<10	<10	<10
Aromatic C07-C08	ug/l	10.0				<10	<10	<10	<10	<10
Aromatic C08-C10	ug/l	10.0	WHO 2008	300		<10	<10	<10	<10	<10
Aromatic C10-C12	ug/l	10.0	WHO 2008	90.0		<10	<10	<10	<10	<10
Aromatic C12-C16	ug/l	10.0 - 100	WHO 2008	90.0		<100	<10	<10	<10	<10
Aromatic C12-C35	ug/l	10.0 - 100				<100	<10	<10	<10	<10
Aromatic C16-C21	ug/l	10.0 - 100	WHO 2008	90.0		<100	<10	<10	<10	<10
Aromatic C21-C35	ug/l	10.0 - 100	WHO 2008	90.0		<100	<10	<10	<10	<10
Total Aliphatics and Aromatics (C05-C35)	ug/l	10.0				<10	<10	<10	<10	<10



WATER

Site Area(s) selected:Whole site
Event(s) selected:Round 2

BTEX and Fuel Additives

Aquifer: No aquifer entered

Current event: Round 2

Result > Assessment Criteria

Limit of detection > Assessment Criteria

Analyte	Units	LOD	Reference	GAC	PointID	WS01	WS02	WS03	WS04	WS05
					Response Zone Depth (m bgl)	1.0-3.0	1.0-3.0	1.0-5.0	1.0-5.0	1.0-5.0
					Sample Date	31/10/25	31/10/25	31/10/25	31/10/25	31/10/25
Benzene	ug/l	1.00	UK DWS	1.00		<1	<1	<1	<1	<1
BTEX	ug/l	5.00				<5	<5	<5	<5	<5
Ethylbenzene	ug/l	1.00	WHO 2017	300		<1	<1	<1	<1	<1
Methyl t-butylether (MTBE)	ug/l	1.00	WHO 2017	15.0		<1	<1	<1	<1	<1
Toluene	ug/l	1.00	WHO 2017	700		<1	<1	<1	<1	<1
Xylene	ug/l	2.00	WHO 2017	500		<2	<2	<2	<2	<2
Xylene - Total (Summed)	ug/l	-999				1	1	1	1	1
Xylene-m	ug/l	1.00				<1	<1	<1	<1	<1
Xylene-o	ug/l	1.00				<1	<1	<1	<1	<1

WATER

Site Area(s) selected:Whole site
Event(s) selected:Round 2

General Chemistry

Aquifer: No aquifer entered

Current event: Round 2

Result > Assessment Criteria

Limit of detection > Assessment Criteria

Analyte	Units	LOD	Reference	GAC	PointID	WS01	WS02	WS03	WS04	WS05
					Response Zone Depth (m bgl)	1.0-3.0	1.0-3.0	1.0-5.0	1.0-5.0	1.0-5.0
					Sample Date	31/10/25	31/10/25	31/10/25	31/10/25	31/10/25
pH	pH units	1.00	UK DWS	6.50 / 10.0		7.22	7.46	7.52	7.41	7.48

WATER

Site Area(s) selected:Whole site
Event(s) selected:Round 2

INSITU

Aquifer: No aquifer entered

Current event: Round 2

Result > Assessment Criteria

Limit of detection > Assessment Criteria

Analyte	Units	LOD	Reference	GAC	PointID	WS01	WS02	WS03	WS04	WS05
					Response Zone Depth (m bgl)	1.0-3.0	1.0-3.0	1.0-5.0	1.0-5.0	1.0-5.0
					Sample Date	31/10/25	31/10/25	31/10/25	31/10/25	31/10/25
Dissolved Oxygen	mg/l					3.896	1.142	0.765	0.766	0.798
Electrical Conductivity	uS/cm		UK DWS	2,500		1066	993.1	894.2	954.9	935.8
pH	pH Units	1.00	UK DWS	6.50 / 10.0		7.271	7.486	7.695	7.561	7.673
Redox Potential	mV					207	139	22	38	121
Temperature	DegC					14.31	14.29	14.13	14.45	14.49



WATER

Site Area(s) selected:Whole site
Event(s) selected:Round 2

Metals

Aquifer: No aquifer entered

Current event: Round 2

Result > Assessment Criteria

Limit of detection > Assessment Criteria

PointID

Response Zone Depth (m bgl)

Sample Date

Analyte	Units	LOD	Reference	GAC	WS01	WS02	WS03	WS04	WS05
Arsenic	ug/l	0.50	UK DWS	10.0	1.03	3.02	3.06	0.852	2.71
Cadmium	ug/l	0.080	UK DWS	5.00	<0.08	<0.08	<0.08	<0.08	<0.08
Chromium	ug/l	1.00	UK DWS	50.0	<1	2.89	<1	<1	<1
Copper	ug/l	0.30	UK DWS	2,000	1.47	2.5	2.46	0.403	0.931
Lead	ug/l	0.20	UK DWS	10.0	<0.2	<0.2	<0.2	<0.2	<0.2
Mercury	ug/l	0.010	UK DWS	1.00	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	ug/l	0.40	UK DWS	20.0	1.81	5.28	6.95	2.03	2.02
Selenium	ug/l	1.00	UK DWS	10.0	<1	<1	<1	<1	<1
Zinc	ug/l	1.00			7.11	2.3	2.75	9.02	3.17

WATER

Site Area(s) selected:Whole site
Event(s) selected:Round 2

PAHs

Aquifer: No aquifer entered

Current event: Round 2

Result > Assessment Criteria

Limit of detection > Assessment Criteria

PointID

Response Zone Depth (m bgl)

Sample Date

Analyte	Units	LOD	Reference	GAC	WS01	WS02	WS03	WS04	WS05
Acenaphthene	ug/l	0.005 - 0.050			<0.05	<0.025	<0.005	<0.005	<0.005
Acenaphthylene	ug/l	0.005 - 0.050			<0.05	<0.025	<0.005	<0.005	<0.005
Anthracene	ug/l	0.005 - 0.050			<0.05	<0.025	<0.005	0.00818	<0.005
Benzo (a) anthracene	ug/l	0.005 - 0.050			<0.05	<0.025	<0.005	0.0115	<0.005
Benzo (a) pyrene	ug/l	0.002 - 0.020	UK DWS	0.010	0.0923	<0.01	0.0108	0.00455	<0.002
Benzo (b) fluoranthene	ug/l	0.005 - 0.050			0.1	0.0357	0.017	0.00813	<0.005
Benzo (ghi) perylene	ug/l	0.005 - 0.050			<0.05	<0.025	0.00886	<0.005	<0.005
Benzo (k) fluoranthene	ug/l	0.005 - 0.050			0.0806	<0.025	0.0109	0.0104	<0.005
Chrysene	ug/l	0.005 - 0.050			0.128	0.0312	0.0233	0.0448	<0.005
Dibenzo (ah) anthracene	ug/l	0.005 - 0.050			<0.05	<0.025	<0.005	<0.005	<0.005
Fluoranthene	ug/l	0.005 - 0.050			0.189	0.053	0.0374	0.103	0.0192
Fluorene	ug/l	0.005 - 0.050			<0.05	<0.025	<0.005	<0.005	<0.005
Indeno (1,2,3-cd) pyrene	ug/l	0.005 - 0.050			<0.05	<0.025	0.00548	<0.005	<0.005
Naphthalene	ug/l	0.010 - 0.10			<0.1	<0.05	<0.01	<0.01	<0.01
PAH (Total)	ug/l	0.082 - 0.82			0.878	<0.41	0.157	0.284	<0.082
Phenanthrene	ug/l	0.005 - 0.050			0.0791	<0.025	0.00983	0.0298	0.00868
Pyrene	ug/l	0.005 - 0.050			0.209	0.0424	0.0332	0.0637	0.0156



WATER

Site Area(s) selected:Whole site
Event(s) selected:Round 2

QA Standard

Aquifer: No aquifer entered

Current event: Round 2

Result > Assessment Criteria

Limit of detection > Assessment Criteria

	PointID	WS01	WS02	WS03	WS04	WS05			
	Response Zone Depth (m bgl)	1.0-3.0	1.0-3.0	1.0-5.0	1.0-5.0	1.0-5.0			
	Sample Date	31/10/25	31/10/25	31/10/25	31/10/25	31/10/25			
Analyte	Units	LOD	Reference	GAC					
Toluene-d8 Surrogate	%				96.8	97.5	97.2	96.9	98.1



WATER

Site Area(s) selected:Whole site
Event(s) selected:Round 2

TPH/EPH

Aquifer: No aquifer entered

Current event: Round 2

Result > Assessment Criteria

Limit of detection > Assessment Criteria

					PointID	WS01	WS02	WS03	WS04	WS05
					Response Zone Depth (m bgl)	1.0-3.0	1.0-3.0	1.0-5.0	1.0-5.0	1.0-5.0
					Sample Date	31/10/25	31/10/25	31/10/25	31/10/25	31/10/25
Analyte	Units	LOD	Reference	GAC						
GRO Surrogate	%					105	103	102	107	102
Petrol Range Organics (>C05-C12)	ug/l	50.0				<50	<50	<50	<50	<50

Appendix B.4

GEOTECHNICAL LABORATORY DATA



70119719 Halewood LUF

Geotechnical Sample Schedule

Grace Park Site

Exploratory Hole	Depth	Sample	MC	PI (4 Point)	BRE extended	PSD	SED (>15% fines only)	CBR	2.5kg compaction
WS01	1.6	D	X	X	X				
WS01	2.8	D	X	X	X				
WS02	1.9	D	X	X	X				
WS03	0.6	D	X	X	X				
WS03	1.6	D	X	X	X				
WS03	3.45	D-SPT	X	X	X				
WS03	5.45	D-SPT	X	X	X				
WS04	2.0	D	X	X	X				
WS05	2.7	D	X	X	X				
WS05	4.3	D	X	X	X				
TP01	1	B				X	X	X	
TP01	2.1	B							
TP01	3	B				X	X		
TP04	0.5	B						X	
TP04	1.5	B				X	X		X
TP08	1.1	B						X	
TP08	2.2	B				X	X		
TP12	0.5	B							X
TP12	2.5	B				X	X		
TP13	1	B						X	
TP13	2	B							
TP13	3	B				X	X		
TP15	0.5	B				X	X		X
TP15	1.6	B				X	X		X
TP15	2.6	B							
TP22	0.5	B				X	X	X	
TP22	1	B				X	X		X

