Welsh Water

Wrexham – Wynnstay Avenue

Hydrogeological Impact Assessment

4391_S_240-ARP-01-BG-RP-GE-10003

Issue | 18 December 2019

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It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 241513

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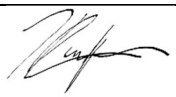
		Signature			
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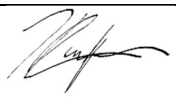
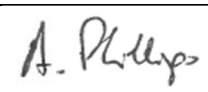
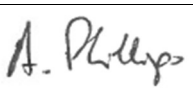
		Signature			
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1 Introduction

1.1 Purpose of this Report

This report presents a Hydrogeological Impact Assessment (HIA) of temporary construction dewatering activities required for the Wrexham – Wynnstay Avenue storage tank, this is furthermore known in this report as "The Site".

'Water Abstraction and Impounding (Exemptions) Regulations 2017' requires that certain temporary construction dewatering activities in England and Wales require an abstraction licence. This report presents hydrogeological context of the Site to assess whether an abstraction license is required.

This report outlines a conceptual hydrogeological model of the construction site, summarises the findings of additional ground investigation, considers the potential connection and risk of impact on nearby sensitive environmental receptors. The conceptual model has then been used to inform a Tier-1 HIA following NRW guidelines[1].

1.2 Legislative Background

The introduction of the 'Water Abstraction and Impounding (Exemptions) Regulations 2017' in England and Wales has introduced the need to licence temporary construction dewatering activities in certain situations.

All large-scale groundwater abstractions required for construction dewatering, as of January 2018, require a licence to carry out these operations. These regulations have been brought into motion to help create a fairer system for all abstractors as well as enable the Regulator to manage water resources more effectively.

The new regulations are cited as the 'Water Abstraction and Impounding (Exemptions) Regulations 2017'[2]. Under Part 2, Section 5 (entitled 'Small scale dewatering in the course of building or engineering works') of these Regulations, the following exemptions to groundwater abstraction licencing are identified:

"Small scale dewatering in the course of building or engineering works"

5.(1) The restriction on abstraction does not apply to an abstraction or series of abstractions of water carried out in the course of building or engineering works for the purpose of dewatering from a sump or excavation if:

> *(a) the abstraction or series of abstractions are temporary and, in any event, carried out over a period of less than six consecutive months beginning with commencement of the first abstraction;*
>
> *(b) each abstraction does not cause or is not likely to cause damage to a conservation site or specific features in such a site;*
>
> *(c) each abstraction does not cause or is not likely to cause damage to protected species; and,*
>
> *(d) either:*

(i) the water abstracted is immediately discharged to a soakaway; or,

(ii) the volume of water abstracted is less than 100 cubic metres of water per day and there is no intervening use of that water before discharge.

5.(2) Where the abstraction is undertaken within 500 metres of a conservation site or within 250 metres of a spring, well or borehole used to supply water for any lawful use, paragraph (1)(d)(ii) applies in respect of that abstraction as if the reference to 100 cubic metres of water per day were a reference to 50 cubic metres of water per day."

All of these provisions listed above must be satisfied to qualify for an abstraction licence exemption. All abstractions less than 20 m^3/d, for whatever use, will still (as of April 2005) not need to undergo an application for an abstraction licence.

1.3 Description of Proposed Construction Activities

The proposed works at Wrexham includes a 1500 m^3 underground storage tank and gravity fed sewerage lines that will connect into the existing sewage network. It is anticipated that the excavation for the storage tank will intercept the superficial deposits aquifer and require dewatering during construction. The approximate storage tank excavation dimensions are 50 m (long) x 40 m (wide) x 4.8 m (depth below ground level).

The proposed dewatering activities, including construction phases of excavation and installation will be temporary. The dewatering design and programme is currently in development by the Contractor.

1.4 Need for an Abstraction Licence

It is anticipated that an abstraction licence will be required to permit dewatering at the Site. The estimated daily abstraction rate is approximately 132 m^3/d (1.5 l/s), which exceeds the 100 m^3/d threshold as cited in the regulations. However, during wetter periods the abstraction rate could be up to 159 m m^3/d (1.8 l/s), so an abstraction licence is recommended.

NRW have stated that an application for an abstraction licence must be accompanied by a HIA. The HIA methodology is described in 'Hydrogeological Impact Appraisal for dewatering abstractions'[1]. The HIA methodology is composed of a series of 14 steps as follows:

1. Establish the regional water resource – see Section 2;
2. Develop a conceptual model for the dewatering operation and the surrounding area – see Section 3;
3. Identify all potential water features which are susceptible to flow impacts – see Section 4.1;
4. Apportion the likely flow impacts to the water features – see section 4.2;

5. Mitigate the flow impacts – see Section 4.3;
6. Assess the significance of the net flow impacts – see Section 4.4;
7. Define the search area for drawdown impacts – see Section 5.1;
8. Identify all potential water features which could be impacted by drawdown – see Section 5.2;
9. Predict the likely drawdown impacts – see Section 5.3;
10. Mitigate the drawdown impacts – see Section 5.4;
11. Assess the significance of net drawdown impacts – see Section 5.5;
12. Assess the water quality impacts – see Section 6;
13. Redesign the mitigation measures to minimise flow and drawdown impacts – see Section 7;
14. Develop a monitoring strategy – see Section 8.

2 Regional Water Resource Status

The Site is located within the River Dee surface water catchment. No further surface water resources in the catchment are available for abstraction within the catchment[3]. Groundwater resources in the site area have not been assessed for availability according to the 'Dee Catchment Abstraction Management Strategy 2015'[3].

3 Development of the Conceptual Model

3.1 Site Location and Topography

The Site is located approximately 1 km northeast from the centre of Wrexham (approximate grid reference SJ346506) within North Wales. The proposed dewatering activities will take place at the storage tank location, as shown in the site plan in **Figure 1**.

The site is located in a shallow valley feature that gently slopes towards the River Gwenfro to the south. The ground level elevation at the storage tank location is approximately 72 mAOD.

3.2 Published Geology

3.2.1 Geology

The mapped geological conditions[4][5] for the site are presented in **Table 1**.

Table 1: Mapped geological conditions

Geological Formation	Period	Aquifer Designation[6][7]	Material Description
Superficial Geology			
Made ground (fine grained)	Recent	N/A	Made ground is anticipated to be encountered due to the construction of the residential properties and infrastructure[9].
Alluvium	Quaternary	Secondary A	Comprises clay, silt sand and gravel.
Glaciofluvial deposits	Quaternary	Secondary A	Comprises sand and gravel.
Bedrock Geology			
Salop Formation (Warwickshire Group)	Carboniferous	Secondary A	Includes mudstone, sandstone containing beds of pebbly sandstone and conglomerate containing limestone and chert clasts and thin *Spirobis* limestone beds and caliche in the lower part of the unit[4].

3.2.2 Structural geology

The structural features mapped[8] in the vicinity of the site include inferred faults striking north-south and spaced at approximately 1200 m. One inferred fault is approximately 400 m north of the storage tank.

Previous mine workings in the area include two sand pits approximately 265 m northwest and 475 m west of the storage tank.

3.3 Ground Investigation

3.3.1 Completed investigations

One phase of ground investigation has been undertaken between 8 January 2019 and 10 January 2019 to inform the design of the Wrexham – Wynnestay Avenue storage tanks. A total of two cable percussion boreholes were excavated. BH1 and BH2 are located approximately 30 m and 260 m north of the proposed storage tank location. These boreholes were located at tank locations proposed during earlier stages of the project.

A second phase of ground investigation has been undertaken between 7 October 2019 and 19 October 2019 to further investigate the ground conditions along the

proposed pipeline route and underground storage tank. A total of 18 trial pits were excavated – of which 5 were considered. TP11 is approximately 30 m north east of the proposed storage tank location, whilst TP14, TP15 and TP16 are approximately 10 m, 20 m and 35 m south west of the proposed storage tank respectively. TP13 is situated at the proposed underground storage tank location.

Table 2 below summarises the exploratory hole depths and the methods used. **Figure 1** shows the location of these ground investigation boreholes and the ground investigation report in **Appendix A** shows the location of test pits.

Table 2: Ground investigation schedule in vicinity of the Site

Location	GI Phase	Grid Reference	Ground level (mAOD)	Overall depth (m)	Excavation method
BH1	1	Not provided	Not provided	10.20	0 – 1.2m hand dug 1.2 – 10.2m cable percussion
BH2	1	Not provided	Not provided	10.15	0 – 1.2m hand dug 1.2 – 10.15m cable percussion
TP11	2	E: 334687.9 N: 350664.8	70.74	3.50	0 – 3.5m machine excavated
TP13	2	E: 334664.0 N: 350625.8	71.07	3.75	0 – 3.75m machine excavated
TP14	2	E: 334653.4 N: 350598.2	71.11	3.50	0 – 3.5m machine excavated
TP15	2	E: 334629.5 N: 350599.6	71.50	3.90	0 – 3.9m machine excavated
TP16	2	E: 334613.1 N: 350599.0	71.69	1.20	0 – 1.2m machine excavated

The encountered ground conditions in the vicinity of the Site are provided below in **Table 3**. The made ground comprised clayey SAND, gravelly SAND and clayey gravelly SAND. Both the alluvium and glaciofluvial deposits comprised slightly gravelly, slightly silty fine to coarse SAND other than in one trial pit in which alluvial clay was observed.

Table 3: Summary of encountered ground conditions in vicinity of the Site

Location	Made ground base (m)	Alluvium base (m)	Glaciofluvial deposits base (m)	Groundwater strikes during investigation
BH1	2.9	> 10.2	-	2.7m and rose to 2.4m
BH2	2.9	-	> 10.15	3.0m and rose to 1.0m
TP11	> 3.5	-	-	2.4
TP13	> 3.75	-	-	2.4
TP14	> 3.5	-	-	2.4
TP15	2.0	> 3.9	-	3.8
TP16	> 1.2	-	-	-

Due to the similar particle size distribution of the made ground in TP11, TP13, TP14, TP15, TP16 and the alluvium and glaciofluvial deposits in BH1 and BH2, it is expected that the hydraulic response of these units will also be similar. Alluvial clay was only found in TP15 and is not expected to be laterally extensive. For this assessment the alluvium and glaciofluvial deposits will be combined and referred to as the superficial deposits.

3.4 Groundwater

Groundwater strikes during borehole drilling were encountered at 2.7m and 3.0 m depth and between 2.4m and 3.8m during trial pit excavation. The groundwater strikes were around the interface of cohesive made ground over granular superficial deposits where confining clay is present. In the absence of overlying clays confining the underlying strata, as observed in the trial pits, the groundwater strikes were typically observed within made ground, other than TP15 where it was observed within alluvial clay. It is anticipated that the superficial deposits are the main water bearing unit that the excavation is likely to interact with. The results of the groundwater monitoring are presented in **Table 4**.

Table 4: Summary groundwater monitoring

Location	Installed response zone (m)	Geological unit monitored	16/01/2019	31/01/2019	26/02/2019
BH1	3.0 – 6.5	Superficial deposits (alluvium)	1.55 mbgl	1.53 mbgl	1.51 mbgl

Location	Installed response zone (m)	Geological unit monitored	16/01/2019	31/01/2019	26/02/2019
BH2	3.0 – 6.5	Superficial deposits (glaciofluvial deposits)	1.41 mbgl	1.33 mbgl	1.37 mbgl

In-situ variable head testing and analysis was completed by the ground investigation contractor, SOCOTEC. Falling head tests were conducted in BH1 and BH2 during drilling, however these tests failed to show a response. Variable head testing was completed in the piezometers on the 14th February 2019. The tests achieved full head recovery within 6 minutes or less. These hydraulic responses are considered to be representative of the superficial deposits encountered in the boreholes. The results of SOCOTEC's variable head testing analysis are presented in Appendix B. Note, SOCOTEC's analysis does not consider the hydraulic gradient to 37% head recovery as per BS22282-2: 2012. SOCOTEC's analysis considers the hydraulic gradient to 100% head recovery.

The hydraulic conductivity has been calculated using the results of the final rising head test completed in the second round of testing by SOCOTEC and applying the hydraulic gradient up to 37% head recovery. For this assessment, a hydraulic conductivity of $5.7x10^{-6}$ m/s has been adopted for the superficial deposits.

The made ground observed in the trial pits is similar in composition to the superficial deposits and it is anticipated that the bulk hydraulic conductivity of the typically coarse-grained made ground will be similar to the underlying coarse-grained superficial deposits. Therefore, a hydraulic conductivity of $5.7x10^{-6}$ m/s has been applied to the made ground in addition to the superficial deposits.

3.5 Conceptual Model

The superficial deposits are anticipated to be the main water-bearing aquifer. Recharge of the superficial aquifer is assumed to be from direct rainfall recharge or via infiltration through made ground particularly adjacent to the site and to the north and east where grassed areas are used for agriculture and parks/playing fields.

The River Gwenfro, approximately 680 m south of the site, is expected to be in hydraulic connection with groundwater in the superficial deposits and groundwater flow paths in the local area are generally towards the river.

The connection between the superficial deposits with the Salop Formation is unknown, though the bedrock is expected to have some connection to permeable superficial deposits in the region.

A figurative conceptual model is shown in **Figure 2**.

3.6 Short-term Construction Activities Associated with Removal of Groundwater

The proposed construction programme at the Site includes phases of underground works. Dewatering will be required for the construction of the new storage tank. The dewatering programme will be temporary, with a scheduled duration yet to be determined as the dewatering design is currently being developed. The location of the proposed works is provided in more detail on **Figure 1**.

4 Flow Impacts

4.1 Water Features Susceptible to Flow Impacts

The following features have been considered as part of a desk study to determine all water-dependent receptors that have potential to be affected by flow impacts:

- **Conservation sites:**

  There are no known conservation sites within 500 m of the excavation[11].

- **Surface watercourses:**

  There are no known surface watercourses within 500 m of the excavation[11].

- **Local springs:** A desk-based assessment of water features indicates that there are no known springs within 500m of the excavation[11].

- **Local licensed and unlicensed abstractions:** There are no known groundwater abstractions within 500 m of the excavation[10].

4.2 Apportioning of the Flow Impacts

It is not considered necessary to apportion possible flow impacts because no receptors are deemed to be impacted.

4.3 Mitigation of Flow Impacts

No mitigation is deemed necessary.

4.4 Significance of Net Flow Impacts

No significant flow impacts anticipated.

5 Drawdown Impacts

5.1 Search Area for Drawdown Impacts

The radius of influence was calculated using the analytical equation proposed by Marinelli and Niccoli[12]. The drawdown impacts and resultant abstraction rates have been assessed for estimated average summer and winter recharge conditions. The results are presented in **Table 5** and provided in **Appendix B**.

Table 5: Range of radius of influences calculated

Scenario	Recharge rate, P (m/day)	Hydraulic Conductivity, K (m/s)	Radius of Influence, Ro (m)	Abstraction rate, Q (m^3/day)
Summer	0.0014	$5.7x10^{-6}$	85	132
Winter	0.0027	$5.7x10^{-6}$	69	159

5.2 Water Features Susceptible to Drawdown Impacts

The following features have been considered as part of a desk study to determine all water-dependent receptors that have potential to be affected by drawdown impacts:

- **Conservation sites:** There are no known conservation sites within the radius of influence of the dewatering works[11].
- **Surface watercourses:** There are no known rivers or surface water features within the radius of influence of the dewatering works[11].
- **Local springs:** A desk-based assessment of water features indicates that there are no known springs within the radius of influence[11].
- **Local licensed and unlicensed abstractions:** There are no known groundwater abstractions within the radius of influence of the dewatering works[4].

5.3 Prediction of Maximum Drawdown Impacts

The maximum radius of influence from the excavation is anticipated to be 85 m, as estimated from Marinelli and Niccoli[12] using variable head testing results. There are no known receptors within 500 m of the dewatering works.

5.4 Mitigation of Drawdown Impacts

No mitigation is deemed necessary.

5.5 Significance of Drawdown Impacts

No significant drawdown impacts anticipated.

6 Water Quality Impacts

The contractor will adhere to the conditions of the Environmental Permit (temporary discharge consent) to ensure that the rate and quality of any discharge does not cause adverse effects to the wider environment. The method of treatment will be explained in detail in the Construction Environmental Management plan (CEMP) to be produced prior to any activities on site. Contamination of water bodies should be prevented by best practice (following Guidance for Pollution Prevention[12]).

The dewatering design and discharge solution is currently under development, however it is anticipated that a well point system may be used. Should the contractor use a well-point system, the following is recommended:

- A settlement tank should be used to allow settling in the abstracted water and reduce levels of silt that might be released to the environment.
- Use of a 2mm-5mm silica filter pack within each wellpoint, to act as an additional treatment barrier, filtering the groundwater prior to it reaching the surface.

7 Redesign Mitigation Methods

Currently the dewatering design and discharge solution is being developed and it is understood a well point solution is likely. The design is being developed by the Contractor in consultation with Arup.

A second phase of ground investigations is being planned to commence in September 2019. The purpose of this second phase of investigation is to supplement the previous investigation by providing more detailed ground conditions along the proposed sewer alignment and the proposed storage tank location. The results of this investigation will be reviewed in conjunction with this HIA to inform the dewatering design.

8 Monitoring and Reporting Plan

Regular monitoring of abstraction volumes should be undertaken throughout the duration of the dewatering works. The discharge quality should also be monitored visually to check that quality and turbidity is suitable for discharge.

9 Conclusions

This report presents an HIA that follows the methodology outlined in NRW guidelines. The assessment concludes that a temporary abstraction licence will be

required for the proposed construction dewatering activities at Wrexham – Wynnstay Avenue. This is because the estimated abstraction volume is marginal relative to the 100 m^3/d criteria and is likely to exceed this if dewatering activities occur during wetter periods of the year. The 100 m^3/d criteria is the maximum permitted abstraction volume when water is not discharged to soakaway.

The assessment has reviewed all possible impacts to any local water features and concluded there are none.

In addition, no changes to the existing hydrological regime are anticipated post-construction as a result of the construction works.

Further ground investigation works are proposed, and the results will be reviewed in conjunction with this HIA for dewatering design.

10 References

[1] Environment Agency, 2007. Hydrogeological impact appraisal for dewatering abstractions. Science Report - SC040020/SR1

[2] The Water Abstraction and Impounding (Exemptions) Regulations 2017. 2017 No. 1044, PART 2, Regulation 5. https://www.legislation.gov.uk/uksi/2017/1044/regulation/5/made Accessed 29/20/2018

[3] Dee Catchment Abstraction Management Strategy. 2015. https://cdn.naturalresources.wales/media/674759/dee_cams_2015_english.pdf?mode=pad&rnd=131596369480000000. Accessed 29/03/2019

[4] British Geological Survey, Bedrock Geology 1:50,000 scale map, http://mapapps2.bgs.ac.uk/geoindex/home.html. Accessed 20/3/19

[5] British Geological Survey, Superficial Deposits Geology 1:50,000 scale map, http://mapapps2.bgs.ac.uk/geoindex/home.html. Accessed 20/3/19

[6] British Geological Survey, Aquifer Designation Wales: Bedrock Geology 1:50,000 scale map, http://mapapps2.bgs.ac.uk/geoindex/home.html. Accessed 20/3/19

[7] British Geological Survey, Aquifer Designation Wales: Superficial Deposits 1:50,000 scale map, http://mapapps2.bgs.ac.uk/geoindex/home.html. Accessed 20/3/19

[8] British Geological Survey, Linear Features 1:50,000 scale map, http://mapapps2.bgs.ac.uk/geoindex/home.html. Accessed 20/3/19

[9] Arup, July 2018, Part 1: Preliminary Review of Features / Constraints, Doc. No. 4391_S_240-ARP-XX-BG-RP-GE-10001-S2-P1

[10] British Geological Survey https://www.bgs.ac.uk/research/groundwater/datainfo/hydromaps/hydro_maps_scanviewer.html. Accessed 12/11/2018

[11] Magicmap. http://magic.defra.gov.uk/MagicMap.aspx. Accessed 02/04/2019

[12] Marinelli, F. and Niccoli, W.L., 2000*, Simple Analytical Equations for Estimating Ground Water Infow to a Mine Pit*, Ground Water, Vol. 38, No. 2.

[13] Guidance for Pollution Prevention http://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/. Accessed 30/05/2018

Figures

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334000 334500 335000

351000 350500 350000

SPRING LODGE SAND PIT- on historical map 1892-1914. Next available map 1944 in which the old sand pit is no longer shown and area has been developed on. No record of what the sand pit has been backfilled with.

BEACONSFIELD SAND PIT- on historical map 1892-1914. Next available map 1944 in which the old sand pit is no longer shown and area has been developed on. No record of what the sand pit has been backfilled with.

BH2

BH1

Storage tank

HISTORIC LANDFILL- THE DUNKS
In use 1960-1980
Combination of inert, industrial, commercial, household and special waste

The Dunks

The Dunks No.2

River Gwenfro

Bala Road

SJ35SW762

SJ35SW761 SJ35SW760 SJ35SW759 SJ35SW758 SJ35SW757 SJ35SW756 SJ35SW755 SJ35SW754 SJ35SW753

SJ35SW862

SJ35SW854 SJ35SW855 SJ35SW853 SJ35SW859 SJ35SW856 SJ35SW861 SJ35SW858 SJ35SW857 SJ35SW860

BGS Borehole scan SJ35SW762 (Approximately 450m southeast of site)
0-0.5m: sandy, clayey topsoil
0.5-1.9m: made ground with medium sand and fine gravel
1.9-2.3m: made ground with fine to medium sand
2.3-3.3m: soft, clayey sandy silt
3.3-4.5m: fine sand with gravel of up to 50mm
4.5-6m: very silty fine sand

BGS Borehole scan SJ35SW862 (Approximately 600m southwest of site)
0-3.5m: brick, soil and ash filling 3.5-4m: peat
4-9.6m: sand and gravel

LEGEND

- PROPOSED TANK OPTION
- HISTORICAL LANDFILL
- HISTORICAL BGS BOREHOLE SCAN
- HISTORICAL SAND PIT
- DCWW SEWER NETWORK
- INDICATIVE GI LOCATION

BGS Superficial Geology

- Alluvium consisting of clay, silt, sand and gravel
- Glaciofluvial sheet deposits comprised of sand and gravel

Issue	Date	By	Chkd	Appd
P0	06/09/19	TR	LB	AP

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Client
DCWW

Dŵr Cymru Welsh Water

Job Title

Wrexham (Wynnstay Avenue) Site plan

Scale at A3
1:5,000

Job No	Drawing Status
241513	**Preliminary**

Drawing No	Issue
Figure 1	**P0**

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Template A3: Version 2

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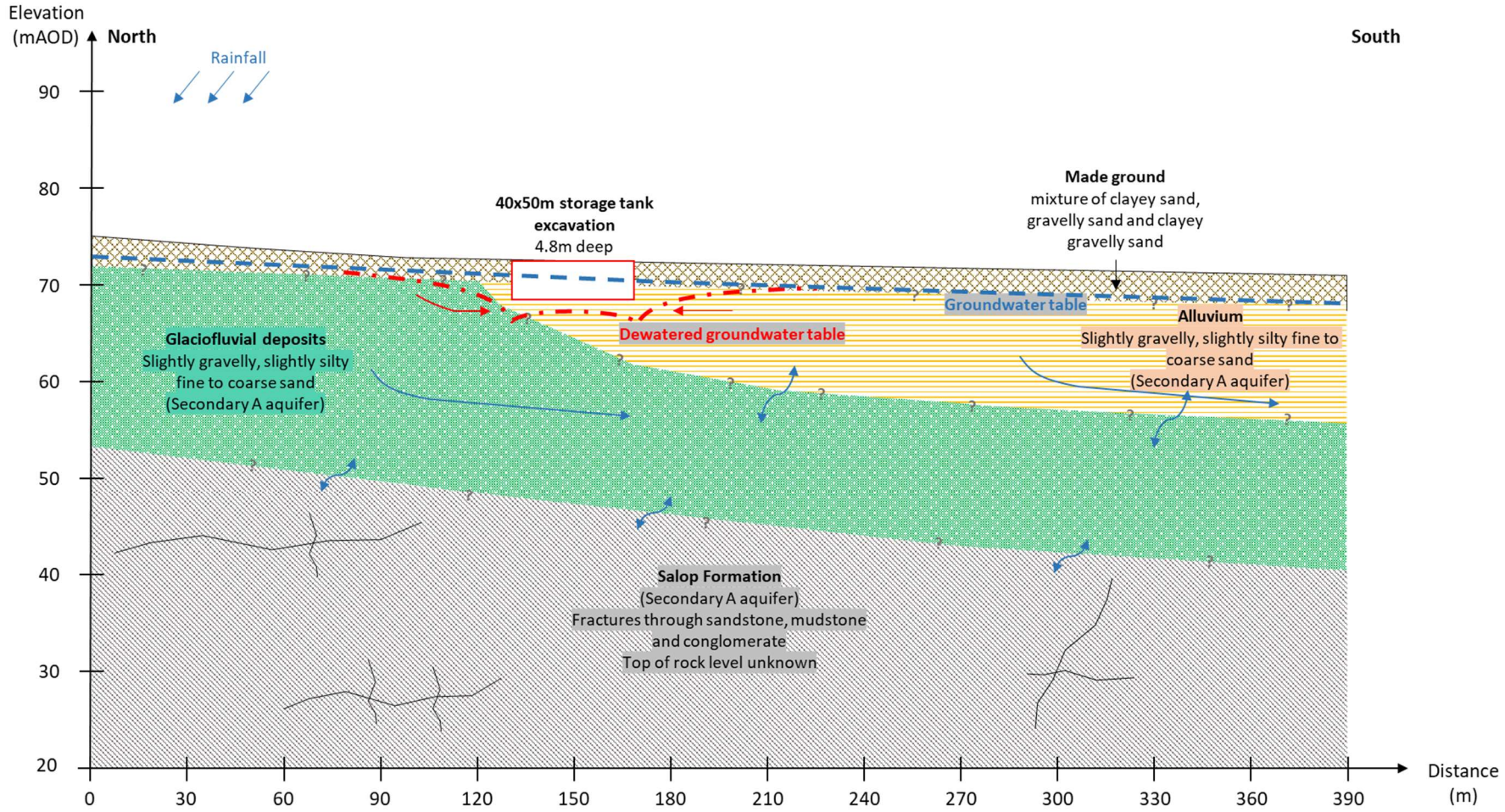
Figure 2: Conceptual site model of the proposed dewatering works



Appendices

Appendix A

Ground Investigation Data

Borehole Log

SOCOTEC

Drilled	DD	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	70.59 mOD
Logged	JP	09/01/2019	Dando 3000	0.00	2.70	200	2.70	**Coordinates (m)**	E 334692.47
Checked	RF	**End**	Hand dug inspection pit to 1.20m. Cable percussion boring to 10.20m.	2.70	10.20	150	9.70	**National Grid**	N 350675.91
Approved	RF	10/01/2019							

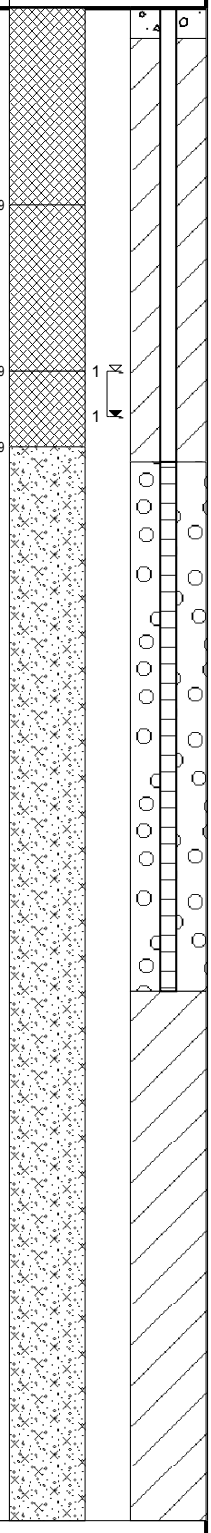
Samples and Tests

Depth	Type & No.	Records	Date / Casing	Time / Water
0.10	D 1			
0.20	ES 2			
0.50	ES 3			
0.50 - 1.00	B 4			
1.00	ES 5			
1.00	D 6			
1.20 - 1.65	SPTS	N=2 (1,0/1,0,1,0)	1.20	Dry
1.20	D 7			
1.20 - 1.70	B 8			
2.00	ES 10			
2.00	D 9			
2.20 - 2.65	SPTS	N=11 (1,2/3,3,3,2)	2.20	Dry
2.20	D 11			
2.20 - 2.70	B 12			
			09/01/19	1800
			2.70	2.40
			10/01/19	0645
			2.70	1.10
3.00	ES 14			
3.00	D 13			
3.20 - 3.65	SPTS	N=8 (2,2/3,2,2,1)	3.20	2.10
3.20	D 0			
3.20 - 3.70	B 15			
4.00	ES 17			
4.00	D 16			
4.20 - 4.65	SPTS	N=6 (3,2/2,2,1,1)	4.20	2.70
4.20	D 18			
4.20 - 4.70	B 19			
5.00	KFH	k=2.4E-7 m/s		
5.00	D 20			
5.20 - 5.65	SPTS	N=5 (2,1/1,2,1,1)	5.20	3.30
5.20	D 21			
5.20 - 5.70	B 22			
6.00	D 23			
6.70 - 7.15	SPTS	N=5 (1,1/1,1,2,1)	6.70	4.40
6.70	D 24			
6.70 - 7.20	B 25			
7.50	D 26			
8.20 - 8.65	SPTS	N=5 (1,1/1,1,2,1)	8.20	5.30
8.20	D 27			
8.20 - 8.70	B 28			
9.00	D 29			
9.70 - 10.15	SPTS	N=4 (2,2/1,1,1,1)	9.70	6.10
9.70	D 30			
			10/01/19	1800
			0.00	Dry

Strata Description

Main	Detail	Depth, Level (Thickness)
MADE GROUND: Dark brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to coarse of various lithologies including brick, concrete, plastic and sandstone.		(1.30)
MADE GROUND: Soft dark brown slightly gravelly sandy CLAY.		1.30 +69.29 (1.10)
Grey sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of various lithologies including sandstone and quartzite. (Possible MADE GROUND)		2.40 +68.19 (0.50)
Loose brown slightly gravelly slightly silty SAND. (ALLUVIUM)	9.00-10.20 Becomes silty.	2.90 +67.69 (7.30)

Legend / Backfill



Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)
1	2.70	Rose to 2.40 m after 20 minutes. Slow inflow	2.70

Depth Related Remarks

Depths (m)	Remarks
1.20 - 10.20	SPT Hammer ID: TH50 ER= 61%

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Scale 1:50

08/03/2019 14:24:20

Project WYNNSTAY AVENUE, WREXHAM

Project No. F8054-18

Carried out for Morgan Sindall

Borehole BH1

Borehole Log

SOCOTEC

Drilled	DD	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	70.59 mOD
Logged	JP	09/01/2019	Dando 3000	0.00	2.70	200	2.70	**Coordinates (m)**	E 334692.47
Checked	RF	**End**	Hand dug inspection pit to 1.20m. Cable percussion boring to 10.20m.	2.70	10.20	150	9.70	**National Grid**	N 350675.91
Approved	RF	10/01/2019							

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
					Loose brown slightly gravelly slightly silty SAND. (ALLUVIUM)		10.20 +60.39		
					END OF EXPLORATORY HOLE				

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Scale 1:50

08/03/2019 14:24:20

Project WYNNSTAY AVENUE, WREXHAM

Project No. F8054-18

Carried out for Morgan Sindall

Borehole BH1

Borehole Log

SOCOTEC

Drilled	DD	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	73.46 mOD
Logged	JP	08/01/2019	Dando 3000	0.00	2.00	200	2.00	**Coordinates (m)**	E 334736.72
Checked	RF	**End**	Hand dug inspection pit to 1.20m. Cable percussion boring to 10.15m.	2.00	10.15	150	9.70	**National Grid**	N 350973.57
Approved	RF	09/01/2019							

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date / Casing	Time / Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
0.10	D 1				MADE GROUND: Brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine and medium of various lithologies including sandstone.		(0.40)		
0.20	ES 2						0.40 +73.06		
0.40	D 3				MADE GROUND: Dark brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine and medium of various lithologies including sandstone.		(0.80)		
0.50	ES 4								
0.50 - 1.00	B 5								
1.00	ES 6								
1.20 - 1.65	UT 7	31 blows 100% rec	1.20	Dry	Soft grey mottled brown slightly gravelly sandy CLAY with a slight black staining. Gravel is subangular to subrounded fine to coarse of various lithologies including sandstone and mudstone. (Possible MADE GROUND)		1.20 +72.26		
1.70	D 8						(1.70)		
2.00	ES 9								
2.20 - 2.65	SPTS	N=8 (1,1/2,2,2,2)	2.20	Dry					
2.20 - 2.65	D 10								
2.20 - 2.70	B 11								
2.90	D 12				Medium dense grey mottled brown gravelly clayey fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of various lithologies including sandstone, mudstone and quartzite. (GLACIOFLUVIAL SHEET DEPOSITS)		2.90 +70.56		
3.00	ES 13								
3.20 - 3.65	SPTS	N=10 (1,2/2,2,3,3)	3.20	Damp					
3.20 - 3.65	D 14								
3.20 - 3.70	B 15						(1.10)		
4.00	KFH	k=7.2E-7 m/s							
4.00	D 16						4.00 +69.46		
4.20 - 4.65	SPTS	N=2 (1,0/1,1,0,0)	4.20	0.50	Very loose and loose grey mottled brown slightly gravelly slightly silty fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of various lithologies including sandstone, mudstone and quartzite. (GLACIOFLUVIAL SHEET DEPOSITS)				
4.20 - 4.65	D 17								
4.20 - 4.70	B 18								
			08/01/19	1800					
			5.00	3.30					
5.00	D 19								
			09/01/19	0650					
5.20 - 5.65	SPTS	N=5 (1,1/1,1,1,2)	5.00	1.60					
5.20 - 5.70	B 20		5.20	1.80					
6.00	D 21						(4.40)		
6.70 - 7.15	SPTS	N=2 (1,1/1,0,1,0)	6.70	2.90					
6.70 - 7.20	B 22								
7.50	D 23								
8.20 - 8.65	SPTS	N=5 (1,1/1,1,1,2)	8.20	4.70					
8.20 - 8.65	D 24								
8.20 - 8.70	B 25				Loose grey mottled brown slightly gravelly silty fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of various lithologies including sandstone, mudstone and quartzite. (GLACIOFLUVIAL SHEET DEPOSITS)		8.40 +65.06		
9.00	D 26						(1.75)		
9.70 - 10.15	SPTS	N=8 (2,2/2,2,2,2)	9.70	5.30					
9.70 - 10.15	D 27								
			09/01/19	1230					
			9.70						

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)
1	3.00	Rose to 1.00 m after 20 minutes. Medium inflow	3.00

Depth Related Remarks

Depths (m)	Remarks
1.20 - 10.15	SPT Hammer ID: TH50 ER= 61%

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Scale 1:50

08/03/2019 14:24:21

Project WYNNSTAY AVENUE, WREXHAM

Project No. F8054-18

Carried out for Morgan Sindall

Borehole BH2

Borehole Log

SOCOTEC

Drilled	DD	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	73.46 mOD
Logged	JP	08/01/2019	Dando 3000	0.00	2.00	200	2.00	**Coordinates (m)**	E 334736.72
Checked	RF	**End**	Hand dug inspection pit to 1.20m. Cable percussion boring to 10.15m.	2.00	10.15	150	9.70	**National Grid**	N 350973.57
Approved	RF	09/01/2019							

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
					Loose grey mottled brown slightly gravelly silty fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of various lithologies including sandstone, mudstone and quartzite. (GLACIOFLUVIAL SHEET DEPOSITS)		10.15 +63.31		
					END OF EXPLORATORY HOLE				

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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AGS

Scale 1:50

08/03/2019 14:24:21

Project WYNNSTAY AVENUE, WREXHAM

Project No. F8054-18

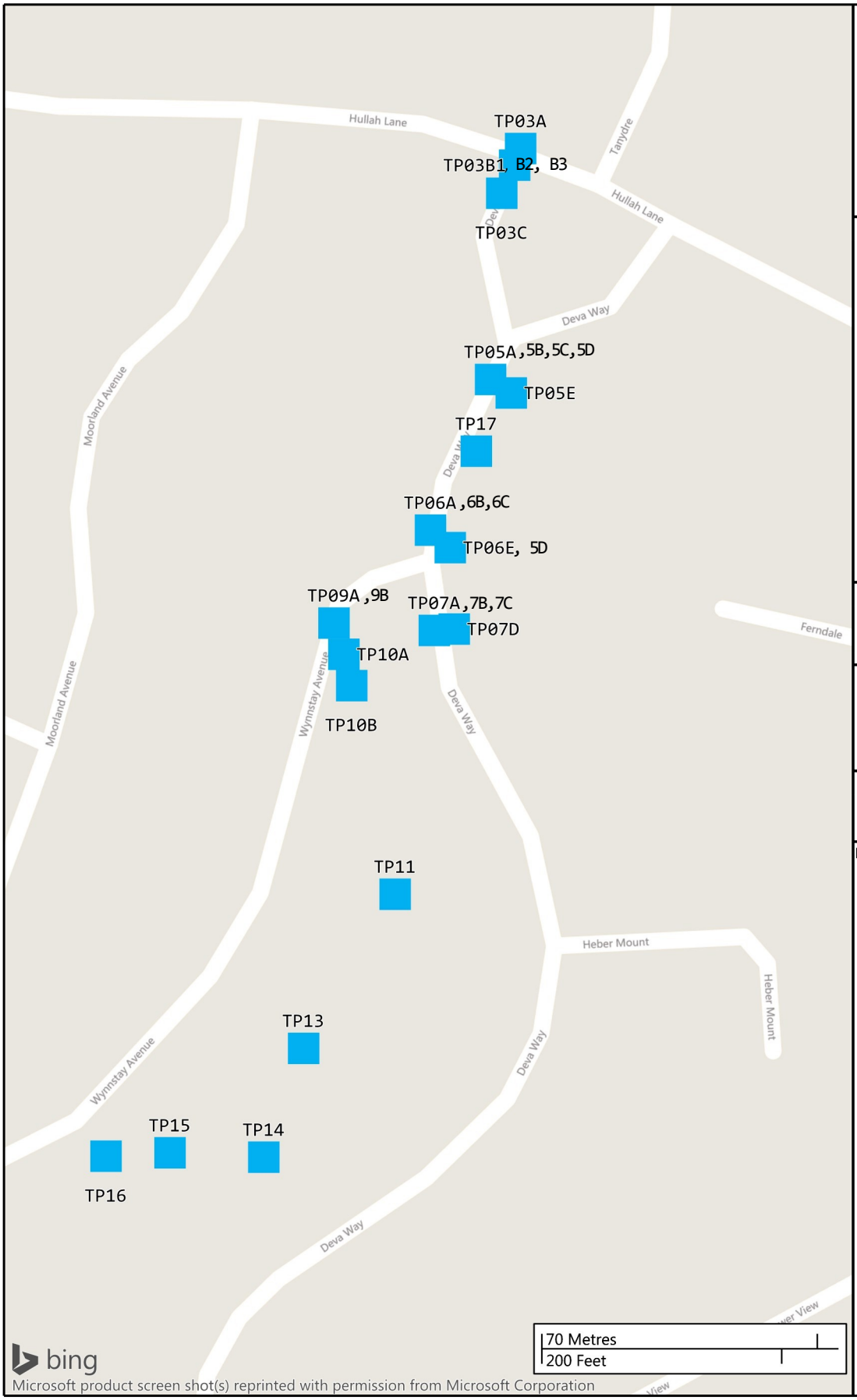
Carried out for Morgan Sindall

Borehole

BH2

Site Plan

SOCOTEC



N
W
E
S

Notes:

Scale:	Sheet Size:
1:1500	A4

Surveyed By:

SOCOTEC UK

Surveyed Date:

22/10/2019

Key:

Legend Key

Trial Pit

Project	Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane
Project No.	F9049-19
Carried out for	Morgan Sindall

Figure:

A1

Key to Exploratory Hole Records

SOCOTEC

SAMPLES

Undisturbed

U	Driven tube sample	nominally 100 mm diameter and full recovery unless otherwise stated
UT	Driven thin wall tube sample	
TW	Pushed thin wall tube sample	
P	Pushed piston sample	
L	Liner sample from dynamic (windowless) sampling. Full recovery unless otherwise stated	
CBR	CBR mould sample	
BLK	Block sample	
C / CS	Core sample (from rotary core) taken for laboratory testing.	
AMAL	Amalgamated sample	

Disturbed

D	Small sample
B	Bulk sample

Other

W	Water sample
G	Gas sample
	Environmental chemistry samples (in more than one container where appropriate)
ES	Soil sample
EW	Water sample

Comments

Sample reference numbers are assigned to every sample taken. A sample reference of 'NR' indicates that, while an attempt was made to take a tube sample, there was no recovery.

Samples taken from borehole installations (ie water or gas) after hole construction are not shown on the exploratory hole logs.

Specimens for point load testing undertaken on site (or other non-lab location) are not shown on the log.

IN SITU TESTS

SPT S or SPT C — Standard Penetration Test, open shoe (S) or solid cone (C)

The Standard Penetration Test is defined in BS EN ISO 22476-3:2005+A1:2011.
The incremental blow counts are given in the Field Records column; each increment is 75 mm unless stated otherwise and any penetration under self-weight in mm (SW) is noted. Where the full 300 mm test drive is achieved the total number of blows for the test drive is presented as N = ** in the Test column. Where the test drive blows reach 50 the total blow count beyond the seating drive is given (without the N = prefix).

IV	*in situ* vane shear strength, peak (p) and remoulded (r)
HV	Hand vane shear strength, peak (p) and remoulded (r)
PP	Pocket penetrometer test, converted to shear strength
KFH, KRH, KPI	Permeability tests (KFH = falling head, KRH = rising head; KPI = packer inflow); results provided in Field Records column (one value per stage for packer tests)

DRILLING RECORDS

The mechanical indices (TCR/SCR/RQD & If) are defined in BS 5930:2015

TCR	Total Core Recovery, %
SCR	Solid Core Recovery, %
RQD	Rock Quality Designation, %
If	Fracture spacing, mm. Minimum, typical and maximum spacing measurements are presented.
NI	Non-intact - used where the core is fragmented (ie no Solid Core).
NA	Not-applicable - used where a measurement is not applicable (eg. If, SCR and RQD in non-rock materials).

Flush returns, estimated percentage with colour where relevant, are given in the Records column

CRF	Core recovered in the following run (length in m)
AZCL	Assessed zone of core loss

GROUNDWATER

▼	Groundwater entry
▽	Depth to groundwater after standing period

Key to Exploratory Hole Records

INSTALLATION Details of standpipe/piezometer installations are given on the Record. Legend column shows installed instrument depths including slotted pipe section or tip depth, response zone filter material type and layers of backfill.

Standpipe/ piezometer The type of instrument installed is indicated by a code in the Legend column at the depth of the response zone:

SP	Standpipe
SPIE	Standpipe piezometer
PPIE	Pneumatic piezometer
EPIE	Electronic piezometer

Plain Pipe

Slotted Pipe

Piezometer Tip

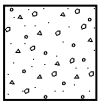
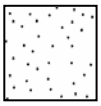
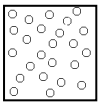
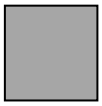
Inclinometer or Slip Indicator The installation of vertical profiling instruments is indicated on the Record. The base of tubing is shown in the Legend column.

ICE The type of instrument installed is indicated by a code in the Legend column at the base of the tubing:
ICM Biaxial inclinometer
SLIP Inclinometer tubing for use with probe
Slip indicator

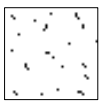
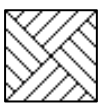
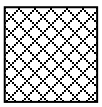
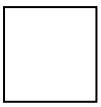
Settlement Points or Pressure Cells The installation of single point instruments is indicated on the Record. The location of the measuring device is shown in the Legend column. The type of instrument installed is indicated by a code in the Legend column:

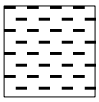
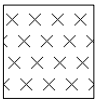
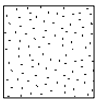
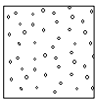
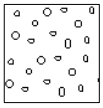
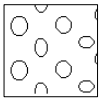
ESET	Electronic settlement cell/gauge
ETM	Magnetic extensometer settlement point
EPCE	Electronic embedment pressure cell
PPCE	Electronic push in pressure cell

INSTALLATION / BACKFILL LEGENDS A legend describing the installation is shown in the rightmost column. Legend symbols used to describe the backfill materials are indicated below.

Macadam
Concrete 
Grout
Bentonite
Sand 
Gravel 
Arisings 

STRATUM LEGENDS The legend symbols used for graphical representation of soils, rocks and other materials on the borehole logs are shown below. For soils with significant proportions of secondary soil types, a combination of two or more symbols may be used.

Macadam
Concrete 
Topsoil 
Made Ground / Fill 
Peat
Void or No Information 

Clay 
Silt 
Sand 
Gravel 
Cobbles 
Boulders 
Coal

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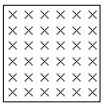
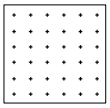
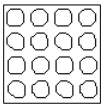
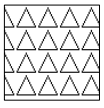
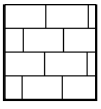
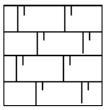
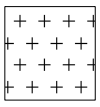
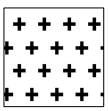
Siltstone 
Sandstone 
Conglomerate 
Breccia 
Limestone 
Chalk 

Igneous (Fine)
Igneous (Med) 
Igneous (Coarse) 
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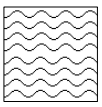
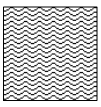
Metamorphic (Med) 
Metamorphic (Coarse) 
Tuff

Key to Exploratory Hole Records

SOCOTEC

NOTES

1 Soils and rocks are described in accordance with BS EN ISO 14688-1:2018 and 14689-1:2018 respectively and the guidance of BS 5930:2015.

2 For fine soils, consistency determined during description is reported for those strata where undisturbed samples are available. Where the logger considers that the sample may not be representative of the condition in situ, for whatever reason, the reported consistency is given in brackets. The reliability of the sample is indicated by Probably or Possibly as appropriate. Hence (Probably firm) indicates the logger is reasonably confident of the assessment, but (Possibly firm) means less certainty. Where the samples available are too disturbed to allow a reasonable assessment of the in situ condition, no consistency is given.

3 Evidence of the occurrence of very coarse particles (cobbles and boulders) is presented on the logs. However, because of their size in relation to the exploratory hole these records may not be fully representative of their size and frequency in the ground mass.

4 The declination of bedding and joints is given with respect to the normal to the core axis. Thus in a vertical borehole this will be the dip.

5 The assessment of SCR, RQD and Fracture Spacing excludes artificial fractures.

6 Observations of discernible groundwater entries during the advancement of the exploratory hole are given at the foot of the log and in the Legend column. The absence of a recorded groundwater entry should not, however, be interpreted as a groundwater level below the base of the borehole. Under certain conditions groundwater entry may not be observed, for instance, drilling with water flush or overwater, or boring at a rate faster than water can accumulate in the borehole. Similarly, where water entry observations do exist, groundwater may also be present at higher elevations in the ground than where recorded in the borehole. In addition, where appropriate, water levels in the hole at the time of recovering individual samples or carrying out in situ tests and at shift changes are given in the Records column.

7 The borehole logs present the results of Standard Penetration Tests recorded in the field without correction or interpretation. However, in certain ground conditions (eg high hydraulic head or where very coarse particles are present) some judgement may be necessary in considering whether the results are representative of in situ mass conditions.

REFERENCES

1 BS EN ISO 14688-1:2018 : Geotechnical investigation and testing - Identification and classification of soil. Part 1 Identification and description. British Standards Institution

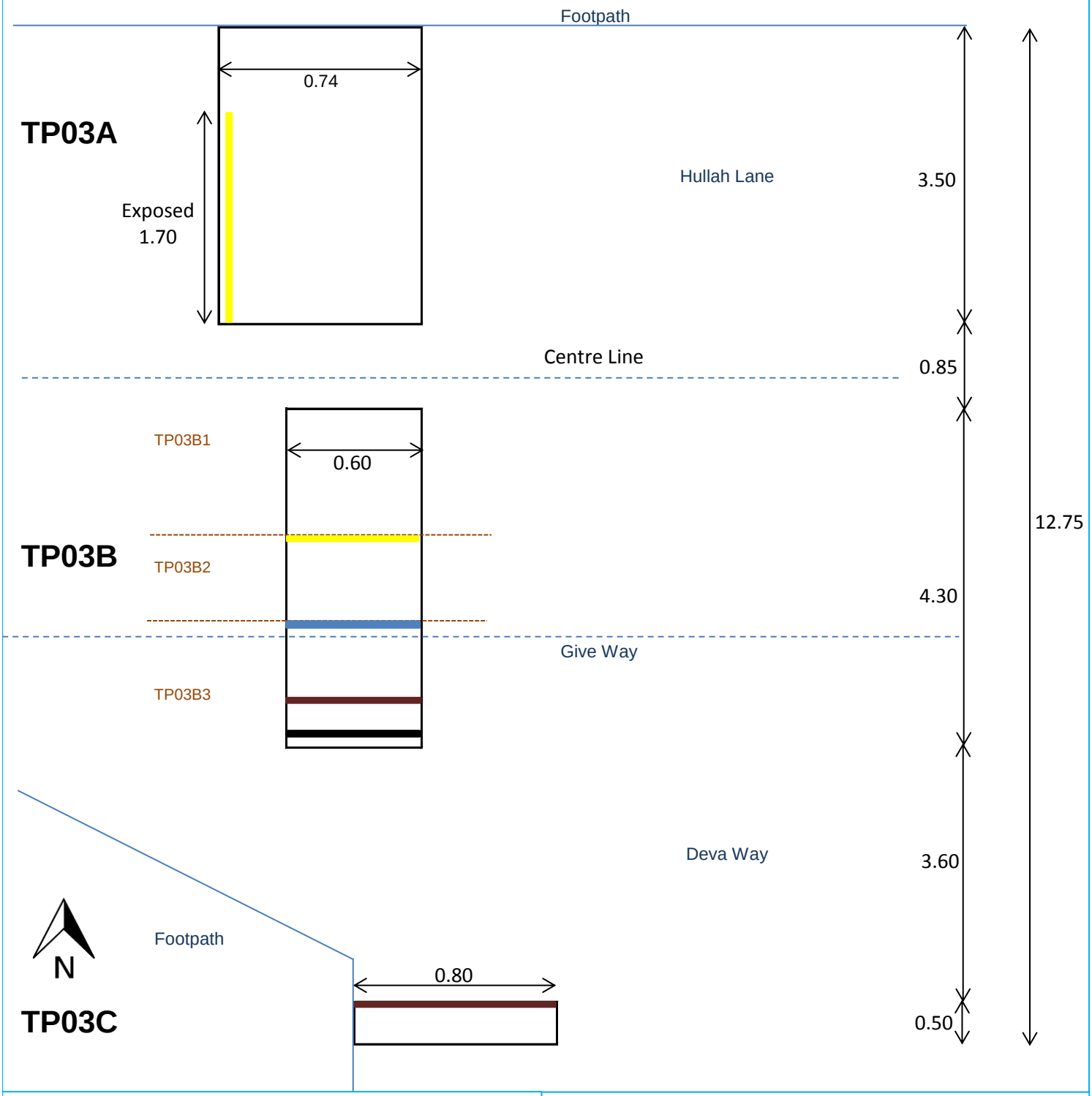
2 BS EN ISO 14689-1 : 2018 : Geotechnical investigation and testing - Identification and classification of rock. Part 1 Identification and description. British Standards Institution

3 BS EN ISO 22476-3:2005+A1 : 2011 : Geotechnical investigation and testing - Field testing. Part 3 Standard penetration test. British Standards Institution

4 BS 5930 : 2015 : Code of practice for ground investigations. British Standards Institution

Trial Trenches Location Sketch

Project	Wynnstay Avenue Trial Pits	Project No	F9049-19
Technician	JC	Trial Pit No	TP03A, B & C
Date	10/10/2019	Sheet No / of	1/1



Remarks

Not to scale.