70119719 Halewood LUF

Geotechnical Sample Schedule

Leisure Centre Site

Exploratory Hole	Depth	Sample	MC	PI (4 Point)	BRE extended	PSD	SED (>15% fines only)	CBR	2.5kg compaction
WS06	1.5	D	X	X	X				
WS06	35	D	X	X	X				
WS07	0.5	D	X	X	X				
WS07	2.5	D	X	X	X				
TP27	0.5	D	X	X	X				
TP27	1.5	D	X	X	X				
TP39	1	D	X	X	X				
TP39	3	D	X	X	X				
TP30	0.5	B				X	X	X	
TP30	1.5	B				X	X		
TP35	0.5	B							X
TP35	2.5	B				X	X		
TP40	0.5	B						X	
TP40	1.5	B							
TP40	2.5	B				X	X		
TP45	1	B							X
TP46	0.6	B						X	
TP46	1.5	B							
TP46	2.5	B							
TP49	1	B				X	X		X
TP49	2.1	B							
TP49	3	B				X	X		

Appendix B.5

SOAKAWAY TEST RESULTS





Soil Infiltration Rate (Soakaway) Test

Soil Infiltration Test carried out in accordance with BRE Digest 365:2016.

Borehole number:

TP38 (SA01)

Page 1 of 1

Project name:

Halewood SPT

Project number:

Clyde 0255

Client:

WSP

Engineer:

WSP

Survey grid system:

OSGB

Co-ordinates:

mE
mN
mOD

Ground level:

Hole type:

TP

Checked by:

LG

Approved by:

CB

Date of test:

22/01/2025 09:00

Test reference:

1

Weather:

Dry

Test type:

Soil Infiltration Test

Response zone top:

0.00

m bgl

Reponse zone base:

3.00

m bgl

Test section diameter:

mm

Shape of test section:

Trial Pit (Cuboid)

Test section dimensions:

0.60m x 3.50m

Type of filter used:

None

(Assumed porosity)

100

%

Groundwater before:

3.00 m bgl

Water added:

1000 l

Water level start of test:

0.40 m bgl

Water level end of test:

0.44 m bgl

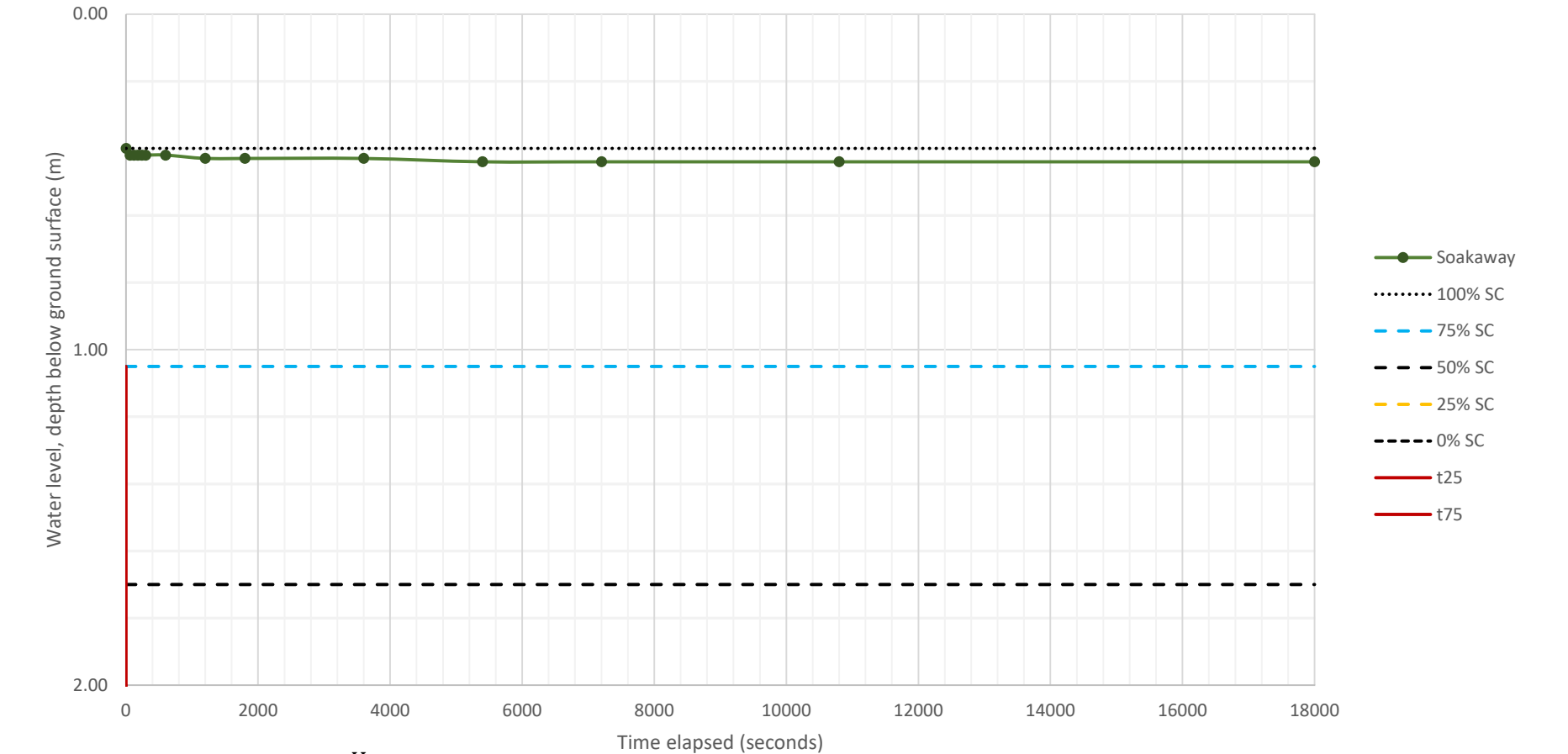
Hole depth after test:

2.00 m bgl

Time, t (seconds)	Water Depth (m)
0	0.40
60	0.42
120	0.42
180	0.42
240	0.42
300	0.42
600	0.42
1200	0.43
1800	0.43
3600	0.43
5400	0.44
7200	0.44
10800	0.44
18000	0.44

Time, t (seconds)	Water Depth (m)

Time, t (seconds)	Water Depth (m)



Soil infiltration rate, $f = \frac{V_{p\ 75-25}}{a_{s\ 50} \times t_{p\ 75-25}}$

Where

$V_{p\ 75-25}$

Effective storage volume of water in borehole between 75% and 25% effective storage capacity (SC) depth.

2.7300 m3

$a_{s\ 50}$

Internal surface area of borehole up to 50% effective storage capacity (SC) depth, including the base area

12.7600 m2

$t_{p\ 75-25}$

Time for water level to fall from 75% to 25% effective storage capacity (SC) depth.

seconds

$f =$

-

m/s

Comments:
Test ran for 300 minutes. Test results not displayed due to requirments not being met. 1000L added.

BAM R Soil Infiltration Test 06/03/2020



Soil Infiltration Rate (Soakaway) Test

Soil Infiltration Test carried out in accordance with BRE Digest 365:2016.

Borehole number:

TP38 (SA01)

Page 1 of 1

Project name: Halewood Leisure Centre
Project number: Clyde 0255
Client: WSP
Engineer: WSP

Survey grid system: OSGB
Co-ordinates: mE
mN
Ground level: mOD

Hole type: TP
Checked by: LG
Approved by: CB

Date of test: 21/01/2025 09:00

Test reference: 1

Weather: Dry

Test type: Soil Infiltration Test
Response zone top: 0.00 m bgl
Reponse zone base: 3.00 m bgl
Test section diameter: mm

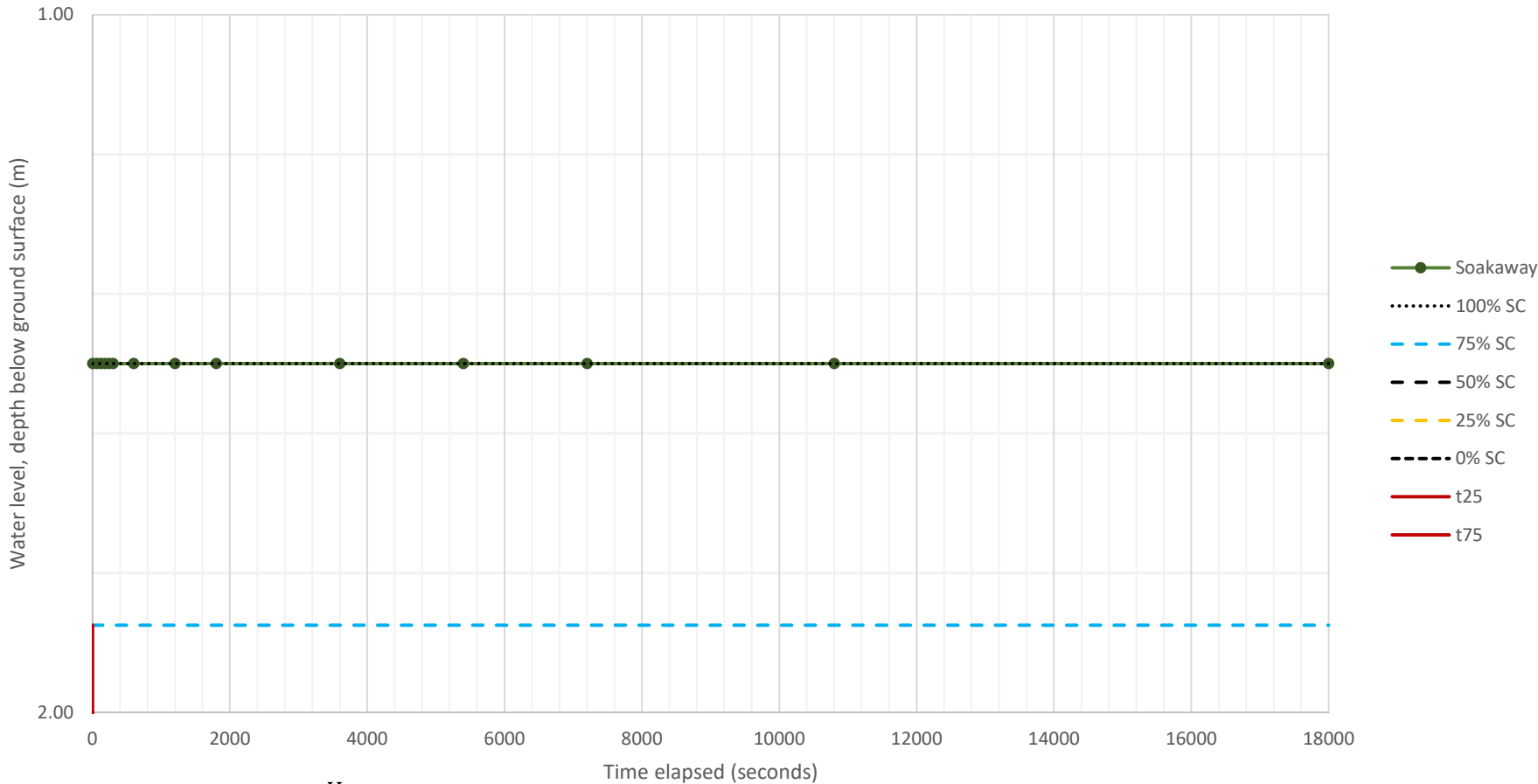
Shape of test section: Trial Pit (Cuboid)
Test section dimensions: 0.60m x 3.50m
Type of filter used: None
(Assumed porosity) 100 %

Groundwater before: 3.00 m bgl
Water added: 1000 l
Water level start of test: 1.50 m bgl
Water level end of test: 1.50 m bgl
Hole depth after test: 2.00 m bgl

Time, t (seconds)	Water Depth (m)
0	1.50
60	1.50
120	1.50
180	1.50
240	1.50
300	1.50
600	1.50
1200	1.50
1800	1.50
3600	1.50
5400	1.50
7200	1.50
10800	1.50
18000	1.50

Time, t (seconds)	Water Depth (m)

Time, t (seconds)	Water Depth (m)



Soil infiltration rate, $f = \frac{V_{p\ 75-25}}{a_{s\ 50} \times t_{p\ 75-25}}$

Where $V_{p\ 75-25}$ Effective storage volume of water in borehole between 75% and 25% effective storage capacity (SC) depth. 1.5750 m3
 $a_{s\ 50}$ Internal surface area of borehole up to 50% effective storage capacity (SC) depth, including the base area 8.2500 m2
 $t_{p\ 75-25}$ Time for water level to fall from 75% to 25% effective storage capacity (SC) depth. seconds

f = - m/s

Comments:
Test ran for 300 minutes. Test results not displayed due to requirments not being met. 1000L added.

Appendix B.6

GRACE PARK GAS MONITORING RESULTS



Project Number:	70119719	Site:	Halewood LUF	Zone:	Grace Park Only
------------------------	----------	--------------	--------------	--------------	-----------------

[illegible][illegible]

Monitoring Round 1

Project Number:	70119719
------------------------	----------

Site:	Halewood LUF
--------------	--------------

Zone:	Grace Park Only
--------------	-----------------

Date:	03/10/2025
--------------	------------

Instrument model(s):	GFM435
----------------------	--------

Atm. Pressure (start) (mb):	1005
-----------------------------	------

Engineer:	HR
-----------	----

Instrument S/No.(s):	11972
----------------------	-------

Atm. Pressure (end) (mb):	1001
---------------------------	------

Temp (°C if known):	
---------------------	--

Recent weather:	Rain
-----------------	------

Record any other observations which may have an impact on the soil gas monitoring results. These observations may include damage to the gas tap or top of well, damage to the cover or an open gas tap.

e.g. See comments for individual monitoring points.

[illegible]

Monitoring Round 4	Project Number:	70119719

Site:	Halewood LUF
--------------	--------------

Date:	07/11/2025
--------------	------------

Instrument model(s):	GFM435
----------------------	--------

Atm. Pressure (start) (mb):	1003
-----------------------------	------

Engineer:	HR
-----------	----

Instrument S/No.(s):	119732
----------------------	--------

Atm. Pressure (end) (mb):	1003
---------------------------	------

Temp (°C if known):	
---------------------	--

Recent weather:	Overcast
-----------------	----------

--

[illegible]

Monitoring Round 6

Project Number:	70119719
-----------------	----------

Project Number:	70119719
------------------------	----------

Site:	Halewood LUP
--------------	--------------

Zone:	Grace Park Only
--------------	-----------------

Date:	11/12/2025
-------	------------

Instrument model(s):	GFM435
----------------------	--------

Atm. Pressure (start) (mb):	1011
-----------------------------	------

Engineer:	HR
-----------	----

Instrument S/No.(s):	119732
----------------------	--------

Atm. Pressure (end) (mb):	1011
---------------------------	------

Temp (°C if known):	
---------------------	--

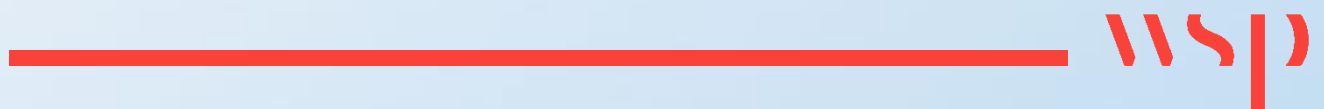
Recent weather:	Fine, slightly grey
-----------------	---------------------

Record any other observations which may have an impact on the soil gas monitoring results. These observations may include damage to the gas tap or top of well, damage to the cover or an open gas tap.

[illegible]

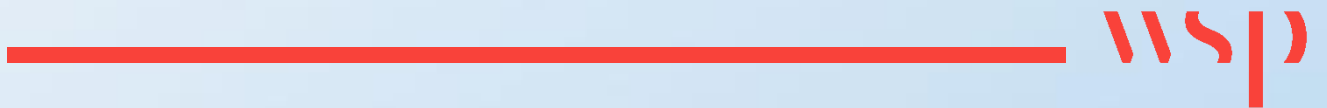
Appendix C

**PREVIOUS REPORTS – TO BE
ISSUED SEPARATELY**



Appendix D

DEVELOPMENT PLANS



- Note.
- THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER SCHEME DRAWINGS AND DOCUMENTS.
LOCATION PLAN
70119719_WSP_LUD_GRP_DR_LA_0002
EXISTING SITE PLAN
70119719_WSP_LUD_GRP_DR_LA_0003
HARD LANDSCAPE PLAN
70119719_WSP_LUD_GRP_DR_LA_0005
SOFT LANDSCAPE STRATEGY
70119719_WSP_LUD_GRP_DR_LA_0006
ALL DIMENSIONS ARE METERS UNLESS STATED OTHERWISE.
LIGHTING PROPOSALS NOT CURRENTLY SHOWN ON PLAN, SUBJECT TO LIGHTING CONSULTANT'S DESIGN.
CCTV PROPOSALS NOT CURRENTLY SHOWN ON PLAN, SUBJECT TO SECURITY CONSULTANT'S DESIGN.
FOR ARBORICULTURAL TREE ROOT PROTECTION PLAN REFER TO DRAWING 70119719-ARB-TRPP-GRP-1.0
FOR TRANSPORT DESIGN REFER TO DRAWINGS
UK0029106.9719- SK01
UK0029106.9719- VT01
UK0029106.9719- VT02
UK0029106.9719- VT03

- KEY:
- Application Site Boundary
 - Proposed Building - To Architects Design
 - Existing Trees to be Retained & Protected
 - Existing Vegetation to be Retained
 - Proposed Individual Trees
Refer to Soft Landscape Strategy
 - Proposed Swale Planting
Refer to Soft Landscape Strategy
 - Proposed Native Scrub Mix
Refer to Soft Landscape Strategy
 - Proposed Amenity Lawn Grass Mix
Refer to Soft Landscape Strategy
 - Proposed Wildflower Meadow Mix
Refer to Soft Landscape Strategy
 - Proposed Ornamental Planting
Refer to Soft Landscape Strategy
 - Proposed Shared Use Route surfacing - Bitumen Macadam surfacing or equivalent and approved to light traffic specification
 - Proposed Footway surfacing - Bitumen Macadam surfacing or equivalent and approved to light traffic specification
 - Proposed Resin Bordered Gravel (Non-porous) - Daxx or equivalent and approved
 - Proposed Car park surfacing - Bitumen Macadam or equivalent and approved to Highways Engineers specification
 - Proposed Setts - Banding for Paved Areas - Hardscape, 10mm (200x50mm) - Charcoal & Silver granite Staked Bond, Or equivalent and approved
 - Proposed Block Paving for Paved Areas - Hardscape, Neogrange (450x450mm) - Silver Granite, Staked Bond, Or equivalent and approved
 - Proposed Block Paving for Paved Areas - Hardscape, Neogrange (450x450mm) - Autumn Brown Staked Bond, Or equivalent and approved
 - Proposed 3G non-infill synthetic surfacing - Polytan (UK) Ligatuf R5+ R system or equivalent and approved to FIFA Quality Standard
 - Proposed Reinforced Grass Matting Safety surfacing or equivalent and approved
 - Proposed Reinforced Grass Mesh System or equivalent and approved
 - Proposed Hard standing area for Temporary Compound to be MCT type 3 or equivalent and approved
 - Proposed Coloured Design to Play Area - Wet Pour Safety Surfacing or equivalent and approved
 - Proposed Bark Mulch safety surfacing or equivalent and approved
 - Proposed Timber logs and posts to be set in bark mulch surfacing as part of play trail on existing mound
 - Proposed Fencing to Temporary Compound to be Hesco fencing or equivalent and approved
 - Existing Boundary Fencing to be retained and made good where required
 - Proposed Acoustic Fencing - 2.5m height, PCD/StoneBlock, Gramm Barriers or equivalent and approved
 - Proposed 4.5m Height Sports Fencing Weldmesh or equivalent and approved
 - Proposed 2m Height Sports Fencing Weldmesh or equivalent and approved
 - Proposed Spectator Rail Fencing - 1.1m Height Steel with Mesh infill and rubber mats for noise reduction or equivalent and approved
 - Proposed boundary bow top fencing 1.2m Height to be Iron Railing or equivalent and approved
 - Proposed Boundary Fencing - 1.8m Height to be Iron Railing or equivalent and approved
 - Proposed Double leaf gate to match adjacent fencing
 - Proposed Single leaf gate to match adjacent fencing
 - Proposed Finger-post Signage - Metal, Black, product to be selected at detail design stage as part of Wayfinding Strategy
 - Proposed Info-board Signage - Metal, Black, product to be selected at detail design stage as part of Wayfinding Strategy
 - Proposed Floor Lighting Column - Refer to Lighting Consultants Design for more information
 - Proposed Picnic Table - Garthside Picnic Bench RAL 9005, Brosp or equivalent and approved
 - Proposed Accessible Picnic Table - Garthside Picnic Bench - Extended Top, RAL 9005, Brosp or equivalent and approved
 - Proposed Benches - Clarendon Seat, Street Master or equivalent and approved
 - Proposed Recessed Planting Area with seating
 - Proposed Bin - Oxford Bin with Lid, Streetmaster RAL 9005 or equivalent and approved
 - Proposed Bollards - Stainless Steel Sheffield Bollard RAL 9005, Brosp or equivalent and approved
Removable Fencing where vehicle access is required
 - Proposed Cycle Stands - Sheffield Cycle Stand RAL 9005, Brosp or equivalent and approved
 - Proposed Metal Filter - Metal, Black, product to be selected at detail design stage
 - Proposed Natural Feature - Tree log and Boulders
 - Proposed Raised Platform Area - with Retention Socket and Electricity access point
 - Proposed Containers for Clubhouse Use