For strata detail, see associated logs.

All measurements are in metres.

Gas

Water

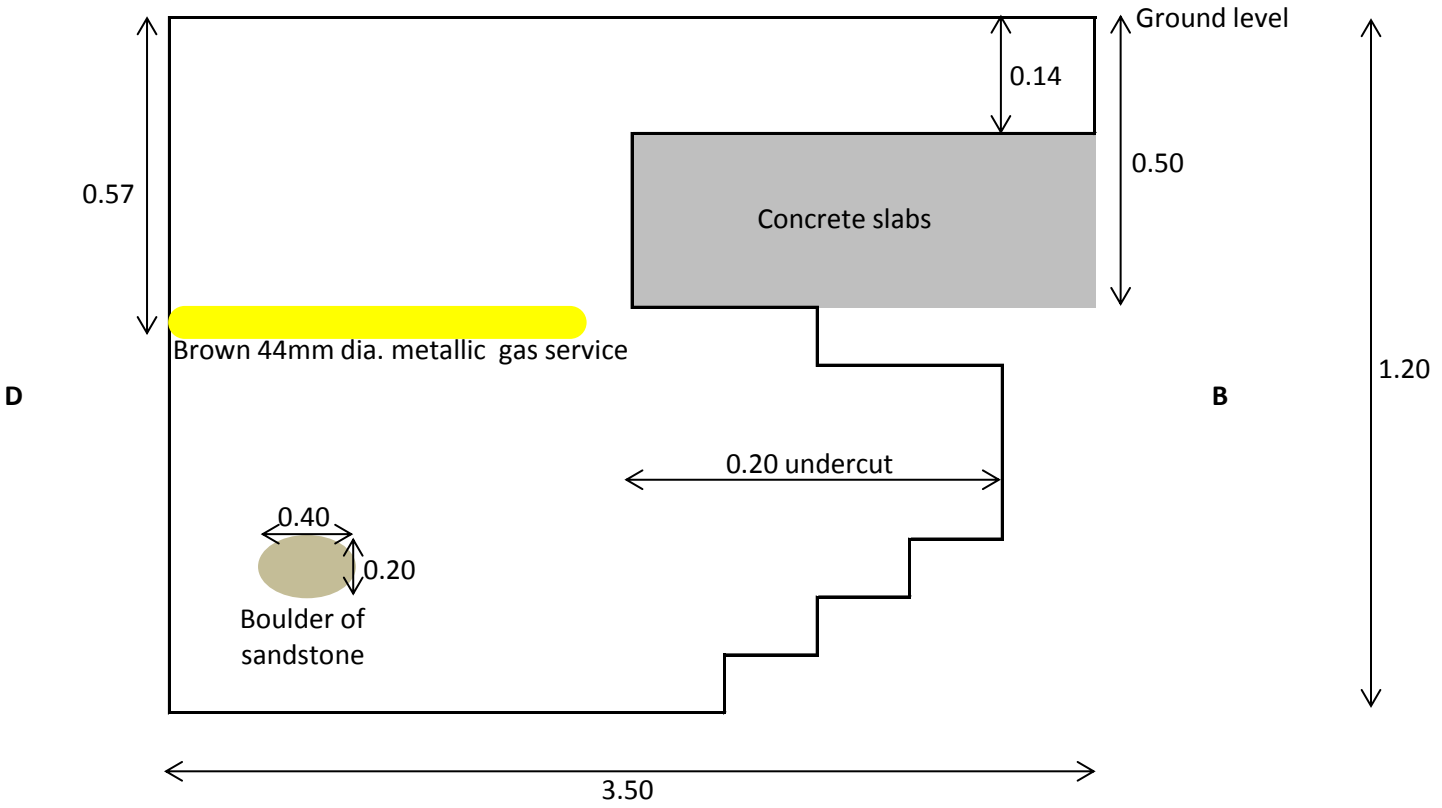
Electric

BT

TP03 Location Plan

Trial Trench Sketch

Project	Wynnstay Avenue Trial Pits	Project No	F9049-19
Engineer	JC	Trial Pit No	TP03A
Date	09/10/2019	Sheet No / of	2/2

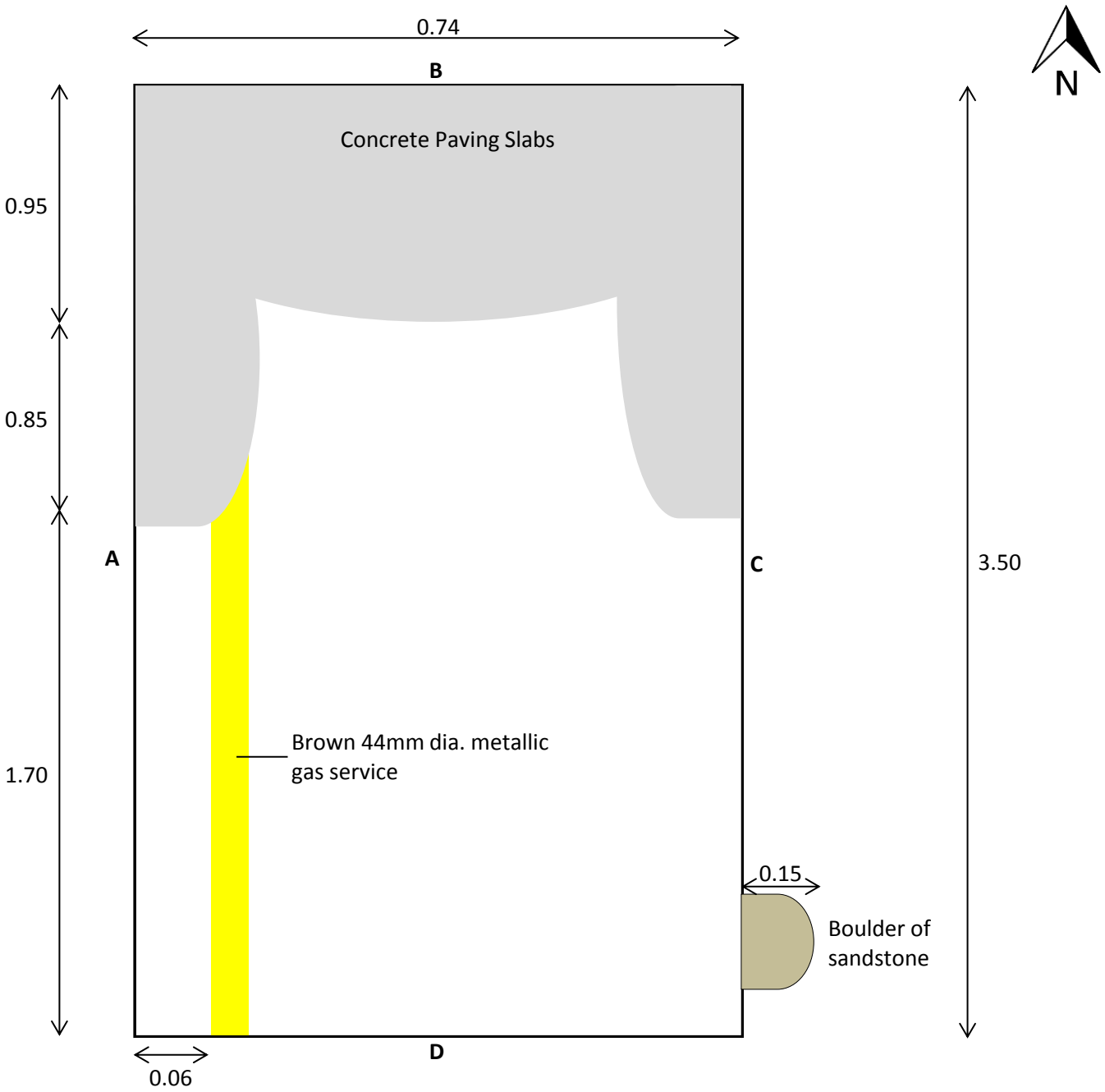


Remarks
Not to scale.
For strata detail, see associated logs.
All measurements are in metres, unless otherwise stated.
Exposure of service limited by overlying concrete slabs.
Exposed for 1.70m.

TP03A Cross Section

Trial Trench Sketch

Project	Wynnstay Avenue Trial Pits	Project No	F9049-19
Engineer	JC	Trial No	TP03A
Date	09/10/2019	Sheet No / of	1/2



Remarks
Not to scale.
For strata detail, see associated logs.
All measurements are in metres, unless otherwise stated.
Exposure of service limited by overlying concrete paving slabs.

TP03A Plan View

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 09/10/2019 **End** 09/10/2019	**Equipment, Methods and Remarks** 3 Tonne Tracked Excavator. Machine excavated trial pit to 1.20m No groundwater encountered.	**Dimension and Orientation** Width 0.74 m Length 3.50 m A / D / B / C 180 (Deg)	**Ground Level** 73.15 mOD **Coordinates (m)** E 334722.61 **National Grid** N 350854.56	

Samples and Tests

Depth	Type & No.	Records
0.00 - 0.14	B2	
0.05	ES1	
0.05	D3	
0.14 - 0.57	B4	
0.20	ES5	
0.20	D6	
0.50	ES7	
0.50	D8	
0.57 - 1.20	B9	
1.00	ES10	
1.00	D11	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Black MACADAM, 70% aggregate fine and medium of limestone, 5% voids. (SURFACE COURSE)	0.17-0.41 Low cobble content of angular to subrounded concrete paving slabs. 0.37-0.57 Occasional brick fragments. 0.60-0.80 Boulder of subrounded sandstone.	(0.08) 0.08 +73.07 (0.06) 0.14 +73.01		
MADE GROUND: Black glassy MACADAM, 70% aggregate fine to coarse of limestone, 15% voids.(BASE COURSE)				
MADE GROUND: Dark brown mottled black very sandy slightly clayey angular to subrounded fine to coarse GRAVEL of sandstone, siltstone and limestone. (SUBBASE)		(0.43) 0.57 +72.58		
Light brown mottled black slightly gravelly slightly clayey fine to coarse SAND with pockets of firm brown slightly sandy clay (up to 40mm). Gravel is angular to subrounded fine to coarse of sandstone and siltstone. (POSSIBLE MADE GROUND)		(0.63)		
END OF EXPLORATORY HOLE		1.20 +71.95		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.51	Brown 45mm dia. metallic gas service.

Stability Stable
Shoring None
Weather Dry

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

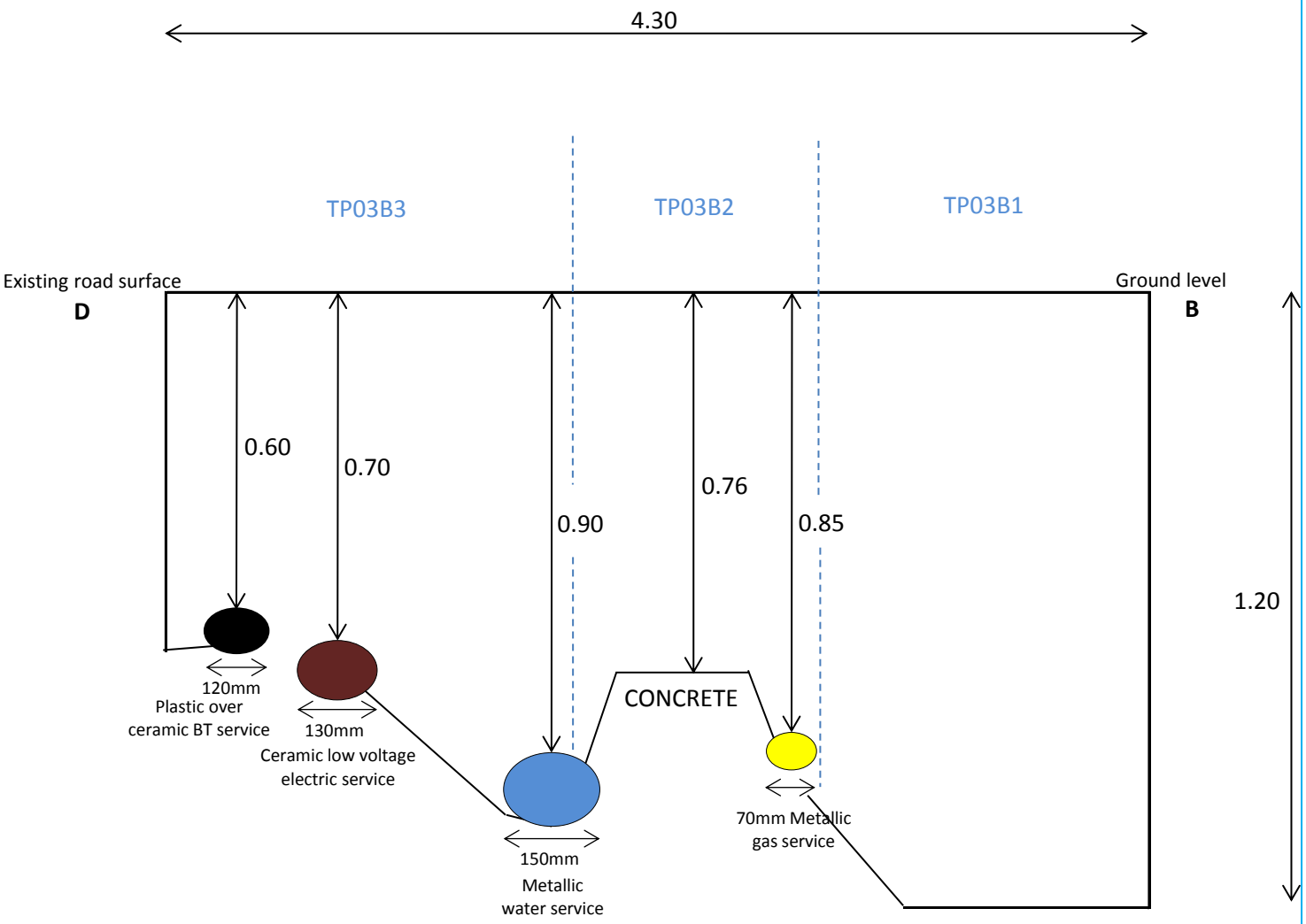
Carried out for **Morgan Sindall**

Trial Pit

TP03A

Trial Trench Sketch

Project	Wynnstay Avenue Trial Pits	Project No	F9049-19
Engineer	JC	Trail Pit No	TP03B
Date	10/10/2019	Sheet No / of	2/2

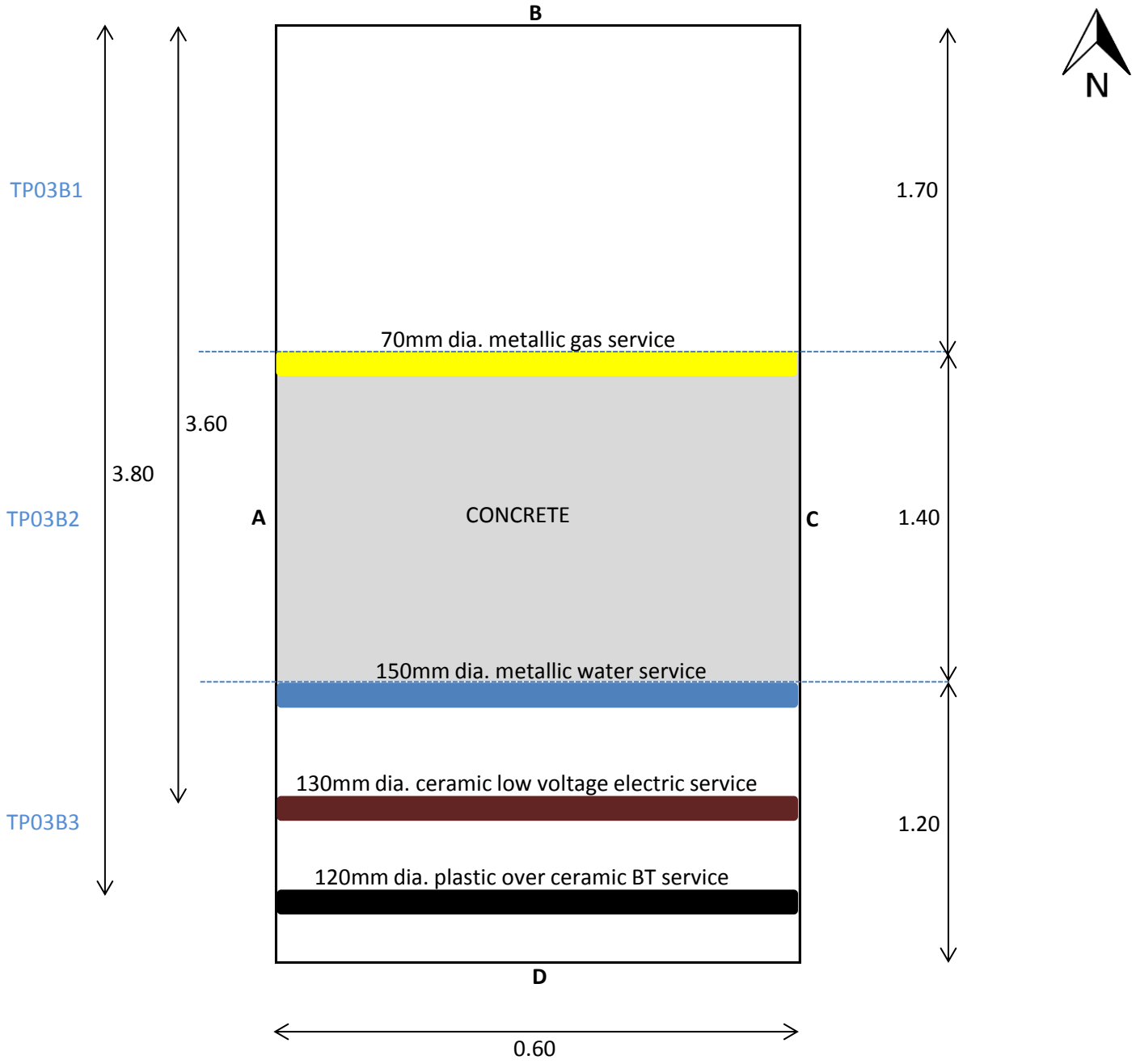


Remarks
Not to scale.
For strata detail, see associated logs.
All measurements are in metres, unless otherwise stated.

TP03B Cross Section

Trial Trench Sketch

Project	Wynnstay Avenue Trial Pits	Project No	F9049-19
Engineer	JC	Trial Pit No	TP03B
Date	10/10/2019	Sheet No / of	1/2



Remarks
Not to scale.
For strata detail, see associated logs.
All measurements are in metres, unless otherwise stated.

TP03B Plan View

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 10/10/2019 **End** 10/10/2019	**Equipment, Methods and Remarks** 3 Tonne Tracked Excavator. Machine excavated trial pit to1.20m Pit is situated directly south of TP03B2 as part of TP03B. No groundwater encountered.	**Dimension and Orientation** Width 0.60 m Length 1.70 m A / D / B / C 180 (Deg)	**Ground Level** 73.25 mOD **Coordinates (m)** E 334721.02 **National Grid** N 350850.35	

Samples and Tests

Depth	Type & No.	Records
0.00 - 0.15	B3	
0.05	ES1	
0.05	D2	
0.20	ES4	
0.20	D5	
0.50	ES7	
0.50	D8	
0.50 - 0.90	B6	
0.90 - 1.20	B11	
1.00	ES9	
1.00	D10	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Black dull MACADAM, 70% aggregate fine and medium of limestone, 5% voids with a moderate hydrocarbon odour. (SURFACE COURSE)		(0.10) 0.10 (0.05) +73.15 0.15 +73.10		
MADE GROUND: Black glassy MACADAM, 70% aggregate fine to coarse of limestone, 15% voids with a moderate hydrocarbon odour. (BASE COURSE)				
MADE GROUND: Dark brown mottled black gravelly slightly clayey fine to coarse SAND with low cobble content. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with ceramic, slag, clinker, macadam and brick. Cobbles are sandstone, siltstone and limestone. (SUB-BASE)		(0.75)		
Light brown mottled black slightly gravelly slightly clayey fine to coarse SAND with pockets of firm brown slightly sandy clay (up to 40mm). Gravel is angular to subrounded fine to coarse of sandstone and siltstone. (POSSIBLE MADE GROUND)		0.90 +72.35 (0.30)		
END OF EXPLORATORY HOLE		1.20 +72.05		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks

Stability Stable

Shoring None

Weather Dry

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP03B1

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 10/10/2019 **End** 10/10/2019	**Equipment, Methods and Remarks** 3 Tonne Tracked Excavator. Machine excavated trial pit to 0.85m Pit is situated directly south of TP03B3 as part of log TP03B. Terminated on concrete at 0.85m. No groundwater encountered.	**Dimension and Orientation** Width 0.60 m Length 2.40 m A / D / B / C 180 (Deg)	**Ground Level** 73.25 mOD **Coordinates (m)** E 334721.02 **National Grid** N 350850.35	

Samples and Tests

Depth	Type & No.	Records
0.10 - 0.60	B22	
0.50 0.50	ES12 D13	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Black dull MACADAM, 70% aggregate fine and medium of limestone, 5% voids with a moderate hydrocarbon odour. (SURFACE COURSE)		(0.08) 0.08 +73.17 (0.02) 0.10 +73.15		
MADE GROUND: Black glassy MACADAM, 70% aggregate fine to coarse of limestone, 15% voids with a moderate hydrocarbon odour. (BASE COURSE)				
MADE GROUND: Light grey mottled white and black very sandy slightly clayey angular to subrounded fine to coarse GRAVEL of limestone. (SUB-BASE)		(0.50) 0.60 +72.65		
MADE GROUND: Firm to stiff dark brown mottled black slightly gravelly sandy CLAY. Gravel is angular to subrounded fine to coarse of sandstone and siltstone. (SUB-BASE)		(0.16) 0.76 +72.49		
MADE GROUND: Light grey CONCRETE.		(0.09) 0.85 +72.40		
END OF EXPLORATORY HOLE				

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.85	Grey (sprayed yellow by engineer) 70mm dia. cast iron gas pipe.

Stability Stable
Shoring None
Weather Dry

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP03B2

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 10/10/2019 **End** 10/10/2019	**Equipment, Methods and Remarks** 3 Tonne Tracked Excavator. Machine excavated trial pit to 0.80m Pit is adjacent to TP03B2 to the north as part of log TP03. No groundwater encountered.	**Dimension and Orientation** Width 0.60 m Length 1.20 m A D B C 180 (Deg)	**Ground Level** 73.25 mOD **Coordinates (m)** E 334721.02 **National Grid** N 350850.35	

Samples and Tests

Depth	Type & No.	Records
0.20	ES14	
0.20	D15	
0.50	ES16	
0.50	D17	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Black dull MACADAM, 70% aggregate fine and medium of limestone, 5% voids with a moderate hydrocarbon odour. (SURFACE COURSE)		(0.09) 0.09 +73.16		
MADE GROUND: Black mottled dark grey slightly sandy very gravelly MACADAM with high cobble and medium boulder content. Gravel is angular to subrounded fine to coarse of limestone. Cobbles are angular to subrounded of limestone. Boulders are angular to subrounded of limestone (up to 300mm). (BINDER COURSE)		(0.31) 0.40 +72.85		
MADE GROUND: Firm to stiff dark brown mottled black slightly gravelly sandy CLAY. Gravel is angular to subrounded fine to coarse of sandstone and siltstone.		(0.40) 0.80 +72.45		
END OF EXPLORATORY HOLE				

Groundwater Entries

No.	Depth	Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.60	Grey 120mm dia. plastic surrounding ceramic BT service. Ceramic ducting damaged/repaired.
0.70	Orange 130mm dia. ceramic ducting for electric services.
0.89	Geotextile over service.
0.90	Grey metallic 150mm dia. cast iron water main.

Stability Stable
Shoring None
Weather Dry

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP03B3

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 10/10/2019 **End** 10/10/2019	**Equipment, Methods and Remarks** 3 Tonne Tracked Excavator. Machine excavated trial pit to 0.80m No groundwater encountered.	**Dimension and Orientation** Width 0.80 m Length 0.50 m A / D / B / C 90 (Deg)	**Ground Level** 72.90 mOD **Coordinates (m)** E 334717.63 **National Grid** N 350843.21	

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
0.05 0.06 - 0.80	ES18 B20		MADE GROUND: Black dull MACADAM, 70% aggregate, fine and medium of limestone, 5% voids with a moderate hydrocarbon odour. (SURFACE COURSE)		0.06 (0.06) +72.84		
			MADE GROUND: Black mottled dark grey slightly sandy very gravelly MACADAM with high cobble content. Gravel is angular to subrounded fine to coarse of limestone. Cobbles are angular to subrounded of limestone. (BORDER COURSE)		(0.29)		
0.50 0.50	ES21 D19		MADE GROUND: Firm to stiff dark brown mottled black slightly gravelly sandy CLAY. Gravel is angular to subrounded fine to coarse of sandstone and siltstone. (SUB-BASE)		0.35 +72.55 (0.45)		
			END OF EXPLORATORY HOLE		0.80 +72.10		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.55	Orange 150mm dia. ceramic ducting for electric services.

Stability Stable
Shoring None
Weather Dry

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

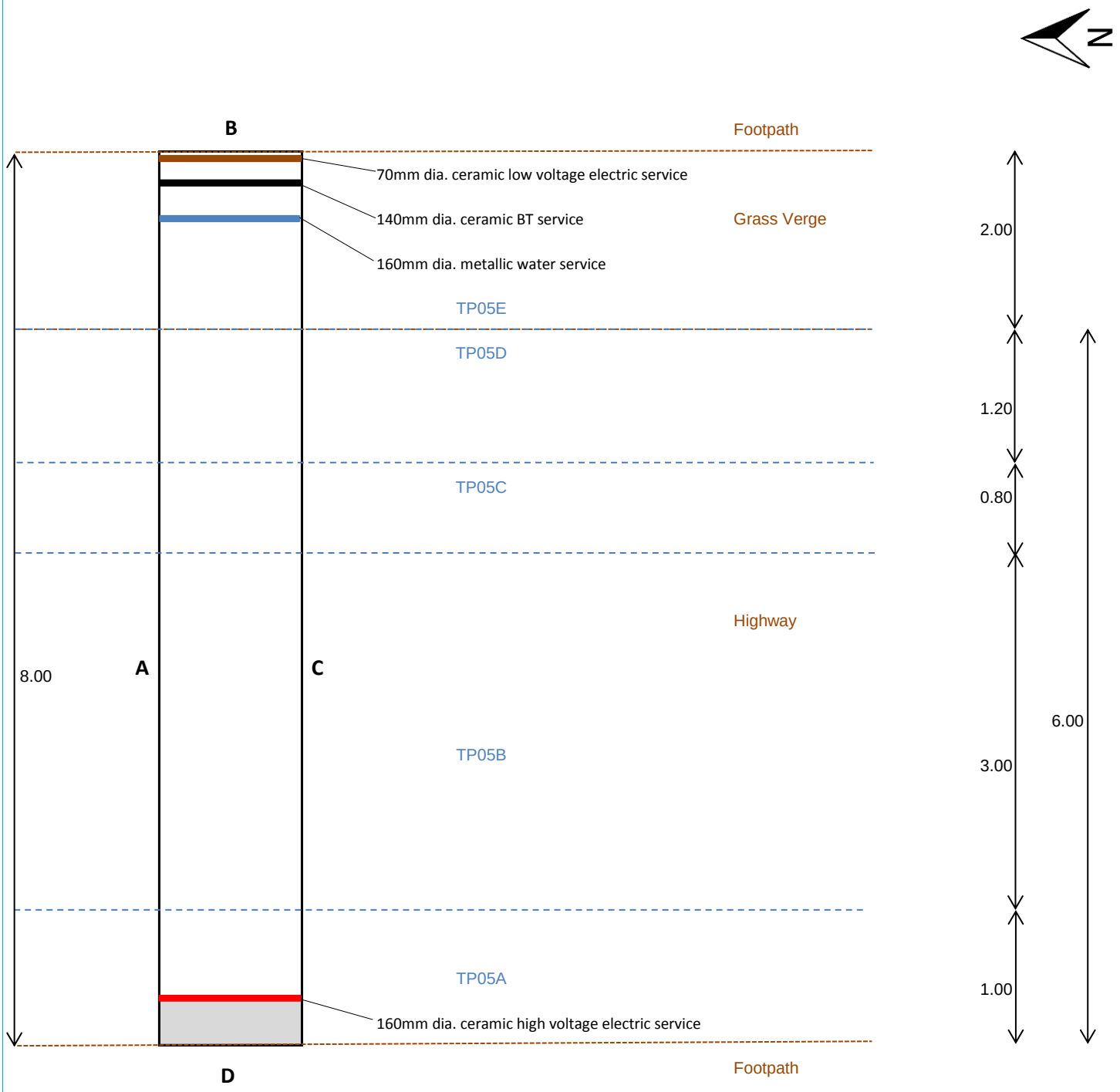
Carried out for **Morgan Sindall**

Trial Pit

TP03C

Trial Trenches Location Sketch

Project	Wynnstay Avenue Trial Pits	Project No	F9049-19
Technician	JC	Trial Pit No	TP05A, B, C, D & E
Date	15/10/2019	Sheet No / of	1/2

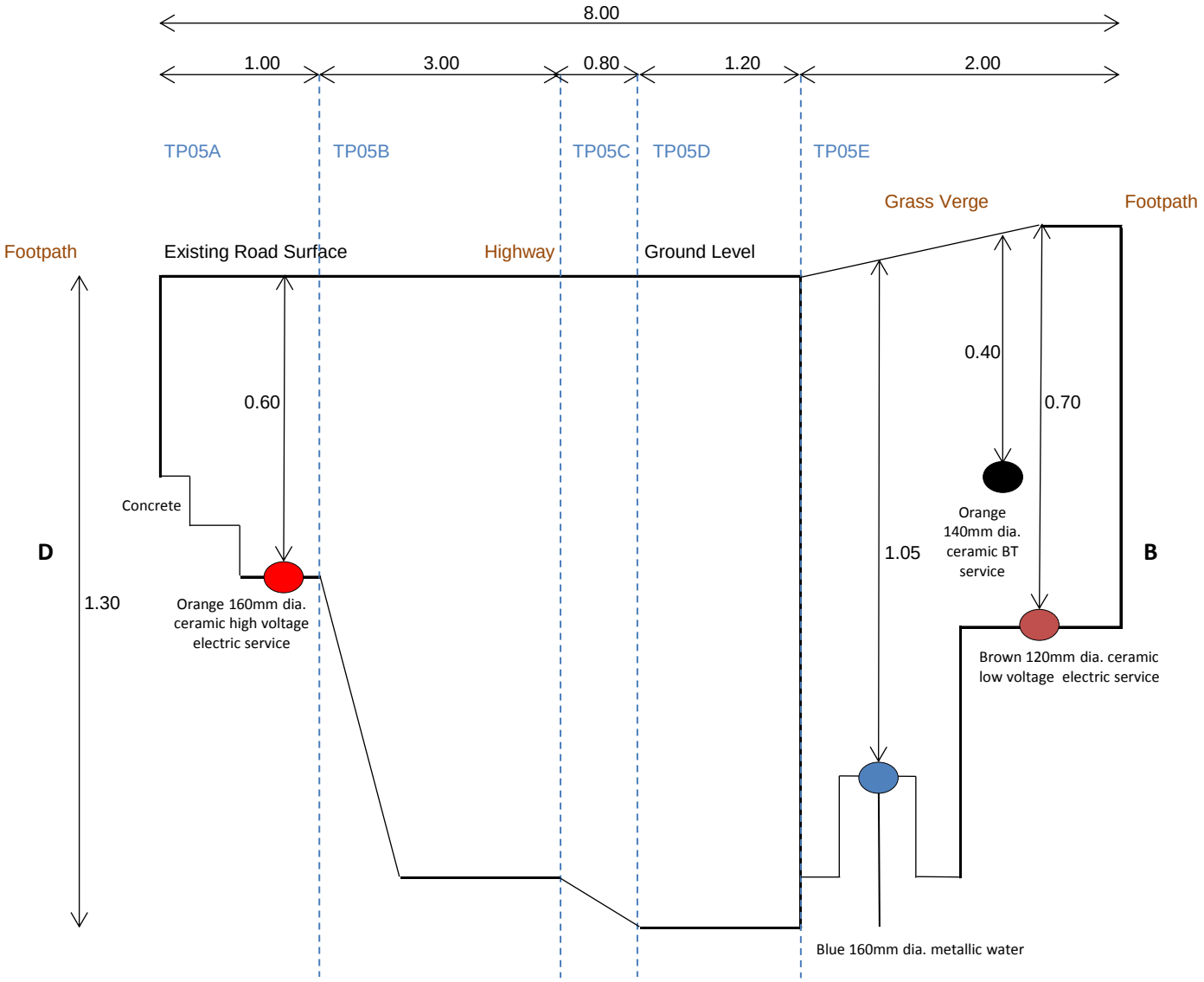


Remarks
Not to scale.
For strata detail, see associated logs.
All measurements are in metres, unless otherwise stated.

TP05A, B, C, D & E Location Plan

Trial Trench Sketch

Project	Wynnstay Avenue Trial Pits	Project No	F9049-19
Engineer	JC	Trial Pit No	TP05A, B, C, D & E
Date	15/10/2019	Sheet No / of	2/2



N

Remarks
Not to scale.
For strata detail, see associated logs.
All measurements are in metres, unless otherwise stated.

TP05A, B, C, D & E Cross Section

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 14/10/2019 **End** 14/10/2019	**Equipment, Methods and Remarks** 1.5 Tonne and 3 Tonne Tracked Excavator. Machine excavated trial pit to 1.20m TP05A adjacent to TP05B to east. No groundwater encountered.	**Dimension and Orientation** Width 0.60 m Length 1.00 m A / D / B / C 90 (Deg)	**Ground Level** 71.46 mOD **Coordinates (m)** E 334714.13 **National Grid** N 350795.77	

Samples and Tests

Depth	Type & No.	Records
0.00 - 0.17	B3	
0.10	ES1	
0.10	D2	
0.17 - 0.48	B6	
0.20	ES4	
0.20	D5	
0.48 - 1.00	B9	
0.50	ES7	
0.50	D8	
1.00	ES10	
1.00	D11	
1.00 - 1.20	B12	
1.20	ES13	
1.20	D14	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Black dull MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 5% voids. (SURFACE COURSE)		0.07 (0.07) +71.39		
MADE GROUND: Black glassy MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 15% voids. (BASE COURSE)		0.17 (0.10) +71.29		
MADE GROUND: Light grey mottled white occasionally black very gravelly slightly clayey fine to coarse SAND with medium cobble content. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with concrete and brick fragments. Cobbles are angular to subrounded of concrete.	0.30-0.40 Concrete paving slab.	(0.31)		
Soft to firm light brown mottled dark reddish brown and dark grey slightly gravelly sandy CLAY. Gravel is angular to subrounded fine to coarse of sandstone and siltstone. (POSSIBLE MADE GROUND)		0.48 +70.98 (0.52)		
Light orangish brown mottled black slightly gravelly clayey fine to coarse SAND. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with rare ceramic. (POSSIBLE MADE GROUND)		1.00 +70.46 (0.20)		
END OF EXPLORATORY HOLE		1.20 +70.26		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.60	Orange 160mm dia. electric service under ceramic tile with 'danger electric' written on.

Stability Stable

Shoring None

Weather Dry

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP05A

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 14/10/2019 **End** 14/10/2019	**Equipment, Methods and Remarks** 1.5 Tonne and 3 Tonne Tracked Excavator. Machine excavated trial pit to 1.20m Adjacent to TP05A to west and TP05C to east. No groundwater encountered.	**Dimension and Orientation** Width 0.60 m Length 3.00 m A / D / B / C 40 (Deg)	**Ground Level** 71.46 mOD **Coordinates (m)** E 334714.13 **National Grid** N 350795.77	

Samples and Tests

Depth	Type & No.	Records
0.17 - 1.00	B15	
0.20	ES16	
0.20	D17	
0.50	ES18	
0.50	D19	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Black dull MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 5% voids. (SURFACE COURSE)		0.07 (0.07) +71.39		
MADE GROUND: Black glassy MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 15% voids. (BASE COURSE)	0.17-0.40 Cobbles of bricks.	0.17 (0.10) +71.29		
MADE GROUND: Dark brown to black mottled orange and brown slightly gravelly clayey fine to coarse SAND with high cobble content and occasional rootlets. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with brick fragments. Cobbles are angular to subrounded of sandstone and whole and half bricks.		(0.83)		
Light greyish brown mottled black slightly clayey fine to coarse SAND. Gravel is angular to subrounded fine to coarse of sandstone, siltstone and limestone. (POSSIBLE MADE GROUND)		1.00 (0.20) +70.46		
END OF EXPLORATORY HOLE		1.20 +70.26		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks

Stability Stable

Shoring None

Weather Raining

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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22/11/2019 11:28:05

AGS

Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP05B

Sheet 1 of 1

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 14/10/2019 **End** 14/10/2019	**Equipment, Methods and Remarks** 1.5 Tonne and 3 Tonne Tracked Excavator. Machine excavated trial pit to 1.30m No groundwater encountered.	**Dimension and Orientation** Width 0.60 m Length 0.80 m A / D / B / C 90 (Deg)	**Ground Level** 71.46 mOD **Coordinates (m)** E 334714.13 **National Grid** N 350795.77	

Samples and Tests

Depth	Type & No.	Records
0.20	ES20	
0.20	D21	
0.40 - 1.00	B22	
0.50	ES23	
0.50	D24	
1.00 - 1.30	B25	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Black dull MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 5% voids. (SURFACE COURSE)		(0.10) 0.10 +71.36		
MADE GROUND: Black glassy MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 15% voids. (SURFACE COURSE)		(0.05) 0.15 +71.31		
MADE GROUND: Light orangish brown very gravelly clayey fine to coarse SAND with high cobble content. Gravel is angular to subrounded fine to coarse of sandstone and brick fragments. Cobbles are angular to subrounded of half and whole bricks.		(0.25) 0.40 +71.06		
MADE GROUND: Dark brown occasionally mottled black gravelly very clayey fine to coarse SAND with occasional rootlets. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with brick fragments.		(0.60) 1.00 +70.46		
Light greyish brown mottled black clayey fine to coarse SAND. (POSSIBLE MADE GROUND)		(0.30) 1.30 +70.16		
END OF EXPLORATORY HOLE				

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks

Stability Stable

Shoring None

Weather Raining

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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AGS

Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP05C

Sheet 1 of 1

Trial Pit Log

SOCOTEC

Logged JC	**Start** 14/10/2019	**Equipment, Methods and Remarks**	**Dimension and Orientation**	**Ground Level**	71.46 mOD
Checked AG	**End**	1.5 Tonne and 3 Tonne Tracked Excavator. Machine excavated trial pit to 1.30m No groundwater encountered.	Width 0.60 m Length 1.20 m A D B C 90 (Deg)	**Coordinates (m)**	E 334714.13
Approved AG	14/10/2019			**National Grid**	N 350795.77

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			MADE GROUND: Black dull MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 5% voids. (SURFACE COURSE)		(0.10) 0.10		
			MADE GROUND: Black glassy MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 5% voids. (BASE COURSE)		(0.05) 0.15 +71.31		
			MADE GROUND: Dark brown occasionally mottled black gravelly clayey fine to coarse SAND with occasional rootlets. Gravel is subangular to subrounded fine to coarse of sandstone and siltstone with brick fragments.		(0.85)		
			Greyish light brown occasionally mottled black clayey fine to coarse SAND. (POSSIBLE MADE GROUND)		1.00 +70.46 (0.30)		
			END OF EXPLORATORY HOLE		1.30 +70.16		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks

Stability Stable

Shoring None

Weather Raining

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP05D

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 15/10/2019 **End** 15/10/2019	**Equipment, Methods and Remarks** 1.5 Tonne Tracked Excavator Machine excavated trial pit to 1.20m No groundwater encountered.	**Dimension and Orientation** Width 0.60 m Length 1.90 m A / D / B / C 90 (Deg)	**Ground Level** 71.44 mOD **Coordinates (m)** E 334719.36 **National Grid** N 350792.24	

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
0.05 0.05 0.10 - 0.80 0.20 0.20 0.50 0.50 0.80 - 1.20 1.00 1.00	D1 D2 B5 ES3 D4 ES6 D7 B8 ES9 D10		MADE GROUND: Dark brown slightly gravelly clayey fine to coarse SAND with many rootlets. Gravel is angular to subrounded fine to coarse of sandstone and siltstone. MADE GROUND: Dark brown mottled light brown slightly gravelly clayey fine to coarse SAND with lenses of light brown mottled bluish grey fine to coarse sand and low cobble content. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with ceramic, slag, clinker, concrete and brick fragments. Cobbles are angular to subrounded of concrete, half and whole bricks. (ENBANKMENT FILL)	0.60 Lense of black fine and medium sand.	(0.10) 0.10 +71.34 (1.10) 1.20 +70.24		
			END OF EXPLORATORY HOLE				

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.30 - 0.60	Row of bricks loosely mortared over position of water service.
0.40	Orange 140mm dia. ceramic BT / Gas.
0.70	Brown ceramic tile 'electric cable danger' 120mm dia. low voltage.
1.05	Blue 160mm dia. metallic water pipe.

Stability Stable

Shoring None

Weather Dry

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

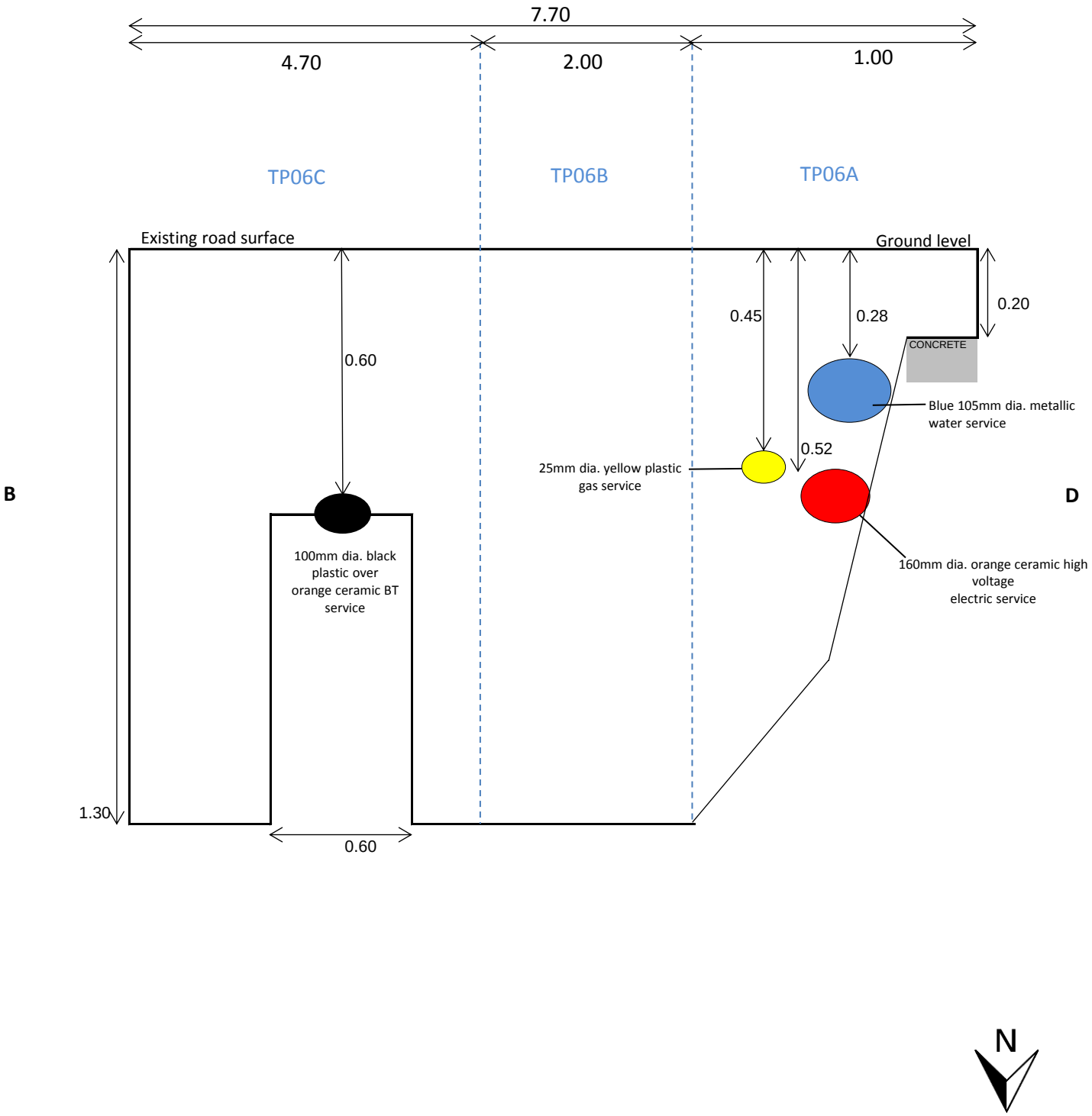
Carried out for **Morgan Sindall**

Trial Pit

TP05E

Trial Trench Sketch

Project	Wynnstay Avenue Trial Pits	Project No	F9049-19
Engineer	JC	Trial Pit No	TP06A, B & C
Date	15/10/2019	Sheet No / of	2/2

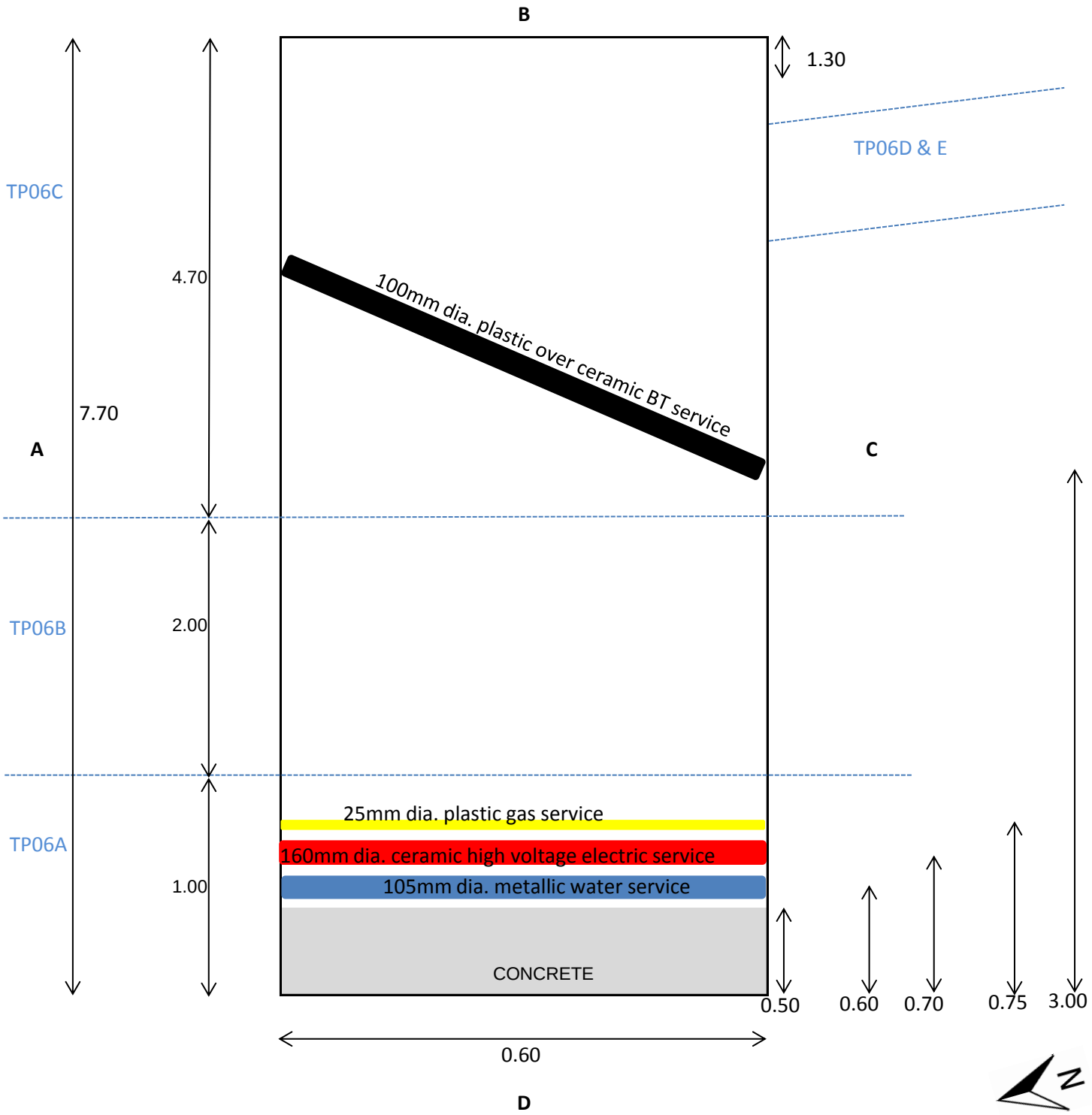


Remarks
Not to scale.
For strata detail, see associated logs.
All measurements are in metres, unless otherwise stated.

TP06A, B & C Cross Section

Trial Trench Sketch

Project	Wynnstay Avenue Trial Pits	Project No	F9049-19
Engineer	JC	Trial Pit No	TP06A, B & C
Date	15/10/2019	Sheet No / of	1/2



Remarks
Not to scale.
For strata detail, see associated logs.
All measurements are in metres, unless otherwise stated.

TP06A, B & C Location Plan

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 15/10/2019 **End** 15/10/2019	**Equipment, Methods and Remarks** 3 Tonne Tracked Excavator Machine excavated trial pit to 1.20m Adjacent to TP06B to east.	**Dimension and Orientation** Width 0.60 m Length 1.00 m A / B / C / D 90 (Deg)	**Ground Level** 70.99 mOD **Coordinates (m)** E 334698.24 **National Grid** N 350757.53	

Samples and Tests

Depth	Type & No.	Records
0.00 - 0.18	B3	
0.05	ES1	
0.05	D2	
0.20	ES4	
0.20	D5	
0.50	ES6	
0.50	D7	
0.70 - 1.20	B10	
1.00	ES8	
1.00	D9	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Black dull MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 5% voids. (SURFACE COURSE)		0.07 (0.07) +70.92		
MADE GROUND: Black glassy MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 10% voids. (BASE COURSE)		0.18 (0.11) +70.81		
MADE GROUND: Light grey mottled black and white CONCRETE, 60% aggregate of angular to subrounded fine to coarse sandstone, siltstone and limestone, 10% voids. (POSSIBLE ROAD BASE)		0.40 (0.22) +70.59		
MADE GROUND: Dark brown occasionally black slightly gravelly very clayey fine to coarse SAND. Gravel is angular to subrounded fine and medium of sandstone and siltstone with brick fragments.		0.70 (0.30) +70.29		
Light grey mottled brown slightly gravelly slightly clayey fine to coarse SAND. Gravel is subangular to rounded fine to coarse of sandstone and siltstone. (POSSIBLE MADE GROUND)		1.20 (0.50) +69.79	1	
END OF EXPLORATORY HOLE				

Groundwater Entries

No.	Depth Strike (m)	Remarks
1	1.17	

Remarks

Depth (m)	Remarks
0.28	Black 105mm dia. ribbed plastic pipe surrounding blue plastic water pipe (already damaged, see photo).
0.45	Yellow 25mm dia. plastic gas pipe.
0.52	Orange ceramic tile 160mm dia. written 'electric danger' high voltage.

Stability Stable
Shoring None
Weather Dry

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP06A

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 15/10/2019 **End** 15/10/2019	**Equipment, Methods and Remarks** 3 Tonne Tracked Excavator Machine excavated trial pit to 1.30m Adjacent to TP06A to west and TP06B to east. No groundwater encountered.	**Dimension and Orientation** Width 0.60 m Length 2.00 m A / D / B / C 90 (Deg)	**Ground Level** 70.99 mOD **Coordinates (m)** E 334698.24 **National Grid** N 350757.53	

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			MADE GROUND: Black dull MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 5% voids. (SURFACE COURSE)		0.07 (0.07) +70.92		
			MADE GROUND: Black glassy MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 10% voids. (BASE COURSE)		0.17 (0.10) +70.82		
			MADE GROUND: Dark brown occasionally mottled black slightly gravelly very clayey fine to coarse SAND with low cobble content. Gravel is angular to subrounded fine and medium of sandstone and siltstone with brick fragments. Cobbles are angular to subrounded of half bricks.		(0.53)		
			Light grey mottled brownish bluish grey slightly gravelly slightly clayey fine to coarse SAND. Gravel is subangular to rounded fine to coarse of sandstone and siltstone. (POSSIBLE MADE GROUND)		0.70 +70.29		
					(0.60)		
			END OF EXPLORATORY HOLE		1.30 +69.69		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks

Stability Stable

Shoring None

Weather Dry

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP06B

Sheet 1 of 1

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 15/10/2019 **End** 15/10/2019	**Equipment, Methods and Remarks** 3 Tonne Tracked Excavator Machine excavated trial pit to 1.35m Adjacent to TP06B to west.	**Dimension and Orientation** Width 0.60 m Length 4.70 m A / D / B / C 90 (Deg)	**Ground Level** 70.99 mOD **Coordinates (m)** E 334698.24 **National Grid** N 350757.53	

Samples and Tests

Depth	Type & No.	Records
0.15 - 0.30	B13	
0.20	ES11	
0.20	D12	
0.40 - 1.00	B16	
0.50	ES14	
0.50	D15	
1.00	ES17	
1.00	D18	
1.00 - 1.35	B19	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Black dull MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 5% voids. (SURFACE COURSE)		0.07 (0.07) +70.92		
MADE GROUND: Black glassy MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 10% voids. (BASE COURSE)		0.15 (0.08) +70.84		
MADE GROUND: Dark orangish brown very gravelly slightly clayey fine to coarse SAND with high cobble content. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with brick fragments. Cobbles are angular to subrounded of whole and half bricks.		0.30 (0.15) +70.69		
MADE GROUND: Dark brown occasionally mottled black slightly gravelly very clayey fine to coarse SAND. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with brick fragments.		0.40 (0.10) +70.59		
Light grey mottled light brown and bluish grey slightly gravelly slightly clayey fine to coarse SAND. Gravel is subangular to rounded fine to coarse of sandstone and siltstone with rare brick fragments. (POSSIBLE MADE GROUND)		(0.95)	1	
END OF EXPLORATORY HOLE		1.35 +69.64		

Groundwater Entries

No.	Depth Strike (m)	Remarks
1	1.05	

Remarks

Depth (m)	Remarks
0.60	Brownish orange 100mm dia. ceramic BT damaged by excavation - repair planned 16.10.2019.

Stability Stable
Shoring None
Weather Dry

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

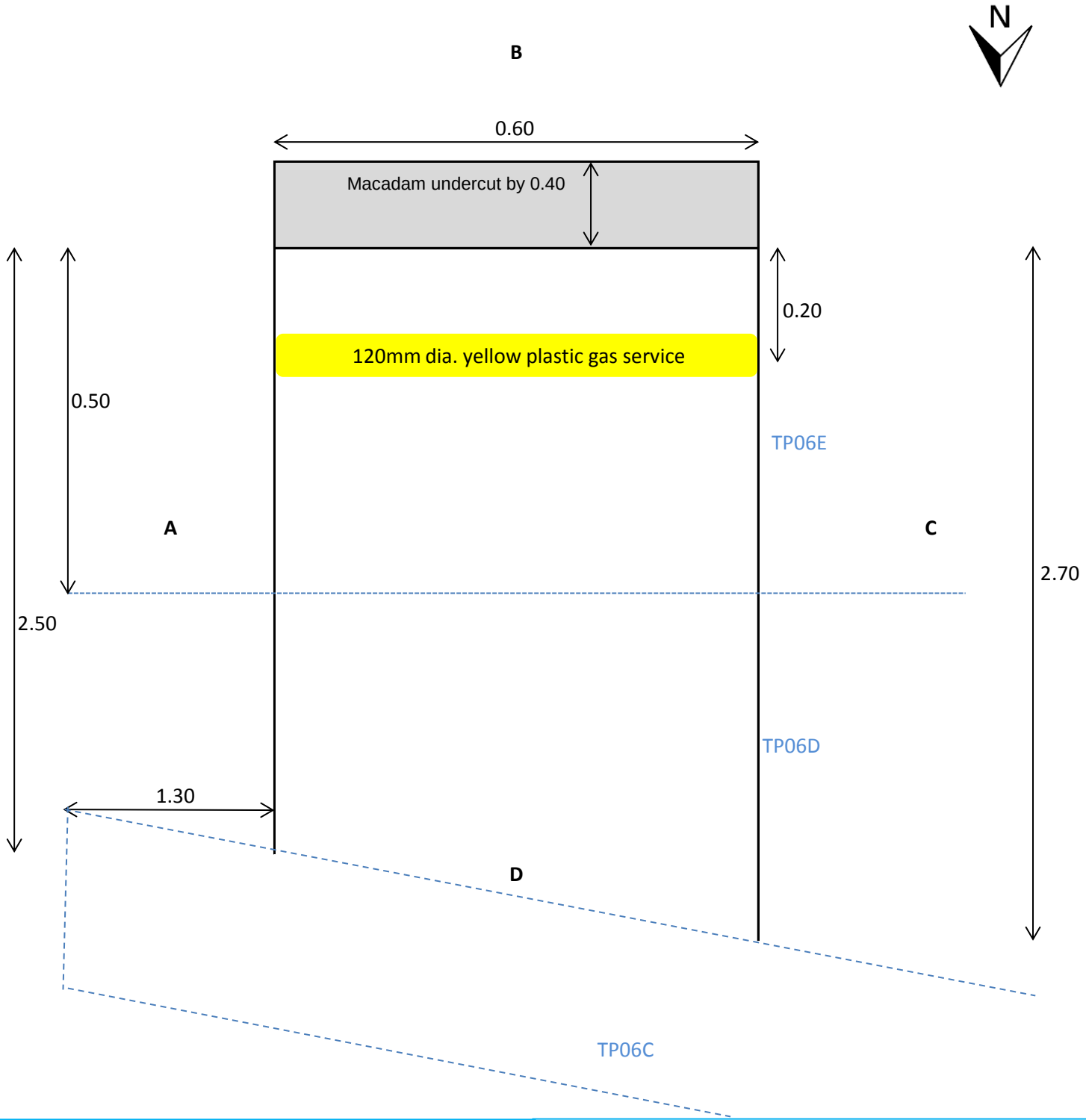
Carried out for **Morgan Sindall**

Trial Pit

TP06C

Trial Trench Sketch

Project	Wynnstay Avenue Trial Pits	Project No	F9049-19
Engineer	JC	Trial Pit No	TP06D & E
Date	16/10/2019	Sheet No / of	1/2

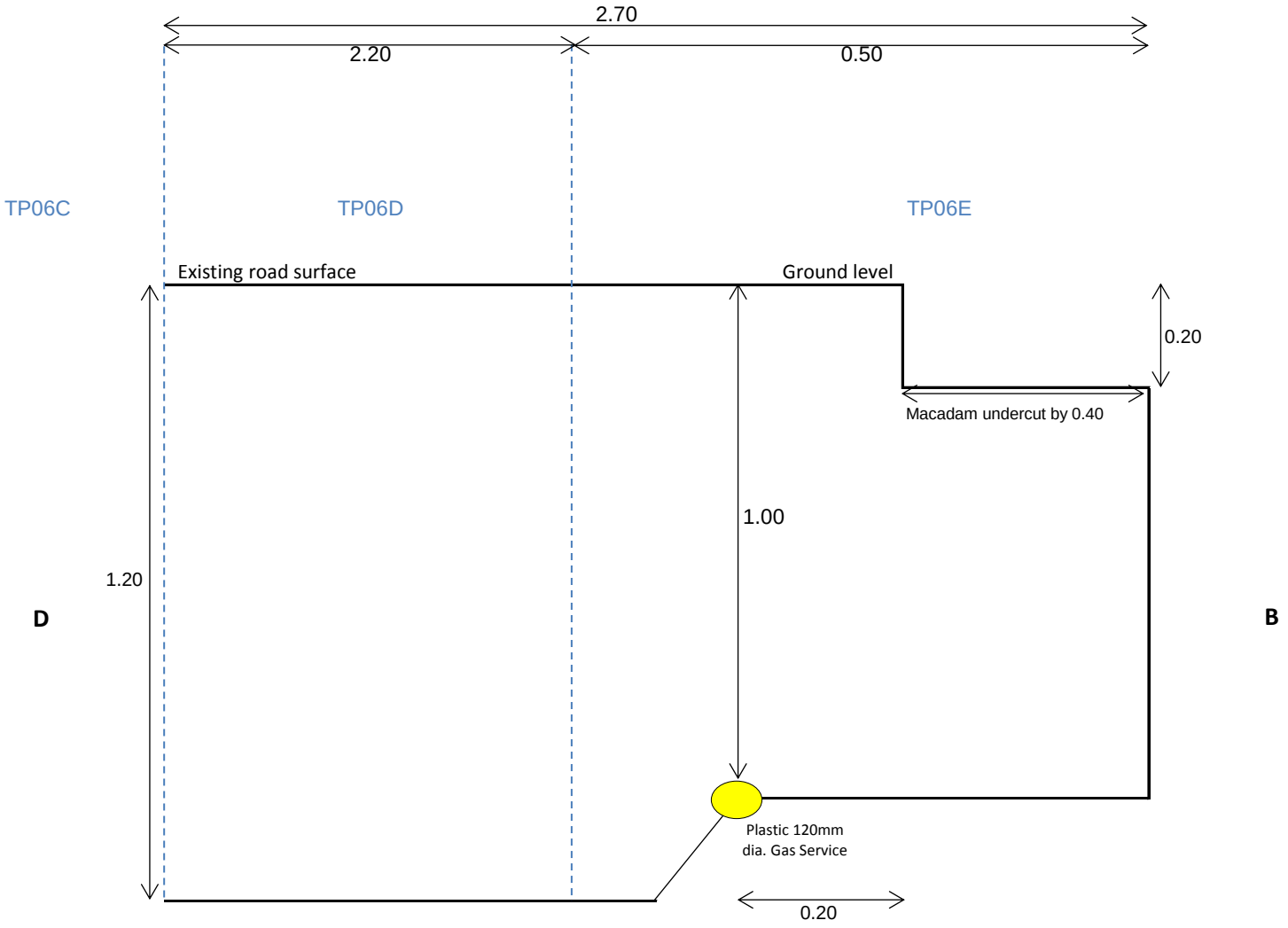


Remarks
Not to scale.
For strata detail, see associated logs.
All measurements are in metres, unless otherwise stated.

TP06D & E Location Plan

Trial Trench Sketch

Project	Wynnstay Avenue Trial Pits	Project No	F9049-19
Engineer	JC	Trial Pit No	TP06D & E
Date	16/10/2019	Sheet No / of	2/2



Remarks
Not to scale.
For strata detail, see associated logs.
All measurements are in metres, unless otherwise stated.

TP06D & E Cross Section

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 16/10/2019 **End** 16/10/2019	**Equipment, Methods and Remarks** 3 Tonne Tracked Excavator. Machine excavated trial pit to 1.20m Adjacent to TP06E to south, TP06C to north at 90deg.	**Dimension and Orientation** Width 0.60 m Length 2.20 m A / D / B / C 180 (Deg)	**Ground Level** 71.11 mOD **Coordinates (m)** E 334703.23 **National Grid** N 350753.03	

Samples and Tests

Depth	Type & No.	Records
0.00 - 0.15	B3	
0.05	ES1	
0.05	D2	
0.30 - 0.45	B4	
0.35	ES5	
0.35	D6	
0.45 - 1.20	B7	
0.50	ES8	
0.50	D9	
1.00	ES10	
1.00	D11	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Black dull MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 5% voids. (SURFACE COURSE)		(0.10) 0.10 +71.01		
MADE GROUND: Black glassy MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 10% voids. (BASE COURSE)		(0.05) 0.15 +70.96		
MADE GROUND: Dark orangish brown gravelly slightly clayey fine to coarse SAND with high cobble content. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with brick fragments. Cobbles are angular to subrounded of whole and half bricks.		(0.15) 0.30 +70.81		
MADE GROUND: Dark brown occasionally mottled black slightly gravelly very clayey fine to coarse SAND. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with clinker and slag.		(0.15) 0.45 +70.66		
MADE GROUND: Light grey mottled light brown and orange slightly gravelly slightly clayey fine to coarse SAND. Gravel is subangular to rounded fine to coarse of sandstone and siltstone with rare brick fragments.		(0.75)		
END OF EXPLORATORY HOLE		1.20 +69.91		

Groundwater Entries

No.	Depth	Strike (m)	Remarks
1	1.15		

Remarks

Depth (m)	Remarks

Stability Stable

Shoring None

Weather Dry / Sunny

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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AGS

Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP06D

Sheet 1 of 1

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 16/10/2019 **End** 16/10/2019	**Equipment, Methods and Remarks** 3 Tonne Tracked Excavator Machine excavated trial pit to 1.05m No groundwater encountered. Adjacent to TP06D.	**Dimension and Orientation** Width 0.50 m Length 0.60 m A / D / B / C 180 (Deg)	**Ground Level** 71.11 mOD **Coordinates (m)** E 334703.23 **National Grid** N 350753.03	

Samples and Tests

Depth	Type & No.	Records
0.15 - 1.05	B14	
0.20	ES12	
0.20	D13	
0.50	ES15	
0.50	D16	
1.00	ES17	
1.00	D18	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Black dull MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 5% voids. (SURFACE COURSE)		(0.10) 0.10 +71.01		
MADE GROUND: Black glassy MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 10% voids. (BASE COURSE)		(0.05) 0.15 +70.96		
MADE GROUND: Light grey mottled cream and black sandy slightly clayey fine to coarse GRAVEL of limestone with rare brick fragments.		(0.90)		
END OF EXPLORATORY HOLE		1.05 +70.06		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
1.00 - 1.00	Yellow 120mm dia. plastic gas service.
1.05	Base of pit 0.90m long (MACADAM undercut).

Stability Stable

Shoring None

Weather Dry

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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AGS

Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP06E

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 17/10/2019 **End** 17/10/2019	**Equipment, Methods and Remarks** 1.5 Tonne Tracked Excavator. Machine excavated trial pit to 1.05m	**Dimension and Orientation** Width 0.60 m Length 1.50 m A / D / B / C 90 (Deg)	**Ground Level** 71.01 mOD **Coordinates (m)** E 334698.87 **National Grid** N 350731.96	

Samples and Tests

Depth	Type & No.	Records
0.00 - 0.14	B3	
0.05	ES1	
0.05	D2	
0.14 - 0.35	B6	
0.20	ES4	
0.20	D5	
0.40 - 1.30	B9	
0.50	ES7	
0.50	D8	
1.00	ES10	
1.00	D11	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Black dull MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone. 5% voids. (SURFACE COURSE)		0.07 (0.07) +70.94		
MADE GROUND: Black glassy MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 5% voids. (BASE COURSE)		0.14 (0.07) +70.87		
MADE GROUND: Dark brown mottled orange and black very gravelly slightly clayey fine to coarse SAND with high cobble content and black sandy lenses. Gravel is angular to subrounded fine to coarse of sandstone, siltstone and limestone with ceramic and brick fragments. Cobbles are angular to subrounded fine to coarse of whole and half bricks.		0.35 (0.21) 0.40 (0.05) +70.66 +70.61		
MADE GROUND: Black gravelly slightly clayey fine to coarse SAND. Gravel is angular to subrounded fine and medium of sandstone and siltstone with clinker, slag and brick fragments.				
Light greyish brown occasionally mottled blue and black slightly gravelly clayey fine to coarse SAND. Gravel is subangular to rounded fine to coarse of sandstone and siltstone. (POSSIBLE MADE GROUND)		(0.90)		
END OF EXPLORATORY HOLE		1.30 +69.71		

Groundwater Entries

No.	Depth	Strike (m)	Remarks
1	1.15		

Remarks

Depth (m)	Remarks

Stability Stable
Shoring None
Weather Dry

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Scale 1:25

22/11/2019 11:28:08

AGS

Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP07A

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 17/10/2019 **End** 17/10/2019	**Equipment, Methods and Remarks** 1.5 Tonne Tracked Excavator. Machine excavated trial pit to 1.40m	**Dimension and Orientation** Width 0.60 m Length 1.80 m A / D / B / C 90 (Deg)	**Ground Level** 71.01 mOD **Coordinates (m)** E 334698.87 **National Grid** N 350731.96	

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			MADE GROUND: Black dull MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 5% voids. (SURFACE COURSE)		(0.10) 0.10 +70.91		
			MADE GROUND: Black glassy MACADAM, 70% aggregate of subangular to subrounded fine to coarse limestone, 10% voids. (BASE COURSE)		(0.05) 0.15 +70.86		
					(0.20) 0.35 +70.66		
0.45 - 1.40 0.50 0.50	B12 ES13 D14		MADE GROUND: Dark brown mottled orange and black very gravelly slightly clayey fine to coarse SAND with high cobble content. Gravel is angular to subrounded fine to coarse of sandstone, siltstone and limestone with ceramic and brick fragments. Cobbles are angular to subrounded of whole and half bricks.		(0.10) 0.45 +70.56		
			MADE GROUND: Black gravelly slightly clayey fine to coarse SAND. Gravel is angular to subrounded fine and medium of sandstone and siltstone with clinker, slag and brick fragments.				
1.00 1.00	ES15 D16		Light greyish brown occasionally mottled blue and black slightly gravelly clayey fine to coarse SAND. Gravel is subangular to rounded fine to coarse of sandstone and siltstone. (POSSIBLE MADE GROUND)		(0.95)	1	
1.40 1.40	ES17 D18		END OF EXPLORATORY HOLE		1.40 +69.61		

Groundwater Entries

No.	Depth	Strike (m)	Remarks
1	1.15		

Remarks

Depth (m)	Remarks

Stability Stable
Shoring None
Weather Dry

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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AGS

Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP07B

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 17/10/2019 **End** 17/10/2019	**Equipment, Methods and Remarks** 1.5 Tonne Tracked Excavator. Machine excavated trial pit to 1.50m	**Dimension and Orientation** Width 0.60 m Length 1.60 m A / D / B / C 90 (Deg)	**Ground Level** 71.01 mOD **Coordinates (m)** E 334698.87 **National Grid** N 350731.96	

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			MADE GROUND: Black dull MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 5% voids. (SURFACE COURSE)		(0.10) 0.10 +70.91		
0.20	ES19		MADE GROUND: Black glassy MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 10% voids. (BASE COURSE)		(0.05) 0.15 +70.86		
			MADE GROUND: Black very gravelly slightly clayey fine to coarse SAND. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with clinker, slag and brick fragments.		(0.30)		
0.45 - 0.80 0.50 0.50	B20 ES22 D21		MADE GROUND: Dark brown mottled black and occasionally orange slightly gravelly very clayey fine to coarse SAND with occasional lenses of black fine and medium sand. Gravel is angular to subrounded fine to coarse of sandstone and siltstone.	0.45-0.50 Occasional rootlets.	0.45 +70.56		
					(0.35)		
0.80 - 1.50	B25		Light greyish brown occasionally mottled blue and black slightly gravelly clayey fine to coarse SAND. Gravel is subangular to rounded fine to coarse of sandstone and siltstone. (POSSIBLE MADE GROUND)		0.80 +70.21		
1.00 1.00	ES23 D24				(0.70)	1	
1.50 1.50	ES26 D27		END OF EXPLORATORY HOLE		1.50 +69.51		

Groundwater Entries

No.	Depth	Strike (m)	Remarks
1	1.15		

Remarks

Depth (m)	Remarks

Stability Stable

Shoring None

Weather Dry

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

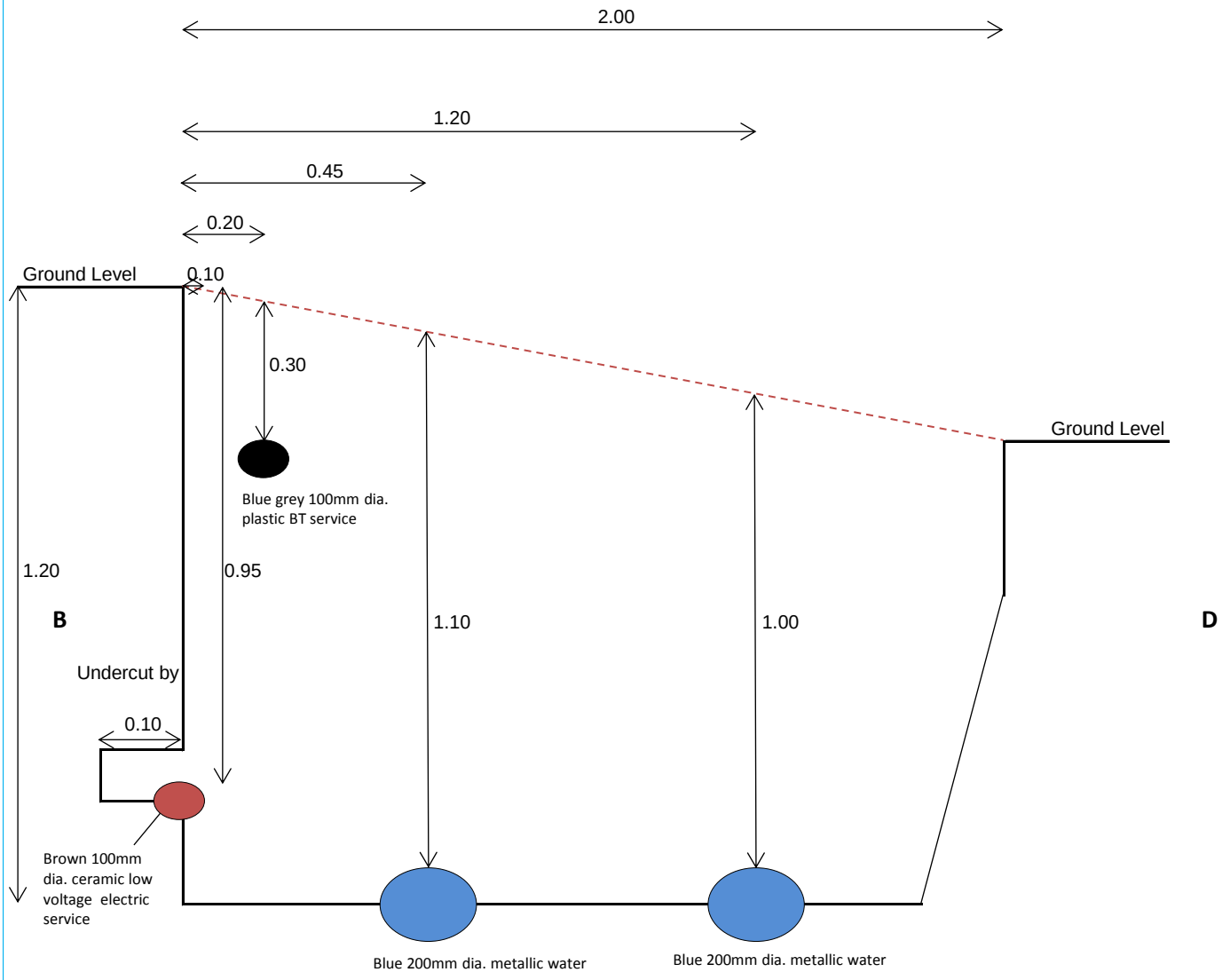
Carried out for **Morgan Sindall**

Trial Pit

TP07C

Trial Trench Sketch

Project	Wynnstay Avenue Trial Pits	Project No	F9049-19
Engineer	JC	Trial Pit No	TP07D
Date	15/10/2019	Sheet No / of	2/2

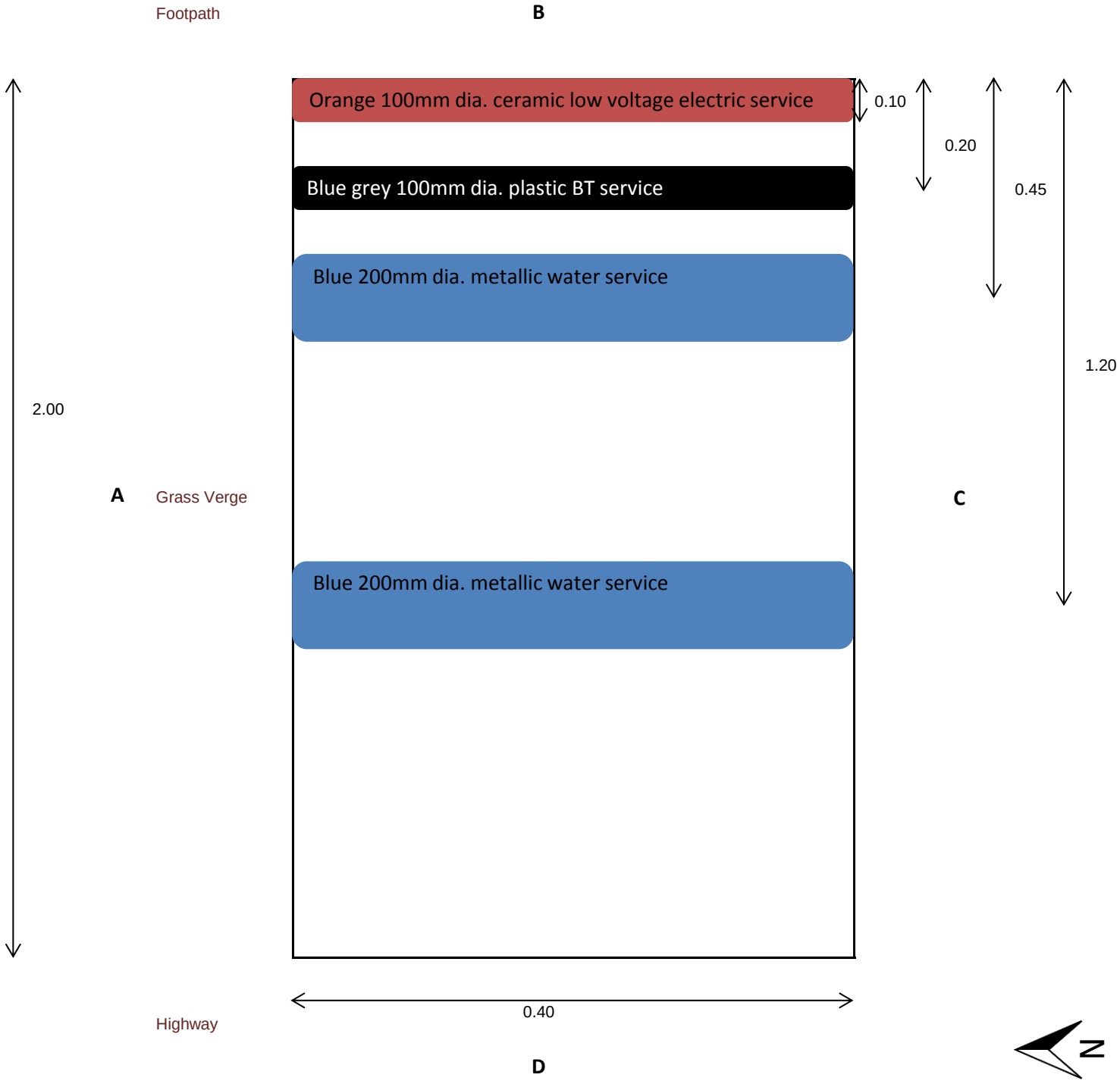


Remarks
Not to scale.
For strata detail, see associated logs.
All measurements are in metres, unless otherwise stated.

TP07D Cross Section

Trial Trench Sketch

Project	Wynnstay Avenue Trial Pits	Project No	F9049-19
Engineer	JC	Trial Pit No	TP07D
Date	18/10/2019	Sheet No / of	1/2



Remarks
Not to scale.
For strata detail, see associated logs.
All measurements are in metres, unless otherwise stated.

TP07D Location Plan

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 18/10/2019 **End** 18/10/2019	**Equipment, Methods and Remarks** 1.5 Tonne Tracked Excavator. Machine excavated trial pit to 1.20m Gas services not located No groundwater encountered.	**Dimension and Orientation** Width 0.40 m Length 2.00 m A / D / B / C 90 (Deg)	**Ground Level** 71.04 mOD **Coordinates (m)** E 334703.97 **National Grid** N 350732.23	

Samples and Tests

Depth	Type & No.	Records
0.00 - 0.10	B3	
0.05	ES1	
0.05	D2	
0.10 - 0.50	B6	
0.20	ES4	
0.20	D5	
0.50	ES7	
0.50	D8	
0.50 - 1.20	B11	
1.00	ES9	
1.00	D10	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Dark brown mottled light brown gravelly slightly clayey fine to coarse SAND with many rootlets. Gravel is subangular to rounded fine to coarse of sandstone and siltstone with ceramic, macadam and brick fragments.		(0.10) 0.10 +70.94		
MADE GROUND: Light brown occasionally mottled orange gravelly slightly clayey fine to coarse SAND. Gravel is subangular to rounded fine to coarse of sandstone and siltstone with rare woody fragments and occasional ceramic and brick fragments.	0.50-1.20 Slightly gravelly.	(1.10)		
END OF EXPLORATORY HOLE		1.20 +69.84		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.30	Bluish grey 100mm dia. plastic BT cable.
0.95	Ceramic tile with 'Danger Electric' on, over black 100mm dia. metallic LV electric.
1.00	Blue 200mm dia. metallic water.
1.10	Blue 200mm dia. metallic possible water pipe.

Stability Stable
Shoring None
Weather Dry

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

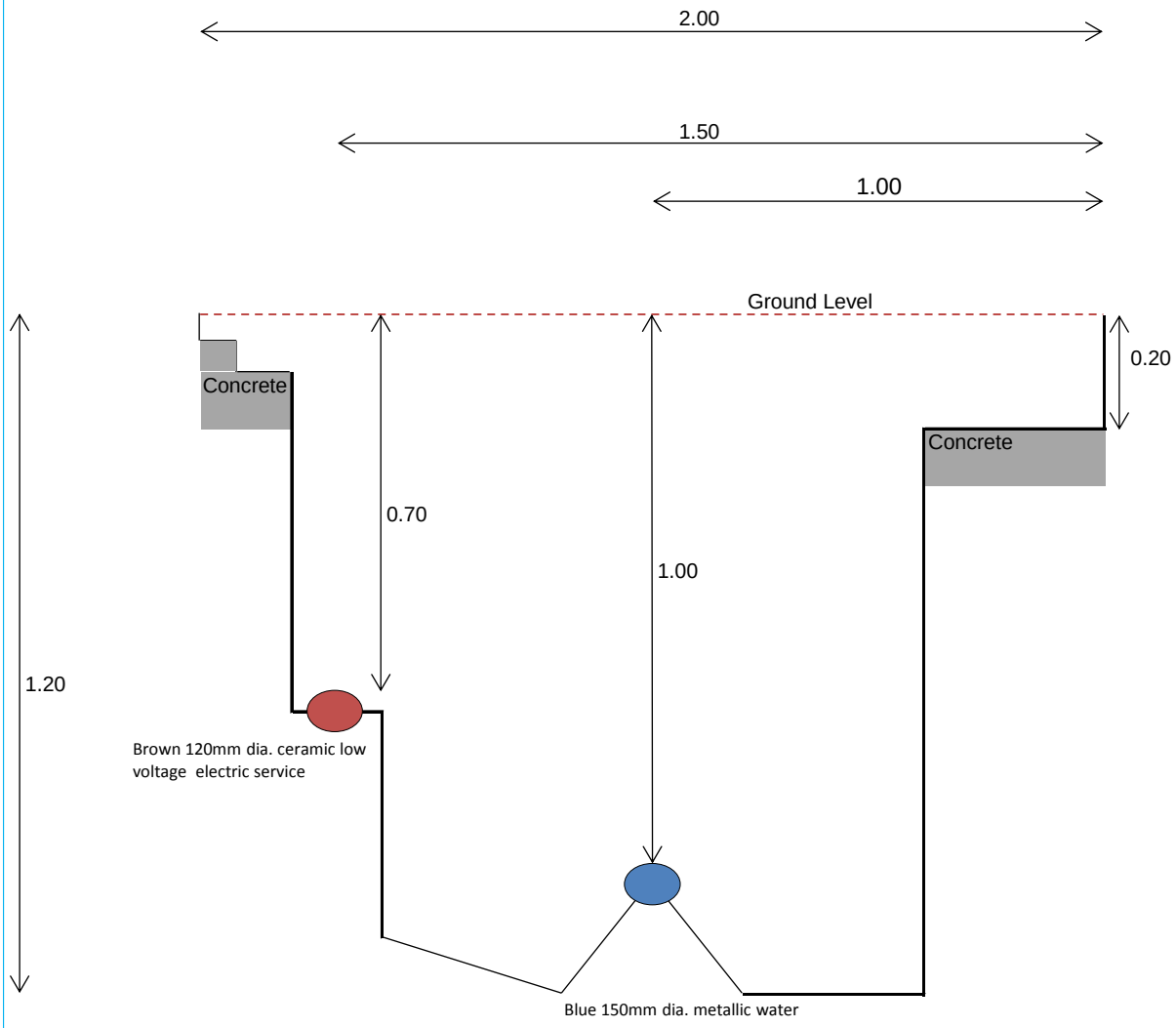
Trial Pit

TP07D

Sheet 1 of 1

Trial Trench Sketch

Project	Wynnstay Avenue Trial Pits	Project No	F9049-19
Engineer	JC	Trial Pit No	TP09A
Date	21/10/2019	Sheet No / of	2/2



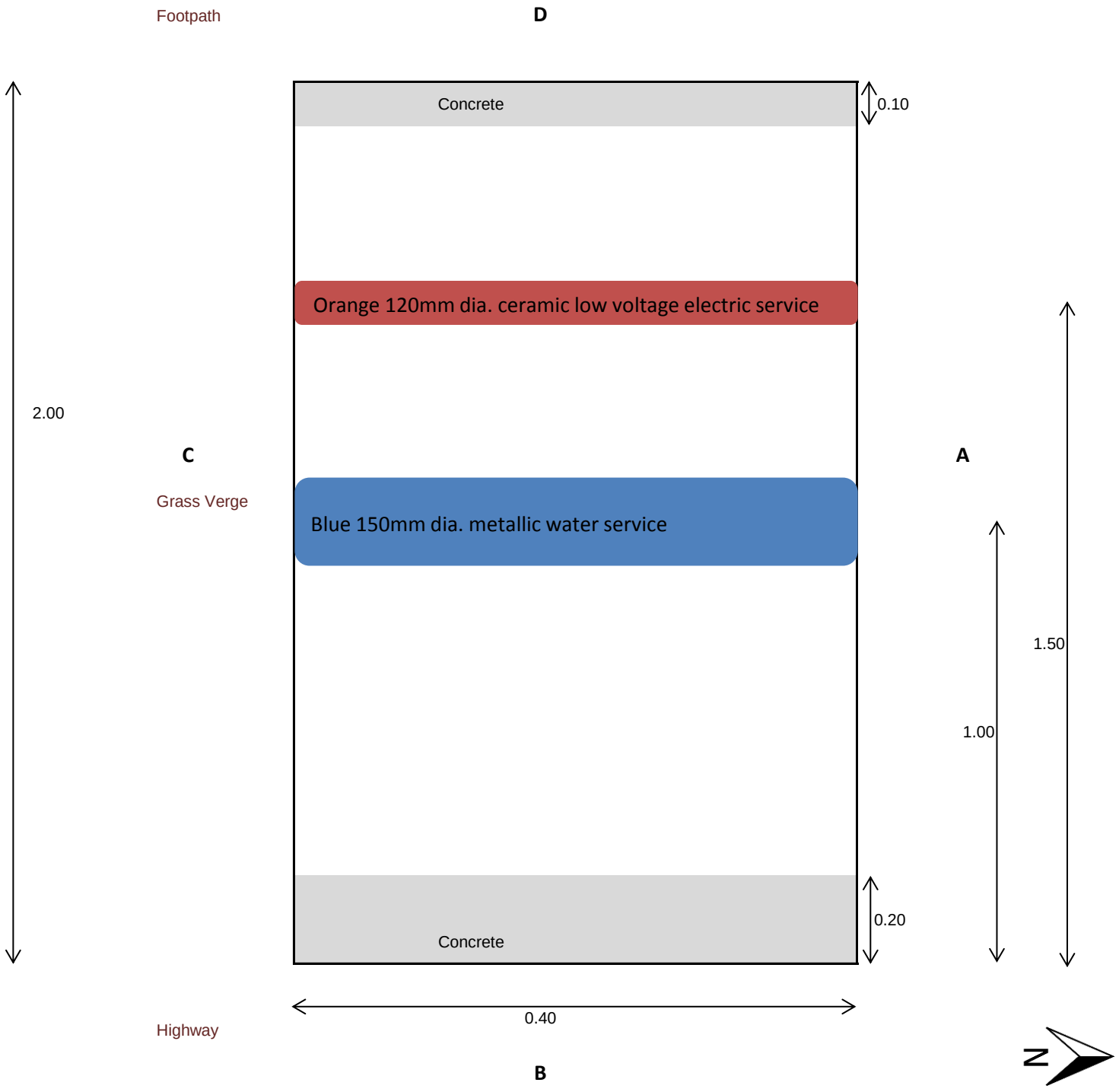
Footpath Grass Verge Highway

Remarks
Not to scale.
For strata detail, see associated logs.
All measurements are in metres, unless otherwise stated.

TP09A Cross Section

Trial Trench Sketch

Project	Wynnstay Avenue Trial Pits	Project No	F9049-19
Engineer	JC	Trial Pit No	TP09A
Date	21/10/2019	Sheet No / of	1/2



Remarks
Not to scale.
For strata detail, see associated logs.
All measurements are in metres, unless otherwise stated.

TP09A Location Plan

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 21/10/2019 **End** 21/10/2019	**Equipment, Methods and Remarks** 1.5 Tonne Tracked Excavator. Machine excavated trial pit to 1.20m	**Dimension and Orientation** Width 0.40 m Length 2.00 m A / D / B / C 90 (Deg)	**Ground Level** 70.58 mOD **Coordinates (m)** E 334673.24 **National Grid** N 350734.19	

Samples and Tests

Depth	Type & No.	Records
0.00 - 0.10	B3	
0.05	ES1	
0.05	D2	
0.10 - 0.40	B6	
0.20	ES4	
0.20	D5	
0.40 - 1.10	B9	
0.50		
0.50	ES7	
0.50	D8	
1.00	ES10	
1.00	D11	
1.10 - 1.20	B14	
1.20	ES12	
1.20	D13	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Dark brown occasionally mottled white gravelly slightly silty fine and medium SAND with many rootlets. Gravel is subangular to rounded fine to coarse of sandstone and siltstone with ceramic and brick fragments.		(0.10) 0.10 +70.48		
MADE GROUND: Dark orangish brown mottled light brown slightly gravelly clayey fine to coarse SAND with occasional pockets (up to 30mm) of firm dark brown slightly sandy slightly gravelly clay. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with ceramic and brick fragments.		(0.30) 0.40 +70.18		
MADE GROUND: Soft to firm dark brown occasionally mottled black slightly sandy slightly gravelly CLAY with occasional yellowish light brown fine to coarse sand lenses and rare black preserved root structures. Gravel is subangular to rounded fine and medium rarely coarse of sandstone, siltstone and coal.	0.50 Yellow and black plastic tape.	(0.70) 1.10 +69.48	1	
Light grey mottled dark brown slightly gravelly slightly clayey fine to coarse SAND with pockets (up to 40mm) of soft dark brown slightly sandy slightly gravelly clay. Gravel is subangular to rounded fine to coarse of sandstone and siltstone. (POSSIBLE MADE GROUND)		(0.10) 1.20 +69.38		
END OF EXPLORATORY HOLE				

Groundwater Entries

No.	Depth Strike (m)	Remarks
1	1.10	

Remarks

Depth (m)	Remarks
0.10	Ceramic tile 120mm dia. over 45mm dia. plastic ducting for electric service.
0.70	Ceramic tile 120mm dia. with 'Danger Electric' written on over blue 45mm dia. electric service.
1.00	Blue 150mm dia. metallic water pipe.

Stability Stable

Shoring None

Weather Dry

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP09A

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 21/10/2019 **End** 21/10/2019	**Equipment, Methods and Remarks** 1.5 Tonne Tracked Excavator. Machine excavated trial pit to 1.40m No services encountered.	**Dimension and Orientation** Width 0.60 m Length 5.00 m A / D / B / C 90 (Deg)	**Ground Level** 70.49 mOD **Coordinates (m)** E 334673.14 **National Grid** N 350733.34	

Samples and Tests

Depth	Type & No.	Records
0.00 - 0.15	B3	
0.05	ES1	
0.05	D2	
0.15 - 0.45	B6	
0.20	ES4	
0.20	D5	
0.45 - 1.00	B9	
0.50	ES7	
0.50	D8	
0.90	ES10	
0.90	D11	
1.00 - 1.40	B14	
1.20	ES12	
1.20	D13	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Black dull MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 5% voids. (SURFACE COURSE)		(0.10) 0.10 +70.39		
MADE GROUND: Black glassy MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 10% voids. (BASE COURSE)		(0.05) 0.15 +70.34		
MADE GROUND: Dark grey mottled black and orange very gravelly clayey fine to coarse SAND with high cobble content, medium boulder content and rare rootlets. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with glass, clinker, slag, concrete and brick. Cobbles are angular to subrounded of concrete, half and whole bricks. Boulders are (up to 500mm) angular to subangular of concrete and mortared bricks.		(0.30) 0.45 +70.04		
MADE GROUND: Dark grey mottled black and dark brown gravelly very clayey fine to coarse SAND. Gravel is angular to subrounded fine to coarse of sandstone and siltstone.		(0.55) 1.00 +69.49		
Light grey mottled dark brown slightly gravelly clayey fine to coarse SAND. Gravel is subangular to rounded fine to coarse of sandstone and siltstone. (POSSIBLE MADE GROUND)		(0.40) 1.40 +69.09	1	
END OF EXPLORATORY HOLE				

Groundwater Entries

No.	Depth Strike (m)	Remarks
1	1.20	

Remarks

Depth (m)	Remarks

Stability Stable
Shoring None
Weather Dry

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

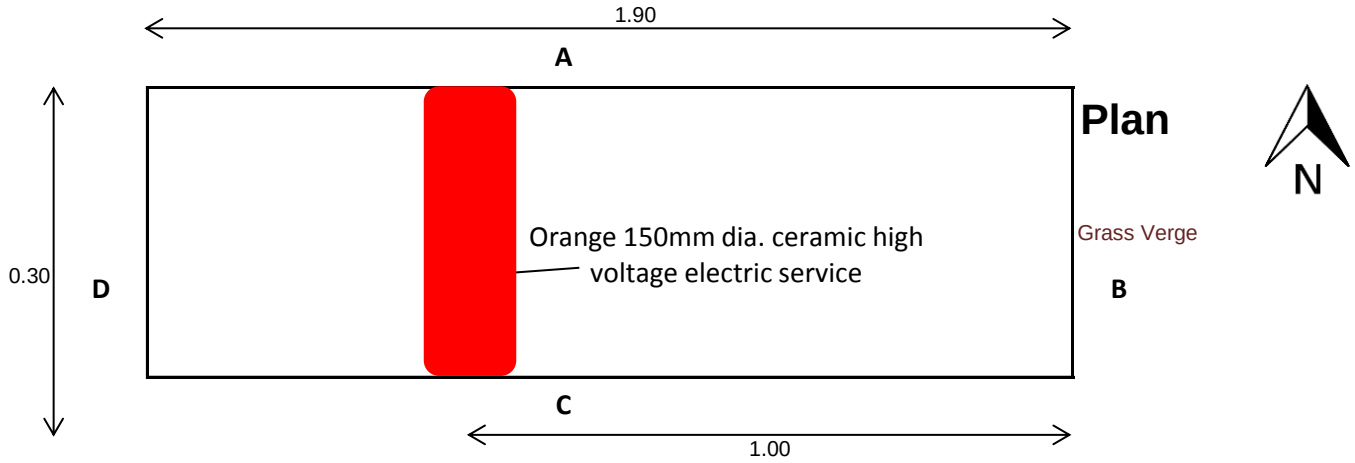
Carried out for **Morgan Sindall**

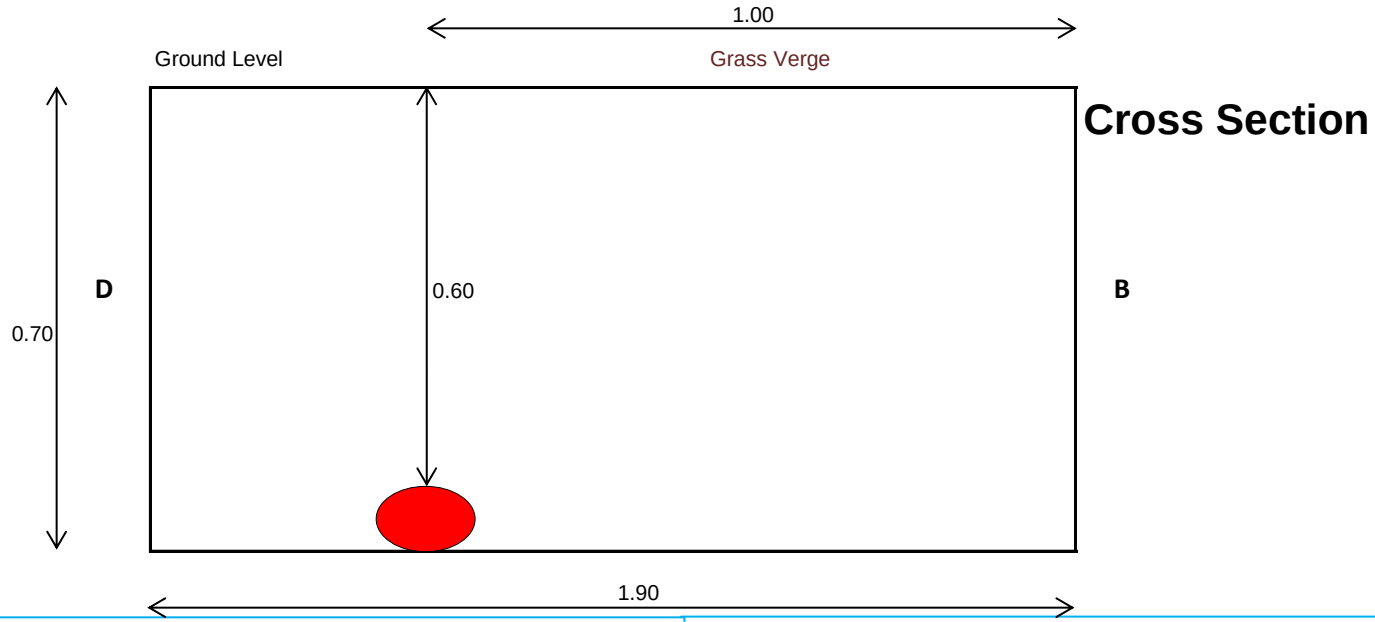
Trial Pit

TP09B

Trial Trench Sketch

Project	Wynnstay Avenue Trial Pits	Project No	F9049-19
Engineer	JC	Trial Pit No	TP10A
Date	22/10/2019	Sheet No / of	1/1





Remarks
Not to scale.
For strata detail, see associated logs.
All measurements are in metres, unless otherwise stated.

TP10A Location

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 22/10/2019 **End** 22/10/2019	**Equipment, Methods and Remarks** 3 Tonne Tracked Excavator. Machine dug trial pit to 0.70m No groundwater encountered.	**Dimension and Orientation** Width 0.30 m Length 1.90 m A / D / B / C 90 (Deg)	**Ground Level** 70.50 mOD **Coordinates (m)** E 334675.66 **National Grid** N 350726.18	

Samples and Tests

Depth	Type & No.	Records
0.00 - 0.20	B3	
0.10	ES1	
0.10	D2	
0.20 - 0.70	B6	
0.50	ES4	
0.50	D5	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Dark brown occasionally mottled white slightly gravelly silty fine to coarse SAND with many rootlets and some roots (up to 10mm). Gravel is angular to subrounded fine to coarse of sandstone and siltstone with ceramic and brick fragments.		(0.20)		
		0.20 +70.30		
MADE GROUND: Light brown mottled dark brown and occasionally orange slightly gravelly clayey fine to coarse SAND with occasional pockets (up to 40mm) of soft to firm light brown slightly sandy slightly gravelly clay and yellowish brown fine to coarse sand lenses. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with plastic, ceramic and brick fragments.		(0.50)		
END OF EXPLORATORY HOLE		0.70 +69.80		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.60	Light orangish brown 150mm dia. ceramic tile 'Danger Electric' written on - high voltage service.