DO NOT SCALE

PROPOSED:

- Main vehicular entrance from Leathers Lane
- Entrance plaza with ornamental planting and seating connecting to Halewood Shopping Centre
- Shared-use active travel route
- Main pedestrian and cyclist entrance from Wood Road
- Secondary pedestrian entrances from Wood Road
- Series of planted swales and attenuation basins (SuDs)
- Private Naturalised Area & SuDs feature fenced and maintained by Club Operators
- Public meeting spaces 'Grace Gardens'
- Flexible use plaza area with Pergola, electricity points and retention socket for outdoor events
- Car park with 32 standard bays and 5 accessible bays and 10 EV charging bays
- Sports/Community Pavilion to be designed by Architect
- Artificial Grass Pitch with multi-pitch layout to Football Association (FA) guide lines 100x64m
- Mini 5v5 Football pitch to Football Association (FA) guide lines 40x30m
- Picnic Area
- Feature play area, fenced with inclusive play equipment - **Designed to be agreed with KMBC**
- Existing mound re-graded to flexible amenity grassed area
- Temporary Contractors Compound Hard Standing Area to be fenced from public access

P03	14/11/25	JY	Updated following Redesign	MF	RW
P02	18/12/24	JY	Updated in accordance with other disciplines	ER	RV
P01	10/10/24	JY	First Issue	ER	RV
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: S3 - FOR REVIEW



1st Floor Station House, Exchange Station, Timebeam Street, Liverpool, L2 2QP, UK
T: +44 (0) 151 680 5500
wsp.com

CLIENT: KMBC

ARCHITECT: WSP

PROJECT: Halewood LUF
Grace Park
RIBA 3

TITLE: Grace Park
Proposed Site Plan

SCALE @ A3: 1:500	CHECKED: MF	APPROVED: RW
PROJECT No: 70119719	DESIGNED: JY/MF	DRAWN: JY
DRAWING No: 70119719_WSP_LUD_GRP_DR_LA_0004	DATE: November 25	REV: P03

© WSP UK Ltd



- Note.
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER SCHEME DRAWINGS AND DOCUMENTS.
LOCATION PLAN
70119719_WSP_LUD_HLC_DR_LA_0002
EXISTING SITE PLAN
70119719_WSP_LUD_HLC_DR_LA_0003
HARD LANDSCAPE PLAN
70119719_WSP_LUD_HLC_DR_LA_0005
SOFT LANDSCAPE STRATEGY
70119719_WSP_LUD_HLC_DR_LA_0006
PROVIDED LEVELS SHALL BE VERIFIED AND CONFIRMED WITH DESIGNER PRIOR TO ANY WORKS COMMENCING.
 2. FOR LIGHTING PROPOSALS REFER TO LIGHTING IMPACT ASSESSMENT
HAL-WSP-XX-XX-RP-Y-0002
 3. FOR ARBORICULTURAL TREE ROOT PROTECTION PLAN REFER TO DRAWING
70119719-ARB-TRPP-HLC-1.0
 4. FOR TRANSPORT DESIGN REFER TO DRAWINGS
UK0029106.9719- SK02
UK0029106.9719- VT04
UK0029106.9719- VT05
UK0029106.9719- VT06
UK0029106.9719- VT07

ALL LAYOUTS ARE SUBJECT TO ADDITIONAL SURVEY WORKS AND DESIGN INCLUDING:

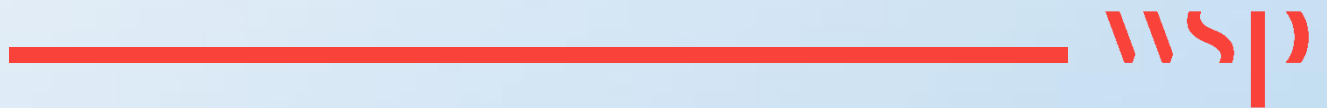
- GROUND INVESTIGATION
- DRAINAGE DESIGN
- MATERIAL MANAGEMENT PLAN

- LEGEND:
- Application Site Boundary
- EXISTING:
- 1 Main vehicular and pedestrian entrance from Bailey's Lane to be enhanced
 - 2 Halewood Leisure Centre Building
 - 3 Secondary pedestrian entrance from Barn Croft Lane to be enhanced
 - 4 All Weather Pitch to be retained
- PROPOSED:
- 5 Main cycle and pedestrian entrance from Barn Croft Lane
 - 6 Shared cycle route with thermoplastic line-marking 'LEISURE CENTRE'
 - 7 Flexible-use space with outdoor electricity access points
 - 8 Car park with 186 standard bays, 12 accessible bays and 4 electric vehicle charging bays
 - 9 Planted swale
 - 10 Boardwalk & Viewing platform over planted swale for access from car park to entrance space
 - 11 3x Multi-use games areas, fenced sports pitch 30x20m with 3G synthetic turf
 - 12 Amenity lawn grassed area for recreational use
 - 13 Active loop with outdoor gym equipment

P01	10/02/25	JY	First Issue	ER	RW
REV	DATE	BY	DESCRIPTION	CHK	APP
Drawing STATUS: S2 - FOR INFORMATION					
 1st Floor Station House, Exchange Station, Tithebarn Street, Liverpool, L2 2QP, UK T+44 (0) 151 600 5500 wsp.com					
CLIENT: KMBC					
ARCHITECT: WSP					
PROJECT: Halewood LUF					
TITLE: Halewood Leisure Centre Proposed Site Plan					
SCALE @ A0 1:500		CHECKED ER		APPROVED RW	
PROJECT NO. 70119719		DRAWN JYER	DATE JY	March 25	
DRAWING NO. 70119719_WSP_LUD_HLC_DR_LA_0004				REV P01	
© WSP UK Ltd					

Appendix E

GENERAL LIMITATIONS



REPORT LIMITATIONS - GROUND AND WATER

GENERAL

1. WSP UK Limited has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed and outlined in the body of the report.
2. Unless explicitly agreed otherwise, in writing, this report has been prepared under WSP UK Limited standard Terms and Conditions as included within our proposal to the Client.
3. Project specific appointment documents may be agreed at our discretion and a charge may be levied for both the time to review and finalise appointments documents and also for associated changes to the appointment terms. WSP UK Limited reserves the right to amend the fee should any changes to the appointment terms create an increase risk to WSP UK Limited.
4. The report needs to be considered in the light of the WSP UK Limited proposal and associated limitations of scope. The report needs to be read in full and isolated sections cannot be used without full reference to other elements of the report and any previous works referenced within the report.

PHASE 1 GEO ENVIRONMENTAL AND PRELIMINARY RISK ASSESSMENTS

Coverage: *This section covers reports with the following titles or combination of titles: phase 1; desk top study; geo environmental assessment; development appraisal; preliminary environmental risk assessment; constraints report; due diligence report; geotechnical development review; environmental statement; environmental chapter; project scope summary report (PSSR), program environmental impact report (PEIR), geotechnical development risk register; and, baseline environmental assessment.*

5. The works undertaken to prepare this report comprised a study of available and easily documented information from a variety of sources (including the Client), together with (where appropriate) a brief walk over inspection of the Site and correspondence with relevant authorities and other interested parties. Due to the short timescales associated with these projects responses may not have been received from all parties. WSP UK Limited cannot be held responsible for any disclosures that are provided post production of our report and will not automatically update our report.
6. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only for the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, WSP UK Limited reserves the right to review such information and, if warranted, to modify the opinions accordingly.
7. It should be noted that any risks identified in this report are perceived risks based on the information reviewed. Actual risks can only be assessed following intrusive investigations of the site.
8. WSP UK Limited does not warrant work / data undertaken / provided by others.