Stability Stable
Shoring None
Weather Dry

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

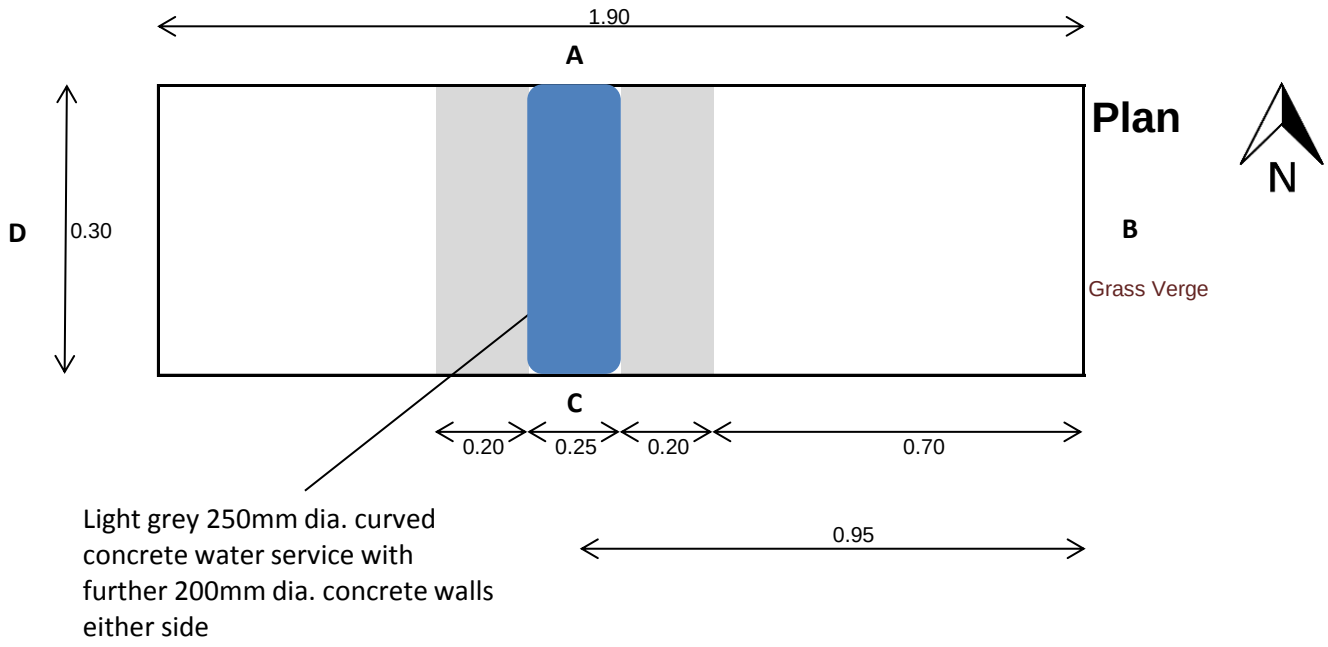
Trial Pit

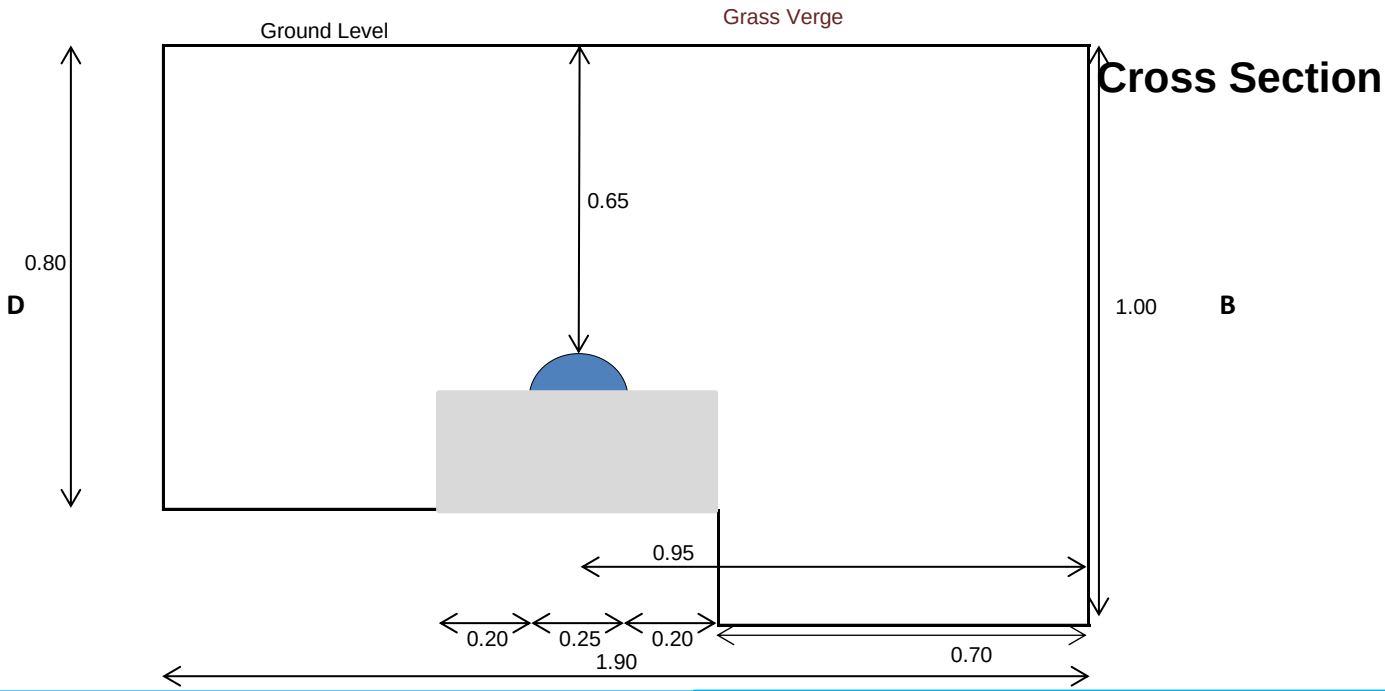
TP10A

Sheet 1 of 1

Trial Trench Sketch

Project	Wynnstay Avenue Trial Pits	Project No	F9049-19
Engineer	JC	Trial Pit No	TP10B
Date	22/10/2019	Sheet No / of	1/1





Remarks
Not to scale.
For strata detail, see associated logs.
All measurements are in metres, unless otherwise stated.

TP10B Location

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 22/10/2019 **End** 22/10/2019	**Equipment, Methods and Remarks** 3 Tonne Tracked Excavator. Machine excavated trial pit to 1.00m No groundwater encountered.	**Dimension and Orientation** Width 0.30 m Length 1.90 m A / D / B / C 90 (Deg)	**Ground Level** 70.55 mOD **Coordinates (m)** E 334677.56 **National Grid** N 350718.17	

Samples and Tests

Depth	Type & No.	Records
0.00 - 0.20	B9	
0.10	ES7	
0.10	D8	
0.20 - 0.40	B12	
0.30	ES10	
0.30	D11	
0.35	D15	
0.40 - 1.00	B18	
0.50	ES13	
0.50	D14	
1.00	ES16	
1.00	D17	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Dark brown occasionally mottled white slightly gravelly silty fine to coarse SAND with many rootlets. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with ceramic and brick fragments.		(0.20) 0.20 +70.35		
MADE GROUND: Light brown mottled dark brown and occasionally orange slightly gravelly clayey fine to coarse SAND with pockets (up to 30mm) of soft to firm light brown slightly sandy slightly gravelly clay, occasional light yellowish brown sand lenses and low cobble content. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with plastic, glass, ceramic and brick fragments. Cobbles are angular to subrounded of whole and half bricks.		(0.20) 0.40 +70.15		
MADE GROUND: Dark grey mottled black and dark brown gravely very clayey fine to coarse SAND. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with slag, clinker, ceramic and brick fragments.		(0.60)		
END OF EXPLORATORY HOLE		1.00 +69.55		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.35	Light greenish blue 100mm dia. piece of pipe work containing chrysotile (D15).
0.65	Light grey 250mm dia. concrete pipe with further 200mm of concrete wall either side. Storm water service.

Stability Stable
Shoring None
Weather Dry

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP10B

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 08/10/2019 **End** 08/10/2019	**Equipment, Methods and Remarks** JCB 3CX Machine excavated trial pit to 3.50m No services found within pit.	**Dimension and Orientation** Width 0.90 m Length 3.00 m A / D / B / C 90 (Deg)	**Ground Level** 70.74 mOD **Coordinates (m)** E 334687.94 **National Grid** N 350664.80	

Samples and Tests

Depth	Type & No.	Records
0.10	ES1	
0.10	D2	
0.20 - 0.40	B5	
0.30	ES3	
0.30	D4	
0.40 - 0.60	B8	
0.50	ES6	
0.50	D7	
0.60 - 1.00	B11	
1.00	ES9	
1.00	D10	
1.00 - 1.70	B12	
1.20 - 2.40	D15	
2.00	ES13	
2.00	D14	
2.40 - 3.50	B18	
3.00	ES16	
3.00	D17	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Dark brown slightly gravelly clayey fine to coarse SAND with many rootlets, rare bricks and brick fragments. . Gravel is angular to subrounded fine to coarse of sandstone and siltstone.		(0.20)		
		0.20 +70.54		
MADE GROUND: Dark brown mottled grey very gravelly clayey fine to coarse SAND with high cobble content. Gravel is subangular to rounded fine to coarse of sandstone and siltstone. Cobbles are subrounded to rounded of siltstone. Boulders are subangular to rounded of sandstone.		(0.20)		
		0.40 +70.34		
MADE GROUND: Firm to stiff light orangish brown mottled dark brown slightly gravelly sandy CLAY. Gravel is subangular to rounded fine and medium of sandstone, siltstone and coal.		(0.30)		
		0.70 +70.04		
MADE GROUND: Dark greyish brown very gravelly slightly clayey fine to coarse SAND with high cobble content. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with ceramic, slag, clinker and brick fragments. Cobbles are angular to subrounded of sandstone and limestone.		(1.00)		
		1.70 +69.04		
MADE GROUND: Light brown mottled orange and grey sandy slightly clayey angular to subrounded fine to coarse GRAVEL of sandstone, siltstone and limestone.		(0.70)		
		2.40 +68.34	1	
MADE GROUND: Brownish grey gravelly fine to coarse SAND with high cobble content. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with ceramic and brick fragments. Cobbles are angular to subrounded of whole bricks.		(1.10)		
END OF EXPLORATORY HOLE		3.50 +67.24		

Groundwater Entries

No.	Depth Strike (m)	Remarks
1	2.40	

Remarks

Depth (m)	Remarks
3.50	On completion of pit (3.50m), waited 30mins as requested by Client, to observe water ingress to 2.45m

Stability Unstable below 1.70m

Shoring None

Weather Overcast

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP11

Sheet 1 of 1

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 08/10/2019 **End** 08/10/2019	**Equipment, Methods and Remarks** JCB 3CX Machine excavated trial pit to 3.75m Terminated at 3.75m due to collapse of brick wall. No services found within pit.	**Dimension and Orientation** Width 0.90 m Length 3.00 m A / D / B / C 90 (Deg)	**Ground Level** 71.07 mOD **Coordinates (m)** E 334664.00 **National Grid** N 350625.81	

Samples and Tests

Depth	Type & No.	Records
0.00 - 0.20	B3	
0.10	ES1	
0.10	D2	
0.20 - 1.00	B6	
0.50	ES4	
0.50	D5	
1.00	ES7	
1.00	D8	
1.00 - 2.80	B9	
2.00	ES10	
2.00	D11	
2.80 - 3.50	B12	
3.00	ES13	
3.00	D14	
3.50 - 3.75	B17	
3.60	ES15	
3.60	D16	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Dark brown slightly gravelly slightly clayey fine to coarse SAND with many rootlets. Gravel is angular to subrounded fine to coarse of sandstone and siltstone.		(0.20)		
MADE GROUND: Dark brown mottled whitish grey gravelly slightly clayey fine to coarse SAND with high cobble and medium boulder content. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with ceramic, glass, slag, clinker and brick fragments. Cobbles are angular to subrounded of sandstone with whole and half bricks. Boulders are angular to subrounded of sandstone.		0.20 +70.87 (2.60)		
MADE GROUND: Soft to firm dark grey mottled brownish blue slightly gravelly sandy CLAY with low cobble content and a slight organic odour. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with ceramic, slag, clinker, metal springs and metal bolts with brick fragments. Cobbles are angular to subrounded of ceramic pipe work, half and whole bricks and sandstone.		2.80 +68.27 (0.70)		
MADE GROUND: Brownish grey mottled blue and black slightly gravelly very clayey fine to coarse SAND with occasional wood fragments. Gravel is subangular to rounded fine and medium of sandstone, siltstone and coal.		3.50 +67.57 (0.25)		
END OF EXPLORATORY HOLE		3.75 +67.32		

1 ▽

Groundwater Entries

No.	Depth Strike (m)	Remarks
1	2.40	

Remarks

Depth (m)	Remarks
3.75	At end of pit (3.75m), waited 30mins as requested by Client, water rose to 3.35m.

Stability Unstable below 3.50m

Shoring None

Weather Raining

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Scale 1:25

22/11/2019 11:28:11

AGS

Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP13

Sheet 1 of 1

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 08/10/2019 **End** 08/10/2019	**Equipment, Methods and Remarks** JCB 3CX Machine excavated trial pit to 3.50m Terminated at 3.50m due to collapse of wall below 2.40m. No services found within pit.	**Dimension and Orientation** Width 2.00 m Length 3.00 m A / B / C / D 180 (Deg)	**Ground Level** 71.11 mOD **Coordinates (m)** E 334653.44 **National Grid** N 350598.18	

Samples and Tests

Depth	Type & No.	Records
0.00 - 0.20	B3	
0.10	ES1	
0.10	D2	
0.20 - 0.50	B6	
0.30	ES4	
0.30	D5	
0.50 - 0.80	B8	
0.70	ES7	
0.80 - 1.50	B12	
1.00	ES10	
1.00	D11	
1.50 - 2.40	B15	
2.00	ES13	
2.00	D14	
2.40 - 3.50	B18	
3.00	ES16	
3.00	D17	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Dark brown slightly gravelly slightly clayey fine to coarse SAND with frequent rootlets. Gravel is subangular to rounded fine and medium of sandstone and siltstone.		(0.20)		
MADE GROUND: Dark brown mottled dark grey gravelly slightly clayey fine to coarse SAND with high cobble content, low boulder content and occasional rootlets. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with slag, clinker and brick fragments. Cobbles are angular to subrounded of sandstone and whole and half bricks. Boulders are subangular to rounded of sandstone.		0.20 +70.91 (0.30)		
MADE GROUND: Firm to stiff light brown mottled dark brownish orange and grey slightly gravelly sandy CLAY with low cobble content. Gravel is subangular to rounded fine to coarse of sandstone and siltstone with occasional brick fragments. Cobbles are subangular to rounded of sandstone.		0.50 +70.61 (0.30)		
MADE GROUND: Light brown mottled cream very gravelly slightly silty fine to coarse SAND with high cobble and low boulder content. Gravel is angular to subrounded fine to coarse of sandstone, siltstone and coal with slag, clinker and brick fragments. Cobbles and boulders are subangular to rounded of sandstone.		0.80 +70.31 (0.70)		
MADE GROUND: Dark grey mottled dark brown and black gravelly slightly silty fine to coarse SAND with low cobble content and occasional timber and glass bottles and an organic odour. Gravel is subangular to rounded fine to coarse of sandstone and siltstone with ceramic, slag, glass, clinker and brick fragments. Cobbles are subangular to rounded of sandstone.		1.50 +69.61 (0.90)		
MADE GROUND: Dark grey mottled dark brown and black slightly gravelly clayey fine to coarse SAND with high cobble content. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with timber and brick fragments. Cobbles are half and whole bricks and timber.		2.40 +68.71 (1.10)	1	
END OF EXPLORATORY HOLE		3.50 +67.61		

Groundwater Entries

No.	Depth Strike (m)	Remarks
1	2.40	

Remarks

Depth (m)	Remarks
3.50	At end of pit (3.50m), waited 30mins as requested by Client, water rose to 2.70m.

Stability Unstable below 2.40m

Shoring None

Weather Raining

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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22/11/2019 11:28:11

AGS

Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP14

Sheet 1 of 1

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 07/10/2019 **End** 07/10/2019	**Equipment, Methods and Remarks** JCB 3CX Machine excavated trial pit to 3.90m No services found within pit.	**Dimension and Orientation** Width 0.90 m Length 3.00 m A / D / B / C 90 (Deg)	**Ground Level** 71.50 mOD **Coordinates (m)** E 334629.48 **National Grid** N 350599.63	

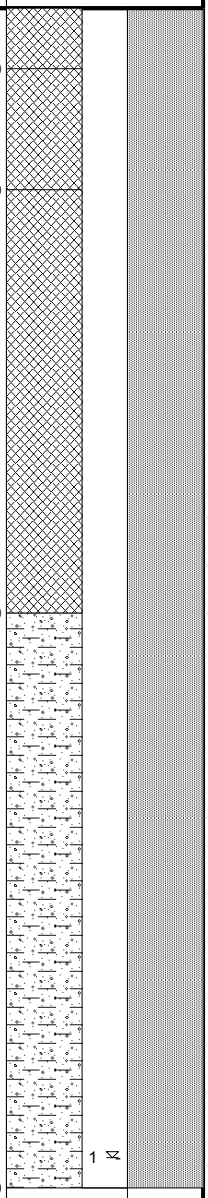
Samples and Tests

Depth	Type & No.	Records
0.00 - 0.20	B3	
0.10	ES1	
0.10	D2	
0.20 - 0.60	B6	
0.50	ES4	
0.50	D5	
1.00	ES7	
1.00	D8	
1.60 - 2.00	B9	
2.10	ES11	
2.10	D12	
2.10 - 3.00	B10	
3.00 - 3.95	B13	
3.10	ES14	
3.10	D15	

Strata Description

Main	Detail	Depth, Level (Thickness)
MADE GROUND: Dark brown slightly gravelly clayey fine to coarse SAND with many rootlets. Gravel is subrounded to rounded fine to coarse of sandstone and siltstone.		(0.20)
MADE GROUND: Dark brown mottled light brown gravelly slightly clayey fine to coarse SAND with medium cobble content. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with slag, timber and brick fragments.		0.20 +71.30 (0.40)
MADE GROUND: Dark grey mottled white and light brown slightly gravelly clayey fine to coarse SAND with low cobble content and strong organic odour. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with slag, clinker and brick fragments. Cobbles are angular to subrounded of sandstone and siltstone with half bricks.		0.60 +70.90 (1.40)
Fissured light mottled dark brown and orange slightly gravelly sandy CLAY with relict black rootlets. Gravel is subangular to rounded fine and medium of sandstone and siltstone.		2.00 +69.50 (1.90)
END OF EXPLORATORY HOLE		3.90 +67.60

Legend



Backfill

Groundwater Entries

No.	Depth Strike (m)	Remarks
1	3.80	

Remarks

Depth (m)	Remarks

Stability Stable
Shoring None
Weather Raining

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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22/11/2019 11:28:12

AGS

Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP15

Sheet 1 of 1

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 07/10/2019 **End** 07/10/2019	**Equipment, Methods and Remarks** JCB 3CX Machine excavated trial pit to 1.20m No services found within pit. No groundwater encountered.	**Dimension and Orientation** Width 0.30 m Length 2.20 m A / D / B / C 90 (Deg)	**Ground Level** 71.69 mOD **Coordinates (m)** E 334613.10 **National Grid** N 350599.00	

Samples and Tests

Depth	Type & No.	Records
0.00 - 0.20	B3	
0.10	ES1	
0.10	D2	
0.20 - 0.40	B6	
0.30	ES4	
0.30	D5	
0.40 - 0.60	B9	
0.50	ES7	
0.50	D8	
0.60 - 1.20	B12	
1.00	ES10	
1.00	D11	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Dark brown slightly gravelly clayey fine to coarse SAND with many rootlets. Gravel is subangular to rounded fine and medium of sandstone and siltstone with rare brick fragments.		(0.20)		
		0.20 +71.49		
MADE GROUND: Dark brown mottled dark grey slightly clayey fine to coarse SAND with high cobble content and occasional pockets of slightly gravelly clay (up to 200mm). Gravel is angular to subrounded fine to coarse of sandstone and siltstone with charcoal, slag, clinker and ceramic with brick fragments. Cobbles are angular to subrounded of whole and half bricks.		(0.20)		
		0.40 +71.29		
MADE GROUND: Light brown mottled dark brown slightly gravelly slightly clayey fine to coarse SAND. Gravel is angular to subrounded fine to coarse of sandstone and siltstone.		(0.20)		
		0.60 +71.09		
MADE GROUND: Dark grey mottled dark brown and black gravelly slightly clayey fine to coarse SAND with high cobble content. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with clinker, slag and brick fragments. Cobbles are angular to subrounded of half and whole bricks.		(0.60)		
END OF EXPLORATORY HOLE		1.20 +70.49		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks

Stability Stable

Shoring None

Weather Raining

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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22/11/2019 11:28:12

AGS

Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP16

Trial Pit Log

SOCOTEC

Logged JC **Checked** AG **Approved** AG	**Start** 14/10/2019 **End** 14/10/2019	**Equipment, Methods and Remarks** 1.5 and 3 Tonne Tracked Excavator. Machine excavated trial pit to No groundwater encountered.	**Dimension and Orientation** Width 0.60 m Length 3.50 m A / D / B / C 180 (Deg)	**Ground Level** 71.30 mOD **Coordinates (m)** E 334710.24 **National Grid** N 350777.51	

Samples and Tests

Depth	Type & No.	Records
0.00 - 0.10	B3	
0.05	ES1	
0.05	D2	
0.10 - 0.40	B6	
0.20	ES4	
0.20	D5	
0.40 - 0.90	B9	
0.50	ES7	
0.50	D8	
0.90 - 1.20	B12	
1.00	ES10	
1.00	D11	

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
MADE GROUND: Black dull MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 5% voids. (SURFACE COURSE)		0.05 (0.05) +71.25		
MADE GROUND: Black glassy MACADAM, 70% aggregate of angular to subrounded fine to coarse limestone, 15% voids. (BASE COURSE)		0.10 (0.05) +71.20		
MADE GROUND: Dark brown mottled light brown to grey very gravelly slightly clayey fine to coarse SAND with high cobble content. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with concrete and brick fragments. Cobbles are angular to subrounded of whole and half bricks.		(0.30)		
MADE GROUND: Dark brown occasionally mottled dark grey slightly gravelly clayey fine to coarse SAND. Gravel is angular to subrounded fine to coarse of sandstone and siltstone with concrete and brick fragments.		0.40 +70.90		
		(0.50)		
Light greyish brown mottled black slightly gravelly clayey fine to coarse SAND with low cobble content of sandstone. Gravel is angular to subrounded fine to coarse of sandstone and siltstone. (POSSIBLE MADE GROUND)		0.90 +70.40		
		(0.30)		
END OF EXPLORATORY HOLE		1.20 +70.10		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks

Stability Stable

Shoring None

Weather Raining

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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22/11/2019 11:28:12

AGS

Project **Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane**

Project No. **F9049-19**

Carried out for **Morgan Sindall**

Trial Pit

TP17

TEST REPORT

1252

Report No. EFS/203091 (Ver. 1)

SOCOTEC UK Deeside
Unit 18
Drome Road
Deeside Industrial Park
Deeside
Flintshire
CH5 2NY

Site: F9049-19 Wrexham - Wynnstay Avenue, Deva Way

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 26-Oct-2019. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 06-Nov-2019

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Page 2)
Subcontracted Analysis Reports (Pages 3 to 4)
The accreditation status of subcontracted analysis is displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Page 5)
Table of Method Descriptions (Page 6)
Table of Report Notes (Page 7)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham Operations Manager
Energy & Waste Services

Date of Issue: 06-Nov-2019

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected. SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Where individual results are flagged see report notes for status.

		Units :																
		Method Codes :	Sub020															
		Method Reporting Limits :																
		UKAS Accredited :	Yes															
LAB ID Number CL/	Client Sample Description	Sample Date	^Asbestos ID (Stage 1)															
1976506	TP10B D 15 0.35	22-Oct-19	CH															

SOCOTEC

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Burton-on-Trent, Staffordshire, DE15 0YZ

Tel +44 (0) 1283 554400

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Client Name	SOCOTEC UK Deeside
Contact	Rebecca Fryer

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	06-Nov-2019
Report Number	EFS/203091
Table Number	1

Where individual results are flagged see report notes for status.

IOM

working for a healthy and sustainable world

CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY: SOCOTEC UK Ltd
Environmental Chemistry
PO Box 100
Burton upon Trent
Staffordshire
DE15 0XD

CONTRACT NO: S09041-9

DATE OF ISSUE: 06.11.19

DATE SAMPLE RECEIVED: 30.10.19

DATE SAMPLE ANALYSED: 06.11.19

DESCRIPTION: One loose aggregate sample.

ANALYSIS REQUESTED: Qualitative analysis of a sample for determination of presence/type of asbestos.

METHODS:

Our method involves initial examination of the sample followed by detailed analysis of a representative sub-sample. The sub-sample is analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

RESULTS:

Initial Screening

Asbestos was detected in the sample by stereo-binocular and polarised light microscopy.

A summary of the results is given in Table 1.

www.iom-world.org

Registered Address: Research Avenue North, Riccarton, Edinburgh, EH14 4AP, United Kingdom
Tel: 0131 449 8000 Fax: 0131 449 8084 Email: iom@iom-world.org

IOM CONSULTING LIMITED, registered in Scotland No. SC205670

UKAS TESTING
0374

CONTRACT NO: S09041-9
DATE OF ISSUE: 06.11.19

RESULTS: (cont.)

Table 1: Qualitative Results

SOCOTEC Job I.D: S203091

IOM sample number	Client sample number	ACM type detected	PLM result
S67947	S1976506 TP10B 0.35	Cement	Chrysotile

Our detection limit for this method is 0.001%.

COMMENTS:

This sample consisted entirely of asbestos containing cement.

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are outwith the scope of our UKAS accreditation.

AUTHORISED BY: .....
D Third
Scientific Technician

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Deeside
Site F9049-19 Wrexham - Wynnstay Avenue, Deva Way
Report No S203091

Consignment No S89177
Date Logged 26-Oct-2019
In-House Report Due 06-Nov-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Sampled	MethodID	CustServ	Sub020
				REPORT A	^Asbestos ID (Stage 1)
					✓
CL/1976506	TP10B 0.35	22/10/19			

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.

 The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-contractor.

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Deeside

Site : F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Report Number : S20_3091

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1976506	TP10B D 15 0.35	Brown POSSIBLE ACM

TEST REPORT

1252

Report No. EFS/202706M (Ver. 1)

SOCOTEC UK Deeside
Unit 18
Drome Road
Deeside Industrial Park
Deeside
Flintshire
CH5 2NY

Site: F9049-19 Wrexham - Wynnstay Avenue, Deva Way

The 6 samples described in this report were registered for analysis by SOCOTEC UK Limited on 12-Oct-2019. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 25-Oct-2019

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS or MCERTS accredited. Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by SOCOTEC UK Limited.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 15)
Table of WAC Analysis Results (Pages 16 to 21)
Table of Asbestos Screening Results (Page 22)
Analytical and Deviating Sample Overview (Pages 23 to 24)
Table of Additional Report Notes (Page 25)
Table of Method Descriptions (Pages 26 to 27)
Table of Report Notes (Page 28)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham Operations Manager
Energy & Waste Services

Date of Issue: 25-Oct-2019

Accreditation Codes: **N** (Not Accredited), **U** (UKAS), **UM** (UKAS & MCERTS)
Tests marked '^' have been subcontracted to another laboratory.
(NVM) - denotes the sample matrix is dissimilar to matrices upon which the MCERTS validation was based, and is therefore not accredited for MCERTS.
All results are reported on a dry weight basis at 105^{o}C unless otherwise stated. (except QC samples)
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Units :			Mol/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			ANC	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	FTIRSWPER	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA
Method Reporting Limits :			0.04	10	10	20	20	10	10	30	50	0.2	0.2	0.2	0.2	0.2	0.2	0.01
Accreditation Code:			N	UM	UM	UM	U	UM	UM	UM	N	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Acid Neut. Capacity**	**Benzene**	**Ethyl Benzene**	**m/p Xylenes**	**MTBE**	**o Xylene**	**Toluene**	**Xylenes**	**TPH FTIRPER (AR)**	**GRO**	**GRO (>C5 - C6)**	**GRO (>C7 - C8)**	**GRO (>C8 - C10)**	**GRO (C5-C10)**	**GRO (C5-C6 Aliphatic)**	**GRO (C5-C7 Aromatic)**
1974871	TP15 ES 4 0.50	07-Oct-19	0.88	<11.4	<11.4	<22.9	<22.9	<11.4	<11.4	<34.3		<0.229	<0.229	<0.229	<0.229		<0.229	<0.011
1974872	TP15 ES 7 1.00	07-Oct-19	0.50	<13.4	<13.4	<26.8	<26.8	<13.4	<13.4	<40.3		<0.268	<0.268	<0.268	<0.268		<0.268	<0.013
1974873	TP15 ES 11 2.10	07-Oct-19	0.73	<11.8	<11.8	<23.5	<23.5	<11.8	<11.8	<35.3		<0.235	<0.235	<0.235	<0.235		<0.235	<0.012
1974874	TP15 ES 14 3.10	07-Oct-19	0.57	<12.2	<12.2	<24.4	<24.4	<12.2	<12.2	<37	<61					<0.2		
1974875	TP16 ES 4 0.30	07-Oct-19	2.33	<11.8	<11.8	<23.6	<23.6	<11.8	<11.8	<35.4		<0.236	<0.236	<0.236	<0.236		<0.236	<0.012
1974876	TP16 ES 10 1.00	07-Oct-19	1.30	<12.0	<12.0	<24.0	<24.0	<12.0	29	<36.1		<0.240	<0.240	<0.240	<0.240		<0.240	<0.012

SOCOTEC

Bretby Business Park, Ashby Road

Burton-on-Trent, Staffordshire, DE15 0YZ

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Client Name SOCOTEC UK Deeside

Contact Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**28-Oct-2019**
Report Number	**EFS/202706M**
Table Number	**1**

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Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg
Method Codes :			GROHSA	GROHSA	GROHSA	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPWSS	KONECR	LOI(%MM)	PAHMSUS
Method Reporting Limits :			0.2	0.2	0.01	0.3	0.2	1.2	1.6	0.7	0.5	2	0.5	16	10	0.1	0.2	0.08
Accreditation Code:			UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	N	N	UM
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**GRO (C6-C7)**	**GRO (C6-C8 Aliphatic)**	**GRO (C7-C8 Aromatic)**	**Arsenic (MS)**	**Cadmium (MS)**	**Chromium (MS)**	**Copper (MS)**	**Lead (MS)**	**Mercury (MS)**	**Nickel (MS)**	**Selenium (MS)**	**Zinc (MS)**	**SO4-- (H2O sol) mg/l**	**Chromium vi:**	**L.O.I. % @ 450C**	**Acenaphthene**
1974871	TP15 ES 4 0.50	07-Oct-19	<0.229	<0.229	<0.011	8.6	0.28	15.6	28.2	83.3	<0.50	16.5	<0.5	97.8	28	<0.1	4.4	<0.09
1974872	TP15 ES 7 1.00	07-Oct-19	<0.268	<0.268	<0.013	8.4	0.3	13.7	33.7	90.3	<0.52	16.8	1.1	85.2	159	<0.1	8.6	<0.11
1974873	TP15 ES 11 2.10	07-Oct-19	<0.235	<0.235	<0.012	3.8	<0.2	12	17.1	22.3	<0.5	13.2	<0.5	46.8	40	<0.1	1.5	<0.09
1974874	TP15 ES 14 3.10	07-Oct-19				5	<0.20	11.9	17.9	39.6	<0.5	13.7	0.7	61.9	69	<0.1	3.2	<0.10
1974875	TP16 ES 4 0.30	07-Oct-19	<0.236	<0.236	<0.012	15.8	0.56	29.0	55.5	282.9	<0.52	30.8	0.6	264.3	58	<0.1	5.4	<0.09
1974876	TP16 ES 10 1.00	07-Oct-19	<0.240	<0.240	0.029	13.5	0.44	20.6	48.0	167.9	<0.51	22.6	0.6	223	59	<0.1	5.5	<0.10

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Method Codes :			PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS
Method Reporting Limits :			0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Accreditation Code:			U	U	UM	UM	UM	UM	UM	UM	N	UM	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Acenaphthylene**	**Anthracene**	**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(ghi)perylene**	**Benzo(k)fluoranthene**	**Chrysene**	**Coronene**	**Dibenzo(ah)anthracene**	**Fluoranthene**	**Fluorene**	**Indeno(123-cd)pyrene**	**Naphthalene**	**Phenanthrene**	**Pyrene**	
1974871	TP15 ES 4 0.50	07-Oct-19	<0.09	<0.09	0.09	0.16	0.19	0.15	0.10	0.14	<0.09	0.13	0.14	<0.09	0.17	<0.09	<0.09	0.13	
1974872	TP15 ES 7 1.00	07-Oct-19	<0.11	<0.11	<0.11	0.16	0.19	0.15	<0.11	0.15	<0.11	0.13	0.19	<0.11	0.19	<0.11	<0.11	0.17	
1974873	TP15 ES 11 2.10	07-Oct-19	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	
1974874	TP15 ES 14 3.10	07-Oct-19	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
1974875	TP16 ES 4 0.30	07-Oct-19	<0.09	<0.09	0.30	0.35	0.45	0.26	0.19	0.35	0.12	0.12	0.53	<0.09	0.32	<0.09	0.21	0.48	
1974876	TP16 ES 10 1.00	07-Oct-19	<0.10	0.10	0.46	0.56	0.70	0.42	0.32	0.48	0.17	0.17	0.77	<0.10	0.53	<0.10	0.31	0.70	

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			Units :	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	pH Units	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg
			Method Codes :	PAHMSUS	PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PHSOIL	SFAPI	SFAPI	Sub002	SVOCSW	SVOCSW	SVOCSW	SVOCSW
			Method Reporting Limits :	1.28	5	5	5	5	5	5	5		0.5	0.5		0.1	0.1	0.1	0.1
			Accreditation Code:	U	UM	UM	UM	UM	UM	UM	UM	UM	UM	U	U	N	U	U	U
LAB ID Number CL/	Client Sample Description	Sample Date		Total PAH (Sum of USEPA 16)	PCB 101	PCB 118	PCB 138	PCB 153	PCB 180	PCB 28	PCB 52	pH units (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID and Quant (1 & 2)	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene
1974871	TP15 ES 4 0.50	07-Oct-19		<1.92	<5.72	<5.72	<5.72	<5.72	<5.72	<5.72	<5.72	8.8	<0.6	<0.6	NADIS				
1974872	TP15 ES 7 1.00	07-Oct-19		<2.20	<6.71	<6.71	<6.71	<6.71	<6.71	<6.71	<6.71	7.3	<0.7	<0.7	NADIS	<0.134	<0.134	<0.134	<0.134
1974873	TP15 ES 11 2.10	07-Oct-19		<1.51	<5.88	<5.88	<5.88	<5.88	<5.88	<5.88	<5.88	7.8	<0.6	<0.6					
1974874	TP15 ES 14 3.10	07-Oct-19		<1.56	<6.11	<6.11	<6.11	<6.11	<6.11	<6.11	<6.11	7.6	<0.6	<0.6					
1974875	TP16 ES 4 0.30	07-Oct-19		<4.04	<5.90	<5.90	<5.90	<5.90	<5.90	<5.90	<5.90	8.5	<0.6	<0.6	<0.001				
1974876	TP16 ES 10 1.00	07-Oct-19		<5.90	<6.01	<6.01	<6.01	<6.01	<6.01	<6.01	<6.01	8.4	<0.6	<0.6	0.001				

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		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		Method Codes :	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
		Method Reporting Limits :	0.1	0.1	0.1	0.1	0.1	0.5	0.2	0.5	0.1	0.1	0.1	0.1	0.5	0.1	0.1	14.5	
		Accreditation Code:	U	U	U	U	U	N	U	U	U	U	U	U	N	U	U	N	
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**1-Methylnaphthalene**	**2,4,5-Trichlorophenol**	**2,4,6-Trichlorophenol**	**2,4-Dichlorophenol**	**2,4-Dimethylphenol**	**2,4-Dinitrophenol**	**2,4-Dinitrotoluene**	**2,6-Dinitrotoluene**	**2-Chloronaphthalene**	**2-Chlorophenol**	**2-Methylnaphthalene**	**2-Methylphenol**	**2-Nitroaniline**	**2-Nitrophenol**	**3- & 4-Methylphenol**	**3-Nitroaniline**	
1974871	TP15 ES 4 0.50	**07-Oct-19**																	
1974872	TP15 ES 7 1.00	**07-Oct-19**	<0.134	<0.134	<0.134	<0.134	<0.134	<0.671	<0.268	<0.671	<0.134	<0.134	<0.134	<0.134	<0.671	<0.134	<0.134	<19.5	
1974873	TP15 ES 11 2.10	**07-Oct-19**																	
1974874	TP15 ES 14 3.10	**07-Oct-19**																	
1974875	TP16 ES 4 0.30	**07-Oct-19**																	
1974876	TP16 ES 10 1.00	**07-Oct-19**																	

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Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
Method Reporting Limits :			0.2	0.1	0.1	0.5	0.5	0.1	0.6	0.5	0.1	0.1	0.1	0.2	0.2	0.2	0.5	0.2	
Accreditation Code:			N	U	U	N	U	U	N	N	U	U	U	U	U	U	U	U	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**4,6-Dinitro-2-methylphenol**	**4-Bromophenyl-phenylether**	**4-Chloro-3-methylphenol**	**4-Chloroaniline**	**4-Chlorophenol**	**4-Chlorophenyl-phenylether**	**4-Nitroaniline**	**4-Nitrophenol**	**Acenaphthene**	**Acenaphthylene**	**Anthracene**	**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(ghi)perylene**	**Benzo(k)fluoranthene**	
1974871	TP15 ES 4 0.50	**07-Oct-19**																	
1974872	TP15 ES 7 1.00	**07-Oct-19**	<0.268	<0.134	<0.134	<0.671	<0.671	<0.134	<0.805	<0.671	<0.134	<0.134	<0.134	<0.268	<0.268	<0.268	<0.671	<0.268	
1974873	TP15 ES 11 2.10	**07-Oct-19**																	
1974874	TP15 ES 14 3.10	**07-Oct-19**																	
1974875	TP16 ES 4 0.30	**07-Oct-19**																	
1974876	TP16 ES 10 1.00	**07-Oct-19**																	

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Method Codes :			SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
Method Reporting Limits :			0.5	0.5	0.1	0.1	0.1	0.5	0.2	0.2	0.1	0.3	0.5	0.1	0.1	0.1	0.1	0.1	0.2
Accreditation Code:			N	U	U	U	U	U	U	U	U	N	U	U	U	U	U	U	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Benzoic Acid**	**Benzyl alcohol**	**Biphenyl**	**bis(2-Chloroethoxy)methane**	**bis(2-Chloroethyl)ether**	**bis(2-Chloroisopropyl)ether**	**bis(2-Ethylhexyl)phthalate**	**Butylbenzylphthalate**	**Chrysene**	**Coronene**	**Dibenzo(ah)anthracene**	**Dibenzofuran**	**Diethylphthalate**	**Dimethylphthalate**	**Di-n-butylphthalate**	**Di-n-octylphthalate**
1974871	TP15 ES 4 0.50	**07-Oct-19**																	
1974872	TP15 ES 7 1.00	**07-Oct-19**	<0.671	<0.671	<0.134	<0.134	<0.134	<0.671	<0.268	<0.268	<0.134	<0.403	<0.671	<0.134	<0.134	<0.134	<0.134	<0.268	
1974873	TP15 ES 11 2.10	**07-Oct-19**																	
1974874	TP15 ES 14 3.10	**07-Oct-19**																	
1974875	TP16 ES 4 0.30	**07-Oct-19**																	
1974876	TP16 ES 10 1.00	**07-Oct-19**																	

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Method Codes :			SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
Method Reporting Limits :			0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.5	0.1	0.1	0.5	0.9	0.1	0.5	0.1	0.1	
Accreditation Code:			U	U	U	U	N	N	U	U	N	U	U	N	N	N	U	U	
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Diphenyl Ether**	**Fluoranthene**	**Fluorene**	**Hexachlorobenzene**	**Hexachlorobutadiene**	**Hexachlorocyclopentadiene**	**Hexachloroethane**	**Indeno(123-cd)pyrene**	**Isophorone**	**Naphthalene**	**Nitrobenzene**	**N-Nitroso-di-n-propylamine**	**N-Nitrosodiphenylamine**	**Pentachlorophenol**	**Phenanthrene**	**Phenol**	
1974871	TP15 ES 4 0.50	07-Oct-19																	
1974872	TP15 ES 7 1.00	07-Oct-19	<0.134	<0.268	<0.268*	<0.134	<0.134	<0.134	<0.134	<0.671	<0.134	<0.134	<0.671	<1.208	<0.134	<0.671	<0.134	<0.134	
1974873	TP15 ES 11 2.10	07-Oct-19																	
1974874	TP15 ES 14 3.10	07-Oct-19																	
1974875	TP16 ES 4 0.30	07-Oct-19																	
1974876	TP16 ES 10 1.00	07-Oct-19																	

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Method Codes :			SVOCSW	TMSS	TPHFIDUS	TPHFIDUS	TPHFIDUS	TPHFIDUS	TPHFIDUS	TPHFIDUS	TPHFIDUS	TPHFIDUS	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI
Method Reporting Limits :			0.2	0.1	2		10	2	2	4.38	2	10	4	4	4	11.88	8.75	5.62
Accreditation Code:			U	U	U	No	U	U	U	U	U	UM	U	U	U	U	U	N
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Pyrene**	**Tot.Moisture @ 105C**	**TPH Band (>C10-C12)**	**TPH Band (>C10-C26)**	**TPH Band (>C10-C40)**	**TPH Band (>C12-C16)**	**TPH Band (>C16-C21)**	**TPH Band (>C21-C35)**	**TPH Band (>C8-C10)**	**TPH by GCFID (AR)**	**TPH Ali Band >C10-C12**	**TPH Ali Band >C12-C16**	**TPH Ali Band >C16-C21**	**TPH Ali Band >C16-C35**	**TPH Ali Band >C21-C35**	**TPH Ali Band >C35-C44**
1974871	TP15 ES 4 0.50	07-Oct-19		12.6			85.0					85.4	<4.58	<4.58	<4.58	<13.6	<10.02	<6.43
1974872	TP15 ES 7 1.00	07-Oct-19	<0.268	25.5			177					177	<5.37	<5.37	<5.37	<16.0	<11.76	<7.54
1974873	TP15 ES 11 2.10	07-Oct-19		15.0			34.2					34.5	<4.71	<4.71	<4.71	<14.0	<10.31	<6.61
1974874	TP15 ES 14 3.10	07-Oct-19		18.2	<2.44	<10	36.2	7.13	2.87	20.5*	<2.44	36.3						
1974875	TP16 ES 4 0.30	07-Oct-19		15.3			72.6					72.7	<4.72	<4.72	<4.72	<14.0	<10.34	6.78
1974876	TP16 ES 10 1.00	07-Oct-19		16.8			102.6					102.8	7.33	<4.81	<4.81	<14.3	<10.53	7.26

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		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg
		Method Codes :	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	VOCHSAS	VOCHSAS	VOCHSAS
		Method Reporting Limits :	4	4	20	20	4	4	4	8.75	5.62	4	4	20	20	1	1	1
		Accreditation Code:	N	U	U	N	U	U	U	U	N	N	U	U	N	UM	UM	N
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**TPH Ali Band >C40-C44**	**TPH Ali Band >C8-C10**	**TPH Ali Band >C8-C40**	**TPH Ali Band >C8-C44**	**TPH Aro Band >C10-C12**	**TPH Aro Band >C12-C16**	**TPH Aro Band >C16-C21**	**TPH Aro Band >C21-C35**	**TPH Aro Band >C35-C44**	**TPH Aro Band >C40-C44**	**TPH Aro Band >C8-C10**	**TPH Aro Band >C8-C40**	**TPH Aro Band >C8-C44**	**1,1,1,2-Tetrachloroethane**	**1,1,1-Trichloroethane**	**1,1,2,2-Tetrachloroethane**
1974871	TP15 ES 4 0.50	07-Oct-19	<4.58	<4.58	<22.9	<22.9	<4.58	<4.58	<4.58	30.4	<6.43	<4.58	<4.58	39.4	39.5			
1974872	TP15 ES 7 1.00	07-Oct-19	<5.37	<5.37	<26.8	<26.8	<5.37	<5.37	<5.37	22.6	<7.54	<5.37	<5.37	33.7	33.8	<1.3	<1.3	<1.3
1974873	TP15 ES 11 2.10	07-Oct-19	<4.71	<4.71	<23.5	<23.5	<4.71	<4.71	<4.71	13.8	<6.61	<4.71	<4.71	<23.5	<23.5			
1974874	TP15 ES 14 3.10	07-Oct-19																
1974875	TP16 ES 4 0.30	07-Oct-19	<4.72	<4.72	<23.6	<23.6	<4.72	<4.72	7.06	25.0	<6.64	<4.72	<4.72	38.0	38.8			
1974876	TP16 ES 10 1.00	07-Oct-19	<4.81	<4.81	27.9	31.0	<4.81	<4.81	<4.81	<10.53	<6.75	<4.81	<4.81	<24.0	<24.0			

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Client Name SOCOTEC UK Deeside

Contact Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**28-Oct-2019**
Report Number	**EFS/202706M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Method Codes :			VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS
Method Reporting Limits :			1	1	1	1	3	1	3	1	1	1	1	1	1	1	1	1	1
Accreditation Code:			UM	UM	U	UM	UM	UM	N	UM	N	UM	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**1,1,2-Trichloroethane**	**1,1-Dichloroethane**	**1,1-Dichloroethene**	**1,1-Dichloropropene**	**1,2,3-Trichlorobenzene**	**1,2,3-Trichloropropane**	**1,2,4-Trichlorobenzene**	**1,2,4-Trimethylbenzene**	**1,2-Dibromo-3-chloropropane**	**1,2-Dibromoethane**	**1,2-Dichlorobenzene**	**1,2-Dichloroethane**	**1,2-Dichloropropane**	**1,3,5-Trimethylbenzene**	**1,3-Dichlorobenzene**	**1,3-Dichloropropane**
1974871	TP15 ES 4 0.50	07-Oct-19																	
1974872	TP15 ES 7 1.00	07-Oct-19	<1.3	<1.3*	<1.3	<1.3	<4.0	<1.3	<4.0	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
1974873	TP15 ES 11 2.10	07-Oct-19																	
1974874	TP15 ES 14 3.10	07-Oct-19																	
1974875	TP16 ES 4 0.30	07-Oct-19																	
1974876	TP16 ES 10 1.00	07-Oct-19																	

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Sample Analysis

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Units :			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Method Codes :			VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS
Method Reporting Limits :			1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	3
Accreditation Code:			UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**1,4-Dichlorobenzene**	**2,2-Dichloropropane**	**2-Chlorotoluene**	**4-Chlorotoluene**	**Benzene**	**Benzene**	**Bromobenzene**	**Bromochloromethane**	**Bromodichloromethane**	**Bromoform**	**Bromomethane**	**Carbon Tetrachloride**	**Chlorobenzene**	**Chloroethane**	**Chloroform**	**Chloromethane**
1974871	TP15 ES 4 0.50	07-Oct-19						<1										
1974872	TP15 ES 7 1.00	07-Oct-19	<1.3	<1.3	<1.3	<1.3	<1.3		<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<2.7	<1.3	<4.0
1974873	TP15 ES 11 2.10	07-Oct-19						<1										
1974874	TP15 ES 14 3.10	07-Oct-19						<1										
1974875	TP16 ES 4 0.30	07-Oct-19						<1										
1974876	TP16 ES 10 1.00	07-Oct-19						<1										

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Units :			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	ug/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Method Codes :			VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS
Method Reporting Limits :			5	1	1	1	1	1	2	2	1	4	4	1	5	1	2	2	
Accreditation Code:			UM	UM	UM	UM	N	UM	UM	N	UM	UM	UM	UM	UM	U	UM	UM	
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**cis 1,2-Dichloroethene**	**cis 1,3-Dichloropropene**	**Dibromochloromethane**	**Dibromomethane**	**Dichlorodifluoromethane**	**Ethyl Benzene**	**Ethylbenzene**	**Hexachlorobutadiene**	**iso-Propylbenzene**	**m and p-Xylene**	**m/p Xylenes**	**MTBE**	**Naphthalene**	**n-Butylbenzene**	**o Xylene**	**o-Xylene**	
1974871	TP15 ES 4 0.50	07-Oct-19						<2					<5				<2		
1974872	TP15 ES 7 1.00	07-Oct-19	<6.7	<1.3	<1.3	<1.3	<1.3		<2.7	<2.7	<1.3	<5.4		<1.3	<6.7	<1.3		<2.7	
1974873	TP15 ES 11 2.10	07-Oct-19						<2					<5				<2		
1974874	TP15 ES 14 3.10	07-Oct-19						<2					<5				<2		
1974875	TP16 ES 4 0.30	07-Oct-19						<2					<5				<2		
1974876	TP16 ES 10 1.00	07-Oct-19						<2					<5				<2		

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Units :			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	% M/M	
Method Codes :			VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	WSLM59	
Method Reporting Limits :			1	1	1	1	1	3	5	5	1	1	1	1	1	6	0.02	
Accreditation Code:			UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	N	
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**p-Isopropyltoluene**	**Propylbenzene**	**sec-Butylbenzene**	**Styrene**	**tert-Butylbenzene**	**Tetrachloroethene**	**Toluene**	**Toluene**	**trans 1,2-Dichloroethene**	**trans 1,3-Dichloropropene**	**Trichloroethene**	**Trichlorofluoromethane**	**Vinyl Chloride**	**Xylenes**	**Total Organic Carbon**	
1974871	TP15 ES 4 0.50	07-Oct-19								25						<7	2.33	
1974872	TP15 ES 7 1.00	07-Oct-19	<1.3	<1.3	<1.3	<1.3	<1.3	<4.0	37.6		<1.3	<1.3	<1.3	<1.3	<1.3		4.54	
1974873	TP15 ES 11 2.10	07-Oct-19								33						<7	0.67	
1974874	TP15 ES 14 3.10	07-Oct-19								7						<7	1.45	
1974875	TP16 ES 4 0.30	07-Oct-19								13						<7	5.88	
1974876	TP16 ES 10 1.00	07-Oct-19								78						<7	4.46	

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Client Name	**SOCOTEC UK Deeside**
Contact	Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**28-Oct-2019**
Report Number	**EFS/202706M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.256
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	12.6
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.419
					Fraction of sample above 4 mm %	40.500
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP15 ES 4 0.50		s20_2706M	CL/1974871	25-Oct-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	2.33	3	5	6
N	LOI450	Loss on Ignition (%)	4.4			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0685	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	85	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<2.01	100		
U	PHSOIL	pH (pH units)	8.8		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	0.88		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except oo		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) oo	8.2	7.9	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) oo	208	110					
U	ICPMSW	Arsenic	0.001	0.001	0.002	0.01	0.5	2	25
U	ICPWATVAR	Barium	0.01	<0.01	0.02	<0.1	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.003	0.002	0.006	0.02	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.014	0.005	0.028	0.06	0.5	10	30
U	ICPMSW	Nickel	<0.001	<0.001	<0.002	<0.01	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.003	0.002	0.006	0.02	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.003	<0.002	0.006	<0.02	4	50	200
U	KONENS	Chloride	4	<1	8	<14	800	15000	25000
U	ISEF	Fluoride	0.8	0.3	1.6	4	10	150	500
U	ICPWATVAR	Sulphate as SO4	10	<3	20	<39	1000	20000	50000
N	WSLM27	Total Dissolved Solids	162	85.6	324	958	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	7.3	4	14.6	44	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

Tests where the accreditation is set to U are UKAS accredited, those where the accreditation is set to N are not UKAS accredited

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.259
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	25.5
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.416
					Fraction of sample above 4 mm %	45.400
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP15 ES 7 1.00		s20_2706M	CL/1974872	25-Oct-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	4.54	3	5	6
N	LOI450	Loss on Ignition (%)	8.6			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0804	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.049	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	177	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<2.31	100		
U	PHSOIL	pH (pH units)	7.3		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	0.5		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except oo		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) oo	8.1	7.8	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) oo	478	217					
U	ICPMSW	Arsenic	0.002	0.001	0.004	0.01	0.5	2	25
U	ICPWATVAR	Barium	0.12	0.07	0.24	0.8	20	100	300
U	ICPMSW	Cadmium	0.00003	<0.00002	0.00006	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.006	0.004	0.012	0.04	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.015	0.009	0.03	0.1	0.5	10	30
U	ICPMSW	Nickel	0.002	0.001	0.004	0.01	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.003	0.002	0.006	0.02	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.007	<0.002	0.014	<0.03	4	50	200
U	KONENS	Chloride	5	<1	10	<15	800	15000	25000
U	ISEF	Fluoride	0.3	0.7	0.6	6	10	150	500
U	ICPWATVAR	Sulphate as SO4	74	12	148	203	1000	20000	50000
N	WSLM27	Total Dissolved Solids	373	169	746	1962	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	20	9.4	40	108	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