REPORT LIMITATIONS - GROUND RISK AND REMEDIATION

INTRUSIVE INVESTIGATION REPORTS

Coverage: *The following report titles (or combination) may cover this category of work: geo environmental site investigation; geotechnical assessment; GIR (Ground Investigation reports); preliminary environmental and geotechnical risk assessment; and, geotechnical risk register.*

9. The investigation has been undertaken to provide information concerning either:
 - i. The type and degree of contamination present at the site in order to allow a generic quantitative risk assessment to be undertaken; or
 - ii. Information on the soil properties present at the site to allow for geotechnical development constraints to be considered.
10. The scope of the investigation was selected on the basis of the specific development and land use scenario proposed by the Client and may be inappropriate to another form of development or scheme. If the development layout was not known at the time of the investigation the report findings may need revisiting once the development layout is confirmed.
11. For contamination purposes, the objectives of the investigation are limited to establishing the risks associated with potential contamination sources with the potential to cause harm to human health, building materials, the environment (including adjacent land), or controlled waters.
12. For geotechnical investigations the purpose is to broadly consider potential development constraints associated with the physical property of the soils underlying the site within the context of the proposed future or continued use of the site, as stated within the report.
13. The amount of exploratory work, soil property testing and chemical testing undertaken has necessarily been restricted by various factors which may include accessibility, the presence of services; existing buildings; current site usage or short timescales. The exploratory holes completed assess only a small percentage of the area in relation to the overall size of the Site, and as such can only provide a general indication of conditions.
14. The number of sampling points and the methods of sampling and testing do not preclude the possible existence of contamination where concentrations may be significantly higher than those actually encountered or ground conditions that vary from those identified. In addition, there may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report.
15. The inspection, testing and monitoring records relate specifically to the investigation points and the timeframe that the works were undertaken. They will also be limited by the techniques employed. As part of this assessment, WSP UK Limited has used reasonable skill and care to extrapolate conditions between these points based upon assumptions to develop our interpretation and conclusions. The assumption made in forming our conclusions is that the ground and groundwater conditions (both chemically and physically) are the same as have been encountered during the works undertaken at the specific points of investigation. Conditions can change between investigation points and these interpretations should be considered indicative.
16. The risk assessment and opinions provided are based on currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values. Specific assumptions associated

REPORT LIMITATIONS - GROUND RISK AND REMEDIATION

with the WSP UK Limited risk assessment process have been outlined within the body or associated appendix of the report.

17. Additional investigations may be required in order to satisfy relevant planning conditions or to resolve any engineering and environmental issues.
18. Where soil contamination concentrations recorded as part of this investigation are used for commentary on potential waste classification of soils for disposal purposes, these should be classed as indicative only. Due consideration should be given to the variability of contaminant concentrations taken from targeted samples versus bulk excavated soils and the potential variability of contaminant concentrations between sampling locations. Where major waste disposal operations are considered, targeted waste classification investigations should be designed.
19. The results of the asbestos testing are factually reported and interpretation given as to how this relates to the previous use of the site, the types of ground encountered and site conceptualisation. This does not however constitute a formal asbestos assessment. These results should be treated cautiously and should not be relied upon to provide detailed and representative information on the delineation, type and extent of bulk ACMs and / or trace loose asbestos fibres within the soil matrix at the site.
20. If costs have been included in relation to additional site works, and / or site remediation works these must be considered as indicative only and must be confirmed by a qualified quantity surveyor.

EUROCODE 7: GEOTECHNICAL DESIGN

21. On 1st April 2010, BS EN 1997-1:2004 (Eurocode 7: Geotechnical Design – Part 1) became the mandatory baseline standard for geotechnical ground investigations.
22. In terms of geotechnical design for foundations, slopes, retaining walls and earthworks, EC7 sets guidance on design procedures including specific guidance on the numbers and spacings of boreholes for geotechnical design, there are limits to methods of ground investigation and the quality of data obtained and there are also prescriptive methods of assessing soil strengths and methods of design. Unless otherwise explicitly stated, the work has not been undertaken in accordance with EC7. A standard geotechnical interpretative report will not meet the requirements of the Geotechnical Design Report (GDR) under Eurocode 7. The GDR can only be prepared following confirmation of all structural loads and serviceability requirements. The report is likely to represent a Ground Investigation Report (GIR) under the Eurocode 7 guidance.

DETAILED QUANTITATIVE RISK ASSESSMENTS AND REMEDIAL STRATEGY REPORTS

23. These reports build upon previous report versions and associated notes. The scope of the investigation, further testing and monitoring and associated risk assessments were selected on the basis of the specific development and land use scenario proposed by the Client and may not be appropriate to another form of development or scheme layout. The risk assessment and opinions provided are based on currently available approaches in the generation of Site Specific Assessment Criteria relating to contamination concentrations and are not considered to represent a risk in a specific land use scenario to a specific receptor. No liability can be accepted for the retrospective effects of any future changes or amendments to these values, associated models or associated guidance.



REPORT LIMITATIONS - GROUND RISK AND REMEDIATION

- 24. The outputs of the Detailed Quantitative Risk Assessments are based upon WSP UK Limited manipulation of standard risk assessment models. These are our interpretation of the risk assessment criteria.
- 25. Prior to adoption on site they will need discussing and agreeing with the Regulatory Authorities prior to adoption on site. The regulatory discussion and engagement process may result in an alternative interpretation being determined and agreed. The process and timescales associated with the Regulatory Authority engagement are not within the control of WSP UK Limited. All costs and programmes presented as a result of this process should be validated by a quantity surveyor and should be presumed to be indicative.

GEOTECHNICAL DESIGN REPORT (GDR)

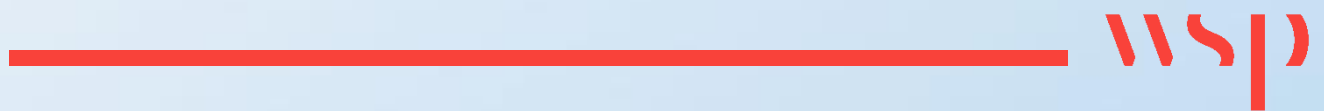
- 26. The GDR can only be prepared following confirmation of all structural loads and serviceability requirements. All the relevant information needs to be provided to allow for a GDR to be produced.

MONITORING (INCLUDING REMEDIATION MONITORING REPORTS)

- 27. These reports are factual in nature and comprise monitoring, normally groundwater and ground gas and data provided by contractors as part of an earthworks or remedial works.
- 28. The data is presented and will be compared with assessment criteria.

Appendix F

RISK ASSESSMENT METHODOLOGIES



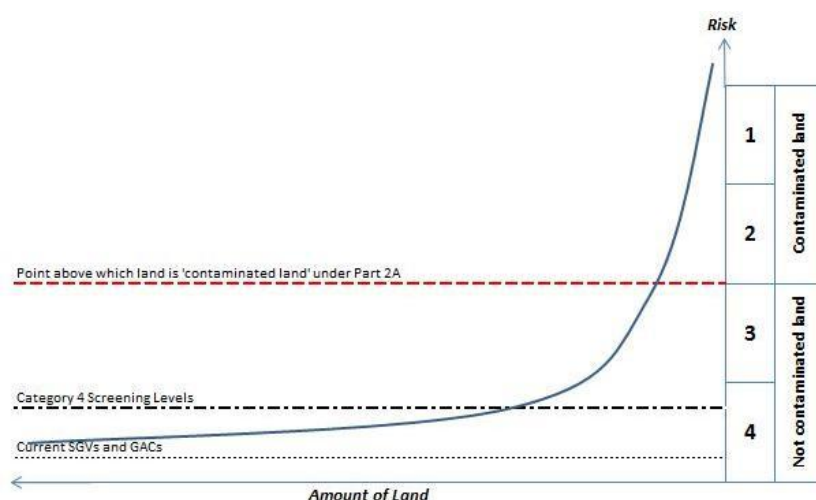
METHODOLOGY FOR THE DERIVATION OF GENERIC QUANTITATIVE ASSESSMENT CRITERIA TO EVALUATE RISKS TO HUMAN HEALTH FROM SOIL & GROUNDWATER CONTAMINATION

UK APPROACH

In the UK, the potential risks to human health from contamination in the ground are usually evaluated through a generic quantitative risk assessment (GQRA) approach. This allows generic and conservative exposure assumptions to be readily applied to risk assessments, and can be a useful tool for rapidly screening data and to identify those contaminants or scenarios that could benefit from further investigation and/or site-specific detailed quantitative risk assessment (DQRA). Current industry good practice is to use the approach presented in the Environment Agency (EA) publications SR2¹ and SR3². This approach allows the derivation of Generic Assessment Criteria (GACs), primarily for chronic exposure.

In April 2012, the Department of Environment, Food and Rural Affairs (Defra) published updated statutory guidance³ which introduced a four category approach to determining whether land in England and Wales is contaminated or not on the grounds of significant possibility of significant harm (SPOSH). **Figure 1** presents a graphical representation of the categories.

Figure 1: Four Categories for Determining if Land Represent a SPOSH



Cases classified as Category 1 are considered to be SPOSH based on actual evidence or an unacceptably high probability of harm existing. Category 4 cases are those where there is no risk, or a low risk of SPOSH.

¹ Environment Agency 'Human Health Toxicological Assessment of Contaminants in Soil', Report SC050021/SR2. January 2009.

² Environment Agency 'Updated Technical Background to the CLEA Model,' Report SC050021/SR3. January 2009.

³ Defra 'Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance'. April 2012.

GACs represent a minimal risk level, well within Category 4. A 2014 publication by Contaminated Land: Applications in Real Environments (CL:AIRE), SP1010⁴ and endorsed by Defra⁵ provided an approach to determine Category 4 Screening Levels (C4SLs) which are higher than the GACs whilst being “more pragmatic but still strongly precautionary”. It also provided C4SLs for six contaminants of concern. Although the C4SLs were designed to support Part 2A assessments to determine ‘contaminated land’ they are specifically mentioned, along with reference to the Part 2A statutory guidance, by the Department for Communities and Local Government (DCLG) for use in a planning context⁶.

An updated version the Contaminated Land Exposure Assessment (CLEA) Workbook (v1.071) was released by the EA in September 2015 to take into account the publication of SP1010. The updates comprised: additional toxicity data for the six chemicals for which C4SLs were derived; two new public open space land use scenarios; updated exposure parameters; options to run the model using C4SL exposure assumptions; and increased functionality. There were no changes to algorithms, so it is still possible to replicate the withdrawn SGVs using the input parameters held within v1.071.