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WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.271
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	15.0
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.404
					Fraction of sample above 4 mm %	0.000
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP15 ES 11 2.10		s20_2706M	CL/1974873	25-Oct-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	0.67	3	5	6
N	LOI450	Loss on Ignition (%)	1.5			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0707	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	34.2	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<1.60	100		
U	PHSOIL	pH (pH units)	7.8		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	0.73		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	7.3	6.8	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	<100	<100					
U	ICPMSW	Arsenic	0.004	0.004	0.008	0.04	0.5	2	25
U	ICPWATVAR	Barium	0.04	0.08	0.08	0.7	20	100	300
U	ICPMSW	Cadmium	0.00004	0.00005	0.00008	0.0005	0.04	1	5
U	ICPMSW	Chromium	<0.001	0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.003	0.011	0.006	0.1	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.003	0.001	0.006	0.01	0.5	10	30
U	ICPMSW	Nickel	<0.001	0.001	<0.002	<0.01	0.4	10	40
U	ICPMSW	Lead	<0.001	0.012	<0.002	<0.11	0.5	10	50
U	ICPMSW	Antimony	0.003	0.002	0.006	0.02	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.006	0.01	0.012	0.09	4	50	200
U	KONENS	Chloride	2	<1	4	<11	800	15000	25000
U	ISEF	Fluoride	<0.5	0.4	<1	<4	10	150	500
U	ICPWATVAR	Sulphate as SO4	13	4	26	52	1000	20000	50000
N	WSLM27	Total Dissolved Solids	74	<60	148	<619	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	5.4	4.7	10.8	48	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

Tests where the accreditation is set to U are UKAS accredited, those where the accreditation is set to N are not UKAS accredited

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.288
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	18.2
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.387
					Fraction of sample above 4 mm %	0.000
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP15 ES 14 3.10		s20_2706M	CL/1974874	25-Oct-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	1.45	3	5	6
N	LOI450	Loss on Ignition (%)	3.2			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0732	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	36.2	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<1.66	100		
U	PHSOIL	pH (pH units)	7.6		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	0.57		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	7.4	6.8	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	149	<100					
U	ICPMSW	Arsenic	0.006	0.003	0.012	0.03	0.5	2	25
U	ICPWATVAR	Barium	0.14	0.05	0.28	0.6	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.002	0.002	0.004	0.02	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.007	0.003	0.014	0.04	0.5	10	30
U	ICPMSW	Nickel	0.001	<0.001	0.002	<0.01	0.4	10	40
U	ICPMSW	Lead	<0.001	0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.004	0.002	0.008	0.02	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.006	0.004	0.012	0.04	4	50	200
U	KONENS	Chloride	2	<1	4	<11	800	15000	25000
U	ISEF	Fluoride	<0.5	0.2	<1	<2	10	150	500
U	ICPWATVAR	Sulphate as SO4	24	5	48	75	1000	20000	50000
N	WSLM27	Total Dissolved Solids	116	<60	232	<675	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	8.3	3.8	16.6	44	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

Tests where the accreditation is set to U are UKAS accredited, those where the accreditation is set to N are not UKAS accredited

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.274
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	15.3
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.401
					Fraction of sample above 4 mm %	73.300
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP16 ES 4 0.30		s20_2706M	CL/1974875	25-Oct-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	5.88	3	5	6
N	LOI450	Loss on Ignition (%)	5.4			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0708	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	72.6	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<4.16	100		
U	PHSOIL	pH (pH units)	8.5		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	2.33		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	8	7.6	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	305	129					
U	ICPMSW	Arsenic	0.002	0.003	0.004	0.03	0.5	2	25
U	ICPWATVAR	Barium	0.04	0.02	0.08	0.2	20	100	300
U	ICPMSW	Cadmium	0.00004	<0.00002	0.00008	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.005	0.003	0.01	0.03	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.028	0.008	0.056	0.11	0.5	10	30
U	ICPMSW	Nickel	0.001	<0.001	0.002	<0.01	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.003	0.003	0.006	0.03	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.004	0.002	0.008	0.02	4	50	200
U	KONENS	Chloride	4	<1	8	<14	800	15000	25000
U	ISEF	Fluoride	0.7	0.2	1.4	3	10	150	500
U	ICPWATVAR	Sulphate as SO4	23	4	46	65	1000	20000	50000
N	WSLM27	Total Dissolved Solids	238	100	476	1184	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	7.3	3.3	14.6	38	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

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Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.278
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	16.8
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.397
					Fraction of sample above 4 mm %	100.000
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP16 ES 10 1.00		s20_2706M	CL/1974876	25-Oct-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	4.46	3	5	6
N	LOI450	Loss on Ignition (%)	5.5			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.089	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	102.6	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<6.07	100		
U	PHSOIL	pH (pH units)	8.4		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	1.3		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	10.3	11.3	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	1070	480					
U	ICPMSW	Arsenic	0.005	0.005	0.01	0.05	0.5	2	25
U	ICPWATVAR	Barium	0.04	0.01	0.08	0.1	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	0.011	0.005	0.022	0.06	0.5	10	70
U	ICPMSW	Copper	0.056	0.025	0.112	0.29	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.031	0.006	0.062	0.09	0.5	10	30
U	ICPMSW	Nickel	0.004	0.001	0.008	0.01	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.009	0.007	0.018	0.07	0.06	0.7	5
U	ICPMSW	Selenium	0.003	0.002	0.006	0.02	0.1	0.5	7
U	ICPMSW	Zinc	0.004	0.004	0.008	0.04	4	50	200
U	KONENS	Chloride	107	12	214	247	800	15000	25000
U	ISEF	Fluoride	0.4	1.3	0.8	12	10	150	500
U	ICPWATVAR	Sulphate as SO4	24	8	48	101	1000	20000	50000
N	WSLM27	Total Dissolved Solids	832	374	1664	4351	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	24	7.9	48	100	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

Tests where the accreditation is set to U are UKAS accredited, those where the accreditation is set to N are not UKAS accredited

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

ASBESTOS ANALYSIS RESULTS

SOCOTEC Asbestos Limited Certificate of Analysis for Asbestos in Soils, Sediments and Aggregates

UKAS TESTING
1089

Detection limit of Method SCI-ASB-020 is 0.001%

Sampling has been carried out by a third party

SOCOTEC

Client:	SOCOTEC Environmental Chemistry	**Page 1 of 1**	
Address:	Etwall House, Bretby Business Park, Ashby Road, Burton upon Trent	**Report No:**	**ANO-0503-21489**
For the attention of:	SOCOTEC UK Deeside	**Report Date:**	**25/10/2019**
Site Address:	F9049-19 Wrexham - Wynnstay Avenue, Deva Way	**Project Number:**	**S202706**

Sample Number	Sample Date	Sample Location & Matrix	Test Date	Total Sample Dry Weight (g)	Weight of <10mm Fraction (g)	Asbestos(g) in >10mm	Asbestos(g) in < 10mm	% Asbestos by weight of Total Dried Sample	Moisture Content	Asbestos Fibre Types Identified
CL/1974871	07/10/19	TP15 0.50 Soils	25/10/2019	359.4	344.8	0.0000	0.0000			NADIS
CL/1974872	07/10/19	TP15 1.00 Soils	25/10/2019	265.7	239.4	0.0000	0.0000			NADIS
CL/1974875	07/10/19	TP16 0.30 Soils	25/10/2019	411.9	310.8	0.0000	0.0015	<0.001		Amosite(Free Fibres) <10mm
CL/1974876	07/10/19	TP16 1.00 Soils	25/10/2019	400.4	309.1	0.0000	0.0040	0.001		Chrysotile(Free Fibres) <10mm

Keys

NAACR = Not Analysed at Clients Request

NAIIS = No Asbestos Identified in Sample (Identification Only)

*** visible to naked eye**

NADIS = No Asbestos Detected in Sample (ID & Quant Only)

Name:	Tom Pratt	Authorised Signatory:
Position:	Lab Coordinator	

The sample analysis for the above results was carried out using the procedures detailed in SOCOTEC Asbestos Limited in house method (SCI-ASB-020) based on EA document Quantification of asbestos in soil and associated materials - Draft 2017. Fibre identification was carried out using SOCOTEC Asbestos Limited in house method of transmitted/polarised light microscopy and centre stop dispersion staining (SCI-ASB-007), based on HSE's HSG 248. The analysis of the < 10mm fraction for asbestos content only includes ACMs and fibres and does not discriminate non-asbestos fibres. All fibres are assumed, unless specified, to be amphiboles. All tests were carried out at a SOCOTEC Asbestos Ltd laboratory, UKAS Testing Number 1089. Recommended sample weight is 1kg-2kg, samples less than 1kg are classified as deviating samples.

Where individual results are flagged see report notes for status.

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Deeside
Site F9049-19 Wrexham - Wynnstay Avenue, Deva Way
Report No S202706M

Consignment No S88723
Date Logged 12-Oct-2019
In-House Report Due 23-Oct-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Sampled	MethodID	ANC	BTEXHSA		CEN Leac(P)1	CEN Leac(P)2	CustServ	FTIRSWPER	GROHSA		ICPMSS									ICPWSS	KONECR	LOI(%MM)	MCertS	PAHMSUS	PCBECD	PHSOIL
				Acid Neut. Capacity	BTEX-HSA + MTBE analysis	MTBE (µg/kg)	CEN Leac(P)1	CEN Leac(P)2	REPORT A	TPH FTIRPER (AR)	GRO (AA-UK) HSA-GCFID	GRO (C5-C10)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Mercury (MS)	Nickel (MS)	Selenium (MS)	Zinc (MS)	SO4-- (H2O sol) mg/l	Chromium vi:	L.O.I. % @ 450C	MCertS Analysis	PAH (17) by GCMS	PCB-7 Congeners Analysis	pH units (AR)
					✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
CL/1974871	TP15 0.50	07/10/19																										
CL/1974872	TP15 1.00	07/10/19																										
CL/1974873	TP15 2.10	07/10/19																										
CL/1974874	TP15 3.10	07/10/19																										
CL/1974875	TP16 0.30	07/10/19																										
CL/1974876	TP16 1.00	07/10/19																										

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.
The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Deeside
Site F9049-19 Wrexham - Wynnstay Avenue, Deva Way
Report No S202706M

Consignment No S88723
Date Logged 12-Oct-2019
In-House Report Due 23-Oct-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	SFAPI		Sub002	SVOCSW	TMSS	TPHFIDUS				TPHUSSI	VOCHSAS			WSLM59
		Sampled	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID and Quant (1 & 2)	SVOC (AR)	Tot.Moisture @ 105C	TPH Band (>C10-C26)	TPH Band (>C10-C40)	TPH by GCFID (AR)	TPH Carbon Banding.	TPH by GCFID (Si-UKCWG)>44	BTEX-HSA GCMS analysis	VOC HSA-GCMS	Ethyl Benzene (µg/kg)	Total Organic Carbon
			✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
CL/1974871	TP15 0.50	07/10/19														
CL/1974872	TP15 1.00	07/10/19														
CL/1974873	TP15 2.10	07/10/19														
CL/1974874	TP15 3.10	07/10/19														
CL/1974875	TP16 0.30	07/10/19														
CL/1974876	TP16 1.00	07/10/19														

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Report Number : EFS/202706

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
SVOCSW	CL1974872	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (Fluorene) . These circumstances should be taken into consideration when utilising the data.
VOCHSAS	CL1974872	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (1,1-Dichloroethene). These circumstances should be taken into consideration when utilising the data.
VOCHSAS	CL1974872	Due to matrix interference, the Internal Standard recovery for this Test is below the required QMS specification. This has been confirmed by repeating the analysis. All other Laboratory Process Controls meet the requirements of the QMS unless otherwise stated. These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	ANC	Oven Dried @ < 35°C	Quantitative digestion with Hydrochloric Acid back titration with 1M Sodium Hydroxide to pH 7
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes (BTEX) by Headspace GCFID
Soil	FTIRSWPER	As Received	Determination of Tetrachloroethylene extractable aliphatic Hydrocarbons by Fourier Transform Infrared spectroscopy (FTIR)
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace GCFID
Soil	ICPMSS	Oven Dried @ < 35°C	Determination of Metals in Marine Sediments and Soil samples by aqua regia digestion followed by ICPMS detection
Soil	ICPWSS	Oven Dried @ < 35°C	Determination of Water Soluble Sulphate in soil samples by water extraction followed by ICPOES detection
Soil	KONECR	Oven Dried @ < 35°C	Determination of Chromium vi in soil samples by water extraction followed by colorimetric detection
Soil	LOI(%MM)	Oven Dried @ < 35°C	Determination of loss on ignition for soil samples at specified temperature by gravimetry
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by hexane/acetone extraction followed by GCMS detection
Soil	PCBECD	As Received	Determination of Polychlorinated Biphenyl (PCB) congeners/aroclors by hexane/acetone extraction followed by GCECD detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-contractor.
Soil	SVOCSW	As Received	Determination of Semi-Volatile Organic Compounds by dichloromethane/acetone extraction followed by GCMS detection
Soil	TMSS	As Received	Determination of the Total Moisture content at 105ºC by loss on oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHFIDUS	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection.
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection including quantitation of Aromatic and Aliphatic fractions.
Soil	VOCHSAS	As Received	Determination of Volatile Organic Compounds (VOC) by Headspace GCMS
Soil	WSLM59	Oven Dried @ < 35°C	Determination of Organic Carbon in soil using sulphurous Acid digestion followed by high temperature combustion and IR detection

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	ISEF	As Received	Determination of Fluoride in water samples by Ion Selective Electrode (ISE)
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM2	As Received	Determination of the Electrical Conductivity (µS/cm) by electrical conductivity probe.
Water	WSLM27	As Received	Gravimetric Determination
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Deeside

Site : F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Report Number : S20_2706

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1974871	TP15 ES 4 0.50	Brown Gravel SILT
CL/1974872	TP15 ES 7 1.00	Brown Gravel SILT
CL/1974873	TP15 ES 11 2.10	Brown Clay SILT
CL/1974874	TP15 ES 14 3.10	Grey/Brown Silt CLAY Gravel
CL/1974875	TP16 ES 4 0.30	Brown Gravel SILT Brick
CL/1974876	TP16 ES 10 1.00	Brown MADE GROUND

TEST REPORT

1252

Report No. EFS/202707M (Ver. 1)

SOCOTEC UK Deeside
Unit 18
Drome Road
Deeside Industrial Park
Deeside
Flintshire
CH5 2NY

Site: F9049-19 Wrexham - Wynnstay Avenue, Deva Way

The 10 samples described in this report were registered for analysis by SOCOTEC UK Limited on 12-Oct-2019. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 29-Oct-2019

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS or MCERTS accredited. Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by SOCOTEC UK Limited.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 15)
Table of WAC Analysis Results (Pages 16 to 25)
Table of Asbestos Screening Results (Page 26)
Analytical and Deviating Sample Overview (Pages 27 to 28)
Table of Additional Report Notes (Page 29)
Table of Method Descriptions (Pages 30 to 31)
Table of Report Notes (Page 32)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham Operations Manager
Energy & Waste Services

Date of Issue: 29-Oct-2019

Accreditation Codes: **N** (Not Accredited), **U** (UKAS), **UM** (UKAS & MCERTS)
Tests marked '^' have been subcontracted to another laboratory.
(NVM) - denotes the sample matrix is dissimilar to matrices upon which the MCERTS validation was based, and is therefore not accredited for MCERTS.
All results are reported on a dry weight basis at 105^{o}C unless otherwise stated. (except QC samples)
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

			Units :	Mol/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			Method Codes :	ANC	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA
			Method Reporting Limits :	0.04	10	10	20	20	10	10	30	0.2	0.2	0.2	0.2	0.2	0.2	0.01	0.2	0.2
			Accreditation Code:	N	UM	UM	UM	U	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	Client Sample Description	Sample Date		Acid Neut. Capacity	Benzene	Ethyl Benzene	m/p Xylenes	MTBE	o Xylene	Toluene	Xylenes	GRO	GRO (>C5 - C6)	GRO (>C7 - C8)	GRO (>C8 - C10)	GRO (C5-C6 Aliphatic)	GRO (C5-C7 Aromatic)	GRO (C6-C7)	GRO (C6-C8 Aliphatic)
1974877	TP11 ES 3 0.30	08-Oct-19		1.70	<11.4	<11.4	<22.8	<22.8	<11.4	<11.4	<34.2	<0.228	<0.228	<0.228	<0.228	<0.228	<0.011	<0.228	<0.228
1974878	TP11 ES 13 2.00 (NVM)	08-Oct-19		13.90	<11.95§	<11.95§	<23.89§	<23.89§	<11.95§	<11.95§	<35.84§	<0.2389§	<0.2389§	<0.2389§	<0.2389§	<0.2389§	<0.0119§	<0.2389§	<0.2389§
1974879	TP11 ES 16 3.00	08-Oct-19		3.60	<12.1	<12.1	<24.3	<24.3	<12.1	<12.1	<36.4	<0.243	<0.243	<0.243	<0.243	<0.243	<0.012	<0.243	<0.243
1974880	TP13 ES 4 0.50	08-Oct-19		1.01	<12.2	<12.2	<24.3	<24.3	<12.2	<12.2	<36.5	<0.243	<0.243	<0.243	<0.243	<0.243	<0.012	<0.243	<0.243
1974881	TP13 ES 13 3.00	08-Oct-19		0.86	<15.1	<15.1	<30.3	<30.3	<15.1	<15.1	<45.4	<0.303	<0.303	<0.303	<0.303	<0.303	<0.015	<0.303	<0.303
1974882	TP13 ES 15 3.60	08-Oct-19		0.62	<13.4	<13.4	<26.7	<26.7	<13.4	<13.4	<40.1	<0.267	<0.267	<0.267	<0.267	<0.267	<0.013	<0.267	<0.267
1974883	TP14 ES 7 0.70	08-Oct-19		0.46	<11.9	<11.9	<23.9	<23.9	<11.9	<11.9	<35.8	<0.239	<0.239	<0.239	<0.239	<0.239	<0.012	<0.239	<0.239
1974884	TP14 ES 10 1.00	08-Oct-19		2.32	<11.2	<11.2	<22.3	<22.3	<11.2	<11.2	<33.5	<0.223	<0.223	<0.223	<0.223	<0.223	<0.011	<0.223	<0.223
1974885	TP14 ES 13 2.00	08-Oct-19		2.31	<14.4	<14.4	<28.9	<28.9	<14.4	<14.4	<43.3	<0.289	<0.289	<0.289	<0.289	<0.289	<0.014	<0.289	<0.289
1974886	TP14 ES 16 3.00	08-Oct-19		2.67	<11.9	<11.9	<23.8	<23.8	<11.9	<11.9	<35.8	<0.238	<0.238	<0.238	<0.238	<0.238	<0.012	<0.238	<0.238

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Contact Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**29-Oct-2019**
Report Number	**EFS/202707M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg
Method Codes :			GROHSA	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPWSS	KONECR	LOI(%MM)	PAHMSUS	PAHMSUS	PAHMSUS
Method Reporting Limits :			0.01	0.3	0.2	1.2	1.6	0.7	0.5	2	0.5	16	10	0.1	0.2	0.08	0.08	0.08
Accreditation Code:			UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	N	N	UM	U	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**GRO (C7-C8 Aromatic)**	**Arsenic (MS)**	**Cadmium (MS)**	**Chromium (MS)**	**Copper (MS)**	**Lead (MS)**	**Mercury (MS)**	**Nickel (MS)**	**Selenium (MS)**	**Zinc (MS)**	**SO4-- (H2O sol) mg/l**	**Chromium vi:**	**L.O.I. % @ 450C**	**Acenaphthene**	**Acenaphthylene**	**Anthracene**
1974877	TP11 ES 3 0.30	08-Oct-19	<0.011	11.7	0.46	20.9	28.9	67.5	<0.52	29	0.8	113.3	<21	<0.1	2.9	<0.09	<0.09	<0.09
1974878	TP11 ES 13 2.00 (NVM)	08-Oct-19	<0.0119§	16.67§	1.63§	11.08§	173.48§	31.71§	<0.51§	14.43§	0.71§	188.11§	59§	<0.1	2.8	<0.096§	<0.096§	<0.096§
1974879	TP11 ES 16 3.00	08-Oct-19	<0.012	9.8	0.28	11.5	41.3	37.5	<0.5	16.7	<0.5	90.4	65	<0.1	2.4	<0.10	<0.10	<0.10
1974880	TP13 ES 4 0.50	08-Oct-19	<0.012	14.9	0.51	19.1	69	386.4	0.72	27.2	1.1	184.4	36	<0.1	9.8	<0.10	<0.10	0.24
1974881	TP13 ES 13 3.00	08-Oct-19	<0.015	19.7	1.28	19.8	68.5	198.6	<0.6	34.9	2.7	388.1	798	<0.1	14.4	<0.12	<0.12	0.15
1974882	TP13 ES 15 3.60	08-Oct-19	<0.013	3.1	<0.22	10.8	24.8	40.2	<0.6	14.9	0.7	66.3	97	<0.1	2.3	<0.11	<0.11	<0.11
1974883	TP14 ES 7 0.70	08-Oct-19	<0.012	9.7	<0.21	26	26.3	40.2	<0.5	28	<0.5	75.3	87	<0.1	2.9	<0.10	<0.10	<0.10
1974884	TP14 ES 10 1.00	08-Oct-19	<0.011	6.9	0.26	12.9	22.0	42.3	<0.5	16.8	<0.5	68	51	<0.1	2.4	<0.09	0.12	0.25
1974885	TP14 ES 13 2.00	08-Oct-19	<0.014	16.8	0.57	18.4	54.1	722.9	<0.59	25.6	0.9	233.2	201	<0.1	5.9	0.30	0.33	0.66
1974886	TP14 ES 16 3.00	08-Oct-19	<0.012	22.5	0.83	20	60.7	701.6	<0.51	26.1	0.9	299.7	232	<0.1	13.4	0.35	0.62	1.51

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Sample Analysis

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Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg
Method Codes :			PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PCBECD
Method Reporting Limits :			0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	1.28	5
Accreditation Code:			UM	UM	UM	UM	UM	UM	N	UM	UM	UM	UM	UM	UM	UM	U	UM
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(ghi)perylene**	**Benzo(k)fluoranthene**	**Chrysene**	**Coronene**	**Dibenzo(ah)anthracene**	**Fluoranthene**	**Fluorene**	**Indeno(123-cd)pyrene**	**Naphthalene**	**Phenanthrene**	**Pyrene**	**Total PAH (Sum of USEPA 16)**	**PCB 101**
1974877	TP11 ES 3 0.30	08-Oct-19	0.43	0.51	0.65	0.35	0.25	0.41	0.10	<0.09	0.79	<0.09	0.38*	<0.09	0.30	0.74	<5.33*	<5.69
1974878	TP11 ES 13 2.00 (NVM)	08-Oct-19	<0.096§	<0.096§	0.108§	<0.096§	<0.096§	<0.096§	<0.10	<0.096§	0.108§	<0.096§	<0.096*§	<0.096§	<0.096§	0.119§	<1.565*§	<5.974§
1974879	TP11 ES 16 3.00	08-Oct-19	<0.10	<0.10	0.11	<0.10	<0.10	<0.10	<0.10	<0.10	0.17	<0.10	<0.10*	<0.10	<0.10	0.16	<1.7*	<6.07
1974880	TP13 ES 4 0.50	08-Oct-19	1.15	1.23	1.57	0.73	0.57	1.01	0.18	0.17	2.30	<0.10	0.79*	<0.10	1.00	2.11	<13.2*	<6.08
1974881	TP13 ES 13 3.00	08-Oct-19	0.67	0.95	1.53	0.92	0.48	0.70	0.24	0.20	1.59	<0.12	0.95*	<0.12	0.59	1.38	<10.6*	<7.56
1974882	TP13 ES 15 3.60	08-Oct-19	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11*	<0.11	<0.11	<0.11	<1.71*	<6.68
1974883	TP14 ES 7 0.70	08-Oct-19	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10*	<0.10	<0.10	<0.10	<1.53*	<5.97
1974884	TP14 ES 10 1.00	08-Oct-19	1.61	1.35	1.56	0.60	0.64	1.26	0.17	0.18	2.73	<0.09	0.67*	<0.09	0.61	2.41	<14.3*	<5.58
1974885	TP14 ES 13 2.00	08-Oct-19	1.70	1.49	1.80	0.74	0.69	1.50	0.19	0.20	3.68	0.51	0.79*	0.14	2.25	3.09	19.9*	<7.22
1974886	TP14 ES 16 3.00	08-Oct-19	3.09	2.40	2.93	1.11	1.12	2.54	0.30	0.33	6.90	0.69	1.23*	0.19	5.89	5.58	36.5*	<5.96

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Sample Analysis

Date Printed	**29-Oct-2019**
Report Number	**EFS/202707M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

		Units :	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	pH Units	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		Method Codes :	PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PHSOIL	SFAPI	SFAPI	Sub002	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
		Method Reporting Limits :	5	5	5	5	5	5		0.5	0.5		0.1	0.1	0.1	0.1	0.1	0.1
		Accreditation Code:	UM	UM	UM	UM	UM	UM	UM	UM	U	U	N	U	U	U	U	U
LAB ID Number CL/	Client Sample Description	Sample Date	PCB 118	PCB 138	PCB 153	PCB 180	PCB 28	PCB 52	pH units (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID and Quant (1 & 2)	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1-Methylnaphthalene	2,4,5-Trichlorophenol
1974877	TP11 ES 3 0.30	08-Oct-19	<5.69	<5.69	6.16	<5.69	6.57	9.16	8.4	<0.6	<0.6	NADIS						
1974878	TP11 ES 13 2.00 (NVM)	08-Oct-19	<5.974§	<5.974§	<5.974§	<5.974§	<5.974§	<5.974§	8 §	<0.60§	<0.60§	0.002 §						
1974879	TP11 ES 16 3.00	08-Oct-19	<6.07	<6.07	<6.07	<6.07	<6.07	<6.07	7.8	<0.6	<0.6	NADIS						
1974880	TP13 ES 4 0.50	08-Oct-19	<6.08	<6.08	<6.08	<6.08	<6.08	<6.08	8.1	<0.6	<0.6	NADIS						
1974881	TP13 ES 13 3.00	08-Oct-19	<7.56	<7.56	<7.56	<7.56	<7.56	<7.56	7	<0.8	<0.8	NADIS						
1974882	TP13 ES 15 3.60	08-Oct-19	<6.68	<6.68	<6.68	<6.68	<6.68	<6.68	7.5	<0.7	<0.7	NADIS						
1974883	TP14 ES 7 0.70	08-Oct-19	<5.97	<5.97	<5.97	<5.97	<5.97	<5.97	7.8	<0.6	<0.6	NADIS						
1974884	TP14 ES 10 1.00	08-Oct-19	<5.58	<5.58	<5.58	<5.58	<5.58	<5.58	8.1	<0.6	<0.6	NADIS						
1974885	TP14 ES 13 2.00	08-Oct-19	<7.22	<7.22	<7.22	<7.22	<7.22	<7.22	7.8	<0.7	<0.7	NADIS	<0.144	<0.144	<0.144	<0.144	<0.144	<0.144
1974886	TP14 ES 16 3.00	08-Oct-19	<5.96	<5.96	<5.96	<5.96	<5.96	<5.96	8	<0.6	<0.6	NADIS						

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Date Printed	**29-Oct-2019**
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Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		Method Codes :	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
		Method Reporting Limits :	0.1	0.1	0.1	0.5	0.2	0.5	0.1	0.1	0.1	0.1	0.5	0.1	0.1	14.5	0.2	0.1	
		Accreditation Code:	U	U	U	N	U	U	U	U	U	U	N	U	U	N	N	U	
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**2,4,6-Trichlorophenol**	**2,4-Dichlorophenol**	**2,4-Dimethylphenol**	**2,4-Dinitrophenol**	**2,4-Dinitrotoluene**	**2,6-Dinitrotoluene**	**2-Chloronaphthalene**	**2-Chlorophenol**	**2-Methylnaphthalene**	**2-Methylphenol**	**2-Nitroaniline**	**2-Nitrophenol**	**3- & 4-Methylphenol**	**3-Nitroaniline**	**4,6-Dinitro-2-methylphenol**	**4-Bromophenyl-phenylether**	
1974877	TP11 ES 3 0.30	**08-Oct-19**																	
1974878	TP11 ES 13 2.00 (NVM)	**08-Oct-19**																	
1974879	TP11 ES 16 3.00	**08-Oct-19**																	
1974880	TP13 ES 4 0.50	**08-Oct-19**																	
1974881	TP13 ES 13 3.00	**08-Oct-19**																	
1974882	TP13 ES 15 3.60	**08-Oct-19**																	
1974883	TP14 ES 7 0.70	**08-Oct-19**																	
1974884	TP14 ES 10 1.00	**08-Oct-19**																	
1974885	TP14 ES 13 2.00	**08-Oct-19**	<0.144	<0.144	<0.144	<0.722	<0.289	<0.722	<0.144	<0.144	<0.144	<0.144	<0.722	<0.144	<0.144	<20.9	<0.289	<0.144	
1974886	TP14 ES 16 3.00	**08-Oct-19**																	

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Client Name SOCOTEC UK Deeside

Contact Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**29-Oct-2019**
Report Number	**EFS/202707M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		Method Codes :	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
		Method Reporting Limits :	0.1	0.5	0.5	0.1	0.6	0.5	0.1	0.1	0.1	0.2	0.2	0.2	0.5	0.2	0.5	0.5
		Accreditation Code:	U	N	U	U	N	N	U	U	U	U	U	U	U	U	N	U
LAB ID Number CL/	Client Sample Description	Sample Date	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenol	4-Chlorophenyl-phenylether	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzoic Acid	Benzyl alcohol
1974877	TP11 ES 3 0.30	08-Oct-19																
1974878	TP11 ES 13 2.00 (NVM)	08-Oct-19																
1974879	TP11 ES 16 3.00	08-Oct-19																
1974880	TP13 ES 4 0.50	08-Oct-19																
1974881	TP13 ES 13 3.00	08-Oct-19																
1974882	TP13 ES 15 3.60	08-Oct-19																
1974883	TP14 ES 7 0.70	08-Oct-19																
1974884	TP14 ES 10 1.00	08-Oct-19																
1974885	TP14 ES 13 2.00	08-Oct-19	<0.144	<0.722	<0.722	<0.144	<0.866	<0.722	<0.144	<0.144	<0.144	0.495	0.424	0.518	<0.722	<0.289	<0.722	<0.722
1974886	TP14 ES 16 3.00	08-Oct-19																

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			Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			Method Codes :	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
			Method Reporting Limits :	0.1	0.1	0.1	0.5	0.2	0.2	0.1	0.3	0.5	0.1	0.1	0.1	0.1	0.2	0.1	0.2
			Accreditation Code:	U	U	U	U	U	U	U	N	U	U	U	U	U	U	U	U
LAB ID Number CL/	Client Sample Description	Sample Date	Biphenyl	bis(2-Chloroethoxy)methane	bis(2-Chloroethyl)ether	bis(2-Chloroisopropyl)ether	bis(2-Ethylhexyl)phthalate	Butylbenzylphthalate	Chrysene	Coronene	Dibenzo(ah)anthracene	Dibenzofuran	Diethylphthalate	Dimethylphthalate	Di-n-butylphthalate	Di-n-octylphthalate	Diphenyl Ether	Fluoranthene
1974877	TP11 ES 3 0.30	08-Oct-19																
1974878	TP11 ES 13 2.00 (NVM)	08-Oct-19																
1974879	TP11 ES 16 3.00	08-Oct-19																
1974880	TP13 ES 4 0.50	08-Oct-19																
1974881	TP13 ES 13 3.00	08-Oct-19																
1974882	TP13 ES 15 3.60	08-Oct-19																
1974883	TP14 ES 7 0.70	08-Oct-19																
1974884	TP14 ES 10 1.00	08-Oct-19																
1974885	TP14 ES 13 2.00	08-Oct-19	<0.144	<0.144	<0.144	<0.722	<0.289	<0.289	0.469	<0.433	<0.722	<0.144	<0.144	<0.144	<0.144	<0.289	<0.144	0.925
1974886	TP14 ES 16 3.00	08-Oct-19																

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Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%
Method Codes :			SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	TMSS
Method Reporting Limits :			0.2	0.1	0.1	0.1	0.1	0.5	0.1	0.1	0.5	0.9	0.1	0.5	0.1	0.1	0.2	0.1	
Accreditation Code:			U	U	N	N	U	U	N	U	U	N	N	N	U	U	U	U	
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Fluorene**	**Hexachlorobenzene**	**Hexachlorobutadiene**	**Hexachlorocyclopentadiene**	**Hexachloroethane**	**Indeno(123-cd)pyrene**	**Isophorone**	**Naphthalene**	**Nitrobenzene**	**N-Nitroso-di-n-propylamine**	**N-Nitrosodiphenylamine**	**Pentachlorophenol**	**Phenanthrene**	**Phenol**	**Pyrene**	**Tot.Moisture @ 105C**	
1974877	TP11 ES 3 0.30	08-Oct-19																12.2	
1974878	TP11 ES 13 2.00 (NVM)	08-Oct-19																16.3 §	
1974879	TP11 ES 16 3.00	08-Oct-19																17.6	
1974880	TP13 ES 4 0.50	08-Oct-19																17.7	
1974881	TP13 ES 13 3.00	08-Oct-19																33.9	
1974882	TP13 ES 15 3.60	08-Oct-19																25.2	
1974883	TP14 ES 7 0.70	08-Oct-19																16.3	
1974884	TP14 ES 10 1.00	08-Oct-19																10.4	
1974885	TP14 ES 13 2.00	08-Oct-19	<0.289*	<0.144	<0.144	<0.144	<0.144	<0.722	<0.144	<0.144	<0.722	<1.299	<0.144	<0.722	0.380	<0.144	0.802	30.7	
1974886	TP14 ES 16 3.00	08-Oct-19																16.1	

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Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			TPHFIDUS	TPHFIDUS	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI
Method Reporting Limits :			10	10	4	4	4	11.88	8.75	5.62	4	4	20	20	4	4	4	8.75	
Accreditation Code:			U	UM	U	U	U	U	U	N	N	U	U	N	U	U	U	U	
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**TPH Band (>C10-C40)**	**TPH by GCFID (AR)**	**TPH Ali Band >C10-C12**	**TPH Ali Band >C12-C16**	**TPH Ali Band >C16-C21**	**TPH Ali Band >C16-C35**	**TPH Ali Band >C21-C35**	**TPH Ali Band >C35-C44**	**TPH Ali Band >C40-C44**	**TPH Ali Band >C8-C10**	**TPH Ali Band >C8-C40**	**TPH Ali Band >C8-C44**	**TPH Aro Band >C10-C12**	**TPH Aro Band >C12-C16**	**TPH Aro Band >C16-C21**	**TPH Aro Band >C21-C35**	
1974877	TP11 ES 3 0.30	08-Oct-19	129	130	<4.56	<4.56	<4.56	<13.6	<9.98	<6.40	<4.56	<4.56	<22.8	<22.8	<4.56	<4.56	6.41	30.9	
1974878	TP11 ES 13 2.00 (NVM)	08-Oct-19	90.80§	91.76§	<4.779§	<4.779§	<4.779§	<14.22§	<10.466§	<6.71	<4.78	<4.779§	<23.89§	<23.9	<4.779§	<4.779§	5.532§	23.06§	
1974879	TP11 ES 16 3.00	08-Oct-19	109.2	110.3	<4.85	<4.85	<4.85	<14.4	<10.63	<6.82	<4.85	<4.85	<24.3	<24.3	<4.85	<4.85	7.18	21.0	
1974880	TP13 ES 4 0.50	08-Oct-19	209	210	<4.86	<4.86	<4.86	<14.5	<10.64	<6.83	<4.86	<4.86	<24.3	<24.3	<4.86	<4.86	14.6	61.4	
1974881	TP13 ES 13 3.00	08-Oct-19	437	439	<6.05	<6.05	<6.05	50.5	45.7	<8.50	<6.05	<6.05	53.0	53.6	<6.05	<6.05	26.3	151	
1974882	TP13 ES 15 3.60	08-Oct-19	95.5	96.3	<5.35	<5.35	<5.35	<15.9	<11.71	<7.51	<5.35	<5.35	<26.7	<26.7	<5.35	<5.35	8.60	20.9	
1974883	TP14 ES 7 0.70	08-Oct-19	61.8	62.5	<4.78	<4.78	<4.78	<14.2	<10.47	<6.71	<4.78	<4.78	<23.9	<23.9	<4.78	<4.78	7.85	15.2	
1974884	TP14 ES 10 1.00	08-Oct-19	161	162	<4.46	<4.46	<4.46	<13.3	<9.78	<6.27	<4.46	<4.46	<22.3	<22.3	<4.46	<4.46	32.0	55.6	
1974885	TP14 ES 13 2.00	08-Oct-19	313	313	<5.77	<5.77	<5.77	18.5	12.70	<8.11	<5.77	<5.77	<28.9	<28.9	<5.77	7.76	33.2	76.6	
1974886	TP14 ES 16 3.00	08-Oct-19	371	372	<4.77	<4.77	<4.77	16.9	15.5	<6.70	<4.77	<4.77	<23.8	<23.8	<4.77	12.0	53.4	107.0	

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Sample Analysis

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Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Method Codes :			TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS
Method Reporting Limits :			5.62	4	4	20	20	1	1	1	1	1	1	1	1	3	1	3	1
Accreditation Code:			N	N	U	U	N	UM	UM	N	UM	UM	U	UM	UM	UM	N	UM	
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**TPH Aro Band >C35-C44**	**TPH Aro Band >C40-C44**	**TPH Aro Band >C8-C10**	**TPH Aro Band >C8-C40**	**TPH Aro Band >C8-C44**	**1,1,1,2-Tetrachloroethane**	**1,1,1-Trichloroethane**	**1,1,2,2-Tetrachloroethane**	**1,1,2-Trichloroethane**	**1,1-Dichloroethane**	**1,1-Dichloroethene**	**1,1-Dichloropropene**	**1,2,3-Trichlorobenzene**	**1,2,3-Trichloropropane**	**1,2,4-Trichlorobenzene**	**1,2,4-Trimethylbenzene**	
1974877	TP11 ES 3 0.30	08-Oct-19	13.4	4.70	7.93	58.5	63.2												
1974878	TP11 ES 13 2.00 (NVM)	08-Oct-19	15.1	6.37	9.427§	52.69§	59.0												
1974879	TP11 ES 16 3.00	08-Oct-19	13.2	5.29	8.63	48.9	54.2												
1974880	TP13 ES 4 0.50	08-Oct-19	17.1	<4.86	8.34	102.4	106.7												
1974881	TP13 ES 13 3.00	08-Oct-19	30.7	7.26	11.06	218	225												
1974882	TP13 ES 15 3.60	08-Oct-19	12.13	<5.35	9.48	49.7	55												
1974883	TP14 ES 7 0.70	08-Oct-19	10.30	4.95	8.63	40.6	45.5												
1974884	TP14 ES 10 1.00	08-Oct-19	16.5	5.76	7.96	111.2	117												
1974885	TP14 ES 13 2.00	08-Oct-19	21.5	<5.77	10.56	146	150	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4*	<1.4	<4.3	<1.4	<4.3	<1.4	
1974886	TP14 ES 16 3.00	08-Oct-19	26.6	6.65	6.96	200	206												

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		Units :	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
		Method Codes :	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS
		Method Reporting Limits :	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		Accreditation Code:	N	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	Client Sample Description	Sample Date	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Chlorotoluene	4-Chlorotoluene	Benzene	Benzene	Bromobenzene	Bromochloromethane
1974877	TP11 ES 3 0.30	08-Oct-19														<1		
1974878	TP11 ES 13 2.00 (NVM)	08-Oct-19														<1§		
1974879	TP11 ES 16 3.00	08-Oct-19														<1		
1974880	TP13 ES 4 0.50	08-Oct-19														<1		
1974881	TP13 ES 13 3.00	08-Oct-19														<2		
1974882	TP13 ES 15 3.60	08-Oct-19														<1		
1974883	TP14 ES 7 0.70	08-Oct-19														<1		
1974884	TP14 ES 10 1.00	08-Oct-19														<1		
1974885	TP14 ES 13 2.00	08-Oct-19	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4		<1.4	<1.4
1974886	TP14 ES 16 3.00	08-Oct-19														<1		

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		Units :	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	ug/kg	µg/kg	µg/kg
		Method Codes :	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS
		Method Reporting Limits :	1	1	1	1	1	2	1	3	5	1	1	1	1	1	2	2
		Accreditation Code:	UM	UM	UM	UM	UM	UM	UM	U	UM	UM	UM	UM	N	UM	UM	N
LAB ID Number CL/	Client Sample Description	Sample Date	Bromodichloromethane	Bromoform	Bromomethane	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis 1,2-Dichloroethene	cis 1,3-Dichloropropene	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Ethyl Benzene	Ethylbenzene	Hexachlorobutadiene
1974877	TP11 ES 3 0.30	08-Oct-19														<2		
1974878	TP11 ES 13 2.00 (NVM)	08-Oct-19														<2§		
1974879	TP11 ES 16 3.00	08-Oct-19														<2		
1974880	TP13 ES 4 0.50	08-Oct-19														<2		
1974881	TP13 ES 13 3.00	08-Oct-19														<3		
1974882	TP13 ES 15 3.60	08-Oct-19														<3		
1974883	TP14 ES 7 0.70	08-Oct-19														<2		
1974884	TP14 ES 10 1.00	08-Oct-19														<2		
1974885	TP14 ES 13 2.00	08-Oct-19	<1.4	<1.4	<1.4	<1.4	<1.4	<2.9	<1.4	<4.3	<7.2	<1.4	<1.4	<1.4	<1.4		<2.9	<2.9
1974886	TP14 ES 16 3.00	08-Oct-19														<2		

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			Units :	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
			Method Codes :	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS
			Method Reporting Limits :	1	4	4	1	5	1	2	2	1	1	1	1	1	3	5	5
			Accreditation Code:	UM	UM	UM	UM	UM	U	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	Client Sample Description	Sample Date		iso-Propylbenzene	m and p-Xylene	m/p Xylenes	MTBE	Naphthalene	n-Butylbenzene	o Xylene	o-Xylene	p-Isopropyltoluene	Propylbenzene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Toluene
1974877	TP11 ES 3 0.30	08-Oct-19				<5				<2									7
1974878	TP11 ES 13 2.00 (NVM)	08-Oct-19				<5§				<2§									<6§
1974879	TP11 ES 16 3.00	08-Oct-19				<5				<2									<6
1974880	TP13 ES 4 0.50	08-Oct-19				<5				<2									9
1974881	TP13 ES 13 3.00	08-Oct-19				<6				<3									11
1974882	TP13 ES 15 3.60	08-Oct-19				<5				<3									7
1974883	TP14 ES 7 0.70	08-Oct-19				<5				<2									<6
1974884	TP14 ES 10 1.00	08-Oct-19				<4				<2									9
1974885	TP14 ES 13 2.00	08-Oct-19	<1.4	<5.8		<1.4	<7.2	<1.4		<2.9	<1.4	<1.4	<1.4	<1.4	<1.4	<4.3	<7.2		
1974886	TP14 ES 16 3.00	08-Oct-19			<5				<2									48	

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Client Name	SOCOTEC UK Deeside
Contact	Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	29-Oct-2019
Report Number	EFS/202707M
Table Number	1

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	% M/M									
Method Codes :			VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	WSLM59									
Method Reporting Limits :			1	1	1	1	1	6	0.02									
Accreditation Code:			UM	UM	UM	UM	UM	UM	N									
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**trans 1,2-Dichloroethene**	**trans 1,3-Dichloropropene**	**Trichloroethene**	**Trichlorofluoromethane**	**Vinyl Chloride**	**Xylenes**	**Total Organic Carbon**									
1974877	TP11 ES 3 0.30	08-Oct-19						<7	1.82									
1974878	TP11 ES 13 2.00 (NVM)	08-Oct-19						<7§	3.191§									
1974879	TP11 ES 16 3.00	08-Oct-19						<7	1.86									
1974880	TP13 ES 4 0.50	08-Oct-19						<7	10.1									
1974881	TP13 ES 13 3.00	08-Oct-19						<9	9.69									
1974882	TP13 ES 15 3.60	08-Oct-19						<8	1.22									
1974883	TP14 ES 7 0.70	08-Oct-19						<7	0.83									
1974884	TP14 ES 10 1.00	08-Oct-19						<7	1.15									
1974885	TP14 ES 13 2.00	08-Oct-19	<1.4	<1.4	<1.4	<1.4	<1.4		5.06									
1974886	TP14 ES 16 3.00	08-Oct-19						<7	7.7									

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Client Name **SOCOTEC UK Deeside**

Contact Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**29-Oct-2019**
Report Number	**EFS/202707M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.253
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	12.2
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.422
					Fraction of sample above 4 mm %	80.900
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP11 ES 3 0.30		s20_2707M	CL/1974877	29-Oct-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	1.82	3	5	6
N	LOI450	Loss on Ignition (%)	2.9			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0684	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.04589	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	129	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<5.43	100		
U	PHSOIL	pH (pH units)	8.4		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	1.7		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	8	7.9	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	251	127					
U	ICPMSW	Arsenic	0.001	<0.001	0.002	<0.01	0.5	2	25
U	ICPWATVAR	Barium	0.05	0.02	0.1	0.2	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.003	0.002	0.006	0.02	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.012	0.009	0.024	0.09	0.5	10	30
U	ICPMSW	Nickel	0.001	<0.001	0.002	<0.01	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.002	0.001	0.004	0.01	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.004	0.016	0.008	0.14	4	50	200
U	KONENS	Chloride	6	<1	12	<17	800	15000	25000
U	ISEF	Fluoride	0.8	0.7	1.6	7	10	150	500
U	ICPWATVAR	Sulphate as SO4	15	3	30	46	1000	20000	50000
N	WSLM27	Total Dissolved Solids	195	99.1	390	1119	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	8.6	3.3	17.2	40	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

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Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.268
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	16.3
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.407
					Fraction of sample above 4 mm %	100.000
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP11 ES 13 2.00		s20_2707M	CL/1974878	29-Oct-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
N	WSLM59	Total Organic Carbon (% M/M)	3.191§	3	5	6
N	LOI450	Loss on Ignition (%)	2.8			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0715	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
N	TPHFIDUS	Mineral Oil (mg/kg)	90.80§	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<1.66	100		
N	PHSOIL	pH (pH units)	8 §		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	13.9		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	8.1	7.8	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	462	173					
U	ICPMSW	Arsenic	0.002	0.001	0.004	0.01	0.5	2	25
U	ICPWATVAR	Barium	0.16	0.1	0.32	1.1	20	100	300
U	ICPMSW	Cadmium	0.00003	<0.00002	0.00006	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.015	0.009	0.03	0.1	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.015	0.006	0.03	0.07	0.5	10	30
U	ICPMSW	Nickel	0.002	0.002	0.004	0.02	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.002	0.002	0.004	0.02	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.007	0.002	0.014	0.03	4	50	200
U	KONENS	Chloride	3	3	6	30	800	15000	25000
U	ISEF	Fluoride	0.4	0.4	0.8	4	10	150	500
U	ICPWATVAR	Sulphate as SO4	11	4	22	49	1000	20000	50000
N	WSLM27	Total Dissolved Solids	360	135	720	1650	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	10	6.7	20	71	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

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Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.271
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	17.6
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.404
					Fraction of sample above 4 mm %	69.200
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP11 ES 16 3.00		s20_2707M	CL/1974879	29-Oct-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	1.86	3	5	6
N	LOI450	Loss on Ignition (%)	2.4			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0727	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	109.2	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<1.80	100		
U	PHSOIL	pH (pH units)	7.8		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	3.6		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	8	7.7	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	376	146					
U	ICPMSW	Arsenic	0.004	0.003	0.008	0.03	0.5	2	25
U	ICPWATVAR	Barium	0.11	0.07	0.22	0.8	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.002	0.006	0.004	0.05	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.036	0.014	0.072	0.17	0.5	10	30
U	ICPMSW	Nickel	0.003	0.002	0.006	0.02	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.006	0.006	0.012	0.06	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.003	0.004	0.006	0.04	4	50	200
U	KONENS	Chloride	46	3	92	87	800	15000	25000
U	ISEF	Fluoride	0.4	0.4	0.8	4	10	150	500
U	ICPWATVAR	Sulphate as SO4	26	9	52	113	1000	20000	50000
N	WSLM27	Total Dissolved Solids	293	114	586	1379	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	9.1	5	18.2	55	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

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Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.285
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	17.7
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.390
					Fraction of sample above 4 mm %	61.200
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP13 ES 4 0.50		s20_2707M	CL/1974880	29-Oct-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	10.1	3	5	6
N	LOI450	Loss on Ignition (%)	9.8			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0731	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	209	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<13.43	100		
U	PHSOIL	pH (pH units)	8.1		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	1.01		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	8	7.7	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	307	145					
U	ICPMSW	Arsenic	0.002	0.003	0.004	0.03	0.5	2	25
U	ICPWATVAR	Barium	0.05	0.03	0.1	0.3	20	100	300
U	ICPMSW	Cadmium	0.00003	<0.00002	0.00006	<0.0002	0.04	1	5
U	ICPMSW	Chromium	0.002	0.001	0.004	0.01	0.5	10	70
U	ICPMSW	Copper	0.005	0.004	0.01	0.04	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.011	0.004	0.022	0.05	0.5	10	30
U	ICPMSW	Nickel	<0.001	<0.001	<0.002	<0.01	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.003	0.002	0.006	0.02	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.003	<0.002	0.006	<0.02	4	50	200
U	KONENS	Chloride	25	<1	50	<42	800	15000	25000
U	ISEF	Fluoride	0.5	0.5	1	5	10	150	500
U	ICPWATVAR	Sulphate as SO4	13	<3	26	<43	1000	20000	50000
N	WSLM27	Total Dissolved Solids	239	113	478	1298	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	6.3	3.6	12.6	40	500	800	1000

Template Ver. 1

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Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.317
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	33.9
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.358
					Fraction of sample above 4 mm %	45.700
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP13 ES 13 3.00		s20_2707M	CL/1974881	29-Oct-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	9.69	3	5	6
N	LOI450	Loss on Ignition (%)	14.4			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0907	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.056	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	437	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<10.83	100		
U	PHSOIL	pH (pH units)	7		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	0.86		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	8	7.6	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	761	283					
U	ICPMSW	Arsenic	0.006	0.002	0.012	0.03	0.5	2	25
U	ICPWATVAR	Barium	0.17	0.11	0.34	1.2	20	100	300
U	ICPMSW	Cadmium	0.00003	<0.00002	0.00006	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.004	0.004	0.008	0.04	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.023	0.023	0.046	0.23	0.5	10	30
U	ICPMSW	Nickel	0.004	0.003	0.008	0.03	0.4	10	40
U	ICPMSW	Lead	0.002	0.001	0.004	0.01	0.5	10	50
U	ICPMSW	Antimony	0.005	0.004	0.01	0.04	0.06	0.7	5
U	ICPMSW	Selenium	0.001	<0.001	0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.022	0.012	0.044	0.13	4	50	200
U	KONENS	Chloride	8	<1	16	<19	800	15000	25000
U	ISEF	Fluoride	0.2	0.3	0.4	3	10	150	500
U	ICPWATVAR	Sulphate as SO4	199	40	398	612	1000	20000	50000
N	WSLM27	Total Dissolved Solids	594	221	1188	2707	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	28	9	56	115	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

Tests where the accreditation is set to U are UKAS accredited, those where the accreditation is set to N are not UKAS accredited

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.268
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	25.2
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.407
					Fraction of sample above 4 mm %	0.000
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP13 ES 15 3.60		s20_2707M	CL/1974882	29-Oct-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	1.22	3	5	6
N	LOI450	Loss on Ignition (%)	2.3			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0803	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.049	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	95.5	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<1.82	100		
U	PHSOIL	pH (pH units)	7.5		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	0.62		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	7.7	7.1	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	215	<100					
U	ICPMSW	Arsenic	0.003	0.003	0.006	0.03	0.5	2	25
U	ICPWATVAR	Barium	0.17	0.07	0.34	0.8	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	<0.001	0.001	<0.002	<0.01	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.014	0.005	0.028	0.06	0.5	10	30
U	ICPMSW	Nickel	0.001	<0.001	0.002	<0.01	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.005	0.004	0.01	0.04	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.004	0.005	0.008	0.05	4	50	200
U	KONENS	Chloride	3	<1	6	<13	800	15000	25000
U	ISEF	Fluoride	0.4	0.3	0.8	3	10	150	500
U	ICPWATVAR	Sulphate as SO4	24	13	48	145	1000	20000	50000
N	WSLM27	Total Dissolved Solids	168	61.6	336	758	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	6	3.5	12	38	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