It should be noted that the four category approach has not been adopted in Scotland under Part 2A or the planning regime. The Part 2A statutory guidance applicable in Scotland (Paper SE/2006/44 dated May 2006) does not reflect the changes introduced by Defra in April 2012 which allow for the use of C4SLs within Part 2A risk assessments. Additionally, it is considered that the principal of ‘minimal risk’ should still apply under planning in Scotland, based on current guidance.

WSP APPROACH

Following the withdrawal of the SGVs, and in the absence of an industry-wide, accepted set of GACs it is down to individual practitioners to derive their own soil assessment criteria. WSP has used the approach provided within SR2, SR3, SP1010, CLEA Workbook v1.071 and SR4⁷ to produce a set of minimal risk GACs. The chemical-specific data within two key publications were considered during their production: CL:AIRE 2010⁸ and LQM 2015⁹. Both documents provide comprehensive sets of GACs for different contaminants of concern.

The LQM Suitable For Use Levels (S4ULs) have selected exposure parameters consistent with the C4SL exposure scenarios. This approach was rejected by WSP as not representing minimal risk. However, the LQM S4UL document was critically reviewed and the approach and chemical input parameters were utilised where considered to be appropriate.

An industry-led C4SL Working Group is in the process of deriving a larger set of C4SLs in the near future, for approximately 20 contaminants. This will include a critical review of the chemical input data for all selected substances, and may therefore lead to further amendments to the chemical input data used in the WSP in-house screening values. It is considered likely that the contaminant list will

⁴ CL:AIRE ‘Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination’ SP1010, Final Project Report (Revision 2). September 2014.

⁵ Defra ‘SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document’. December 2014.

⁶ DCLG Planning Practice Guidance ‘Land Affected by Contamination’, particularly Paragraphs 001 and 007. Ref IDs: 33-001-20140306 & 33-007-20140612.

⁷ Environment Agency ‘CLEA Software (Version 1.05) Handbook (and Software)’, Report SC050021/SR4. September 2009.

⁸ CL:AIRE ‘The EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment’. ISBN 978-1-05046-20-1. January 2010.

⁹ Nathanail et al ‘The LQM/CIEH S4ULs for Human Health Risk Assessment’, Land Quality Press, ISBN 978-0-9931084-0-2. 2015.

crossover with the 2009 EIC/AGS/CL:AIRE GACs. As such, this document was not critically reviewed by WSP.

WSP's current approach to the assessment of risks to human health is to continue to evaluate minimal risk through the use of in-house derived GACs, and to use the published C4SLs as a secondary tier of assessment until such time as additional C4SLs are published and/or in-house values are derived.

EXPOSURE MODELS

LAND USES

WSP has largely adopted the exposure assumptions of the generic land use scenarios included within SR3, with two additional public open space scenarios included from within SP1010 and two bespoke exposure scenarios (highways):

- à Residential with homegrown produce consumption;
- à Residential without homegrown produce consumption;
- à Allotments;
- à Commercial;
- à Public open space near residential housing (POS_{resi});
- à Public park (POS_{park});
- à Highways (surface soils); and
- à Highways (subsurface soils).

Exceptions are described in the following Sections.

SOIL PROPERTIES

SR3 assumes a sandy loam soil with a pH of 7 and a Soil Organic Matter (SOM) content of 6% for its generic land uses, based on the geographical spread of topsoils in the UK. WSP has adopted these default values. In addition, GACs based on an SOM of 1% and 2.5% have been derived, based on common experience of the nature of Made Ground and lack of topsoil on many brownfield sites.

RECEPTOR CHARACTERISTICS AND BEHAVIOURS

SP1010 provides some updated exposure parameters for long-term inhalation rates¹⁰ and the consumption rates for homegrown produce¹¹ compared to those provided in SR3. This data was used to derived WSP's GACs.

The changes in inhalation rates do not apply to the allotment generic land use scenario, as these are based on the breathing rates for short-term exposure of light to moderate intensity activity which were derived from a study that was not updated in USEPA 2011, so the SR3 rates were retained.

¹⁰ USEPA, National Centre for Environmental Assessment 'Exposure Factors Handbook: 2011 Edition' EPA/600/R-09/052F. September 2011.

¹¹ National Diet and Nutrition Survey 2008/2009 to 2010/2011.

HIGHWAYS EXPOSURE SCENARIOS

Human health GAC for a Highways exposure scenario have been derived. The site area is defined by publicly accessible land adjacent to highways, comprising both hard and soft landscaped areas. Exposure is considered to be largely transitory.

There are no publicly available GAC for this exposure scenario. Consequently, WSP have derived GAC for the following exposure scenarios:

- à Highways (surface soils); and
- à Highways (sub-surface soils).

Surface soils GAC are for soil at ground level and within 300mm of the surface. Conversely, subsurface GAC are for soils at a depth exceeding 0.3m bgl. These GAC are not to be used as import criteria.

The critical receptor is a young female child, CLEA age classes 4-9. This is consistent with the critical receptor for the POS(resi) exposure scenario, and considered to be appropriate for a child potentially playing outside without direct adult supervision.

For all GAC, a sandy loam soil and a soil organic matter content of 1% is assumed. There is no building on site.

Exposure scenarios for surface and subsurface soils are detailed below. These are considered to be conservative estimates, due to the mostly transitory use of publically accessible lands adjacent to highways.

HIGHWAYS GAC (SURFACE SOILS)

The relevant exposure pathways include direct soil and dust ingestion, dermal contact (outdoors) and the inhalation of outdoor dust and vapour.

The exposure frequency is 170 days per annum, and the occupancy period outdoors is 1 hour per day (as per the POS (resi) exposure scenario). The soil and dust ingestion rate has been set at 50 mg/day, consistent with a POS(park) exposure scenario.

HIGHWAYS GAC (SUBSURFACE SOILS)

The single relevant exposure pathway is the inhalation of outdoor vapour. Direct exposure pathways are not viable due to the depth of the soils below ground level.

The exposure frequency is 170 days per annum, and the occupancy period outdoors is 1 hour per day (as per the POS (resi) exposure scenario). The soil and dust ingestion rate has been set to zero, as direct exposure pathways to soils at this depth are not viable.

CHEMICAL DATA

PHYSICO-CHEMICAL PARAMETERS

Physico-chemical properties for the contaminants for which GACs have been derived have been obtained following critical review of the following hierarchy of data sources:

1. Environment Agency/Defra SGV reports where available;
2. Environment Agency '*Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values*', Report SC050021/SR7, November 2008; and
3. Published fate and transport reviews within Nathanail et. al 2015 and CL:AIRE 2010.

Where appropriate, and where sufficient data is available, values were adjusted to reflect a UK soil temperature of 10°C (e.g. K_{aw}).

TOXICOLOGICAL DATA

Toxicological data for the derivation of minimal risk Health Criteria Values (HCV) for each contaminant was selected with due regard to the approach presented in SR2. Where appropriate, the following hierarchy of data sources was used:

1. UK toxicity reviews published by authoritative bodies including:
 - < EA;
 - < Public Health England (PHE);
 - < Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT); and
 - < Committee on Carcinogenicity of Chemicals in Food, Consumer Products and the Environment (COC).
2. Authoritative European sources such as European Food Standards Agency (EFSA)
3. International organisations including:
 - < World Health Organisation (WHO); and
 - < Joint FAO/WHO Expert Committee on Food Additives (JECFA).
4. Authoritative country-specific sources including:
 - < United States Environmental Protection Agency (USEPA);
 - < US Agency for Toxic Substances and Disease Registry (ATSDR);
 - < US Integrated Risk Information System (IRIS); and
 - < Netherlands National Institute for Public Health and the Environment (RIVM).

Factors such as the applicability of the data to human health (e.g. epidemiological vs. animal studies), the quality of the data, the level of uncertainty in the results and the age of the data were also taken into account in the final selection. Details for specific substances are available on request.

MEAN DAILY INTAKES

Estimations of background exposure for each threshold substance have been updated. In line with the SR2 approach, the exposure from non-threshold substances in the soil does not take into account exposure from other sources, and as such GACs were derived without consideration of the Mean Daily Intake (MDI) for those substances.

The data published by the EA in its series of TOX reports between 2002 and 2009 was evaluated to determine whether the values were considered to remain valid today. Values from these current UK published sources were not amended unless they were considered to be significantly different so that the GACs remained as comparable as possible with the revoked SGVs.

ORAL MEAN DAILY INTAKES

Oral MDI were generally estimated as the sum of exposure via the ingestion of food and drinking water using the default adult physiological parameters presented in Table 3.3 of SR2.

Data on the exposure of substances from food ingestion was generally obtained from UK Total Diet Studies (TDS) published by the Food Standards Agency (FSA) and its predecessor the Ministry of Agriculture, Fisheries and Food (MAFF) and from studies commissioned by COT. Where no UK-specific data was available, MDI were derived from the European Food Safety Authority (EFSA), Health Canada and US sources. This was a rare occurrence, and in these instances, the data was evaluated to determine its applicability to the UK.

Data on the concentrations of substances in tap water was obtained from a variety of sources. UK data was used where available, with preference given to Drinking Water Inspectorate (DWI) 2014 data from water company tap water testing (LOD, 1st and 99th percentile data is available). Where the substance was not included in tap water testing, other UK sources of information were considered including:

- à DWI data from water company tap water testing from previous years;
- à COT; and
- à FSA.

Where UK data was not available, a number of other data sources were considered, largely WHO International Programme on Chemical Safety (IPCS) Concise International Chemical Assessment Documents (CICADs) and background documents for the development of Guidelines for Drinking Water Quality, using professional judgement on the relevance of the data to the UK. The final decision on the MDI from drinking water was made using professional judgement on the balance of relevance and probability, taking into account the detection limit where not detected, Koc and solubility, reduction in use of the substance, banned substances, tight controls (e.g. on explosives) and with due consideration to the SR2 instruction that “if no data or information in background exposure are available, background exposure should be assumed to be negligible and the MDI set to zero....”.

Data from other countries was generally not used because it was considered that the hydrogeology of these countries along with industrial practices were unlikely to be reflective of the UK.