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Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.274
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	16.3
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.401
					Fraction of sample above 4 mm %	0.000
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP14 ES 7 0.70		s20_2707M	CL/1974883	29-Oct-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	0.83	3	5	6
N	LOI450	Loss on Ignition (%)	2.9			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0715	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	61.8	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<1.62	100		
U	PHSOIL	pH (pH units)	7.8		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	0.46		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except oo		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) oo	7.9	7.4	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) oo	224	102					
U	ICPMSW	Arsenic	0.002	0.001	0.004	0.01	0.5	2	25
U	ICPWATVAR	Barium	0.01	0.01	0.02	0.1	20	100	300
U	ICPMSW	Cadmium	0.00005	<0.00002	0.0001	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.01	0.007	0.02	0.07	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.003	0.001	0.006	0.01	0.5	10	30
U	ICPMSW	Nickel	0.002	<0.001	0.004	<0.01	0.4	10	40
U	ICPMSW	Lead	0.002	0.004	0.004	0.04	0.5	10	50
U	ICPMSW	Antimony	0.002	0.001	0.004	0.01	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.007	0.003	0.014	0.04	4	50	200
U	KONENS	Chloride	5	1	10	15	800	15000	25000
U	ISEF	Fluoride	0.2	0.2	0.4	2	10	150	500
U	ICPWATVAR	Sulphate as SO4	20	<3	40	<53	1000	20000	50000
N	WSLM27	Total Dissolved Solids	174	79.3	348	919	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	29	9.6	58	122	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

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Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.250
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	10.4
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.425
					Fraction of sample above 4 mm %	40.700
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP14 ES 10 1.00		s20_2707M	CL/1974884	29-Oct-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	1.15	3	5	6
N	LOI450	Loss on Ignition (%)	2.4			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0671	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	161	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<14.45	100		
U	PHSOIL	pH (pH units)	8.1		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	2.32		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	7.9	7.6	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	282	126					
U	ICPMSW	Arsenic	0.001	0.001	0.002	0.01	0.5	2	25
U	ICPWATVAR	Barium	0.03	0.01	0.06	0.1	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.003	0.002	0.006	0.02	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.006	0.003	0.012	0.03	0.5	10	30
U	ICPMSW	Nickel	<0.001	<0.001	<0.002	<0.01	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.002	0.002	0.004	0.02	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.005	0.009	0.01	0.08	4	50	200
U	KONENS	Chloride	4	<1	8	<14	800	15000	25000
U	ISEF	Fluoride	0.5	0.5	1	5	10	150	500
U	ICPWATVAR	Sulphate as SO4	26	4	52	69	1000	20000	50000
N	WSLM27	Total Dissolved Solids	220	98.4	440	1146	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	9.5	3.8	19	46	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

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Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.278
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	30.7
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.397
					Fraction of sample above 4 mm %	43.700
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP14 ES 13 2.00		s20_2707M	CL/1974885	29-Oct-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	5.06	3	5	6
N	LOI450	Loss on Ignition (%)	5.9			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0865	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.049	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	313	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	20.1	100		
U	PHSOIL	pH (pH units)	7.8		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	2.31		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	8	7.7	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	425	192					
U	ICPMSW	Arsenic	0.008	0.008	0.016	0.08	0.5	2	25
U	ICPWATVAR	Barium	0.06	0.04	0.12	0.4	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	<0.001	0.001	<0.002	<0.01	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.052	0.03	0.104	0.33	0.5	10	30
U	ICPMSW	Nickel	0.001	0.001	0.002	0.01	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.004	0.009	0.008	0.08	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.003	0.003	0.006	0.03	4	50	200
U	KONENS	Chloride	4	<1	8	<14	800	15000	25000
U	ISEF	Fluoride	0.4	0.5	0.8	5	10	150	500
U	ICPWATVAR	Sulphate as SO4	33	8	66	113	1000	20000	50000
N	WSLM27	Total Dissolved Solids	331	150	662	1741	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	14	6.2	28	72	500	800	1000

Template Ver. 1

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WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.268
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	16.1
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.407
					Fraction of sample above 4 mm %	52.700
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP14 ES 16 3.00		s20_2707M	CL/1974886	29-Oct-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	7.7	3	5	6
N	LOI450	Loss on Ignition (%)	13.4			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0714	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	371	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	36.77	100		
U	PHSOIL	pH (pH units)	8		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	2.67		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	8	7.6	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	511	198					
U	ICPMSW	Arsenic	0.006	0.007	0.012	0.07	0.5	2	25
U	ICPWATVAR	Barium	0.06	0.05	0.12	0.5	20	100	300
U	ICPMSW	Cadmium	0.00003	<0.00002	0.00006	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.005	0.005	0.01	0.05	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.055	0.019	0.11	0.24	0.5	10	30
U	ICPMSW	Nickel	0.002	<0.001	0.004	<0.01	0.4	10	40
U	ICPMSW	Lead	0.002	0.001	0.004	0.01	0.5	10	50
U	ICPMSW	Antimony	0.024	0.017	0.048	0.18	0.06	0.7	5
U	ICPMSW	Selenium	0.001	<0.001	0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.014	0.006	0.028	0.07	4	50	200
U	KONENS	Chloride	3	<1	6	<13	800	15000	25000
U	ISEF	Fluoride	0.6	0.6	1.2	6	10	150	500
U	ICPWATVAR	Sulphate as SO4	124	20	248	339	1000	20000	50000
N	WSLM27	Total Dissolved Solids	398	155	796	1874	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	11	4.7	22	55	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

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ASBESTOS ANALYSIS RESULTS

SOCOTEC Asbestos Limited Certificate of Analysis for Asbestos in Soils, Sediments and Aggregates

UKAS TESTING 1089

Detection limit of Method SCI-ASB-020 is 0.001%

Sampling has been carried out by a third party

SOCOTEC

Client:	SOCOTEC Environmental Chemistry	**Page 1 of 1**	
Address:	Etwall House, Bretby Business Park, Ashby Road, Burton upon Trent	**Report No:**	**ANO-0503-21496**
For the attention of:	SOCOTEC UK Deeside	**Report Date:**	**28/10/2019**
Site Address:	F9049-19 Wrexham - Wynnstay Avenue, Deva Way	**Project Number:**	**S202707**

Sample Number	Sample Date	Sample Location & Matrix	Test Date	Total Sample Dry Weight (g)	Weight of <10mm Fraction (g)	Asbestos(g) in >10mm	Asbestos(g) in < 10mm	% Asbestos by weight of Total Dried Sample	Moisture Content	Asbestos Fibre Types Identified
CL/1974877	08/10/19	TP11 0.30 Soils	28/10/2019	276.2	195.6	0.0000	0.0000			NADIS
CL/1974878	08/10/19	TP11 2.00 Soils	28/10/2019	738.2	326.7	0.0000	0.0143	0.002		Chrysotile(Free Fibres) <10mm
CL/1974879	08/10/19	TP11 3.00 Soils	25/10/2019	459.8	410.1	0.0000	0.0000			NADIS
CL/1974880	08/10/19	TP13 0.50 Soils	25/10/2019	312.8	242.7	0.0000	0.0000			NADIS
CL/1974881	08/10/19	TP13 3.00 Soils	28/10/2019	202.5	196.2	0.0000	0.0000			NADIS
CL/1974882	08/10/19	TP13 3.60 Soils	25/10/2019	333.7	332.1	0.0000	0.0000			NADIS
CL/1974883	08/10/19	TP14 0.70 Soils	25/10/2019	358.8	339.8	0.0000	0.0000			NADIS
CL/1974884	08/10/19	TP14 1.00 Soils	28/10/2019	329.4	317.6	0.0000	0.0000			NADIS
CL/1974885	08/10/19	TP14 2.00 Soils	28/10/2019	575.9	485.0	0.0000	0.0000			NADIS
CL/1974886	08/10/19	TP14 3.00 Soils	28/10/2019	486.9	408.0	0.0000	0.0000			NADIS

Keys

NAACR = Not Analysed at Clients Request

NAIIS = No Asbestos Identified in Sample (Identification Only)

*** visible to naked eye**

NADIS = No Asbestos Detected in Sample (ID & Quant Only)

Name: Tom Pratt Authorised Signatory:

Position: Lab Coordinator

The sample analysis for the above results was carried out using the procedures detailed in SOCOTEC Asbestos Limited in house method (SCI-ASB-020) based on EA document Quantification of asbestos in soil and associated materials - Draft 2017. Fibre identification was carried out using SOCOTEC Asbestos Limited in house method of transmitted/polarised light microscopy and centre stop dispersion staining (SCI-ASB-007), based on HSE's HSG 248. The analysis of the < 10mm fraction for asbestos content only includes ACMs and fibres and does not discriminate non-asbestos fibres. All fibres are assumed, unless specified, to be amphiboles. All tests were carried out at a SOCOTEC Asbestos Ltd laboratory, UKAS Testing Number 1089. Recommended sample weight is 1kg-2kg, samples less than 1kg are classified as deviating samples.

Where individual results are flagged see report notes for status.

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Deeside
Site F9049-19 Wrexham - Wynnstay Avenue, Deva Way
Report No S202707M

Consignment No S88721
Date Logged 12-Oct-2019
In-House Report Due 23-Oct-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Sampled	Acid Neut. Capacity	BTEX-HSA + MTBE analysis	MTBE (µg/kg)	CEN Leac(P)1	CEN Leac(P)2	REPORT A	GRO (AA-UK) HSA-GCFID	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Mercury (MS)	Nickel (MS)	Selenium (MS)	Zinc (MS)	SO4-- (H2O sol) mg/l	Chromium vi:	L.O.I. % @ 450C	MCertS Analysis	PAH (17) by GCMS	PCB-7 Congeners Analysis	pH units (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)
MethodID			ANC	BTEXHSA		CEN Leac/mate		CustServ	GROHSA	ICPMSS									ICPWSS	KONECR	LOI(%MM)	MCertS	PAHMSUS	PCBECD	PHSOIL	SFAPI	
				✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
CL/1974877	TP11 0.30	08/10/19																									
CL/1974878	TP11 2.00	08/10/19																									
CL/1974879	TP11 3.00	08/10/19																									
CL/1974880	TP13 0.50	08/10/19																									
CL/1974881	TP13 3.00	08/10/19																									
CL/1974882	TP13 3.60	08/10/19																									
CL/1974883	TP14 0.70	08/10/19																									
CL/1974884	TP14 1.00	08/10/19																									
CL/1974885	TP14 2.00	08/10/19																									
CL/1974886	TP14 3.00	08/10/19																									

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.
The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Analytical and Deviating Sample Overview

Customer **SOCOTEC UK Deeside** Consignment No S88721
Site **F9049-19 Wrexham - Wynnstay Avenue, Deva Way** Date Logged 12-Oct-2019
Report No **S202707M** In-House Report Due 23-Oct-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	Sub002	SVOCSW	TMSS	TPHFIDUS		TPHUSSI	VOCHSAS		WSLM59
		Sampled	^Asbestos ID and Quant (1 & 2)	SVOC (AR)	Tot.Moisture @ 105C	TPH Band (>C10-C40)	TPH by GCFID (AR)	TPH by GCFID (Si-UKCWG)>44	BTEX-HSA GCMS analysis	VOC HSA-GCMS	Total Organic Carbon
			✓	✓	✓	✓	✓	✓	✓	✓	✓
CL/1974877	TP11 0.30	08/10/19									
CL/1974878	TP11 2.00	08/10/19									
CL/1974879	TP11 3.00	08/10/19									
CL/1974880	TP13 0.50	08/10/19									
CL/1974881	TP13 3.00	08/10/19									
CL/1974882	TP13 3.60	08/10/19									
CL/1974883	TP14 0.70	08/10/19									
CL/1974884	TP14 1.00	08/10/19									
CL/1974885	TP14 2.00	08/10/19									
CL/1974886	TP14 3.00	08/10/19									

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Report Number : EFS/202707

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
SVOCSW	CL1974885	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (Fluorene) . These circumstances should be taken into consideration when utilising the data.
PAHMSUS	CL/1974877 - 886	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes Indeno[1,2,3-cd]pyrene. These circumstances should be taken into consideration when utilising the data.
VOCHSAS	CL/1974885	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes 1,1-Dichloroethene. These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	ANC	Oven Dried @ < 35°C	Quantitative digestion with Hydrochloric Acid back titration with 1M Sodium Hydroxide to pH 7
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes (BTEX) by Headspace GCFID
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace GCFID
Soil	ICPMSS	Oven Dried @ < 35°C	Determination of Metals in Marine Sediments and Soil samples by aqua regia digestion followed by ICPMS detection
Soil	ICPWSS	Oven Dried @ < 35°C	Determination of Water Soluble Sulphate in soil samples by water extraction followed by ICPOES detection
Soil	KONECR	Oven Dried @ < 35°C	Determination of Chromium vi in soil samples by water extraction followed by colorimetric detection
Soil	LOI(%MM)	Oven Dried @ < 35°C	Determination of loss on ignition for soil samples at specified temperature by gravimetry
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by hexane/acetone extraction followed by GCMS detection
Soil	PCBECD	As Received	Determination of Polychlorinated Biphenyl (PCB) congeners/aroclors by hexane/acetone extraction followed by GCECD detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-contractor.
Soil	SVOCSW	As Received	Determination of Semi-Volatile Organic Compounds by dichloromethane/acetone extraction followed by GCMS detection
Soil	TMSS	As Received	Determination of the Total Moisture content at 105ºC by loss on oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHFIDUS	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection.
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection including quantitation of Aromatic and Aliphatic fractions.
Soil	VOCHSAS	As Received	Determination of Volatile Organic Compounds (VOC) by Headspace GCMS
Soil	WSLM59	Oven Dried @ < 35°C	Determination of Organic Carbon in soil using sulphurous Acid digestion followed by high temperature combustion and IR detection
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	ISEF	As Received	Determination of Fluoride in water samples by Ion Selective Electrode (ISE)
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM2	As Received	Determination of the Electrical Conductivity (µS/cm) by electrical conductivity probe.
Water	WSLM27	As Received	Gravimetric Determination
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Deeside

Site : F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Report Number : S20_2707

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1974877	TP11 ES 3 0.30	Brown Clay SILT Gravel
CL/1974878	TP11 ES 13 2.00 (NVM)	Brown Silt GRAVEL Cobbles
CL/1974879	TP11 ES 16 3.00	Brown Gravel SAND
CL/1974880	TP13 ES 4 0.50	Brown Gravel SILT
CL/1974881	TP13 ES 13 3.00	Brown Gravel SILT
CL/1974882	TP13 ES 15 3.60	Brown Silt SAND
CL/1974883	TP14 ES 7 0.70	Brown Silt CLAY Gravel
CL/1974884	TP14 ES 10 1.00	Brown Gravel SILT Brick
CL/1974885	TP14 ES 13 2.00	Brown Gravel SILT
CL/1974886	TP14 ES 16 3.00	Brown Gravel SILT Brick

TEST REPORT

1252

Report No. EFS/202831M (Ver. 1)

SOCOTEC UK Deeside
Unit 18
Drome Road
Deeside Industrial Park
Deeside
Flintshire
CH5 2NY

Site: F9049-19 Wrexham - Wynnstay Avenue, Deva Way

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 17-Oct-2019. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 29-Oct-2019

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS or MCERTS accredited. Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by SOCOTEC UK Limited.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 7)
Table of WAC Analysis Results (Page 8)
Subcontracted Analysis Reports (Pages 9 to 10)
The accreditation status of subcontracted analysis is displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Pages 11 to 12)
Table of Method Descriptions (Pages 13 to 14)
Table of Report Notes (Page 15)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham Operations Manager
Energy & Waste Services

Date of Issue: 29-Oct-2019

Accreditation Codes: **N** (Not Accredited), **U** (UKAS), **UM** (UKAS & MCERTS)
Tests marked '^' have been subcontracted to another laboratory.
(NVM) - denotes the sample matrix is dissimilar to matrices upon which the MCERTS validation was based, and is therefore not accredited for MCERTS.
All results are reported on a dry weight basis at 105^{o}C unless otherwise stated. (except QC samples)
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Units :			Mol/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			ANC	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA
Method Reporting Limits :			0.04	10	10	20	20	10	10	30	0.2	0.2	0.2	0.2	0.2	0.01	0.2	0.2
Accreditation Code:			N	UM	UM	UM	U	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Acid Neut. Capacity**	**Benzene**	**Ethyl Benzene**	**m/p Xylenes**	**MTBE**	**o Xylene**	**Toluene**	**Xylenes**	**GRO**	**GRO (>C5 - C6)**	**GRO (>C7 - C8)**	**GRO (>C8 - C10)**	**GRO (C5-C6 Aliphatic)**	**GRO (C5-C7 Aromatic)**	**GRO (C6-C7)**	**GRO (C6-C8 Aliphatic)**
1975581	TP03A ES 5 0.20	09-Oct-19	3.90	<10.9	<10.9	<21.8	<21.8	<10.9	<10.9	<32.7	<0.218	<0.218	<0.218	<0.218	<0.218	<0.011	<0.218	<0.218

SOCOTEC

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Client Name	**SOCOTEC UK Deeside**
Contact	Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**29-Oct-2019**
Report Number	**EFS/202831M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg
Method Codes :			GROHSA	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPWSS	KONECR	LOI(%MM)	PAHMSUS	PAHMSUS
Method Reporting Limits :			0.01	0.3	0.2	1.2	1.6	0.7	0.5	0.5	2	0.5	16	10	0.1	0.2	0.08	0.08
Accreditation Code:			UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	N	N	UM	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**GRO (C7-C8 Aromatic)**	**Arsenic (MS)**	**Cadmium (MS)**	**Chromium (MS)**	**Copper (MS)**	**Lead (MS)**	**Mercury (MS)**	**Molybdenum (MS)**	**Nickel (MS)**	**Selenium (MS)**	**Zinc (MS)**	**SO4-- (H2O sol) mg/l**	**Chromium vi:**	**L.O.I. % @ 450C**	**Acenaphthene**	**Acenaphthylene**
1975581	TP03A ES 5 0.20	09-Oct-19	<0.011	5.2	1.97	15.0	14.2	91.0	<0.5	0.7	10.5	3	92.5	207	1.7	3.4	2.13	0.41

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Contact	Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**29-Oct-2019**
Report Number	**EFS/202831M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS
Method Reporting Limits :			0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	1.28
Accreditation Code:			U	UM	UM	UM	UM	UM	UM	N	UM	UM	UM	UM	UM	UM	UM	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Anthracene**	**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(ghi)perylene**	**Benzo(k)fluoranthene**	**Chrysene**	**Coronene**	**Dibenzo(ah)anthracene**	**Fluoranthene**	**Fluorene**	**Indeno(123-cd)pyrene**	**Naphthalene**	**Phenanthrene**	**Pyrene**	**Total PAH (Sum of USEPA 16)**
1975581	TP03A ES 5 0.20	09-Oct-19	4.27	15.6	22.0	25.3	15.2	8.55	14.5	4.05	3.20	31.2	1.56	17.7	0.69	10.9	31.0	204

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Contact	Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**29-Oct-2019**
Report Number	**EFS/202831M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	pH Units	mg/kg	mg/kg	%	%	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PHSOIL	SFAPI	SFAPI	Sub020	TMSS	TPHFIDUS	TPHFIDUS	TPHUSSI	TPHUSSI
Method Reporting Limits :			5	5	5	5	5	5	5		0.5	0.5	0.1	0.1	10	10	4	4
Accreditation Code:			UM	UM	UM	UM	UM	UM	UM	UM	UM	U	U	U	U	UM	U	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**PCB 101**	**PCB 118**	**PCB 138**	**PCB 153**	**PCB 180**	**PCB 28**	**PCB 52**	**pH units (AR)**	**Cyanide(Total) (AR)**	**Phenol Index.(AR)**	**^Asbestos ID and Quant (1 & 2)**	**Tot.Moisture @ 105C**	**TPH Band (>C10-C40)**	**TPH by GCFID (AR)**	**TPH Ali Band >C10-C12**	**TPH Ali Band >C12-C16**
1975581	TP03A ES 5 0.20	09-Oct-19	<5.45	<5.45	<5.45	<5.45	<5.45	<5.45	<5.45	8	0.7	<0.5	NADIS	8.3	1820	1820	61.1	19.0

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Contact	Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**29-Oct-2019**
Report Number	**EFS/202831M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI
Method Reporting Limits :			4	11.88	8.75	5.62	4	4	20	20	4	4	4	8.75	5.62	4	4	20
Accreditation Code:			U	U	U	N	N	U	U	N	U	U	U	U	N	N	U	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**TPH Ali Band >C16-C21**	**TPH Ali Band >C16-C35**	**TPH Ali Band >C21-C35**	**TPH Ali Band >C35-C44**	**TPH Ali Band >C40-C44**	**TPH Ali Band >C8-C10**	**TPH Ali Band >C8-C40**	**TPH Ali Band >C8-C44**	**TPH Aro Band >C10-C12**	**TPH Aro Band >C12-C16**	**TPH Aro Band >C16-C21**	**TPH Aro Band >C21-C35**	**TPH Aro Band >C35-C44**	**TPH Aro Band >C40-C44**	**TPH Aro Band >C8-C10**	**TPH Aro Band >C8-C40**
1975581	TP03A ES 5 0.20	09-Oct-19	53.8	252	198	36.8	9.96	4.84*	298	308	<4.36	63.2	496*	1970	458	128	<4.36	2870

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Client Name	**SOCOTEC UK Deeside**
Contact	Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**29-Oct-2019**
Report Number	**EFS/202831M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	µg/kg	ug/kg	µg/kg	µg/kg	µg/kg	µg/kg	% M/M								
Method Codes :			TPHUSSI	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	WSLM59								
Method Reporting Limits :			20	1	1	4	2	5	6	0.02								
Accreditation Code:			N	UM	UM	UM	UM	UM	UM	N								
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**TPH Aro Band >C8-C44**	**Benzene**	**Ethyl Benzene**	**m/p Xylenes**	**o Xylene**	**Toluene**	**Xylenes**	**Total Organic Carbon**								
1975581	TP03A ES 5 0.20	**09-Oct-19**	3000	<1	<2	<4	<2	<5	<7	1.17								

SOCOTEC

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Sample Analysis

Date Printed	**29-Oct-2019**
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WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.232
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	8.3
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.443
					Fraction of sample above 4 mm %	76.100
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP03A ES 5 0.20		s20_2831M	CL/1975581	29-Oct-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	1.17	3	5	6
N	LOI450	Loss on Ignition (%)	3.4			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0654	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.035	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	1820	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	207.97	100		
U	PHSOIL	pH (pH units)	8		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	3.9		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	8	8.1	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	2250	333					
U	ICPMSW	Arsenic	0.004	0.002	0.008	0.02	0.5	2	25
U	ICPWATVAR	Barium	0.05	0.04	0.1	0.4	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.005	0.002	0.01	0.02	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.051	0.01	0.102	0.15	0.5	10	30
U	ICPMSW	Nickel	0.006	0.001	0.012	0.02	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.01	0.008	0.02	0.08	0.06	0.7	5
U	ICPMSW	Selenium	0.004	0.003	0.008	0.03	0.1	0.5	7
U	ICPMSW	Zinc	0.004	<0.002	0.008	<0.02	4	50	200
U	KONENS	Chloride	387	44	774	897	800	15000	25000
U	ISEF	Fluoride	1.6	1	3.2	11	10	150	500
U	ICPWATVAR	Sulphate as SO4	534	75	1068	1362	1000	20000	50000
N	WSLM27	Total Dissolved Solids	1750	260	3500	4587	4000	60000	100000
U	SFAPI	Phenol Index	0.06	<0.05	0.12	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	31	6.2	62	95	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

Tests where the accreditation is set to U are UKAS accredited, those where the accreditation is set to N are not UKAS accredited

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

IOM

working for a healthy and sustainable world

CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY: SOCOTEC UK Ltd
Environmental Chemistry
PO Box 100
Burton upon Trent
Staffordshire
DE15 0XD

CONTRACT NO: S08812-3

DATE OF ISSUE: 28.10.19

DATE SAMPLE RECEIVED: 21.10.19

DATE SAMPLE ANALYSED: 28.10.19

DESCRIPTION: One soil/loose aggregate sample weighing approximately 0.4kg.

ANALYSIS REQUESTED: Qualitative and quantitative analysis of a soil/loose aggregate sample for mass determination of asbestos.

METHODS:

Qualitative - The sample was analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative - The analysis was carried out using our documented in-house method based on HSE Contract Research Report No. 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies *et al*, 1996) and HSG 248. Our method includes initial examination of the entire sample, detailed analysis of a representative sub-sample and quantification by hand picking/weighing and/or fibre counting/sizing as appropriate.

RESULTS:

Initial Screening

No asbestos was detected in the soil sample by stereo-binocular and polarised light microscopy.

A summary of the results is given in Table 1.

www.iom-world.org

Registered Address: Research Avenue North, Riccarton, Edinburgh, EH14 4AP, United Kingdom
Tel: 0131 449 8000 Fax: 0131 449 8084 Email: iom@iom-world.org

IOM CONSULTING LIMITED, registered in Scotland No. SC205670

UKAS TESTING
0374

CONTRACT NO: S08812-3
DATE OF ISSUE: 28.10.19

RESULTS: (cont.)

Table 1: Qualitative Results

SOCOTEC Job I.D: S202831

IOM sample number	Client sample number	ACM type detected	PLM result
S67720	S1975581 TP03A 0.20	-	No Asbestos Detected

Our detection limit for this method is 0.001%.

COMMENTS:

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are outwith the scope of our UKAS accreditation.

AUTHORISED BY: .....
D Third
Scientific Technician

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Deeside
Site F9049-19 Wrexham - Wynnstay Avenue, Deva Way
Report No S202831M

Consignment No S88732
Date Logged 17-Oct-2019
In-House Report Due 28-Oct-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	ANC	BTEXHSA		CEN Leac/Mate		CustServ	GROHSA	ICPMSS										ICPWSS	KONECR	LOI(%MM)	MCertS	PAHMSUS	PCBECD	PHSOIL	SFAPI
		Sampled	Acid Neut. Capacity	BTEX-HSA + MTBE analysis	MTBE (µg/kg)	CEN Leac(P)1	CEN Leac(P)2	REPORT A	GRO (AA-UK) HSA-GCFID	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Zinc (MS)	SO4-- (H2O sol) mg/l	Chromium vi:	L.O.I. % @ 450C	MCertS Analysis	PAH (17) by GCMS	PCB-7 Congeners Analysis	pH units (AR)	Cyanide(Total) (AR)
				✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓
CL/1975581	TP03A 0.20	09/10/19		E	E				E																		

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key

A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key

	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.
The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Analytical and Deviating Sample Overview

Customer **SOCOTEC UK Deeside** Consignment No S88732
Site **F9049-19 Wrexham - Wynnstay Avenue, Deva Way** Date Logged 17-Oct-2019
Report No **S202831M** In-House Report Due 28-Oct-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	SFAPI	Sub020	TMSS	TPHFIDUS		TPHUSSI	VOCHSAS	WSLM59
		Sampled	Phenol Index.(AR)	^Asbestos ID and Quant (1 & 2)	Tot.Moisture @ 105C	TPH Band (>C10-C40)	TPH by GCFID (AR)	TPH by GCFID (Si-UKCWG)>44	BTEX-HSA GCMS analysis	Total Organic Carbon
			✓	✓	✓	✓	✓	✓	✓	✓
CL/1975581	TP03A 0.20	09/10/19								

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
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Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	ANC	Oven Dried @ < 35°C	Quantitative digestion with Hydrochloric Acid back titration with 1M Sodium Hydroxide to pH 7
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes (BTEX) by Headspace GCFID
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace GCFID
Soil	ICPMSS	Oven Dried @ < 35°C	Determination of Metals in Marine Sediments and Soil samples by aqua regia digestion followed by ICPMS detection
Soil	ICPWSS	Oven Dried @ < 35°C	Determination of Water Soluble Sulphate in soil samples by water extraction followed by ICPOES detection
Soil	KONECR	Oven Dried @ < 35°C	Determination of Chromium vi in soil samples by water extraction followed by colorimetric detection
Soil	LOI(%MM)	Oven Dried @ < 35°C	Determination of loss on ignition for soil samples at specified temperature by gravimetry
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by hexane/acetone extraction followed by GCMS detection
Soil	PCBECD	As Received	Determination of Polychlorinated Biphenyl (PCB) congeners/aroclors by hexane/acetone extraction followed by GCECD detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-contractor.
Soil	TMSS	As Received	Determination of the Total Moisture content at 105ºC by loss on oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHFIDUS	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection.
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection including quantitation of Aromatic and Aliphatic fractions.
Soil	VOCHSAS	As Received	Determination of Volatile Organic Compounds (VOC) by Headspace GCMS
Soil	WSLM59	Oven Dried @ < 35°C	Determination of Organic Carbon in soil using sulphurous Acid digestion followed by high temperature combustion and IR detection
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	ISEF	As Received	Determination of Fluoride in water samples by Ion Selective Electrode (ISE)
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM2	As Received	Determination of the Electrical Conductivity (µS/cm) by electrical conductivity probe.
Water	WSLM27	As Received	Gravimetric Determination
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Deeside

Site : F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Report Number : S20_2831

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1975581	TP03A ES 5 0.20	Brown Gravel SILT

TEST REPORT

1252

Report No. EFS/202832M (Ver. 1)

SOCOTEC UK Deeside
Unit 18
Drome Road
Deeside Industrial Park
Deeside
Flintshire
CH5 2NY

Site: F9049-19 Wrexham - Wynnstay Avenue, Deva Way

The 6 samples described in this report were registered for analysis by SOCOTEC UK Limited on 17-Oct-2019. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 06-Nov-2019

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS or MCERTS accredited. Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by SOCOTEC UK Limited.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 11)
Table of WAC Analysis Results (Pages 12 to 15)
Subcontracted Analysis Reports (Pages 16 to 20)
The accreditation status of subcontracted analysis is displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Pages 21 to 22)
Table of Method Descriptions (Pages 23 to 24)
Table of Report Notes (Page 25)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham Operations Manager
Energy & Waste Services

Date of Issue: 06-Nov-2019

Accreditation Codes: **N** (Not Accredited), **U** (UKAS), **UM** (UKAS & MCERTS)
Tests marked '^' have been subcontracted to another laboratory.
(NVM) - denotes the sample matrix is dissimilar to matrices upon which the MCERTS validation was based, and is therefore not accredited for MCERTS.
All results are reported on a dry weight basis at 105^{o}C unless otherwise stated. (except QC samples)
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

			Units :	Mol/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			Method Codes :	ANC	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	DCMEXT	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA
			Method Reporting Limits :	0.04	10	10	20	20	10	10	30	0.05	0.2	0.2	0.2	0.2	0.2	0.01	0.2
			Accreditation Code:	N	UM	UM	UM	U	UM	UM	UM	N	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	Client Sample Description	Sample Date		Acid Neut. Capacity	Benzene	Ethyl Benzene	m/p Xylenes	MTBE	o Xylene	Toluene	Xylenes	DCM Extractable Material %	GRO	GRO (>C5 - C6)	GRO (>C7 - C8)	GRO (>C8 - C10)	GRO (C5-C6 Aliphatic)	GRO (C5-C7 Aromatic)	GRO (C6-C7)
1975582	TP03B1 0.2 ES 4 0.20	10-Oct-19		6.62	<11.1	<11.1	<22.2	<22.2	<11.1	<11.1	<33.3		<0.222	<0.222	<0.222	<0.222	<0.222	<0.011	<0.222
1975583	TP03B1 1.00 ES 9 1.00	10-Oct-19		1.38	<10.7	<10.7	<21.4	<21.4	<10.7	<10.7	<32.1		<0.214	<0.214	<0.214	<0.214	<0.214	<0.011	<0.214
1975584	TP03B2 0.5 ES 12 0.50 (NVM)	10-Oct-19		1.53	<10.47§	<10.47§	<20.94§	<20.94§	<10.47§	<10.47§	<31.41§		<0.2094§	<0.2094§	<0.2094§	<0.2094§	<0.2094§	<0.0105§	<0.2094§
1975585	TP03B3 0.2 ES 14 0.20 (NVM)	10-Oct-19										1.75							
1975586	TP03C 0.05 ES 18 0.05 (NVM)	10-Oct-19										2.70							
1975587	TP03C 0.50 ES 21 0.50	10-Oct-19		0.80	<12.0	<12.0	<24.1	<24.1	<12.0	<12.0	<36.1		<0.241	<0.241	<0.241	<0.241	<0.241	<0.012	<0.241

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Client Name	SOCOTEC UK Deeside
Contact	Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	06-Nov-2019
Report Number	EFS/202832M
Table Number	1

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg
Method Codes :			GROHSA	GROHSA	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPWSS	KONECR	LOI(%MM)	PAHMSUS	PAHMSUS
Method Reporting Limits :			0.2	0.01	0.3	0.2	1.2	1.6	0.7	0.5	2	0.5	16	10	0.1	0.2	0.08	0.08
Accreditation Code:			UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	N	N	UM	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**GRO (C6-C8 Aliphatic)**	**GRO (C7-C8 Aromatic)**	**Arsenic (MS)**	**Cadmium (MS)**	**Chromium (MS)**	**Copper (MS)**	**Lead (MS)**	**Mercury (MS)**	**Nickel (MS)**	**Selenium (MS)**	**Zinc (MS)**	**SO4-- (H2O sol) mg/l**	**Chromium vi:**	**L.O.I. % @ 450C**	**Acenaphthene**	**Acenaphthylene**
1975582	TP03B1 0.2 ES 4 0.20	**10-Oct-19**	<0.222	<0.011	6.8	1.65	15.6	36.5	220.7	<0.5	16.4	0.7	311	216	<0.1	2.4	1.42	1.83
1975583	TP03B1 1.00 ES 9 1.00	**10-Oct-19**	<0.214	<0.011	3.1	<0.2	6	10.7	16	<0.5	6.4	<0.5	27.2	138	<0.1	1.2	<0.09	<0.09
1975584	TP03B2 0.5 ES 12 0.50 (NVM)	**10-Oct-19**	<0.2094§	<0.0105§	1.51§	0.464§	11.30§	8.47§	101.59§	<0.50§	8.98§	0.71§	52§	87§	<0.1	0.5	<0.084§	<0.084§
1975585	TP03B3 0.2 ES 14 0.20 (NVM)	**10-Oct-19**																
1975586	TP03C 0.05 ES 18 0.05 (NVM)	**10-Oct-19**																
1975587	TP03C 0.50 ES 21 0.50	**10-Oct-19**	<0.241	<0.012	5.8	<0.20	10.4	22.4	56.1	<0.5	10.4	<0.5	50	30	<0.1	3.4	<0.10	<0.10

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Fax +44 (0) 1283 554422

Client Name SOCOTEC UK Deeside

Contact Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/202832M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS
Method Reporting Limits :			0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	1.28
Accreditation Code:			U	UM	UM	UM	UM	UM	UM	N	UM	UM	UM	UM	UM	UM	UM	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Anthracene**	**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(ghi)perylene**	**Benzo(k)fluoranthene**	**Chrysene**	**Coronene**	**Dibenzo(ah)anthracene**	**Fluoranthene**	**Fluorene**	**Indeno(123-cd)pyrene**	**Naphthalene**	**Phenanthrene**	**Pyrene**	**Total PAH (Sum of USEPA 16)**
1975582	TP03B1 0.2 ES 4 0.20	10-Oct-19	5.22	24.1	27.8	31.0	17.2	11.6	21.8	4.77	4.05	38.1	1.50	20.4	0.25	11.4	37.3	255
1975583	TP03B1 1.00 ES 9 1.00	10-Oct-19	<0.09	<0.09	0.13	0.14	0.11	<0.09	0.09	<0.09	<0.09	<0.09	<0.09	0.12	<0.09	<0.09	<0.09	<1.51
1975584	TP03B2 0.5 ES 12 0.50 (NVM)	10-Oct-19	0.094§	0.304§	0.461§	0.513§	0.325§	0.188§	0.335§	0.09	<0.084§	0.440§	<0.084§	0.356§	<0.084§	0.147§	0.461§	<4.042§
1975585	TP03B3 0.2 ES 14 0.20 (NVM)	10-Oct-19																
1975586	TP03C 0.05 ES 18 0.05 (NVM)	10-Oct-19																
1975587	TP03C 0.50 ES 21 0.50	10-Oct-19	<0.10	0.28	0.42	0.49	0.32	0.19	0.28	0.11	<0.10	0.47	<0.10	0.34	<0.10	0.13	0.45	<3.94

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Client Name SOCOTEC UK Deeside

Contact Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/202832M**
Table Number	**1**

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Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

		Units :	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	pH Units	mg/kg	mg/kg	%			mg/kg	mg/kg	mg/kg
		Method Codes :	PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PHSOIL	SFAPI	SFAPI	Sub020	Sub024	Sub024	SVOCSW	SVOCSW	SVOCSW
		Method Reporting Limits :	5	5	5	5	5	5	5		0.5	0.5	0.1			0.1	0.1	0.1
		Accreditation Code:	UM	UM	UM	UM	UM	UM	UM	UM	UM	U	U			N	U	U
LAB ID Number CL/	Client Sample Description	Sample Date	PCB 101	PCB 118	PCB 138	PCB 153	PCB 180	PCB 28	PCB 52	pH units (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID and Quant (1 & 2)	^Coal Tar Interpretation (Soil)	^SVOC scan including bio markers (Forensic)	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene
1975582	TP03B1 0.2 ES 4 0.20	10-Oct-19	<5.54	<5.54	<5.54	<5.54	<5.54	<5.54	<5.54	9	0.8	<0.6	NADIS					
1975583	TP03B1 1.00 ES 9 1.00	10-Oct-19	<5.35	<5.35	<5.35	<5.35	<5.35	<5.35	<5.35	7.8	0.5	<0.5						
1975584	TP03B2 0.5 ES 12 0.50 (NVM)	10-Oct-19	<5.236§	<5.236§	<5.236§	<5.236§	<5.236§	<5.236§	<5.236§	9.6 §	<0.52§	<0.52§	NADIS					
1975585	TP03B3 0.2 ES 14 0.20 (NVM)	10-Oct-19												Req	Req	<5.87	<5.869§	<5.869§
1975586	TP03C 0.05 ES 18 0.05 (NVM)	10-Oct-19												Req	Req	<5.39	<5.394§	<5.394§
1975587	TP03C 0.50 ES 21 0.50	10-Oct-19	<6.02	<6.02	<6.02	<6.02	<6.02	<6.02	<6.02	8.1	<0.6	<0.6	NADIS					

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Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
Method Reporting Limits :			0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.2	0.5	0.1	0.1	0.1	0.1	0.5	0.1	0.1
Accreditation Code:			U	U	U	U	U	U	N	U	U	U	U	U	U	N	U	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**1,4-Dichlorobenzene**	**1-Methylnaphthalene**	**2,4,5-Trichlorophenol**	**2,4,6-Trichlorophenol**	**2,4-Dichlorophenol**	**2,4-Dimethylphenol**	**2,4-Dinitrophenol**	**2,4-Dinitrotoluene**	**2,6-Dinitrotoluene**	**2-Chloronaphthalene**	**2-Chlorophenol**	**2-Methylnaphthalene**	**2-Methylphenol**	**2-Nitroaniline**	**2-Nitrophenol**	**3- & 4-Methylphenol**
1975582	TP03B1 0.2 ES 4 0.20	**10-Oct-19**																
1975583	TP03B1 1.00 ES 9 1.00	**10-Oct-19**																
1975584	TP03B2 0.5 ES 12 0.50 (NVM)	**10-Oct-19**																
1975585	TP03B3 0.2 ES 14 0.20 (NVM)	**10-Oct-19**	<5.869§	<5.869§	<5.869§	<5.869§	<5.869§	<5.869§	<29.3	<11.74§	<29.34§	<5.869§	<5.869§	<5.869§	<5.869§	<29.3	<5.869§	<5.869§
1975586	TP03C 0.05 ES 18 0.05 (NVM)	**10-Oct-19**	<5.394§	<5.394§	<5.394§	<5.394§	<5.394§	<5.394§	<27.0	<10.79§	<26.97§	<5.394§	<5.394§	<5.394§	<5.394§	<27.0	<5.394§	<5.394§
1975587	TP03C 0.50 ES 21 0.50	**10-Oct-19**																

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Sample Analysis

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Table Number	**1**

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		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		Method Codes :	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
		Method Reporting Limits :	14.5	0.2	0.1	0.1	0.5	0.5	0.1	0.6	0.5	0.1	0.1	0.1	0.2	0.2	0.2	0.5	
		Accreditation Code:	N	N	U	U	N	U	U	N	N	U	U	U	U	U	U	U	
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**3-Nitroaniline**	**4,6-Dinitro-2-methylphenol**	**4-Bromophenyl-phenylether**	**4-Chloro-3-methylphenol**	**4-Chloroaniline**	**4-Chlorophenol**	**4-Chlorophenyl-phenylether**	**4-Nitroaniline**	**4-Nitrophenol**	**Acenaphthene**	**Acenaphthylene**	**Anthracene**	**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(ghi)perylene**	
1975582	TP03B1 0.2 ES 4 0.20	**10-Oct-19**																	
1975583	TP03B1 1.00 ES 9 1.00	**10-Oct-19**																	
1975584	TP03B2 0.5 ES 12 0.50 (NVM)	**10-Oct-19**																	
1975585	TP03B3 0.2 ES 14 0.20 (NVM)	**10-Oct-19**	<851	<11.7	<5.869§	<5.869§	<29.3	<29.34§	<5.869§	<35.2	<29.3	<5.869§	<5.869§	<5.869§	34.39§	62.09§	73.12§	49.53§	
1975586	TP03C 0.05 ES 18 0.05 (NVM)	**10-Oct-19**	<782	<10.8	<5.394§	<5.394§	<27.0	<26.97§	<5.394§	<32.4	<27.0	<5.394§	<5.394§	<5.394§	<10.79§	<10.79§	<10.79§	<26.97§	
1975587	TP03C 0.50 ES 21 0.50	**10-Oct-19**																	

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Table Number	**1**

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Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
Method Reporting Limits :			0.2	0.5	0.5	0.1	0.1	0.1	0.5	0.2	0.2	0.1	0.3	0.5	0.1	0.1	0.1	0.1	0.1
Accreditation Code:			U	N	U	U	U	U	U	U	U	U	N	U	U	U	U	U	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Benzo(k)fluoranthene**	**Benzoic Acid**	**Benzyl alcohol**	**Biphenyl**	**bis(2-Chloroethoxy)methane**	**bis(2-Chloroethyl)ether**	**bis(2-Chloroisopropyl)ether**	**bis(2-Ethylhexyl)phthalate**	**Butylbenzylphthalate**	**Chrysene**	**Coronene**	**Dibenzo(ah)anthracene**	**Dibenzofuran**	**Diethylphthalate**	**Dimethylphthalate**	**Di-n-butylphthalate**	
1975582	TP03B1 0.2 ES 4 0.20	**10-Oct-19**																	
1975583	TP03B1 1.00 ES 9 1.00	**10-Oct-19**																	
1975584	TP03B2 0.5 ES 12 0.50 (NVM)	**10-Oct-19**																	
1975585	TP03B3 0.2 ES 14 0.20 (NVM)	**10-Oct-19**	24.77§	<29.3	<29.34§	<5.869§	<5.869§	<5.869§	<29.34§	<11.74§	<11.74§	36.74§	<17.6	<29.34§	<5.869§	<5.869§	<5.869§	<5.869§	
1975586	TP03C 0.05 ES 18 0.05 (NVM)	**10-Oct-19**	<10.79§	<27.0	<26.97§	<5.394§	<5.394§	<5.394§	<26.97§	<10.79§	<10.79§	<5.394§	<16.2	<26.97§	<5.394§	<5.394§	<5.394§	<5.394§	
1975587	TP03C 0.50 ES 21 0.50	**10-Oct-19**																	

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Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/202832M**
Table Number	**1**

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Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
Method Reporting Limits :			0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.5	0.1	0.1	0.5	0.9	0.1	0.5	0.1
Accreditation Code:			U	U	U	U	U	N	N	U	U	N	U	U	N	N	N	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Di-n-octylphthalate**	**Diphenyl Ether**	**Fluoranthene**	**Fluorene**	**Hexachlorobenzene**	**Hexachlorobutadiene**	**Hexachlorocyclopentadiene**	**Hexachloroethane**	**Indeno(123-cd)pyrene**	**Isophorone**	**Naphthalene**	**Nitrobenzene**	**N-Nitroso-di-n-propylamine**	**N-Nitrosodiphenylamine**	**Pentachlorophenol**	**Phenanthrene**
1975582	TP03B1 0.2 ES 4 0.20	10-Oct-19																
1975583	TP03B1 1.00 ES 9 1.00	10-Oct-19																
1975584	TP03B2 0.5 ES 12 0.50 (NVM)	10-Oct-19																
1975585	TP03B3 0.2 ES 14 0.20 (NVM)	10-Oct-19	<11.74§	<5.869§	55.75§	<11.74§	<5.869§	<5.87	<5.87	<5.869§	61.38§	<5.87	<5.869§	<29.34§	<52.8	<5.87	<29.3	<5.869§
1975586	TP03C 0.05 ES 18 0.05 (NVM)	10-Oct-19	<10.79§	<5.394§	<10.79§	<10.79§	<5.394§	<5.39	<5.39	<5.394§	<26.97§	<5.39	<5.394§	<26.97§	<48.5	<5.39	<27.0	<5.394§
1975587	TP03C 0.50 ES 21 0.50	10-Oct-19																

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		Units :	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		Method Codes :	SVOCSW	SVOCSW	TMSS	TPHFIDUS	TPHFIDUS	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI
		Method Reporting Limits :	0.1	0.2	0.1	10	10	4	4	4	11.88	8.75	5.62	4	4	20	20	4	
		Accreditation Code:	U	U	U	U	UM	U	U	U	U	U	N	N	U	U	N	U	
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Phenol**	**Pyrene**	**Tot.Moisture @ 105C**	**TPH Band (>C10-C40)**	**TPH by GCFID (AR)**	**TPH Ali Band >C10-C12**	**TPH Ali Band >C12-C16**	**TPH Ali Band >C16-C21**	**TPH Ali Band >C16-C35**	**TPH Ali Band >C21-C35**	**TPH Ali Band >C35-C44**	**TPH Ali Band >C40-C44**	**TPH Ali Band >C8-C10**	**TPH Ali Band >C8-C40**	**TPH Ali Band >C8-C44**	**TPH Aro Band >C10-C12**	
1975582	TP03B1 0.2 ES 4 0.20	10-Oct-19			9.8	1780	1780	<4.43	267	935	1250	322	174	65.6	<4.43*	1630	1700	<4.43	
1975583	TP03B1 1.00 ES 9 1.00	10-Oct-19			6.5	44.3	44.5	<4.28	<4.28	<4.28	13.6	10.9	<6.01	<4.28	<4.28*	<21.4	<21.4	<4.28	
1975584	TP03B2 0.5 ES 12 0.50 (NVM)	10-Oct-19			4.5 §	53.93§	54.03§	<4.188§	<4.188§	<4.188§	21.68§	18.74§	<5.88	<4.19	<4.188*§	24.61§	25.0	<4.188§	
1975585	TP03B3 0.2 ES 14 0.20 (NVM)	10-Oct-19	<5.869§	59.15§	14.8 §														
1975586	TP03C 0.05 ES 18 0.05 (NVM)	10-Oct-19	<5.394§	<10.79§	7.3 §														
1975587	TP03C 0.50 ES 21 0.50	10-Oct-19			16.9	86.0	86.4	<4.81	<4.81	<4.81	44.9	40.4	23.2	10.13	<4.81*	60.2	70.3	<4.81	

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Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	ug/kg	µg/kg	µg/kg	µg/kg	µg/kg	% M/M	
Method Codes :			TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	WSLM59	
Method Reporting Limits :			4	4	8.75	5.62	4	4	20	20	1	1	4	2	5	6	0.02	
Accreditation Code:			U	U	U	N	N	U	U	N	UM	UM	UM	UM	UM	UM	N	
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**TPH Aro Band >C12-C16**	**TPH Aro Band >C16-C21**	**TPH Aro Band >C21-C35**	**TPH Aro Band >C35-C44**	**TPH Aro Band >C40-C44**	**TPH Aro Band >C8-C10**	**TPH Aro Band >C8-C40**	**TPH Aro Band >C8-C44**	**Benzene**	**Ethyl Benzene**	**m/p Xylenes**	**o Xylene**	**Toluene**	**Xylenes**	**Total Organic Carbon**	
1975582	TP03B1 0.2 ES 4 0.20	**10-Oct-19**	35.6	347*	1920	713	245	<4.43	2770	3020	<1	<2	<4	<2	8	<7	1.45	
1975583	TP03B1 1.00 ES 9 1.00	**10-Oct-19**	6.77	4.96*	13.3	<6.01	<4.28	<4.28	30.9	33.0	<1	<2	<4	<2	<5	<6	0.37	
1975584	TP03B2 0.5 ES 12 0.50 (NVM)	**10-Oct-19**	4.304§	4.890*§	24.08§	<5.88	<4.19	<4.188§	38.12§	40.0	<1§	<2§	<4§	<2§	<5§	<6§	0.484§	
1975585	TP03B3 0.2 ES 14 0.20 (NVM)	**10-Oct-19**																
1975586	TP03C 0.05 ES 18 0.05 (NVM)	**10-Oct-19**																
1975587	TP03C 0.50 ES 21 0.50	**10-Oct-19**	<4.81	<4.81*	33.9	10.63	<4.81	<4.81	52.6	53.9	<1	<2	<5	<2	8	<7	1.61	

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WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.242
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	9.8
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.433
					Fraction of sample above 4 mm %	73.900
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP03B1 0.2 ES 4 0.20		S20_2832M	CL/1975582	06-Nov-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	1.45	3	5	6
N	LOI450	Loss on Ignition (%)	2.4			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0666	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	1780	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	259.8	100		
U	PHSOIL	pH (pH units)	9		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	6.62		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	9.4	9.5	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	1030	170					
U	ICPMSW	Arsenic	0.012	0.009	0.024	0.09	0.5	2	25
U	ICPWATVAR	Barium	0.02	<0.01	0.04	<0.1	20	100	300
U	ICPMSW	Cadmium	0.00004	<0.00002	0.00008	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.076	0.031	0.152	0.37	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.032	0.005	0.064	0.09	0.5	10	30
U	ICPMSW	Nickel	0.002	<0.001	0.004	<0.01	0.4	10	40
U	ICPMSW	Lead	0.001	<0.001	0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.015	0.008	0.03	0.09	0.06	0.7	5
U	ICPMSW	Selenium	0.004	0.002	0.008	0.02	0.1	0.5	7
U	ICPMSW	Zinc	0.003	0.003	0.006	0.03	4	50	200
U	KONENS	Chloride	208	17	416	425	800	15000	25000
U	ISEF	Fluoride	1.8	0.4	3.6	6	10	150	500
U	ICPWATVAR	Sulphate as SO4	115	16	230	292	1000	20000	50000
N	WSLM27	Total Dissolved Solids	803	133	1606	2223	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	14	4.9	28	61	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

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Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.242
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	6.5
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.433
					Fraction of sample above 4 mm %	0.000
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP03B1 1.00 ES 9 1.00		S20_2832M	CL/1975583	06-Nov-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	0.37	3	5	6
N	LOI450	Loss on Ignition (%)	1.2			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0642	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.035	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	44.3	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<1.59	100		
U	PHSOIL	pH (pH units)	7.8		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	1.38		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1 mg/kg (dry weight)		
			mg/l except ºº		mg/kg (dry weight)				
U	WSLM3	pH (pH units) ºº	7.4	7.6	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	1710	202					
U	ICPMSW	Arsenic	<0.001	<0.001	<0.002	<0.01	0.5	2	25
U	ICPWATVAR	Barium	0.02	<0.01	0.04	<0.1	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.007	0.007	0.014	0.07	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.003	0.002	0.006	0.02	0.5	10	30
U	ICPMSW	Nickel	<0.001	<0.001	<0.002	<0.01	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.002	0.002	0.004	0.02	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	<0.002	0.003	<0.004	<0.03	4	50	200
U	KONENS	Chloride	441	36	882	900	800	15000	25000
U	ISEF	Fluoride	0.2	0.1	0.4	1	10	150	500
U	ICPWATVAR	Sulphate as SO4	52	6	104	121	1000	20000	50000
N	WSLM27	Total Dissolved Solids	1330	158	2660	3143	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	7.4	4.4	14.8	48	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

Tests where the accreditation is set to U are UKAS accredited, those where the accreditation is set to N are not UKAS accredited

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.232
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	4.5
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.443
					Fraction of sample above 4 mm %	89.300
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP03B2 0.5 ES 12 0.50		S20_2832M	CL/1975584	06-Nov-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
N	WSLM59	Total Organic Carbon (% M/M)	0.484§	3	5	6
N	LOI450	Loss on Ignition (%)	0.5			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0629	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.035	1		
N	TPHFIDUS	Mineral Oil (mg/kg)	53.93§	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<4.14	100		
N	PHSOIL	pH (pH units)	9.6 §		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	1.53		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	8.1	8.3	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	252	<100					
U	ICPMSW	Arsenic	0.001	0.001	0.002	0.01	0.5	2	25
U	ICPWATVAR	Barium	0.03	0.03	0.06	0.3	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.008	0.003	0.016	0.04	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.014	0.002	0.028	0.04	0.5	10	30
U	ICPMSW	Nickel	<0.001	<0.001	<0.002	<0.01	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.008	0.004	0.016	0.05	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.003	<0.002	0.006	<0.02	4	50	200
U	KONENS	Chloride	37	3	74	75	800	15000	25000
U	ISEF	Fluoride	0.6	0.2	1.2	3	10	150	500
U	ICPWATVAR	Sulphate as SO4	23	5	46	74	1000	20000	50000
N	WSLM27	Total Dissolved Solids	196	<60	392	<781	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	2.8	1.3	5.6	15	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

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Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.278
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	16.9
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.397
					Fraction of sample above 4 mm %	0.000
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP03C 0.50 ES 21 0.50		S20_2832M	CL/1975587	06-Nov-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	1.61	3	5	6
N	LOI450	Loss on Ignition (%)	3.4			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0721	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	86	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<4.04	100		
U	PHSOIL	pH (pH units)	8.1		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	0.8		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	8.2	7.8	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	391	125					
U	ICPMSW	Arsenic	0.003	0.002	0.006	0.02	0.5	2	25
U	ICPWATVAR	Barium	<0.01	<0.01	<0.02	<0.1	20	100	300
U	ICPMSW	Cadmium	<0.00002	0.00004	<0.00004	<0.0004	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.005	0.003	0.01	0.03	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.017	0.004	0.034	0.06	0.5	10	30
U	ICPMSW	Nickel	<0.001	<0.001	<0.002	<0.01	0.4	10	40
U	ICPMSW	Lead	0.004	0.003	0.008	0.03	0.5	10	50
U	ICPMSW	Antimony	0.002	0.002	0.004	0.02	0.06	0.7	5
U	ICPMSW	Selenium	0.001	<0.001	0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.004	0.005	0.008	0.05	4	50	200
U	KONENS	Chloride	25	1	50	42	800	15000	25000
U	ISEF	Fluoride	1.5	0.9	3	10	10	150	500
U	ICPWATVAR	Sulphate as SO4	7	<3	14	<35	1000	20000	50000
N	WSLM27	Total Dissolved Solids	305	97.2	610	1249	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	9.3	4.8	18.6	54	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

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Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

TEST REPORT ASC/41613

Customer:	Environmental Chemistry SOCOTEC Etwall Building Bretby Business Park Ashby Road Burton Upon Trent DE15 0YZ
Testing Facility:	Specialist Chemistry SOCOTEC Etwall Building Bretby Business Park Ashby Road Burton Upon Trent DE15 0YZ
Purchase Order Number:	S202832
Date Sample Received:	21 October 2019
Condition of Sample:	Ambient and Satisfactory
Approved by:	
Approver's name:	Borislav Lazarov
Job Title:	Analyst
Test Report Date:	04 November 2019

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Sample and Method Descriptions

Number of Samples Received	Matrix / Sample Description	Method ID	Description
2	DCM extract	IHM	**IHM** – The DCM extracts were analysed as received by split injection Gas Chromatography Mass Spectrometry (GC/MS) on a general scan to tentatively identify the semi-volatile organic compounds present. Specific compound groups were identified by mass ion monitoring.