INHALATION MEAN DAILY INTAKES

Inhalation MDIs were based on estimates of average daily exposure by the inhalation pathway and calculated using the default adult physiological parameters presented in Table 3.3 of SR2.

The inhalation MDIs were generally estimated using background exposure data from the UK, derived from Defra's UK-AIR: Air Information Resource¹², which provides ambient air quality data from a number of sites forming a UK-wide monitoring network. The MDIs for heavy metals were based on rolling annual average metal mass concentration data from Defra's UK Heavy Metals Monitoring Network from the period October 2009 to September 2010¹³.

Information for some substances was obtained from UK sources including Environment Agency TOX reports and data from the UK Expert Panel on Air Quality Standards (EPAQS). Where recent UK data was not available, data was sourced from the International Programme on Chemical Safety (IPCS), the World Health Organisation (WHO), the Agency for Toxic Substances and Diseases Registry (ATSDR), Health Canada, and various other peer-reviewed sources summarised by LQM/CIEH¹⁴.

For other substances, where no data or information on background exposure was available, background exposure was assumed to be negligible and the MDI set at 0.5*TDI in accordance with guidance in SR2.

PLANT UPTAKE

Soil to plant concentration factors are available in CLEA v1.071 for arsenic, cadmium, hexavalent chromium, lead, mercury, nickel and selenium. For all remaining inorganic chemicals, concentration factors were obtained using the PRISM model. Substance-specific correction factors have been selected in accordance with the guidance established within SR3. This is consistent to the approach utilised in the derivation of the LQM S4UL and the EIC/AGS/CL:AIRE GAC.

Where there is a lack of appropriate data to enable the derivation of specific soil to plant concentrations factors for organic chemicals, plant uptake was modelled within CLEA v1.071 using the generic equations recommended within SR3, as follows:

- à Green Vegetables – Ryan et al. (1988);
- à Root Vegetables – Trapp (2002);
- à Tuber Vegetables – Trapp et al. (2007); and
- à Tree Fruit – Trapp et al. (2003).

There are no suitable models available for modelling uptake for herbaceous fruit or shrub fruit. Exposure is considered negligible.

¹² Crown 2016 copyright Defra via uk-air.defra.gov.uk, licenced under the Open Government Licence (OGL).

¹³ Defra, 2013 Spreadsheet of historic data for multiple years for the Metals network. Available online at: <http://uk-air.defra.gov.uk/data/metals-data>. [Accessed 13/03/2016].

¹⁴ LQM/CIEH, 2015. The LQM/CIEH S4ULs for Human Health Risk Assessment.

SOIL SATURATION LIMITS

GACs are not limited to their theoretical soil saturation within CLEA, although where either the aqueous or the vapour-based saturation is exceeded, this is highlighted within the Workbook (compared with the lower of the two values). This affects pathways which depend on partitioning calculations so in reality this only affects the vapour pathways and is relevant to organic substances and other substances, such as elemental mercury, that have a significant volatile component. However, the Workbook highlights saturation for direct contact pathways to indicate to the user where further qualitative consideration of free phase contamination at the surface may be required.

Where the lower of the two saturation limits is exceeded and the vapour pathway is the only exposure route being considered, the chronic risks to human health are likely to be negligible. Further evaluation could be undertaken using an alternative model suitable for evaluating non-aqueous phase liquids (NAPLs), such as the Johnson & Ettinger (J&E) approach described in USEPA 2003. However, WSP considers that if NAPLs are suspected, given the known limitations and over-simplifications of J&E, soil vapour monitoring is a more accurate way of assessing potential risks.

Where the lower saturation limit is exceeded for the vapour pathway and a number of exposure routes are being considered, then the contribution from the NAPL via vapour inhalation to the overall exposure can be evaluated using the procedure provided in SR4. WSP would evaluate this as part of a DQRA process or through soil vapour monitoring on-site to determine site-specific soil vapour concentrations.

CHEMICAL SPECIFIC ASSUMPTIONS

CYANIDES

Cyanide has high acute toxicity, and short term exposure is an important consideration when assessing the risks from soils contaminated with cyanide. The primary risk to human receptors from free cyanide in soils is an acute risk.

There is no current UK guidance available for calculating acute risks from free cyanide. Consequently, GAC for acute exposure were derived using the algorithms presented in MADEP 1992¹⁵ and assuming a one-off ingestion of 10g of soil (this conservative value has been taken as an upper bound estimate for a one-off soil ingestion rate amongst children). Receptor body weights have been selected according to the critical receptor for each exposure scenario. The lowest of the chronic and acute GAC for each land use scenario were adopted by WSP.

LEAD

The SGV for lead was withdrawn by the EA in 2009, and in 2011 the EA withdrew their published TOX report in light of new scientific evidence. The C4SL for lead was derived using the latest scientific evidence from a large human dataset. As such, no chemical-specific margin was applied in the derivation of the C4SL for lead. It may be possible for WSP to derive a GAC for lead using the same dataset and applying a chemical-specific margin, but the value is likely to be lower than UK natural background concentrations. Therefore, WSP has adopted the toxicological data used to derive the C4SLs in deriving the GAC for lead until such time as alternative GACs are published by an authoritative body. The relative bioavailability was set at 100% in line with the approach taken for other GACs, whereas the C4SL assumes 60% for soil and 64% for airborne dust. Thus, the WSP GAC are lower than the C4SLs.

¹⁵ MADEP 'Background Documentation for the Development of an "Available Cyanide" Benchmark Concentration' 1992. http://www.mass.gov/dep/toxics/cn_soil.htm

POLYCYCLIC AROMATIC HYDROCARBONS

WSP's approach to the assessment of polycyclic aromatic hydrocarbons (PAHs) uses the surrogate marker approach. BaP was used as a surrogate marker for all genotoxic PAHs in line with the Health Protection Agency 2010¹⁶ recommendations and SP1010. This assumes that the PAH profile of the data is similar to that of the coal tars used in the Culp *et al* oral carcinogenicity study from which the toxicity data for BaP was produced. In reality, this profile has been shown by HPA to be applicable on the majority of contaminated sites based on assessment of sites across the country.

The alternative is the Toxic Equivalency Factor (TEF) approach which uses a reference compound and assigns TEFs for other compounds based on estimates of potency. Key uncertainties with this approach include the assumption that all compounds have the same toxic mechanism of action within the body and that no compounds with a greater potency than the reference compound are present. It is considered by the HPA that the TEF approach is likely to under predict the true carcinogenicity of PAHs and therefore favours the surrogate marker approach.

For these reasons, WSP considers that the adoption of BaP as a surrogate marker for genotoxic PAHs, as opposed to the TEF approach, is reasonable. In rare cases where the PAH profile may differ from the wide definitions of the Culp *et al* study the user should discuss their project with an experienced risk assessor. In addition, WSP has derived a GAC for naphthalene, which is commonly a risk driver due to its high volatility, relative to other PAH compounds.

TRIMETHYLBENZENES

The GAC for trimethylbenzenes can be used for the assessment of any individual isomer (1,2,3-trimethylbenzene, 1,2,4-trimethylbenzene or 1,3,5-trimethylbenzene), or a mixture of the three isomers.

CHEMICAL GROUPS

For a number of chemical groups, the available toxicity data is for combinations of chemicals. Given that the physico-chemical parameters may differ between the chemicals, the GACs for the chemicals within the groups have been calculated and then the lowest GAC selected to represent the entire group. This was the approach taken by the EA for m-, o- and p-xylenes, and has also been adopted by WSP for:

- à 2-chlorophenol, 2,4-dichlorophenol, 2,4,6-trichlorophenol and 2,3,4,6-tetrachlorophenol;
- à 2-, 3- and 4-methylphenol (total cresols);
- à aldrin and dieldrin; and
- à α - and β -endosulphan.

¹⁶ HPA Contaminated Land Information Sheet 'Risk Assessment Approaches for Polycyclic Aromatic Hydrocarbons (PAHs) 2010

EXPOSURE TO VAPOURS

INHALATION OF MEASURED VAPOURS

WSP has derived a set of soil vapour GACs (GAC_{sv}) that allow for the assessment of measured site soil vapour concentrations, using J&E, in order to establish potential risks via indoor inhalation of vapours. This methodology enables a more robust assessment of exposure via the inhalation of soil vapours indoors than using CLEA-derived soil GAC, as it is based upon measured soil vapour concentrations beneath the site. It also allows for the assessment of vapours from all source terms (i.e. groundwater, soil or NAPL). Outdoor inhalation was not included. WSP considers that the indoor inhalation pathway is the significantly dominant risk-driver.

The generic land use scenarios within CLEA (residential and commercial) that were used to derive the soil GAC were used to define the receptor and building characteristics for the soil vapour GAC. Only residential and commercial generic land use scenarios include the indoor inhalation of vapours pathway.

The GAC_{sv} were derived for three different soil types; sand, sandy loam and clay, reflecting the importance of this parameter within the J&E model. A depth to contamination of 0.85 m below the base of the building foundation was assumed (i.e. 1 m below ground level). This differs from the depth assumed for the soil GAC (0.5 m bgl), but was selected by WSP as a reasonable worst case scenario.

It is acknowledged that the J&E commonly over-predicts indoor vapour concentrations. In particular, it will significantly over-predict vapour concentrations for suspended floor slabs, which many new builds are constructed with, it does not take into account lateral migration and assumes an infinite source of contamination at steady state conditions. In addition, it is common for soil gas/vapour wells to be installed with at least 1 m of plain riser at the surface and this equates to a total depth of 0.85 m below the building foundation plus a 0.15 m thick foundation, and so is more representative of the depth that samples will be taken from.

The TDSIs and IDs for each substance were converted from $\mu g kg^{-1} bw day^{-1}$ to $\mu g m^{-3}$ using the standard conversions quoted in Table 3.3 of SR2, thereby replacing the need to model C_{air} in the equation:

$$C_{air} = \alpha \cdot C_{vap} \cdot 1,000,000 cm^3 m^{-3}$$

Where:

C_{air} is the concentration of vapours within the building, $mg m^{-3}$

α is the steady state attenuation coefficient between soil and indoor air, dimensionless

C_{vap} is the soil vapour concentration, $mg cm^{-3}$

The target concentrations within indoor air for each substance (C_{air}) are a function of receptor inhalation rates and occupancy periods, as defined by the site conceptual exposure model (assuming standard CLEA occupancy periods and receptors).