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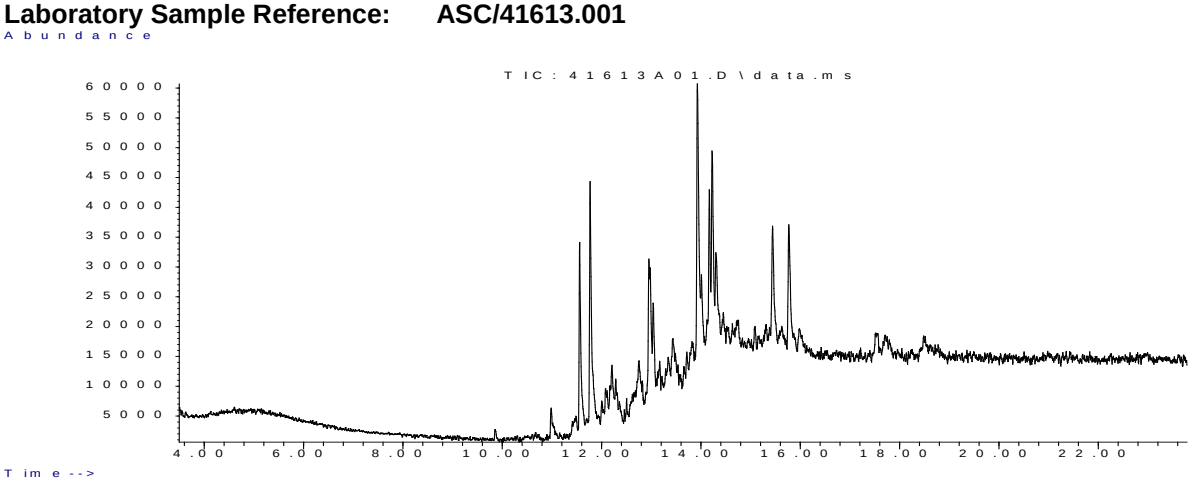
Results

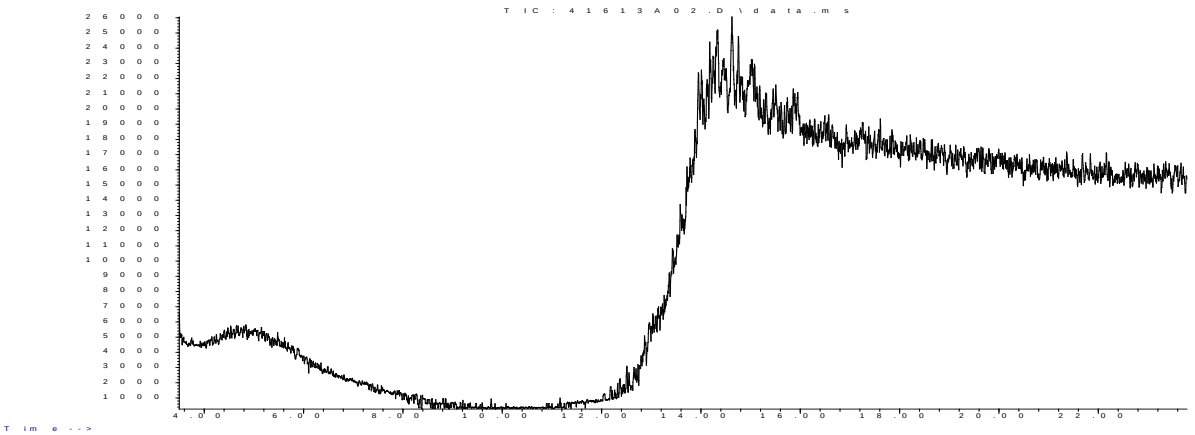
Customer Sample Reference: **S1975585 – TP03B3 0.20**
Laboratory Sample Reference: **ASC/41613.001**



Analysis of the DCM extract identified the presence of a very heavy boiling range hydrocarbon oil, confirmed by the presence of the Hopane biomarkers. Trace levels of Polycyclic Aromatic Hydrocarbons (PAHs) were detected that would be associated with the oil. No evidence of diesel fuel oil or the biomarkers Dibenzothiophenes were detected.

<u>The compounds detected are indicative of Bitumen. No Coal Tar was detected.</u>

Customer Sample Reference: **S1975586 – TP03C 0.05**
Laboratory Sample Reference: **ASC/41613.002**



Analysis of the DCM extract identified the presence of a heavy boiling range hydrocarbon oil, confirmed by the presence of the Hopane biomarkers. Trace levels of Polycyclic Aromatic Hydrocarbons (PAHs) were detected that would be associated with the oil. No evidence of diesel fuel oil or the biomarkers Dibenzothiophenes were detected.

<u>The compounds detected are indicative of Bitumen. No Coal Tar was detected.</u>

END OF TEST REPORT

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working for a healthy and sustainable world

CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY: SOCOTEC UK Ltd
Environmental Chemistry
PO Box 100
Burton upon Trent
Staffordshire
DE15 0XD

CONTRACT NO: S08851-3

DATE OF ISSUE: 29.10.19

DATE SAMPLES RECEIVED: 22.10.19

DATE SAMPLES ANALYSED: 29.10.19

DESCRIPTION: Three soil/loose aggregate samples each weighing approximately 0.1-0.4kg.

ANALYSIS REQUESTED: Qualitative and quantitative analysis of soil/loose aggregate samples for mass determination of asbestos.

METHODS:

Qualitative - The samples were analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative - The analysis was carried out using our documented in-house method based on HSE Contract Research Report No. 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies *et al*, 1996) and HSG 248. Our method includes initial examination of the entire sample, detailed analysis of a representative sub-sample and quantification by hand picking/weighing and/or fibre counting/sizing as appropriate.

RESULTS:

Initial Screening

No asbestos was detected in any of the soil samples by stereo-binocular and polarised light microscopy.

A summary of the results is given in Table 1.

www.iom-world.org

Registered Address: Research Avenue North, Riccarton, Edinburgh, EH14 4AP, United Kingdom
Tel: 0131 449 8000 Fax: 0131 449 8084 Email: iom@iom-world.org

IOM CONSULTING LIMITED, registered in Scotland No. SC205670

UKAS TESTING
0374

CONTRACT NO: S08851-3
DATE OF ISSUE: 29.10.19

RESULTS: (cont.)

Table 1: Qualitative Results

SOCOTEC Job I.D: S202832

IOM sample number	Client sample number	ACM type detected	PLM result
S67749	S1975582 TP03B1 0.20	-	No Asbestos Detected
S67750	S1975584 TP03B2 0.50	-	No Asbestos Detected
S67751	S1975587 TP03C 0.50	-	No Asbestos Detected

Our detection limit for this method is 0.001%.

COMMENTS:

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are outwith the scope of our UKAS accreditation.

AUTHORISED BY: .....
D Third
Scientific Technician

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Deeside
Site F9049-19 Wrexham - Wynnstay Avenue, Deva Way
Report No S202832M

Consignment No S88773
Date Logged 17-Oct-2019
In-House Report Due 28-Oct-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	ANC	BTEXHSA		CEN Leachate		CustServ	DCMEXT	GROHSA	ICPMSS								ICPWSS	KONECR	LOI(%MM)	MCertS	PAHMSUS	PCBECD	PHSOIL	SFAPI
		Sampled	Acid Neut. Capacity	BTEX-HSA + MTBE analysis	MTBE (µg/kg)	CEN Leac(P)1	CEN Leac(P)2	REPORT A	DCM Extractable Material %	GRO (AA-UK) HSA-GCFID	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Mercury (MS)	Nickel (MS)	Selenium (MS)	Zinc (MS)	SO4-- (H2O sol) mg/l	Chromium vi:	L.O.I. % @ 450C	MCertS Analysis	PAH (17) by GCMS	PCB-7 Congeners Analysis	pH units (AR)	Cyanide(Total) (AR)
				✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓
CL/1975582	TP03B1 0.20	10/10/19		E	E																						
CL/1975583	TP03B1 1.00	10/10/19		E	E																						
CL/1975584	TP03B2 0.50	10/10/19		E	E																						
CL/1975585	TP03B3 0.20	10/10/19							E																		
CL/1975586	TP03C 0.05	10/10/19							E																		
CL/1975587	TP03C 0.50	10/10/19		E	E																						

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key

A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key

	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Analytical and Deviating Sample Overview

Customer **SOCOTEC UK Deeside**
Site **F9049-19 Wrexham - Wynnstay Avenue, Deva Way**
Report No **S202832M**

Consignment No S88773
Date Logged 17-Oct-2019
In-House Report Due 28-Oct-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	SFAPI	Sub020	Sub024		SVOCSW	TMSS	TPHFIDUS		TPHUSSI	VOCHSAS	WSLM59
		Sampled	Phenol Index.(AR)	^Asbestos ID and Quant (1 & 2)	^SVOC scan including bio markers (Forensic)	^Coal Tar Interpretation (Soil)	SVOC + TICs (AR)	Tot.Moisture @ 105C	TPH Band (>C10-C40)	TPH by GCFID (AR)	TPH by GCFID (Si-UKCWG)>44	BTEX-HSA GCMS analysis	Total Organic Carbon
			✓	✓			✓	✓	✓	✓	✓	✓	✓
CL/1975582	TP03B1 0.20	10/10/19											
CL/1975583	TP03B1 1.00	10/10/19											
CL/1975584	TP03B2 0.50	10/10/19											
CL/1975585	TP03B3 0.20	10/10/19											
CL/1975586	TP03C 0.05	10/10/19											
CL/1975587	TP03C 0.50	10/10/19											

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.
The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	ANC	Oven Dried @ < 35°C	Quantitative digestion with Hydrochloric Acid back titration with 1M Sodium Hydroxide to pH 7
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes (BTEX) by Headspace GCFID
Soil	DCMEXT	Oven Dried @ < 35°C	Determination of % DCM extractable material by gravimetric analysis
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace GCFID
Soil	ICPMSS	Oven Dried @ < 35°C	Determination of Metals in Marine Sediments and Soil samples by aqua regia digestion followed by ICPMS detection
Soil	ICPWSS	Oven Dried @ < 35°C	Determination of Water Soluble Sulphate in soil samples by water extraction followed by ICPOES detection
Soil	KONECR	Oven Dried @ < 35°C	Determination of Chromium vi in soil samples by water extraction followed by colorimetric detection
Soil	LOI(%MM)	Oven Dried @ < 35°C	Determination of loss on ignition for soil samples at specified temperature by gravimetry
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by hexane/acetone extraction followed by GCMS detection
Soil	PCBECD	As Received	Determination of Polychlorinated Biphenyl (PCB) congeners/aroclors by hexane/acetone extraction followed by GCECD detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-contractor.
Soil	SVOCSW	As Received	Determination of Semi-Volatile Organic Compounds by dichloromethane/acetone extraction followed by GCMS detection
Soil	TMSS	As Received	Determination of the Total Moisture content at 105ºC by loss on oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHFIDUS	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection.
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection including quantitation of Aromatic and Aliphatic fractions.
Soil	VOCHSAS	As Received	Determination of Volatile Organic Compounds (VOC) by Headspace GCMS
Soil	WSLM59	Oven Dried @ < 35°C	Determination of Organic Carbon in soil using sulphurous Acid digestion followed by high temperature combustion and IR detection

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	ISEF	As Received	Determination of Fluoride in water samples by Ion Selective Electrode (ISE)
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM2	As Received	Determination of the Electrical Conductivity (µS/cm) by electrical conductivity probe.
Water	WSLM27	As Received	Gravimetric Determination
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Deeside

Site : F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Report Number : S20_2832

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1975582	TP03B1 0.2 ES 4 0.20	Brown MADE GROUND
CL/1975583	TP03B1 1.00 ES 9 1.00	Brown Gravel SILT
CL/1975584	TP03B2 0.5 ES 12 0.50 (NVM)	Brown Silt GRAVEL
CL/1975585	TP03B3 0.2 ES 14 0.20 (NVM)	Grey TARMAC
CL/1975586	TP03C 0.05 ES 18 0.05 (NVM)	Grey TARMAC
CL/1975587	TP03C 0.50 ES 21 0.50	Brown Clay SILT Gravel

TEST REPORT

Report No. EFS/202840 (Ver. 1)

SOCOTEC UK Deeside
Unit 18
Drome Road
Deeside Industrial Park
Deeside
Flintshire
CH5 2NY

Site: F9049-19 Wrexham - Wynnstay Avenue, Deva Way

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 17-Oct-2019. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 11-Nov-2019

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Table of SVOC (Tics) Results (Page 7)
Subcontracted Analysis Reports (Pages 8 to 10)
The accreditation status of subcontracted analysis is displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Page 11)
Table of Additional Report Notes (Page 12)
Table of Method Descriptions (Page 13)
Table of Report Notes (Page 14)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham Operations Manager
Energy & Waste Services

Date of Issue: 11-Nov-2019

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected. SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Units :			%			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			DCMEXT	Sub024	Sub024	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
Method Reporting Limits :			0.05			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.2	0.5	0.1
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**DCM Extractable Material %**	**^Coal Tar Interpretation (Soil)**	**^SVOC scan including bio markers (Forensic)**	**1,2,4-Trichlorobenzene**	**1,2-Dichlorobenzene**	**1,3-Dichlorobenzene**	**1,4-Dichlorobenzene**	**1-Methylnaphthalene**	**2,4,5-Trichlorophenol**	**2,4,6-Trichlorophenol**	**2,4-Dichlorophenol**	**2,4-Dimethylphenol**	**2,4-Dinitrophenol**	**2,4-Dinitrotoluene**	**2,6-Dinitrotoluene**	**2-Chloronaphthalene**
1975606	TP03A ES 1 0.05	09-Oct-19	2.13	Req	Req	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00*	< 5.00	< 5.00	< 25.0	< 10.0	< 25.0	< 5.00

SOCOTEC

Bretby Business Park, Ashby Road

Burton-on-Trent, Staffordshire, DE15 0YZ

Tel +44 (0) 1283 554400

Fax +44 (0) 1283 554422

Client Name SOCOTEC UK Deeside

Contact Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**11-Nov-2019**
Report Number	**EFS/202840**
Table Number	**1**

Where individual results are flagged see report notes for status.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
Method Reporting Limits :			0.1	0.1	0.1	0.5	0.1	0.1	14.5	0.2	0.1	0.1	0.5	0.5	0.1	0.6	0.5	0.1
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**2-Chlorophenol**	**2-Methylnaphthalene**	**2-Methylphenol**	**2-Nitroaniline**	**2-Nitrophenol**	**3- & 4-Methylphenol**	**3-Nitroaniline**	**4,6-Dinitro-2-methylphenol**	**4-Bromophenyl-phenylether**	**4-Chloro-3-methylphenol**	**4-Chloroaniline**	**4-Chlorophenol**	**4-Chlorophenyl-phenylether**	**4-Nitroaniline**	**4-Nitrophenol**	**Acenaphthene**
1975606	TP03A ES 1 0.05	09-Oct-19	< 5.00	< 5.00	< 5.00	< 25.0	< 5.00*	< 5.00	< 725	< 10.0	< 5.00	< 5.00	< 25.0	< 25.0	< 5.00	< 30.0	< 25.0	18.5

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Contact	Aoife Greene

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Sample Analysis

Date Printed	**11-Nov-2019**
Report Number	**EFS/202840**
Table Number	**1**

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
Method Reporting Limits :			0.1	0.1	0.2	0.2	0.2	0.5	0.2	0.5	0.5	0.1	0.1	0.1	0.5	0.2	0.2	0.1
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Acenaphthylene**	**Anthracene**	**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(ghi)perylene**	**Benzo(k)fluoranthene**	**Benzoic Acid**	**Benzyl alcohol**	**Biphenyl**	**bis(2-Chloroethoxy)methane**	**bis(2-Chloroethyl)ether**	**bis(2-Chloroisopropyl)ether**	**bis(2-Ethylhexyl)phthalate**	**Butylbenzylphthalate**	**Chrysene**
1975606	TP03A ES 1 0.05	**09-Oct-19**	< 5.00	34.8	58.3	96.6	132*	54.0	41.1*	< 25.0	< 25.0	< 5.00	< 5.00	< 5.00	< 25.0	< 10.0	< 10.0	64.1

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Client Name	**SOCOTEC UK Deeside**
Contact	Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**11-Nov-2019**
Report Number	**EFS/202840**
Table Number	**1**

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
Method Reporting Limits :			0.3	0.5	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.5	0.1
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Coronene**	**Dibenzo(ah)anthracene**	**Dibenzofuran**	**Diethylphthalate**	**Dimethylphthalate**	**Di-n-butylphthalate**	**Di-n-octylphthalate**	**Diphenyl Ether**	**Fluoranthene**	**Fluorene**	**Hexachlorobenzene**	**Hexachlorobutadiene**	**Hexachlorocyclopentadiene**	**Hexachloroethane**	**Indeno(123-cd)pyrene**	**Isophorone**
1975606	TP03A ES 1 0.05	09-Oct-19	< 15.0	< 25.0	6.21	< 5.00	< 5.00	< 5.00	< 10.0	< 5.00	152	14.5	< 5.00	< 5.00	< 5.00	< 5.00	65.1	< 5.00

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Client Name SOCOTEC UK Deeside

Contact Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**11-Nov-2019**
Report Number	**EFS/202840**
Table Number	**1**

Where individual results are flagged see report notes for status.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg							
Method Codes :			SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW							
Method Reporting Limits :			0.1	0.5	0.9	0.1	0.5	0.1	0.1	0.2								
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Naphthalene**	**Nitrobenzene**	**N-Nitroso-di-n-propylamine**	**N-Nitrosodiphenylamine**	**Pentachlorophenol**	**Phenanthrene**	**Phenol**	**Pyrene**	**SVOC + TICs (AR)**							
1975606	TP03A ES 1 0.05	**09-Oct-19**	5.48	< 25.0	< 45.0	< 5.00	< 25.0	95.8	< 5.00	145	Req							

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Client Name	**SOCOTEC UK Deeside**
Contact	Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**11-Nov-2019**
Report Number	**EFS/202840**
Table Number	**1**

Where individual results are flagged see report notes for status.

SVOC (TICs)

UKAS accredited?:No

Customer and Site Details:	SOCOTEC UK Deeside: F9049-19 Wrexham - Wynnstay Avenue, Deva Way		
Sample Details:	TP03A ES 1 0.05	**Job Number:**	S20_2840
LIMS ID Number:	CL1975606		
		Multiplier:	10
Date Booked in:	17-Oct-19	**Dilution Factor:**	50
Date Extracted:	25-Oct-19	**GPC (Y/N):**	N
Date Analysed:	29-Oct-19	**Matrix:**	Soil
QC Batch Number:	202	**Method:**	Ultrasonic
Directory/Quant File:	102819.GC11\ 0	**Operator:**	RP

Tentatively Identified Compounds	CAS #	R.T.	Concentration mg/kg	% Fit
Isocopalane	079191-19-8	12.79	27.493	51
Benzo[e]pyrene	000192-97-2	10.59	19.938	98
4H-Cyclopenta[def]phenanthrene	000203-64-5	6.45	17.917	93
Cyclopenta[cd]pyrene	027208-37-3	8.26	16.609	93
4-Formyl-2-(phenylmethyl)-5-phenylthiophene	999398-87-1	13.31	16.077	78
3,4:9,10-Dibenzopyrene	000189-55-9	15.23	15.881	98
28-Nor-17.alpha.(H)-hopane	053584-60-4	12.28	12.968	93
11H-Benzo[b]fluorene	000243-17-4	7.45	12.379	93
Anthracene, 2-methyl-	000613-12-7	6.39	12.136	96
Pyrene, 1-methyl-	002381-21-7	7.56	9.470	91

The compounds listed above have been tentatively identified by a computer based library search.
Compounds identified in the sample are not reported if they also occur in the method blank.
The % fit is an indication of the reliability of the compound assignment.
Due to the similarity between mass spectra of some isomeric compounds assignments may not be correct.
Other compounds may also be present but identification was not possible.
Concentrations are semi-quantitative, assume a response factor of 1 and use the nearest internal standard.
Concentrations are reported on a wet weight basis.

TEST REPORT ASC/41701

Customer:	Environmental Chemistry SOCOTEC Etwall Building Bretby Business Park Ashby Road Burton Upon Trent DE15 0YZ
Testing Facility:	Specialist Chemistry SOCOTEC Etwall Building Bretby Business Park Ashby Road Burton Upon Trent DE15 0YZ
Purchase Order Number:	S202840
Date Sample Received:	25 October 2019
Condition of Sample:	Ambient and Satisfactory
Approved by:	
Approver's name:	Borislav Lazarov
Job Title:	Analyst
Test Report Date:	07 November 2019

This test report shall not be reproduced except in full, without written approval of the laboratory

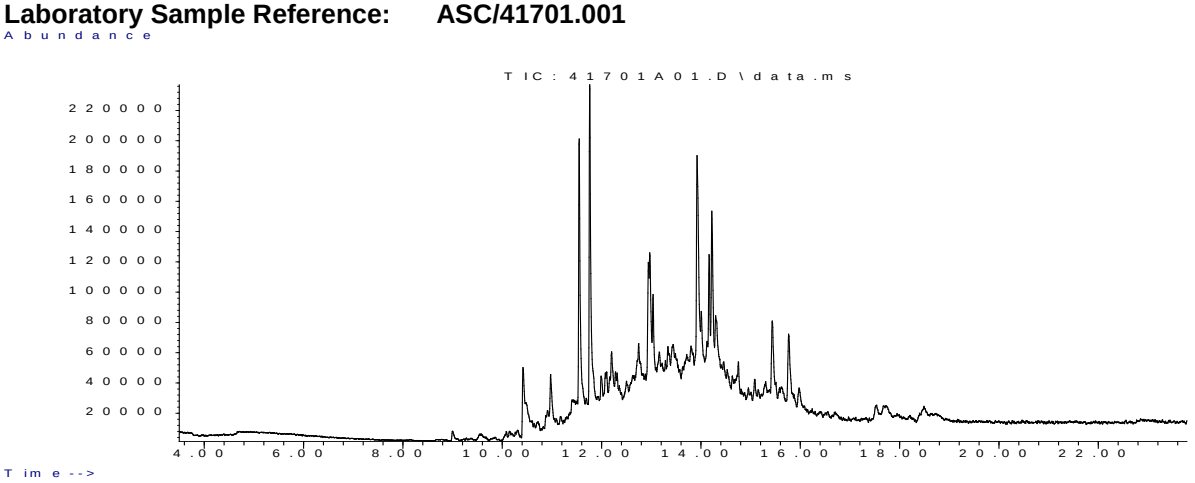
Sample and Method Descriptions

Number of Samples Received	Matrix / Sample Description	Method ID	Description
1	DCM extract	IHM	**IHM** – The DCM extract was analysed as received by split injection Gas Chromatography Mass Spectrometry (GC/MS) on a general scan to tentatively identify the semi-volatile organic compounds present. Specific compound groups were identified by mass ion monitoring.

This test report shall not be reproduced except in full, without written approval of the laboratory

Results

Customer Sample Reference: **S1975606 – TP03A 0.05**
Laboratory Sample Reference: **ASC/41701.001**



Analysis of the DCM extract identified the presence of a complex mixture of heavy Polycyclic Aromatic Hydrocarbons (PAHs). The ratio of the Naphthalene with that of the Methylnaphthalenes could not be obtained due to evaporation of the lighter fraction of PAHs. Mass ion monitoring identified a series of alkylated PAHs along with the Dibenzothiophene biomarkers. Mineral oil was also detected in the extract. No evidence of diesel fuel oil was detected.

<u>The compounds detected are indicative of evaporated Coal Tar.</u>

The sample was estimated to have a coal tar content of 900mg/kg based on the response of the EPA16 suite of PAHs, Coronene and Phenols suite

END OF TEST REPORT

This test report shall not be reproduced except in full, without written approval of the laboratory

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Deeside
Site F9049-19 Wrexham - Wynnstay Avenue, Deva Way
Report No S202840

Consignment No S88732
Date Logged 17-Oct-2019
In-House Report Due 30-Oct-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	CustServ	DCMEXT	Sub024		SVOCSW
		Sampled	Report B	DCM Extractable Material %	^SVOC scan including bio markers (Forensic)	^Coal Tar Interpretation (Soil)	SVOC + TICs (AR)
							✓
CL/1975606	TP03A 0.05	09/10/19		E			E

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Report Number : EFS/202840

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
SVOCSW	CL1975606	The secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (2-Nitrophenol, 4-Chloro-3-methylphenol, 246-TCPhenol, Benzo(b)fluoranthene, Benzo (k)fluoranthene) . These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	DCMEXT	Oven Dried @ < 35°C	Determination of % DCM extractable material by gravimetric analysis
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-contractor.
Soil	SVOCSW	As Received	Determination of Semi-Volatile Organic Compounds by dichloromethane/acetone extraction followed by GCMS detection

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Deeside

Site : F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Report Number : S20_2840

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1975606	TP03A ES 1 0.05	Black TARMAC

TEST REPORT

1252

Report No. EFS/203018M (Ver. 1)

SOCOTEC UK Deeside
Unit 18
Drome Road
Deeside Industrial Park
Deeside
Flintshire
CH5 2NY

Site: F9049-19 Wrexham - Wynnstay Avenue, Deva Way

The 3 samples described in this report were registered for analysis by SOCOTEC UK Limited on 25-Oct-2019. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 06-Nov-2019

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS or MCERTS accredited. Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by SOCOTEC UK Limited.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 7)
Table of WAC Analysis Results (Pages 8 to 10)
Subcontracted Analysis Reports (Pages 11 to 12)
The accreditation status of subcontracted analysis is displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Pages 13 to 14)
Table of Additional Report Notes (Page 15)
Table of Method Descriptions (Pages 16 to 17)
Table of Report Notes (Page 18)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim

Becky Batham Operations Manager
Energy & Waste Services

Date of Issue: 06-Nov-2019

Accreditation Codes: **N** (Not Accredited), **U** (UKAS), **UM** (UKAS & MCERTS)
Tests marked '^' have been subcontracted to another laboratory.
(NVM) - denotes the sample matrix is dissimilar to matrices upon which the MCERTS validation was based, and is therefore not accredited for MCERTS.
All results are reported on a dry weight basis at 105^{o}C unless otherwise stated. (except QC samples)
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

			Units :	Mol/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			Method Codes :	ANC	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA
			Method Reporting Limits :	0.04	10	10	20	20	10	10	30	0.2	0.2	0.2	0.2	0.2	0.2	0.01	0.2	0.2
			Accreditation Code:	N	UM	UM	UM	U	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	Client Sample Description	Sample Date		Acid Neut. Capacity	Benzene	Ethyl Benzene	m/p Xylenes	MTBE	o Xylene	Toluene	Xylenes	GRO	GRO (>C5 - C6)	GRO (>C7 - C8)	GRO (>C8 - C10)	GRO (C5-C6 Aliphatic)	GRO (C5-C7 Aromatic)	GRO (C6-C7)	GRO (C6-C8 Aliphatic)
1976239	TP09A ES 7 0.50	21-Oct-19		0.25	<13.7	<13.7	<27.4*	<27.4	<13.7	<13.7	<41.0*	<0.274	<0.274	<0.274	<0.274	<0.274	<0.014	<0.274	<0.274
1976240	TP09B ES 4 0.20 (NVM)	21-Oct-19		2.95	<11.95§	<11.95§	<23.89*§	<23.89§	<11.95§	<11.95§	<35.84*§	<0.2389§	<0.2389§	<0.2389§	<0.2389§	<0.2389§	<0.0119§	<0.2389§	<0.2389§
1976241	TP09B ES 12 1.20	21-Oct-19		0.28	<12.1	<12.1	<24.1*	<24.1	<12.1	<12.1	<36.2*	<0.241	<0.241	<0.241	<0.241	<0.241	<0.012	<0.241	<0.241

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Client Name	**SOCOTEC UK Deeside**
Contact	Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/203018M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg
Method Codes :			GROHSA	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPWSS	KONECR	LOI(%MM)	PAHMSUS	PAHMSUS	PAHMSUS
Method Reporting Limits :			0.01	0.3	0.2	1.2	1.6	0.7	0.5	2	0.5	16	10	0.1	0.2	0.08	0.08	0.08
Accreditation Code:			UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	N	N	UM	U	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**GRO (C7-C8 Aromatic)**	**Arsenic (MS)**	**Cadmium (MS)**	**Chromium (MS)**	**Copper (MS)**	**Lead (MS)**	**Mercury (MS)**	**Nickel (MS)**	**Selenium (MS)**	**Zinc (MS)**	**SO4-- (H2O sol) mg/l**	**Chromium vi:**	**L.O.I. % @ 450C**	**Acenaphthene**	**Acenaphthylene**	**Anthracene**
1976239	TP09A ES 7 0.50	21-Oct-19	<0.014	7.6	0.33	15.9	19.2	66.3	<0.5	15.2	0.8	44.2	37	<0.1	5.7	<0.11	<0.11	<0.11
1976240	TP09B ES 4 0.20 (NVM)	21-Oct-19	<0.0119§	12.04§	0.30§	12.84§	46.98§	153.67§	<0.50§	23§	1§	98§	98§	<0.1	4.3	0.131§	0.119§	0.143§
1976241	TP09B ES 12 1.20	21-Oct-19	<0.012	1.2	<0.2	2.8	5.1	5.9	<0.5	2.5	<0.5	<16.0	28	<0.1	1.4	<0.10	<0.10	<0.10

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Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg
Method Codes :			PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PCBECD
Method Reporting Limits :			0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	1.28	5
Accreditation Code:			UM	UM	UM	UM	UM	UM	N	UM	UM	UM	UM	UM	UM	UM	UM	U	UM
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(ghi)perylene**	**Benzo(k)fluoranthene**	**Chrysene**	**Coronene**	**Dibenzo(ah)anthracene**	**Fluoranthene**	**Fluorene**	**Indeno(123-cd)pyrene**	**Naphthalene**	**Phenanthrene**	**Pyrene**	**Total PAH (Sum of USEPA 16)**	**PCB 101**	
1976239	TP09A ES 7 0.50	21-Oct-19	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<1.75	<6.84	
1976240	TP09B ES 4 0.20 (NVM)	21-Oct-19	0.621§	1.422§	1.613§	1.458§	0.585§	0.729§	0.41	0.239§	1.075§	<0.096§	1.852§	<0.096§	0.227§	1.147§	<11.541§	<5.974§	
1976241	TP09B ES 12 1.20	21-Oct-19	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<1.54	<6.03	

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F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/203018M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	pH Units	mg/kg	mg/kg	%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PHSOIL	SFAPI	SFAPI	Sub020	TMSS	TPHFIDUS	TPHFIDUS	TPHUSSI	TPHUSSI	TPHUSSI
Method Reporting Limits :			5	5	5	5	5	5		0.5	0.5	0.1	0.1	10	10	4	4	4
Accreditation Code:			UM	UM	UM	UM	UM	UM	UM	UM	U	U	U	U	UM	U	U	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**PCB 118**	**PCB 138**	**PCB 153**	**PCB 180**	**PCB 28**	**PCB 52**	**pH units (AR)**	**Cyanide(Total) (AR)**	**Phenol Index.(AR)**	**^Asbestos ID and Quant (1 & 2)**	**Tot.Moisture @ 105C**	**TPH Band (>C10-C40)**	**TPH by GCFID (AR)**	**TPH Ali Band >C10-C12**	**TPH Ali Band >C12-C16**	**TPH Ali Band >C16-C21**
1976239	TP09A ES 7 0.50	21-Oct-19	<6.84	<6.84	<6.84	<6.84	<6.84	<6.84	7.3	<0.7	<0.7	NADIS	26.9	70.9	71.0	<5.47	<5.47	<5.47
1976240	TP09B ES 4 0.20 (NVM)	21-Oct-19	<5.974§	<5.974§	<5.974§	<5.974§	<5.974§	<5.974§	8.5 §	<0.60§	<0.60§	NADIS	16.3 §	362§	362§	<4.779§	<4.779§	<4.779§
1976241	TP09B ES 12 1.20	21-Oct-19	<6.03	<6.03	<6.03	<6.03	<6.03	<6.03	7.3	<0.6	<0.6	NADIS	17.1	33.2	33.3	<4.83	<4.83	<4.83

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Sample Analysis

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Report Number	**EFS/203018M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		Method Codes :	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI
		Method Reporting Limits :	11.88	8.75	5.62	4	4	20	20	4	4	4	8.75	5.62	4	4	20	20
		Accreditation Code:	U	U	N	N	U	U	N	U	U	U	U	N	N	U	U	N
LAB ID Number CL/	Client Sample Description	Sample Date	TPH Ali Band >C16-C35	TPH Ali Band >C21-C35	TPH Ali Band >C35-C44	TPH Ali Band >C40-C44	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Ali Band >C8-C44	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C35-C44	TPH Aro Band >C40-C44	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	TPH Aro Band >C8-C44
1976239	TP09A ES 7 0.50	21-Oct-19	22.2	21.6	<7.69	<5.47	<5.47	<27.4	27.5	<5.47	<5.47	12.49	27.8	8.28	<5.47	<5.47	56.4	59.8
1976240	TP09B ES 4 0.20 (NVM)	21-Oct-19	70.25§	66.31§	21.5	<4.78	<4.779§	90.92§	93.7	<4.779§	5.962§	19.35§	149§	45.6	<4.78	<4.779§	223§	225
1976241	TP09B ES 12 1.20	21-Oct-19	<14.4	<10.57	<6.78	<4.83	<4.83	<24.1	<24.1	<4.83	<4.83	11.50	15.1	<6.78	<4.83	5.60	41.4	43.9

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Contact	Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/203018M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			µg/kg	ug/kg	µg/kg	µg/kg	µg/kg	µg/kg	% M/M									
Method Codes :			VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	WSLM59									
Method Reporting Limits :			1	1	4	2	5	6	0.02									
Accreditation Code:			UM	UM	UM	UM	UM	UM	N									
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Benzene**	**Ethyl Benzene**	**m/p Xylenes**	**o Xylene**	**Toluene**	**Xylenes**	**Total Organic Carbon**									
1976239	TP09A ES 7 0.50	**21-Oct-19**	<1	<3	<5	<3	<7	<8	2.37									
1976240	TP09B ES 4 0.20 (NVM)	**21-Oct-19**	<1§	<2§	<5§	<2§	<6§	<7§	13.34§									
1976241	TP09B ES 12 1.20	**21-Oct-19**	<1	<2	<5	<2	<6	<7	2.71									

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Contact	Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/203018M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.313
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	26.9
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.363
					Fraction of sample above 4 mm %	0.000
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP09A ES 7 0.50		s20_3018M	CL/1976239	06-Nov-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	2.37	3	5	6
N	LOI450	Loss on Ignition (%)	5.7			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0822	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.049	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	70.9	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<1.86	100		
U	PHSOIL	pH (pH units)	7.3		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	0.25		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	7.6	7	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	161	<100					
U	ICPMSW	Arsenic	0.008	0.003	0.016	0.04	0.5	2	25
U	ICPWATVAR	Barium	0.05	0.02	0.1	0.2	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.01	0.004	0.02	0.05	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.013	0.01	0.026	0.1	0.5	10	30
U	ICPMSW	Nickel	0.001	<0.001	0.002	<0.01	0.4	10	40
U	ICPMSW	Lead	0.002	<0.001	0.004	<0.01	0.5	10	50
U	ICPMSW	Antimony	<0.001	<0.001	<0.002	<0.01	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.009	<0.002	0.018	<0.03	4	50	200
U	KONENS	Chloride	17	1	34	31	800	15000	25000
U	ISEF	Fluoride	0.4	0.4	0.8	4	10	150	500
U	ICPWATVAR	Sulphate as SO4	18	5	36	67	1000	20000	50000
N	WSLM27	Total Dissolved Solids	126	<60	252	<688	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	19	6	38	77	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

Tests where the accreditation is set to U are UKAS accredited, those where the accreditation is set to N are not UKAS accredited

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.274
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	16.3
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.401
					Fraction of sample above 4 mm %	83.200
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP09B ES 4 0.20		s20_3018M	CL/1976240	06-Nov-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
N	WSLM59	Total Organic Carbon (% M/M)	13.34§	3	5	6
N	LOI450	Loss on Ignition (%)	4.3			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0715	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
N	TPHFIDUS	Mineral Oil (mg/kg)	362§	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<12	100		
N	PHSOIL	pH (pH units)	8.5 §		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	2.95		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	7.3	7.9	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	1930	396					
U	ICPMSW	Arsenic	0.002	0.001	0.004	0.01	0.5	2	25
U	ICPWATVAR	Barium	0.1	0.04	0.2	0.5	20	100	300
U	ICPMSW	Cadmium	0.0001	<0.00002	0.0002	<0.0003	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.016	0.008	0.032	0.09	2	50	100
U	ICPMSW	Mercury	0.0001	0.0001	0.0002	0.001	0.01	0.2	2
U	ICPMSW	Molybdenum	0.086	0.016	0.172	0.25	0.5	10	30
U	ICPMSW	Nickel	0.007	0.002	0.014	0.03	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.009	0.005	0.018	0.06	0.06	0.7	5
U	ICPMSW	Selenium	0.004	<0.001	0.008	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.002	<0.002	0.004	<0.02	4	50	200
U	KONENS	Chloride	85	10	170	200	800	15000	25000
U	ISEF	Fluoride	0.9	0.7	1.8	7	10	150	500
U	ICPWATVAR	Sulphate as SO4	1150	152	2300	2851	1000	20000	50000
N	WSLM27	Total Dissolved Solids	1510	309	3020	4691	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	19	6.9	38	85	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

Tests where the accreditation is set to U are UKAS accredited, those where the accreditation is set to N are not UKAS accredited

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.268
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	17.1
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.407
					Fraction of sample above 4 mm %	0.000
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP09B ES 12 1.20		s20_3018M	CL/1976241	06-Nov-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	2.71	3	5	6
N	LOI450	Loss on Ignition (%)	1.4			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0725	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	33.2	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<1.64	100		
U	PHSOIL	pH (pH units)	7.3		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	0.28		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	7.6	8.1	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	177	<100					
U	ICPMSW	Arsenic	0.005	0.003	0.01	0.03	0.5	2	25
U	ICPWATVAR	Barium	0.17	0.04	0.34	0.6	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.004	0.005	0.008	0.05	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.011	0.003	0.022	0.04	0.5	10	30
U	ICPMSW	Nickel	<0.001	<0.001	<0.002	<0.01	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.002	<0.001	0.004	<0.01	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.004	<0.002	0.008	<0.02	4	50	200
U	KONENS	Chloride	10	<1	20	<22	800	15000	25000
U	ISEF	Fluoride	0.5	0.4	1	4	10	150	500
U	ICPWATVAR	Sulphate as SO4	10	4	20	48	1000	20000	50000
N	WSLM27	Total Dissolved Solids	138	<60	276	<704	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	8	3.2	16	38	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

Tests where the accreditation is set to U are UKAS accredited, those where the accreditation is set to N are not UKAS accredited

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

IOM

working for a healthy and sustainable world

CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY: SOCOTEC UK Ltd
Environmental Chemistry
PO Box 100
Burton upon Trent
Staffordshire
DE15 0XD

CONTRACT NO: S08962-8

DATE OF ISSUE: 04.11.19

DATE SAMPLES RECEIVED: 28.10.19

DATE SAMPLES ANALYSED: 04.11.19

DESCRIPTION: Three soil/loose aggregate samples each weighing approximately 0.5-0.8kg.

ANALYSIS REQUESTED: Qualitative and quantitative analysis of soil/loose aggregate samples for mass determination of asbestos.

METHODS:

Qualitative - The samples were analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative - The analysis was carried out using our documented in-house method based on HSE Contract Research Report No. 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies *et al*, 1996) and HSG 248. Our method includes initial examination of the entire sample, detailed analysis of a representative sub-sample and quantification by hand picking/weighing and/or fibre counting/sizing as appropriate.

RESULTS:

Initial Screening

No asbestos was detected in any of the soil samples by stereo-binocular and polarised light microscopy.

A summary of the results is given in Table 1.

www.iom-world.org

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Tel: 0131 449 8000 Fax: 0131 449 8084 Email: iom@iom-world.org

IOM CONSULTING LIMITED, registered in Scotland No. SC205670

UKAS TESTING
0374

CONTRACT NO: S08962-8
DATE OF ISSUE: 04.11.19

RESULTS: (cont.)

Table 1: Qualitative Results

SOCOTEC Job I.D: S203018

IOM sample number	Client sample number	ACM type detected	PLM result
S67860A	S1976239 TP09A 0.50	-	No Asbestos Detected
S67860B	S1976240 TP09B 0.20	-	No Asbestos Detected
S67860C	S1976241 TP09B 1.20	-	No Asbestos Detected

Our detection limit for this method is 0.001%.

COMMENTS:

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are outwith the scope of our UKAS accreditation.