The attenuation factor was calculated using J&E (Equation 10.4 in SR3) and the resulting C_{vap} is equivalent to the GAC_{sv} for the modelled exposure scenario.

Where reported soil vapour concentrations exceed the relevant saturated vapour concentration, free product may occur, and the user should discuss their project with an experienced risk assessor.

INHALATION OF GROUNDWATER-DERIVED VAPOURS

WSP has derived a set of groundwater GACs (GAC_{gw}) to evaluate the potential risks through the indoor inhalation of groundwater-derived vapours by first applying the approach described above for the derivation of the WSP GAC_{sv} to determine the acceptable concentration in soil vapour directly above the water table.

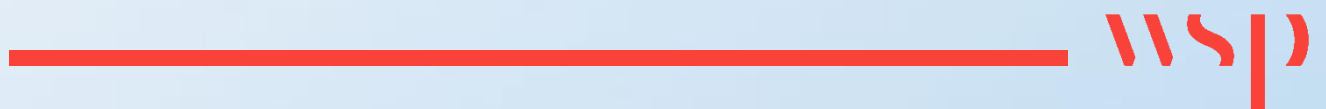
The depth to groundwater was assumed to be 1 m bgl (i.e. 0.85 m below the base of the building foundation). This depth was considered to be more representative of commonly encountered groundwater conditions than the 0.5 m below the base of the building foundation (i.e. 0.65 m bgl) that is used by CLEA for an unsaturated source present in the overlying soil.

The GAC_{gw} was then back-calculated from the GAC_{sv} using the air-water partition coefficient (K_{aw}) for each substance.

The WSP Groundwater Vapour GAC are protective against a dissolved phase contaminant source only. If the presence of NAPL is suspected, the risks from this source will need to be assessed. Where reported groundwater concentrations exceed the relevant solubility limit, free product may occur, and the user should discuss their project with an experienced risk assessor.

Appendix G

CIRIA GUIDANCE



CIRIA C552 RISK ASSESSMENT

The identification of potential pollutant linkages is a key aspect of the evaluation of potentially contaminated land. An approach based on the UK CIRIA 552 report C552 (Contaminated Land Risk Assessment: A Guide to Good Practice, 2001) has been adopted within this report. The assessment considers which source – pathway – receptor pollutant linkages are likely to be plausible and potentially complete, and the potential risk they represent. For each of the pollutant linkages, an estimate of:

- the potential severity (consequence) of the risk, and
- the probability (likelihood) of the risk occurring

has been undertaken to assess the potential risk associated with a complete pollutant linkage.

Table 1 – Classification of consequence (CIRIA C552, 2001)

Classification	Category	Definition	Examples
Severe Short term (acute) risks only	Humans	Short term (acute) risk to human health likely to result in “significant harm” as defined by the Environmental Protection Act 1990, Part 2a	High concentrations of cyanide on the surface of an informal recreation area
	Controlled Waters	Short term risk of pollution of sensitive water resource	Major spillage of contaminants from site into controlled waters
	Property	Catastrophic damage to buildings / property	Explosion causing building collapse
	Ecological Systems	Short term risk to a particular ecosystem or organism forming part of such ecosystem	
Medium Chronic (long term) risks; ‘significant harm’	Humans	Chronic damage to human health (“significant harm” as defined in DEFRA, 2006)	Concentrations of a contaminant from a site exceed the generic or site-specific assessment criteria
	Controlled Waters	Pollution of sensitive water resources	Leaching of contaminants from a site into a Principal or Secondary A aquifer
	Ecological Systems	Significant change in a particular ecosystem or organism forming part of such ecosystem	Death of a species within a designated nature reserve
Mild Chronic (long term) risks; less sensitive receptors	Controlled Waters	Pollution of non-sensitive water resources	Pollution of non-classified surface watercourse
	Property	Significant damage to buildings, structures, crops and services (“significant harm” as defined in DEFRA, 2006) and damage to sensitive buildings / structures and services	Foundation damage to a building rendering it unsafe to occupy due to instability
	Ecological Systems	Damage to the environment	
Minor Chronic (long term) risk; mild	Humans	Non-permanent health effects to human health that are easily prevented by the use of PPE	Presence of contaminants at such concentrations that protective equipment is required during site works
	Property	Easily repairable effects of damage to buildings, structures and services	Discoloration of concrete
	Financial / Project	Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve	

Table 2 – Classification of probability (CIRIA C552, 2001)

Classification	Definition
High likelihood	There is a pollutant linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.
Likely	There is a pollutant linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low likelihood	There is a pollutant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such an event would take place, and is less likely in the shorter term.
Unlikely	There is a pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

Table 3 – Comparison of consequence against probability (CIRIA C552, 2001)

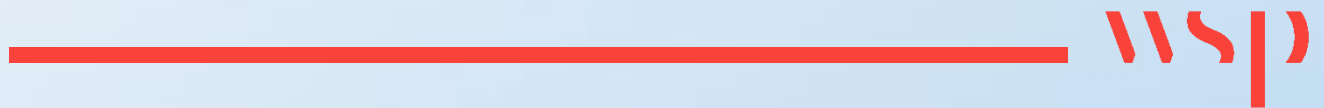
	Severe	Medium	Mild	Minor
High Likelihood	Very High Risk	High Risk	Moderate Risk	Low / Moderate Risk
Likely	High Risk	Moderate Risk	Low to Moderate Risk	Low Risk
Low Likelihood	Moderate Risk	Low / Moderate Risk	Low Risk	Very Low Risk
Unlikely	Low / Moderate Risk	Low Risk	Very Low Risk	Very Low Risk

Table 4 - Risk classification descriptions (CIRIA C552, 2001)

Risk Classification	Definition
Very high risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High risk	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the longer term.
Moderate risk	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not undertaken already) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low risk	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very low risk	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

Appendix H

GEOTECHNICAL RISK REGISTER



Geotechnical risk register

A Geotechnical Risk Register has been prepared for the proposed development at the site following the ground investigation completed and is presented as Table 9-2. This considers geotechnical risks which have been identified following a review of the available information presented in this report. It is recommended the designer maintains a live geotechnical risk register, updated throughout the design process.

The following key geotechnical constraints have been identified with an associated risk rating as follows:

- **Very Low** (very unlikely to affect the development);
- **Low** (unlikely to affect development but cannot be entirely ruled out; further assessment required);
- **Moderate** (likely to affect the development with moderate impact to programme or cost and further assessment required and);
- **High** (expected to affect the development with significant impact - further assessment required during design and contingency should be made for mitigation during construction stage)



Table 0-1 – Geotechnical Risk Register

Hazard	Cause	Consequence	Perceived Level of Risk Without Control	Control Adopted	Perceived Level of Risk After Control	Risk Ownership
Unforeseen / poor ground conditions	Ground conditions differ from those assumed within the design	Delays on site Possible re-design of foundations Financial implications	High	Intrusive investigation has been undertaken to inform the ground model and facilitate design. Note: ground investigation only samples a limited amount of ground and conditions may exist between exploratory holes that are not identified by the ground investigation and cannot be anticipated from interpretation of the available data. As such, the risk of unforeseen ground conditions cannot be entirely mitigated. Additional ground investigation could be undertaken to further reduce the risk.	Low	Client Designer
Poor performance of foundations	Inadequate design. Inappropriate inspection of foundation excavations Inappropriate remediation of areas of poor ground.	Delays on site Possible re-design of foundations and floor slabs Financial implications	High	Foundations to be designed by a competent engineer, taking into account the prevailing ground conditions and changes in ground level. The soils at founding level shall be inspected and tested on site by a competent engineer to ensure that the foundations will bear within competent ground. Any localised soft areas shall be removed and replaced with well compacted granular fill if identified.	Low	Designer Contractor
Inability to install foundations, services and other below	Obstructions	Delays on site Possible re-design of affected elements.	Moderate	Implement appropriate strategy for dealing with obstructions, including accurate surveying of any features that cannot be removed. Early identification of where obstructions may clash with substructures.	Low	Contractor

Hazard	Cause	Consequence	Perceived Level of Risk Without Control	Control Adopted	Perceived Level of Risk After Control	Risk Ownership
ground construction		Financial implications.		Recognise potential for boulders to be present within the Made Ground and natural strata. Use of appropriate plant and equipment.		
Excessive groundwater ingress into excavations	Excavations encountering groundwater table	Delays to programme Health & Safety implications	Moderate	Allowance to be made for dewatering during excavations if required for excavation works. Dewatering works to be assessed and designed by a competent specialist contractor.	Low	Contractor
Collapse of excavations	Inappropriate ground support	Delays to programme Damage to third party assets Health & Safety implications	Moderate	Temporary works to be designed by a specialist. Works to be appropriately designed to take into account ground stability, groundwater level and loading.	Low	Contractor
Poor performance of external areas	Inadequate design Inadequate formation preparation	Remedial works required Financial implications	Moderate	In situ testing to confirm CBR for design. Design to be undertaken by a competent engineer. If required, preparation of an earthworks specification to support level changes. Adequate formation preparation during construction.	Low	Designer Contractor



Hazard	Cause	Consequence	Perceived Level of Risk Without Control	Control Adopted	Perceived Level of Risk After Control	Risk Ownership
Damage to services	Inappropriate buried services assessment	Delays Health and safety issues Financial / legal implications	High	Undertake appropriate services search and undertake diversion/disconnection where necessary.	Low	Contractor
Degradation of below ground concrete	Inappropriate concrete assessment	Remedial works required Financial implications	Moderate	Ground investigation completed to assess concrete class, and all works to be designed accordingly.	Low	Designer
Encountering Unexploded Ordnance (UXO)	Inappropriate UXO assessment	Health and safety issues Delays Financial / legal implications	Moderate	UXO mapping records this area to be of low risk in regard to unexploded ordnance on available regional mapping.	Low	Contractor



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