AUTHORISED BY: .....
D Third
Scientific Technician

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Deeside
Site F9049-19 Wrexham - Wynnstay Avenue, Deva Way
Report No S203018M

Consignment No S89049
Date Logged 25-Oct-2019
In-House Report Due 05-Nov-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	ANC	BTEXHSA		CEN Leac/mate		CustServ	GROHSA	ICPMSS								ICPWSS	KONECR	LOI(%MM)	MCertS	PAHMSUS	PCBECD	PHSOIL	SFAPI	
		Sampled	Acid Neut. Capacity	BTEX-HSA + MTBE analysis	MTBE (µg/kg)	CEN Leac(P)1	CEN Leac(P)2	REPORT A	GRO (AA-UK) HSA-GCFID	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Mercury (MS)	Nickel (MS)	Selenium (MS)	Zinc (MS)	SO4-- (H2O sol) mg/l	Chromium vi:	L.O.I. % @ 450C	MCertS Analysis	PAH (17) by GCMS	PCB-7 Congeners Analysis	pH units (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)
				✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
CL/1976239	TP09A 0.50	21/10/19																								
CL/1976240	TP09B 0.20	21/10/19																								
CL/1976241	TP09B 1.20	21/10/19																								

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key

A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key

	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.
The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Analytical and Deviating Sample Overview

Customer **SOCOTEC UK Deeside** Consignment No S89049
Site **F9049-19 Wrexham - Wynnstay Avenue, Deva Way** Date Logged 25-Oct-2019
Report No **S203018M** In-House Report Due 05-Nov-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	Sub020	TMSS	TPHFIDUS		TPHUSSI	VOCHSAS	WSLM59
		Sampled	^Asbestos ID and Quant (1 & 2)	Tot.Moisture @ 105C	TPH Band (>C10-C40)	TPH by GCFID (AR)	TPH by GCFID (Si-UKCWG)>44	BTEX-HSA GCMS analysis	Total Organic Carbon
			✓	✓	✓	✓	✓	✓	✓
CL/1976239	TP09A 0.50	21/10/19							
CL/1976240	TP09B 0.20	21/10/19							
CL/1976241	TP09B 1.20	21/10/19							

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Report Number : EFS/203018

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
BTEXHSA	CL1976239 CL1976240 CL1976241	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (M/P Xylenes) . These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	ANC	Oven Dried @ < 35°C	Quantitative digestion with Hydrochloric Acid back titration with 1M Sodium Hydroxide to pH 7
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes (BTEX) by Headspace GCFID
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace GCFID
Soil	ICPMSS	Oven Dried @ < 35°C	Determination of Metals in Marine Sediments and Soil samples by aqua regia digestion followed by ICPMS detection
Soil	ICPWSS	Oven Dried @ < 35°C	Determination of Water Soluble Sulphate in soil samples by water extraction followed by ICPOES detection
Soil	KONECR	Oven Dried @ < 35°C	Determination of Chromium vi in soil samples by water extraction followed by colorimetric detection
Soil	LOI(%MM)	Oven Dried @ < 35°C	Determination of loss on ignition for soil samples at specified temperature by gravimetry
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by hexane/acetone extraction followed by GCMS detection
Soil	PCBECD	As Received	Determination of Polychlorinated Biphenyl (PCB) congeners/aroclors by hexane/acetone extraction followed by GCECD detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-contractor.
Soil	TMSS	As Received	Determination of the Total Moisture content at 105ºC by loss on oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHFIDUS	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection.
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection including quantitation of Aromatic and Aliphatic fractions.
Soil	VOCHSAS	As Received	Determination of Volatile Organic Compounds (VOC) by Headspace GCMS
Soil	WSLM59	Oven Dried @ < 35°C	Determination of Organic Carbon in soil using sulphurous Acid digestion followed by high temperature combustion and IR detection
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	ISEF	As Received	Determination of Fluoride in water samples by Ion Selective Electrode (ISE)
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM2	As Received	Determination of the Electrical Conductivity (µS/cm) by electrical conductivity probe.
Water	WSLM27	As Received	Gravimetric Determination
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Deeside

Site : F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Report Number : S20_3018

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1976239	TP09A ES 7 0.50	Brown CLAY
CL/1976240	TP09B ES 4 0.20 (NVM)	Brown Silt GRAVEL Sand
CL/1976241	TP09B ES 12 1.20	Brown Gravel SAND

TEST REPORT

1252

Report No. EFS/203019M (Ver. 1)

SOCOTEC UK Deeside
Unit 18
Drome Road
Deeside Industrial Park
Deeside
Flintshire
CH5 2NY

Site: F9049-19 Wrexham - Wynnstay Avenue, Deva Way

The 3 samples described in this report were registered for analysis by SOCOTEC UK Limited on 25-Oct-2019. This report supersedes any versions previously issued by the laboratory.
The analysis was completed by: 06-Nov-2019

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS or MCERTS accredited. Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by SOCOTEC UK Limited.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 7)
Table of WAC Analysis Results (Pages 8 to 10)
Subcontracted Analysis Reports (Pages 11 to 12)
The accreditation status of subcontracted analysis is displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Pages 13 to 14)
Table of Method Descriptions (Pages 15 to 16)
Table of Report Notes (Page 17)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham Operations Manager
Energy & Waste Services

Date of Issue: 06-Nov-2019

Accreditation Codes: **N** (Not Accredited), **U** (UKAS), **UM** (UKAS & MCERTS)
Tests marked '^' have been subcontracted to another laboratory.
(NVM) - denotes the sample matrix is dissimilar to matrices upon which the MCERTS validation was based, and is therefore not accredited for MCERTS.
All results are reported on a dry weight basis at 105^{o}C unless otherwise stated. (except QC samples)
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Units :			Mol/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			ANC	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA
Method Reporting Limits :			0.04	10	10	20	20	10	10	30	0.2	0.2	0.2	0.2	0.2	0.01	0.2	0.2
Accreditation Code:			N	UM	UM	UM	U	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Acid Neut. Capacity**	**Benzene**	**Ethyl Benzene**	**m/p Xylenes**	**MTBE**	**o Xylene**	**Toluene**	**Xylenes**	**GRO**	**GRO (>C5 - C6)**	**GRO (>C7 - C8)**	**GRO (>C8 - C10)**	**GRO (C5-C6 Aliphatic)**	**GRO (C5-C7 Aromatic)**	**GRO (C6-C7)**	**GRO (C6-C8 Aliphatic)**
1976242	TP07B ES 13 0.50	17-Oct-19	0.32	<12.1	<12.1	<24.2	<24.2	<12.1	<12.1	<36.3	<0.242	<0.242	<0.242	<0.242	<0.242	<0.012	<0.242	<0.242
1976243	TP07C ES 19 0.20	17-Oct-19	0.79	<12.0	<12.0	<24.1	<24.1	<12.0	<12.0	<36.1	<0.241	<0.241	<0.241	<0.241	<0.241	<0.012	<0.241	<0.241
1976244	TP07D ES 4 0.20	18-Oct-19	0.70	<11.9	<11.9	<23.8	<23.8	<11.9	<11.9	<35.7	<0.238	<0.238	<0.238	<0.238	<0.238	<0.012	<0.238	<0.238

SOCOTEC

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Client Name SOCOTEC UK Deeside

Contact Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/203019M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg
Method Codes :			GROHSA	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPWSS	KONECR	LOI(%MM)	PAHMSUS	PAHMSUS	PAHMSUS
Method Reporting Limits :			0.01	0.3	0.2	1.2	1.6	0.7	0.5	2	0.5	16	10	0.1	0.2	0.08	0.08	0.08
Accreditation Code:			UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	N	N	UM	U	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**GRO (C7-C8 Aromatic)**	**Arsenic (MS)**	**Cadmium (MS)**	**Chromium (MS)**	**Copper (MS)**	**Lead (MS)**	**Mercury (MS)**	**Nickel (MS)**	**Selenium (MS)**	**Zinc (MS)**	**SO4-- (H2O sol) mg/l**	**Chromium vi:**	**L.O.I. % @ 450C**	**Acenaphthene**	**Acenaphthylene**	**Anthracene**
1976242	TP07B ES 13 0.50	17-Oct-19	<0.012	1.4	<0.2	8.9	20.2	21.2	<0.5	7.8	<0.5	26	50	<0.1	1.1	<0.10	<0.10	<0.10
1976243	TP07C ES 19 0.20	17-Oct-19	<0.012	7.7	<0.21	11.7	82.2	17.7	<0.5	27.9	0.9	45.1	144	<0.1	5.5	<0.10	<0.10	<0.10
1976244	TP07D ES 4 0.20	18-Oct-19	<0.012	5.0	<0.21	12.8	16.2	23.2	<0.5	13.8	0.6	48.0	33	<0.1	2.0	<0.10	<0.10	<0.10

SOCOTEC

Bretby Business Park, Ashby Road

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Client Name SOCOTEC UK Deeside

Contact Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/203019M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg
Method Codes :			PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PCBECD
Method Reporting Limits :			0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	1.28	5
Accreditation Code:			UM	UM	UM	UM	UM	UM	N	UM	UM	UM	UM	UM	UM	UM	U	UM
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(ghi)perylene**	**Benzo(k)fluoranthene**	**Chrysene**	**Coronene**	**Dibenzo(ah)anthracene**	**Fluoranthene**	**Fluorene**	**Indeno(123-cd)pyrene**	**Naphthalene**	**Phenanthrene**	**Pyrene**	**Total PAH (Sum of USEPA 16)**	**PCB 101**
1976242	TP07B ES 13 0.50	**17-Oct-19**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<1.55	<6.05
1976243	TP07C ES 19 0.20	**17-Oct-19**	0.17	0.19	0.23	0.14	<0.10	0.20	<0.10	<0.10	0.25	<0.10	0.18	0.48	0.31	0.27	<3.00	<6.02
1976244	TP07D ES 4 0.20	**18-Oct-19**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<1.52	<5.95

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Units :			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	pH Units	mg/kg	mg/kg	%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PHSOIL	SFAPI	SFAPI	Sub020	TMSS	TPHFIDUS	TPHFIDUS	TPHUSSI	TPHUSSI	TPHUSSI
Method Reporting Limits :			5	5	5	5	5	5		0.5	0.5	0.1	0.1	10	10	4	4	4
Accreditation Code:			UM	UM	UM	UM	UM	UM	UM	UM	U	U	U	U	UM	U	U	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**PCB 118**	**PCB 138**	**PCB 153**	**PCB 180**	**PCB 28**	**PCB 52**	**pH units (AR)**	**Cyanide(Total) (AR)**	**Phenol Index.(AR)**	**^Asbestos ID and Quant (1 & 2)**	**Tot.Moisture @ 105C**	**TPH Band (>C10-C40)**	**TPH by GCFID (AR)**	**TPH Ali Band >C10-C12**	**TPH Ali Band >C12-C16**	**TPH Ali Band >C16-C21**
1976242	TP07B ES 13 0.50	17-Oct-19	<6.05	<6.05	<6.05	<6.05	<6.05	<6.05	8.2	<0.6	<0.6	NADIS	17.3	19.1	19.1	<4.84	<4.84	<4.84
1976243	TP07C ES 19 0.20	17-Oct-19	<6.02	<6.02	<6.02	<6.02	<6.02	<6.02	8.4	<0.6	<0.6	NADIS	17.0	147	148	<4.82	<4.82	<4.82
1976244	TP07D ES 4 0.20	18-Oct-19	<5.95	<5.95	<5.95	<5.95	<5.95	<5.95	8	<0.6	<0.6	NADIS	16.0	39.0	39.2	<4.76	<4.76	<4.76

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Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI
Method Reporting Limits :			11.88	8.75	5.62	4	4	20	20	4	4	4	8.75	5.62	4	4	20	20
Accreditation Code:			U	U	N	N	U	U	N	U	U	U	U	N	N	U	U	N
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**TPH Ali Band >C16-C35**	**TPH Ali Band >C21-C35**	**TPH Ali Band >C35-C44**	**TPH Ali Band >C40-C44**	**TPH Ali Band >C8-C10**	**TPH Ali Band >C8-C40**	**TPH Ali Band >C8-C44**	**TPH Aro Band >C10-C12**	**TPH Aro Band >C12-C16**	**TPH Aro Band >C16-C21**	**TPH Aro Band >C21-C35**	**TPH Aro Band >C35-C44**	**TPH Aro Band >C40-C44**	**TPH Aro Band >C8-C10**	**TPH Aro Band >C8-C40**	**TPH Aro Band >C8-C44**
1976242	TP07B ES 13 0.50	17-Oct-19	<14.4	<10.59	<6.80	<4.84	<4.84	<24.2	<24.2	<4.84	<4.84	10.52	17.8	<6.80	<4.84	5.76	43.3	46.4
1976243	TP07C ES 19 0.20	17-Oct-19	20.1	19.4	<6.77	<4.82	<4.82	<24.1	<24.1	<4.82	10.69	18.1	54.0	9.57	<4.82	6.58	99.9	102.0
1976244	TP07D ES 4 0.20	18-Oct-19	<14.2	<10.43	<6.69	<4.76	<4.76	<23.8	<23.8	<4.76	6.83	9.99	15.7	<6.69	<4.76	<4.76	39.2	41.3

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Sample Analysis

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Table Number	**1**

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Units :			µg/kg	ug/kg	µg/kg	µg/kg	µg/kg	µg/kg	% M/M									
Method Codes :			VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	WSLM59									
Method Reporting Limits :			1	1	4	2	5	6	0.02									
Accreditation Code:			UM	UM	UM	UM	UM	UM	N									
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Benzene**	**Ethyl Benzene**	**m/p Xylenes**	**o Xylene**	**Toluene**	**Xylenes**	**Total Organic Carbon**									
1976242	TP07B ES 13 0.50	**17-Oct-19**	<1	<2	<5	<2	<6	<7	0.39									
1976243	TP07C ES 19 0.20	**17-Oct-19**	<1	<2	<5	<2	<6	<7	>26.1									
1976244	TP07D ES 4 0.20	**18-Oct-19**	<1	<2	<5	<2	<6	<7	0.62									

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Contact Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/203019M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.253
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	17.3
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.422
					Fraction of sample above 4 mm %	76.600
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP07B ES 13 0.50		s20_3019M	CL/1976242	06-Nov-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	0.39	3	5	6
N	LOI450	Loss on Ignition (%)	1.1			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0726	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	19.1	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<1.64	100		
U	PHSOIL	pH (pH units)	8.2		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	0.32		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	7.6	8.1	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	1710	281					
U	ICPMSW	Arsenic	<0.001	<0.001	<0.002	<0.01	0.5	2	25
U	ICPWATVAR	Barium	0.04	0.02	0.08	0.2	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.002	0.002	0.004	0.02	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.026	0.013	0.052	0.15	0.5	10	30
U	ICPMSW	Nickel	0.002	<0.001	0.004	<0.01	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.003	0.002	0.006	0.02	0.06	0.7	5
U	ICPMSW	Selenium	0.003	<0.001	0.006	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	<0.002	<0.002	<0.004	<0.02	4	50	200
U	KONENS	Chloride	349	37	698	786	800	15000	25000
U	ISEF	Fluoride	0.9	0.6	1.8	6	10	150	500
U	ICPWATVAR	Sulphate as SO4	199	33	398	551	1000	20000	50000
N	WSLM27	Total Dissolved Solids	1330	219	2660	3671	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	2.7	1.3	5.4	15	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

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Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.265
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	17.0
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.410
					Fraction of sample above 4 mm %	0.000
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP07C ES 19 0.20		s20_3019M	CL/1976243	06-Nov-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	>26.1	3	5	6
N	LOI450	Loss on Ignition (%)	5.5			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0721	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	147	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<3.10	100		
U	PHSOIL	pH (pH units)	8.4		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	0.79		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	7.5	7.7	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	432	118					
U	ICPMSW	Arsenic	<0.001	<0.001	<0.002	<0.01	0.5	2	25
U	ICPWATVAR	Barium	0.08	0.02	0.16	0.3	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.004	0.003	0.008	0.03	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.005	0.002	0.01	0.02	0.5	10	30
U	ICPMSW	Nickel	<0.001	<0.001	<0.002	<0.01	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.005	0.002	0.01	0.02	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.003	<0.002	0.006	<0.02	4	50	200
U	KONENS	Chloride	21	<1	42	<37	800	15000	25000
U	ISEF	Fluoride	0.7	0.5	1.4	5	10	150	500
U	ICPWATVAR	Sulphate as SO4	99	12	198	236	1000	20000	50000
N	WSLM27	Total Dissolved Solids	337	91.7	674	1244	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	6.8	4.2	13.6	45	500	800	1000

Template Ver. 1

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WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.262
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	16.0
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.413
					Fraction of sample above 4 mm %	0.000
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP07D ES 4 0.20		s20_3019M	CL/1976244	06-Nov-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	0.62	3	5	6
N	LOI450	Loss on Ignition (%)	2			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0714	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	39	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<1.62	100		
U	PHSOIL	pH (pH units)	8		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	0.7		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	7.3	7.4	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	447	<100					
U	ICPMSW	Arsenic	0.002	0.003	0.004	0.03	0.5	2	25
U	ICPWATVAR	Barium	<0.01	<0.01	<0.02	<0.1	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.004	0.003	0.008	0.03	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.004	<0.001	0.008	<0.01	0.5	10	30
U	ICPMSW	Nickel	<0.001	<0.001	<0.002	<0.01	0.4	10	40
U	ICPMSW	Lead	0.004	<0.001	0.008	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.007	0.001	0.014	0.02	0.06	0.7	5
U	ICPMSW	Selenium	0.004	0.001	0.008	0.01	0.1	0.5	7
U	ICPMSW	Zinc	<0.002	<0.002	<0.004	<0.02	4	50	200
U	KONENS	Chloride	98	6	196	183	800	15000	25000
U	ISEF	Fluoride	0.7	0.3	1.4	4	10	150	500
U	ICPWATVAR	Sulphate as SO4	10	<3	20	<39	1000	20000	50000
N	WSLM27	Total Dissolved Solids	349	<60	698	<985	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	4.2	2.4	8.4	26	500	800	1000

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CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY: SOCOTEC UK Ltd
Environmental Chemistry
PO Box 100
Burton upon Trent
Staffordshire
DE15 0XD

CONTRACT NO: S08962-6

DATE OF ISSUE: 04.11.19

DATE SAMPLE RECEIVED: 28.10.19

DATE SAMPLE ANALYSED: 04.11.19

DESCRIPTION: Three soil/loose aggregate samples each weighing approximately 0.2-1.1kg.

ANALYSIS REQUESTED: Qualitative and quantitative analysis of soil/loose aggregate samples for mass determination of asbestos.

METHODS:

Qualitative - The samples were analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative - The analysis was carried out using our documented in-house method based on HSE Contract Research Report No. 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies *et al*, 1996) and HSG 248. Our method includes initial examination of the entire sample, detailed analysis of a representative sub-sample and quantification by hand picking/weighing and/or fibre counting/sizing as appropriate.

RESULTS:

Initial Screening

No asbestos was detected in any of the soil samples by stereo-binocular and polarised light microscopy.

A summary of the results is given in Table 1.

www.iom-world.org

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IOM CONSULTING LIMITED, registered in Scotland No. SC205670

UKAS TESTING
0374

CONTRACT NO: S08962-6
DATE OF ISSUE: 04.11.19

RESULTS: (cont.)

Table 1: Qualitative Results

SOCOTEC Job I.D: S203019

IOM sample number	Client sample number	ACM type detected	PLM result
S67857	S1976242 TP07B 0.50	-	No Asbestos Detected
S67858	S1976243 TP07C 0.20	-	No Asbestos Detected
S67859	S1976244 TP07D 0.20	-	No Asbestos Detected

Our detection limit for this method is 0.001%.

COMMENTS:

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are outwith the scope of our UKAS accreditation.

AUTHORISED BY: .....
D Third
Scientific Technician

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Deeside
Site F9049-19 Wrexham - Wynnstay Avenue, Deva Way
Report No S203019M

Consignment No S89045
Date Logged 25-Oct-2019
In-House Report Due 05-Nov-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	ANC	BTEXHSA		CEN Leac/mate		CustServ	GROHSA	ICPMSS									ICPWSS	KONECR	LOI(%MM)	MCertS	PAHMSUS	PCBECD	PHSOIL	SFAPI	
		Sampled	Acid Neut. Capacity	BTEX-HSA + MTBE analysis	MTBE (µg/kg)	CEN Leac(P)1	CEN Leac(P)2	REPORT A	GRO (AA-UK) HSA-GCFID	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Mercury (MS)	Nickel (MS)	Selenium (MS)	Zinc (MS)	SO4-- (H2O sol) mg/l	Chromium vi:	L.O.I. % @ 450C	MCertS Analysis	PAH (17) by GCMS	PCB-7 Congeners Analysis	pH units (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)
				✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
CL/1976242	TP07B 0.50	17/10/19																									
CL/1976243	TP07C 0.20	17/10/19																									
CL/1976244	TP07D 0.20	18/10/19																									

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.
The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Analytical and Deviating Sample Overview

Customer **SOCOTEC UK Deeside** Consignment No S89045
Site **F9049-19 Wrexham - Wynnstay Avenue, Deva Way** Date Logged 25-Oct-2019
Report No **S203019M** In-House Report Due 05-Nov-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	Sub020	TMSS	TPHFIDUS		TPHUSSI	VOCHSAS	WSLM59
		Sampled	^Asbestos ID and Quant (1 & 2)	Tot.Moisture @ 105C	TPH Band (>C10-C40)	TPH by GCFID (AR)	TPH by GCFID (Si-UKCWG)>44	BTEX-HSA GCMS analysis	Total Organic Carbon
			✓	✓	✓	✓	✓	✓	✓
CL/1976242	TP07B 0.50	17/10/19							
CL/1976243	TP07C 0.20	17/10/19							
CL/1976244	TP07D 0.20	18/10/19							

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
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E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	ANC	Oven Dried @ < 35°C	Quantitative digestion with Hydrochloric Acid back titration with 1M Sodium Hydroxide to pH 7
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes (BTEX) by Headspace GCFID
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace GCFID
Soil	ICPMSS	Oven Dried @ < 35°C	Determination of Metals in Marine Sediments and Soil samples by aqua regia digestion followed by ICPMS detection
Soil	ICPWSS	Oven Dried @ < 35°C	Determination of Water Soluble Sulphate in soil samples by water extraction followed by ICPOES detection
Soil	KONECR	Oven Dried @ < 35°C	Determination of Chromium vi in soil samples by water extraction followed by colorimetric detection
Soil	LOI(%MM)	Oven Dried @ < 35°C	Determination of loss on ignition for soil samples at specified temperature by gravimetry
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by hexane/acetone extraction followed by GCMS detection
Soil	PCBECD	As Received	Determination of Polychlorinated Biphenyl (PCB) congeners/aroclors by hexane/acetone extraction followed by GCECD detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-contractor.
Soil	TMSS	As Received	Determination of the Total Moisture content at 105ºC by loss on oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHFIDUS	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection.
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection including quantitation of Aromatic and Aliphatic fractions.
Soil	VOCHSAS	As Received	Determination of Volatile Organic Compounds (VOC) by Headspace GCMS
Soil	WSLM59	Oven Dried @ < 35°C	Determination of Organic Carbon in soil using sulphurous Acid digestion followed by high temperature combustion and IR detection
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	ISEF	As Received	Determination of Fluoride in water samples by Ion Selective Electrode (ISE)
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM2	As Received	Determination of the Electrical Conductivity (µS/cm) by electrical conductivity probe.
Water	WSLM27	As Received	Gravimetric Determination
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l
Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Deeside

Site : F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Report Number : S20_3019

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1976242	TP07B ES 13 0.50	Brown SAND
CL/1976243	TP07C ES 19 0.20	Brown Gravel SILT
CL/1976244	TP07D ES 4 0.20	Brown Gravel SAND

TEST REPORT

1252

Report No. EFS/203020M (Ver. 1)

SOCOTEC UK Deeside
Unit 18
Drome Road
Deeside Industrial Park
Deeside
Flintshire
CH5 2NY

Site: F9049-19 Wrexham - Wynnstay Avenue, Deva Way

The 2 samples described in this report were registered for analysis by SOCOTEC UK Limited on 25-Oct-2019. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 06-Nov-2019

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS or MCERTS accredited. Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by SOCOTEC UK Limited.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 7)
Table of WAC Analysis Results (Pages 8 to 9)
Subcontracted Analysis Reports (Pages 10 to 11)
The accreditation status of subcontracted analysis is displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Pages 12 to 13)
Table of Additional Report Notes (Page 14)
Table of Method Descriptions (Pages 15 to 16)
Table of Report Notes (Page 17)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham Operations Manager
Energy & Waste Services

Date of Issue: 06-Nov-2019

Accreditation Codes: **N** (Not Accredited), **U** (UKAS), **UM** (UKAS & MCERTS)
Tests marked '^' have been subcontracted to another laboratory.
(NVM) - denotes the sample matrix is dissimilar to matrices upon which the MCERTS validation was based, and is therefore not accredited for MCERTS.
All results are reported on a dry weight basis at 105^{o}C unless otherwise stated. (except QC samples)
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Units :			Mol/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			ANC	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA
Method Reporting Limits :			0.04	10	10	20	20	10	10	30	0.2	0.2	0.2	0.2	0.2	0.01	0.2	0.2
Accreditation Code:			N	UM	UM	UM	U	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Acid Neut. Capacity**	**Benzene**	**Ethyl Benzene**	**m/p Xylenes**	**MTBE**	**o Xylene**	**Toluene**	**Xylenes**	**GRO**	**GRO (>C5 - C6)**	**GRO (>C7 - C8)**	**GRO (>C8 - C10)**	**GRO (C5-C6 Aliphatic)**	**GRO (C5-C7 Aromatic)**	**GRO (C6-C7)**	**GRO (C6-C8 Aliphatic)**
1976245	TP05E ES 6 0.50	**15-Oct-19**	0.79	<12.6	<12.6	<25.2*	<25.2	<12.6	<12.6	<37.8*	<0.252	<0.252	<0.252	<0.252	<0.252	<0.013	<0.252	<0.252
1976246	TP06A ES 4 0.20	**15-Oct-19**	8.20	<10.7	<10.7	<21.4*	<21.4	<10.7	<10.7	<32.1*	<0.214	<0.214	<0.214	<0.214	<0.214	<0.011	<0.214	<0.214

SOCOTEC

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Burton-on-Trent, Staffordshire, DE15 0YZ

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Client Name	**SOCOTEC UK Deeside**
Contact	Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/203020M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg
Method Codes :			GROHSA	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPWSS	KONECR	LOI(%MM)	PAHMSUS	PAHMSUS	PAHMSUS
Method Reporting Limits :			0.01	0.3	0.2	1.2	1.6	0.7	0.5	2	0.5	16	10	0.1	0.2	0.08	0.08	0.08
Accreditation Code:			UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	N	N	UM	U	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**GRO (C7-C8 Aromatic)**	**Arsenic (MS)**	**Cadmium (MS)**	**Chromium (MS)**	**Copper (MS)**	**Lead (MS)**	**Mercury (MS)**	**Nickel (MS)**	**Selenium (MS)**	**Zinc (MS)**	**SO4-- (H2O sol) mg/l**	**Chromium vi:**	**L.O.I. % @ 450C**	**Acenaphthene**	**Acenaphthylene**	**Anthracene**
1976245	TP05E ES 6 0.50	15-Oct-19	<0.013	9.2	0.2	13.0	28.3	97.2	<0.52	12.7	1	67.6	69	<0.1	5.0	<0.10	<0.10	<0.10
1976246	TP06A ES 4 0.20	15-Oct-19	<0.011	4.4	0.21	22.9	25.4	182.4	<0.5	19.1	0.7	86.3	<20	<0.1	4.1	0.17	<0.09	0.48

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Contact Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/203020M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg
Method Codes :			PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PCBECD
Method Reporting Limits :			0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	1.28	5
Accreditation Code:			UM	UM	UM	UM	UM	UM	N	UM	UM	UM	UM	UM	UM	UM	U	UM
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(ghi)perylene**	**Benzo(k)fluoranthene**	**Chrysene**	**Coronene**	**Dibenzo(ah)anthracene**	**Fluoranthene**	**Fluorene**	**Indeno(123-cd)pyrene**	**Naphthalene**	**Phenanthrene**	**Pyrene**	**Total PAH (Sum of USEPA 16)**	**PCB 101**
1976245	TP05E ES 6 0.50	15-Oct-19	0.40	0.66	0.81	0.58	0.33	0.49	0.16	0.11	0.73	<0.10	0.79	<0.10	0.21	0.73	<6.36	<6.31
1976246	TP06A ES 4 0.20	15-Oct-19	1.03	1.06	1.24	0.57	0.46	0.96	0.15	0.13	2.81	0.14	0.84	0.25	1.91	2.34	<14.5	6.42

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Report Number	**EFS/203020M**
Table Number	**1**

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Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	pH Units	mg/kg	mg/kg	%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PHSOIL	SFAPI	SFAPI	Sub020	TMSS	TPHFIDUS	TPHFIDUS	TPHUSSI	TPHUSSI	TPHUSSI
Method Reporting Limits :			5	5	5	5	5	5		0.5	0.5	0.1	0.1	10	10	4	4	4
Accreditation Code:			UM	UM	UM	UM	UM	UM	UM	UM	U	U	U	U	UM	U	U	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**PCB 118**	**PCB 138**	**PCB 153**	**PCB 180**	**PCB 28**	**PCB 52**	**pH units (AR)**	**Cyanide(Total) (AR)**	**Phenol Index.(AR)**	**^Asbestos ID and Quant (1 & 2)**	**Tot.Moisture @ 105C**	**TPH Band (>C10-C40)**	**TPH by GCFID (AR)**	**TPH Ali Band >C10-C12**	**TPH Ali Band >C12-C16**	**TPH Ali Band >C16-C21**
1976245	TP05E ES 6 0.50	15-Oct-19	<6.31	<6.31	<6.31	<6.31	<6.31	<6.31	8.2	<0.6	<0.6	NADIS	20.7	145	145	<5.04	<5.04	<5.04
1976246	TP06A ES 4 0.20	15-Oct-19	<5.35	<5.35	6.64	<5.35	<5.35	<5.35	12.4	<0.5	0.5	NADIS	6.5	1200	1200	<4.28	22.8	30.4

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Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/203020M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI
Method Reporting Limits :			11.88	8.75	5.62	4	4	20	20	4	4	4	8.75	5.62	4	4	20	20
Accreditation Code:			U	U	N	N	U	U	N	U	U	U	U	N	N	U	U	N
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**TPH Ali Band >C16-C35**	**TPH Ali Band >C21-C35**	**TPH Ali Band >C35-C44**	**TPH Ali Band >C40-C44**	**TPH Ali Band >C8-C10**	**TPH Ali Band >C8-C40**	**TPH Ali Band >C8-C44**	**TPH Aro Band >C10-C12**	**TPH Aro Band >C12-C16**	**TPH Aro Band >C16-C21**	**TPH Aro Band >C21-C35**	**TPH Aro Band >C35-C44**	**TPH Aro Band >C40-C44**	**TPH Aro Band >C8-C10**	**TPH Aro Band >C8-C40**	**TPH Aro Band >C8-C44**
1976245	TP05E ES 6 0.50	**15-Oct-19**	25.5	24.7	<7.09	<5.04	<5.04	28.1	28.2	<5.04	5.64	16.1	71.6	12.27	<5.04	<5.04	108.4	111.5
1976246	TP06A ES 4 0.20	**15-Oct-19**	380	349	89.8	7.75	<4.28	486	493	<4.28	12.3	42.8	628	16.9	<4.28	4.72	706	707

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Client Name SOCOTEC UK Deeside

Contact Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/203020M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			µg/kg	ug/kg	µg/kg	µg/kg	µg/kg	µg/kg	% M/M										
Method Codes :			VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	WSLM59										
Method Reporting Limits :			1	1	4	2	5	6	0.02										
Accreditation Code:			UM	UM	UM	UM	UM	UM	N										
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Benzene**	**Ethyl Benzene**	**m/p Xylenes**	**o Xylene**	**Toluene**	**Xylenes**	**Total Organic Carbon**										
1976245	TP05E ES 6 0.50	**15-Oct-19**	<1	<3	<5	<3	<6	<8	2.64										
1976246	TP06A ES 4 0.20	**15-Oct-19**	<1	<2	<4	<2	<5	<6	1.21										

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Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.278
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	20.7
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.397
					Fraction of sample above 4 mm %	38.100
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP05E ES 6 0.50		S20_3020M	CL/1976245	06-Nov-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	2.64	3	5	6
N	LOI450	Loss on Ignition (%)	5			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0756	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	145	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<6.52	100		
U	PHSOIL	pH (pH units)	8.2		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	0.79		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1 mg/kg (dry weight)		
			mg/l except ºº		mg/kg (dry weight)				
U	WSLM3	pH (pH units) ºº	8.2	11.8	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	389	1690					
U	ICPMSW	Arsenic	0.002	<0.001	0.004	<0.01	0.5	2	25
U	ICPWATVAR	Barium	0.01	0.08	0.02	0.7	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	0.007	<0.002	<0.06	0.5	10	70
U	ICPMSW	Copper	0.007	0.027	0.014	0.24	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.027	0.007	0.054	0.1	0.5	10	30
U	ICPMSW	Nickel	<0.001	0.003	<0.002	<0.03	0.4	10	40
U	ICPMSW	Lead	0.003	<0.001	0.006	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.004	0.023	0.008	0.2	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.003	<0.002	0.006	<0.02	4	50	200
U	KONENS	Chloride	12	43	24	389	800	15000	25000
U	ISEF	Fluoride	1.5	0.4	3	5	10	150	500
U	ICPWATVAR	Sulphate as SO4	19	173	38	1525	1000	20000	50000
N	WSLM27	Total Dissolved Solids	304	1320	608	11845	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	13	6.5	26	74	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

Tests where the accreditation is set to U are UKAS accredited, those where the accreditation is set to N are not UKAS accredited

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.278
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	6.5
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.397
					Fraction of sample above 4 mm %	0.000
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP06A ES 4 0.20		S20_3020M	CL/1976246	06-Nov-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	1.21	3	5	6
N	LOI450	Loss on Ignition (%)	4.1			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0642	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.03764	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	1200	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<14.70	100		
U	PHSOIL	pH (pH units)	12.4		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	8.2		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1 mg/kg (dry weight)		
			mg/l except oo		mg/kg (dry weight)				
U	WSLM3	pH (pH units) oo	12.5	12.4	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) oo	8750	7440					
U	ICPMSW	Arsenic	<0.001	<0.001	<0.002	<0.01	0.5	2	25
U	ICPWATVAR	Barium	1.36	0.93	2.72	9.9	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	0.001	<0.001	0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.019	0.007	0.038	0.09	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.012	0.009	0.024	0.09	0.5	10	30
U	ICPMSW	Nickel	0.022	0.006	0.044	0.08	0.4	10	40
U	ICPMSW	Lead	0.009	0.005	0.018	0.06	0.5	10	50
U	ICPMSW	Antimony	<0.001	<0.001	<0.002	<0.01	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.002	<0.002	0.004	<0.02	4	50	200
U	KONENS	Chloride	129	36	258	484	800	15000	25000
U	ISEF	Fluoride	0.4	0.4	0.8	4	10	150	500
U	ICPWATVAR	Sulphate as SO4	4	4	8	40	1000	20000	50000
N	WSLM27	Total Dissolved Solids	6830	5800	13660	59373	4000	60000	100000
U	SFAPI	Phenol Index	0.13	<0.05	0.26	<0.6	1		
N	WSLM13	Dissolved Organic Carbon	19	4.8	38	67	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

Tests where the accreditation is set to U are UKAS accredited, those where the accreditation is set to N are not UKAS accredited

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

IOM

working for a healthy and sustainable world

CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY: SOCOTEC UK Ltd
Environmental Chemistry
PO Box 100
Burton upon Trent
Staffordshire
DE15 0XD

CONTRACT NO: S08996-2

DATE OF ISSUE: 05.11.19

DATE SAMPLES RECEIVED: 29.10.19

DATE SAMPLES ANALYSED: 04.11.19

DESCRIPTION: Two soil/loose aggregate samples each weighing approximately 0.1-0.2kg.

ANALYSIS REQUESTED: Qualitative and quantitative analysis of soil/loose aggregate samples for mass determination of asbestos.

METHODS:

Qualitative - The samples were analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative - The analysis was carried out using our documented in-house method based on HSE Contract Research Report No. 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies *et al*, 1996) and HSG 248. Our method includes initial examination of the entire sample, detailed analysis of a representative sub-sample and quantification by hand picking/weighing and/or fibre counting/sizing as appropriate.

RESULTS:

Initial Screening

No asbestos was detected in either of the soil samples by stereo-binocular and polarised light microscopy.

A summary of the results is given in Table 1.

www.iom-world.org

Registered Address: Research Avenue North, Riccarton, Edinburgh, EH14 4AP, United Kingdom
Tel: 0131 449 8000 Fax: 0131 449 8084 Email: iom@iom-world.org

IOM CONSULTING LIMITED, registered in Scotland No. SC205670

UKAS TESTING
0374

CONTRACT NO: S08996-2
DATE OF ISSUE: 05.11.19

RESULTS: (cont.)

Table 1: Qualitative Results

SOCOTEC Job I.D: S203020

IOM sample number	Client sample number	ACM type detected	PLM result
S67884	S1976245 TP05E 0.50	-	No Asbestos Detected
S67885	S1976246 TP06A 0.20	-	No Asbestos Detected

Our detection limit for this method is 0.001%.

COMMENTS:

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are outwith the scope of our UKAS accreditation.

AUTHORISED BY: .....
D Third
Scientific Technician

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Deeside
Site F9049-19 Wrexham - Wynnstay Avenue, Deva Way
Report No S203020M

Consignment No S88913
Date Logged 25-Oct-2019
In-House Report Due 04-Nov-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	ANC	BTEXHSA		CEN Leac/mate		CustServ	GROHSA	ICPMSS								ICPWSS	KONECR	LOI(%MM)	MCertS	PAHMSUS	PCBECD	PHSOIL	SFAPI	
		Sampled	Acid Neut. Capacity	BTEX-HSA + MTBE analysis	MTBE (µg/kg)	CEN Leac(P)1	CEN Leac(P)2	REPORT A	GRO (AA-UK) HSA-GCFID	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Mercury (MS)	Nickel (MS)	Selenium (MS)	Zinc (MS)	SO4-- (H2O sol) mg/l	Chromium vi:	L.O.I. % @ 450C	MCertS Analysis	PAH (17) by GCMS	PCB-7 Congeners Analysis	pH units (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)
				✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	
CL/1976245	TP05E 0.50	15/10/19		E	E				E																		
CL/1976246	TP06A 0.20	15/10/19		E	E				E																		

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key

A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key

	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.
The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Analytical and Deviating Sample Overview

Customer **SOCOTEC UK Deeside** Consignment No S88913
Site **F9049-19 Wrexham - Wynnstay Avenue, Deva Way** Date Logged 25-Oct-2019
Report No **S203020M** In-House Report Due 04-Nov-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	Sub020	TMSS	TPHFIDUS		TPHUSSI	VOCHSAS	WSLM59
		Sampled	^Asbestos ID and Quant (1 & 2)	Tot.Moisture @ 105C	TPH Band (>C10-C40)	TPH by GCFID (AR)	TPH by GCFID (Si-UKCWG)>44	BTEX-HSA GCMS analysis	Total Organic Carbon
			✓	✓	✓	✓	✓	✓	✓
CL/1976245	TP05E 0.50	15/10/19							
CL/1976246	TP06A 0.20	15/10/19							

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
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D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Report Number : EFS/203020

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
BTEXHSA	CL1976245 CL1976246	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (M/P Xylenes) . These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	ANC	Oven Dried @ < 35°C	Quantitative digestion with Hydrochloric Acid back titration with 1M Sodium Hydroxide to pH 7
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes (BTEX) by Headspace GCFID
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace GCFID
Soil	ICPMSS	Oven Dried @ < 35°C	Determination of Metals in Marine Sediments and Soil samples by aqua regia digestion followed by ICPMS detection
Soil	ICPWSS	Oven Dried @ < 35°C	Determination of Water Soluble Sulphate in soil samples by water extraction followed by ICPOES detection
Soil	KONECR	Oven Dried @ < 35°C	Determination of Chromium vi in soil samples by water extraction followed by colorimetric detection
Soil	LOI(%MM)	Oven Dried @ < 35°C	Determination of loss on ignition for soil samples at specified temperature by gravimetry
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by hexane/acetone extraction followed by GCMS detection
Soil	PCBECD	As Received	Determination of Polychlorinated Biphenyl (PCB) congeners/aroclors by hexane/acetone extraction followed by GCECD detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-contractor.
Soil	TMSS	As Received	Determination of the Total Moisture content at 105ºC by loss on oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHFIDUS	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection.
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection including quantitation of Aromatic and Aliphatic fractions.
Soil	VOCHSAS	As Received	Determination of Volatile Organic Compounds (VOC) by Headspace GCMS
Soil	WSLM59	Oven Dried @ < 35°C	Determination of Organic Carbon in soil using sulphurous Acid digestion followed by high temperature combustion and IR detection
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	ISEF	As Received	Determination of Fluoride in water samples by Ion Selective Electrode (ISE)
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM2	As Received	Determination of the Electrical Conductivity (µS/cm) by electrical conductivity probe.
Water	WSLM27	As Received	Gravimetric Determination
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Deeside

Site : F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Report Number : S20_3020

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1976245	TP05E ES 6 0.50	Brown Clay SILT
CL/1976246	TP06A ES 4 0.20	Brown Clay SILT

TEST REPORT

1252

Report No. EFS/203021M (Ver. 1)

SOCOTEC UK Deeside
Unit 18
Drome Road
Deeside Industrial Park
Deeside
Flintshire
CH5 2NY

Site: F9049-19 Wrexham - Wynnstay Avenue, Deva Way

The 4 samples described in this report were registered for analysis by SOCOTEC UK Limited on 25-Oct-2019. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 06-Nov-2019

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS or MCERTS accredited. Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by SOCOTEC UK Limited.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 7)
Table of WAC Analysis Results (Pages 8 to 11)
Subcontracted Analysis Reports (Pages 12 to 13)
The accreditation status of subcontracted analysis is displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Pages 14 to 15)
Table of Additional Report Notes (Page 16)
Table of Method Descriptions (Pages 17 to 18)
Table of Report Notes (Page 19)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham Operations Manager
Energy & Waste Services

Date of Issue: 06-Nov-2019

Accreditation Codes: **N** (Not Accredited), **U** (UKAS), **UM** (UKAS & MCERTS)
Tests marked '^' have been subcontracted to another laboratory.
(NVM) - denotes the sample matrix is dissimilar to matrices upon which the MCERTS validation was based, and is therefore not accredited for MCERTS.
All results are reported on a dry weight basis at 105^{o}C unless otherwise stated. (except QC samples)
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Units :			Mol/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			ANC	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA
Method Reporting Limits :			0.04	10	10	20	20	10	10	30	0.2	0.2	0.2	0.2	0.2	0.01	0.2	0.2
Accreditation Code:			N	UM	UM	UM	U	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Acid Neut. Capacity**	**Benzene**	**Ethyl Benzene**	**m/p Xylenes**	**MTBE**	**o Xylene**	**Toluene**	**Xylenes**	**GRO**	**GRO (>C5 - C6)**	**GRO (>C7 - C8)**	**GRO (>C8 - C10)**	**GRO (C5-C6 Aliphatic)**	**GRO (C5-C7 Aromatic)**	**GRO (C6-C7)**	**GRO (C6-C8 Aliphatic)**
1976247	TP05A ES 4 0.20	14-Oct-19	5.87	<11.9	<11.9	<23.9*	<23.9	<11.9	<11.9	<35.8*	<0.239	<0.239	<0.239	<0.239	<0.239	<0.012	<0.239	<0.239
1976248	TP05A ES 7 0.50	14-Oct-19	0.69	<12.6	<12.6	<25.2*	<25.2	<12.6	<12.6	<37.8*	<0.252	<0.252	<0.252	<0.252	<0.252	<0.013	<0.252	<0.252
1976249	TP17 ES 7 0.50	14-Oct-19	1.31	<12.4	<12.4	<24.7*	<24.7	<12.4	<12.4	<37.1*	<0.247	<0.247	<0.247	<0.247	<0.247	<0.012	<0.247	<0.247
1976250	TP17 ES 10 1.00	14-Oct-19	0.56	<11.4	<11.4	<22.8*	<22.8	<11.4	<11.4	<34.2*	<0.228	<0.228	<0.228	<0.228	<0.228	<0.011	<0.228	<0.228

SOCOTEC

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Client Name SOCOTEC UK Deeside

Contact Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/203021M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg
Method Codes :			GROHSA	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPWSS	KONECR	LOI(%MM)	PAHMSUS	PAHMSUS	PAHMSUS
Method Reporting Limits :			0.01	0.3	0.2	1.2	1.6	0.7	0.5	2	0.5	16	10	0.1	0.2	0.08	0.08	0.08
Accreditation Code:			UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	N	N	UM	U	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**GRO (C7-C8 Aromatic)**	**Arsenic (MS)**	**Cadmium (MS)**	**Chromium (MS)**	**Copper (MS)**	**Lead (MS)**	**Mercury (MS)**	**Nickel (MS)**	**Selenium (MS)**	**Zinc (MS)**	**SO4-- (H2O sol) mg/l**	**Chromium vi:**	**L.O.I. % @ 450C**	**Acenaphthene**	**Acenaphthylene**	**Anthracene**
1976247	TP05A ES 4 0.20	14-Oct-19	<0.012	6.3	0.37	20.3	47.7	89.0	<0.5	30.7	0.9	73.3	117	<0.1	5.8	0.38	<0.10	1.24
1976248	TP05A ES 7 0.50	14-Oct-19	<0.013	6	<0.20	18	23.7	66.7	<0.5	15.6	0.6	43.4	110	<0.1	4.4	<0.10	0.16	0.24
1976249	TP17 ES 7 0.50	14-Oct-19	<0.012	8	<0.20	13.1	38.4	50.4	<0.5	16.0	1.3	74.6	187	<0.1	6.1	<0.10	<0.10	0.28
1976250	TP17 ES 10 1.00	14-Oct-19	<0.011	0.8	<0.2	7.1	7.5	14	<0.5	6.2	<0.5	30.7	40	<0.1	1.5	<0.09	<0.09	<0.09

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Contact Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/203021M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg
Method Codes :			PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PCBECD
Method Reporting Limits :			0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	1.28	5
Accreditation Code:			UM	UM	UM	UM	UM	UM	N	UM	UM	UM	UM	UM	UM	UM	U	UM
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(ghi)perylene**	**Benzo(k)fluoranthene**	**Chrysene**	**Coronene**	**Dibenzo(ah)anthracene**	**Fluoranthene**	**Fluorene**	**Indeno(123-cd)pyrene**	**Naphthalene**	**Phenanthrene**	**Pyrene**	**Total PAH (Sum of USEPA 16)**	**PCB 101**
1976247	TP05A ES 4 0.20	**14-Oct-19**	2.58	2.89	3.10	1.47	1.18	2.23	0.41	0.37	6.04	0.35	2.21	0.30	3.66	5.45	<33.5	<5.97
1976248	TP05A ES 7 0.50	**14-Oct-19**	0.49	0.54	0.55	0.28	0.23	0.48	<0.10	<0.10	0.84	0.10	0.40	0.18	0.82	0.83	<6.35	<6.30
1976249	TP17 ES 7 0.50	**14-Oct-19**	1.06	1.50	1.51	1.00	0.63	1.05	0.26	0.21	2.03	<0.10	1.45	<0.10	0.90	1.92	<14.0	<6.18
1976250	TP17 ES 10 1.00	**14-Oct-19**	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<1.46	<5.70

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Sample Analysis

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Table Number	**1**

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Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	pH Units	mg/kg	mg/kg	%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PHSOIL	SFAPI	SFAPI	Sub020	TMSS	TPHFIDUS	TPHFIDUS	TPHUSSI	TPHUSSI	TPHUSSI
Method Reporting Limits :			5	5	5	5	5	5		0.5	0.5	0.1	0.1	10	10	4	4	4
Accreditation Code:			UM	UM	UM	UM	UM	UM	UM	UM	U	U	U	U	UM	U	U	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**PCB 118**	**PCB 138**	**PCB 153**	**PCB 180**	**PCB 28**	**PCB 52**	**pH units (AR)**	**Cyanide(Total) (AR)**	**Phenol Index.(AR)**	**^Asbestos ID and Quant (1 & 2)**	**Tot.Moisture @ 105C**	**TPH Band (>C10-C40)**	**TPH by GCFID (AR)**	**TPH Ali Band >C10-C12**	**TPH Ali Band >C12-C16**	**TPH Ali Band >C16-C21**
1976247	TP05A ES 4 0.20	14-Oct-19	<5.97	<5.97	<5.97	<5.97	<5.97	<5.97	12	<0.6	<0.6	NADIS	16.2	1100	1100	<4.77	14.1	25.5
1976248	TP05A ES 7 0.50	14-Oct-19	<6.30	<6.30	<6.30	<6.30	<6.30	<6.30	8.6	<0.6	<0.6	NADIS	20.6	79.8	79.8	<5.04	<5.04	<5.04
1976249	TP17 ES 7 0.50	14-Oct-19	<6.18	<6.18	<6.18	<6.18	<6.18	<6.18	8.4	<0.6	<0.6	NADIS	19.1	176	176	<4.94	<4.94	<4.94
1976250	TP17 ES 10 1.00	14-Oct-19	<5.70	<5.70	<5.70	<5.70	<5.70	<5.70	8	<0.6	<0.6	NADIS	12.3	24.4	24.4	<4.56	<4.56	<4.56

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Sample Analysis

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Table Number	**1**

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Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI
Method Reporting Limits :			11.88	8.75	5.62	4	4	20	20	4	4	4	8.75	5.62	4	4	20	20
Accreditation Code:			U	U	N	N	U	U	N	U	U	U	U	N	N	U	U	N
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**TPH Ali Band >C16-C35**	**TPH Ali Band >C21-C35**	**TPH Ali Band >C35-C44**	**TPH Ali Band >C40-C44**	**TPH Ali Band >C8-C10**	**TPH Ali Band >C8-C40**	**TPH Ali Band >C8-C44**	**TPH Aro Band >C10-C12**	**TPH Aro Band >C12-C16**	**TPH Aro Band >C16-C21**	**TPH Aro Band >C21-C35**	**TPH Aro Band >C35-C44**	**TPH Aro Band >C40-C44**	**TPH Aro Band >C8-C10**	**TPH Aro Band >C8-C40**	**TPH Aro Band >C8-C44**
1976247	TP05A ES 4 0.20	14-Oct-19	261	236	62.1	5.20	<4.77	334	339	<4.77	11.91	59.1	502	12.8	<4.77	6.47	594	595
1976248	TP05A ES 7 0.50	14-Oct-19	<15.0	13.9	<7.08	<5.04	<5.04	<25.2	<25.2	<5.04	6.32	15.1	33.4	7.44	<5.04	6.54	67.8	72
1976249	TP17 ES 7 0.50	14-Oct-19	36.8	36.0	<6.95	<4.94	<4.94	40.8	41.2	<4.94	<4.94	17.9	66.9	8.76	<4.94	5.97	103.8	106.4
1976250	TP17 ES 10 1.00	14-Oct-19	<13.6	<9.99	<6.41	<4.56	<4.56	<22.8	<22.8	<4.56	<4.56	8.99	14.3	<6.41	<4.56	<4.56	31.5	33.2

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Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/203021M**
Table Number	**1**

Where individual results are flagged see report notes for status.
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Units :			µg/kg	ug/kg	µg/kg	µg/kg	µg/kg	µg/kg	% M/M										
Method Codes :			VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	WSLM59										
Method Reporting Limits :			1	1	4	2	5	6	0.02										
Accreditation Code:			UM	UM	UM	UM	UM	UM	N										
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Benzene**	**Ethyl Benzene**	**m/p Xylenes**	**o Xylene**	**Toluene**	**Xylenes**	**Total Organic Carbon**										
1976247	TP05A ES 4 0.20	**14-Oct-19**	<1	<2	<5	<2	7	<7	4.83										
1976248	TP05A ES 7 0.50	**14-Oct-19**	<1	<3	<5	<3	<6	<8	2.60										
1976249	TP17 ES 7 0.50	**14-Oct-19**	<1	<2	<5	<2	<6	<7	4.58										
1976250	TP17 ES 10 1.00	**14-Oct-19**	<1	<2	<5	<2	<6	<7	0.40										

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Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/203021M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.227
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	16.2
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.448
					Fraction of sample above 4 mm %	60.200
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP05A ES 4 0.20		s20_3021M	CL/1976247	06-Nov-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	4.83	3	5	6
N	LOI450	Loss on Ignition (%)	5.8			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0715	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	1100	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<33.94	100		
U	PHSOIL	pH (pH units)	12		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	5.87		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	12.2	11.8	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	3620	1860					
U	ICPMSW	Arsenic	<0.001	<0.001	<0.002	<0.01	0.5	2	25
U	ICPWATVAR	Barium	0.16	0.09	0.32	1	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	0.003	0.003	0.006	0.03	0.5	10	70
U	ICPMSW	Copper	0.076	0.022	0.152	0.29	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.034	0.012	0.068	0.15	0.5	10	30
U	ICPMSW	Nickel	0.026	0.008	0.052	0.1	0.4	10	40
U	ICPMSW	Lead	0.003	0.001	0.006	0.01	0.5	10	50
U	ICPMSW	Antimony	<0.001	<0.001	<0.002	<0.01	0.06	0.7	5
U	ICPMSW	Selenium	0.002	0.001	0.004	0.01	0.1	0.5	7
U	ICPMSW	Zinc	<0.002	<0.002	<0.004	<0.02	4	50	200
U	KONENS	Chloride	148	33	296	483	800	15000	25000
U	ISEF	Fluoride	0.4	0.4	0.8	4	10	150	500
U	ICPWATVAR	Sulphate as SO4	12	17	24	163	1000	20000	50000
N	WSLM27	Total Dissolved Solids	2820	1450	5640	16327	4000	60000	100000
U	SFAPI	Phenol Index	0.05	<0.05	0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	13	3.8	26	50	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

Tests where the accreditation is set to U are UKAS accredited, those where the accreditation is set to N are not UKAS accredited

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.274
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	20.6
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.401
					Fraction of sample above 4 mm %	0.000
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP05A ES 7 0.50		s20_3021M	CL/1976248	06-Nov-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	2.6	3	5	6
N	LOI450	Loss on Ignition (%)	4.4			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0756	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	79.8	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<6.45	100		
U	PHSOIL	pH (pH units)	8.6		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	0.69		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	8.2	8.3	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	1170	204					
U	ICPMSW	Arsenic	0.001	<0.001	0.002	<0.01	0.5	2	25
U	ICPWATVAR	Barium	0.02	<0.01	0.04	<0.1	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	0.001	<0.001	0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.005	0.003	0.01	0.03	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.025	0.006	0.05	0.09	0.5	10	30
U	ICPMSW	Nickel	0.001	<0.001	0.002	<0.01	0.4	10	40
U	ICPMSW	Lead	0.002	0.001	0.004	0.01	0.5	10	50
U	ICPMSW	Antimony	<0.001	<0.001	<0.002	<0.01	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	<0.002	0.004	<0.004	<0.04	4	50	200
U	KONENS	Chloride	255	22	510	531	800	15000	25000
U	ISEF	Fluoride	1.8	1.3	3.6	14	10	150	500
U	ICPWATVAR	Sulphate as SO4	21	3	42	54	1000	20000	50000
N	WSLM27	Total Dissolved Solids	913	159	1826	2595	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	12	5.7	24	65	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

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WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.281
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	19.1
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.394
					Fraction of sample above 4 mm %	35.600
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP17 ES 7 0.50		s20_3021M	CL/1976249	06-Nov-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	4.58	3	5	6
N	LOI450	Loss on Ignition (%)	6.1			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0743	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	176	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<14.23	100		
U	PHSOIL	pH (pH units)	8.4		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	1.31		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	8	8	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	1440	267					
U	ICPMSW	Arsenic	0.003	0.003	0.006	0.03	0.5	2	25
U	ICPWATVAR	Barium	0.02	0.02	0.04	0.2	20	100	300
U	ICPMSW	Cadmium	<0.00002	0.00003	<0.00004	<0.0003	0.04	1	5
U	ICPMSW	Chromium	0.039	0.008	0.078	0.12	0.5	10	70
U	ICPMSW	Copper	0.009	0.006	0.018	0.06	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.034	0.005	0.068	0.09	0.5	10	30
U	ICPMSW	Nickel	0.002	0.001	0.004	0.01	0.4	10	40
U	ICPMSW	Lead	0.002	0.004	0.004	0.04	0.5	10	50
U	ICPMSW	Antimony	0.004	0.001	0.008	0.01	0.06	0.7	5
U	ICPMSW	Selenium	0.002	<0.001	0.004	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	<0.002	0.005	<0.004	<0.05	4	50	200
U	KONENS	Chloride	285	26	570	605	800	15000	25000
U	ISEF	Fluoride	0.9	0.7	1.8	7	10	150	500
U	ICPWATVAR	Sulphate as SO4	125	19	250	331	1000	20000	50000
N	WSLM27	Total Dissolved Solids	1120	208	2240	3296	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	27	13	54	149	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

Tests where the accreditation is set to U are UKAS accredited, those where the accreditation is set to N are not UKAS accredited

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.259
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	12.3
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.416
					Fraction of sample above 4 mm %	0.000
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP17 ES 10 1.00		s20_3021M	CL/1976250	06-Nov-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	0.4	3	5	6
N	LOI450	Loss on Ignition (%)	1.5			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0684	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	24.4	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<1.55	100		
U	PHSOIL	pH (pH units)	8		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	0.56		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	7	7	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	882	107					
U	ICPMSW	Arsenic	<0.001	<0.001	<0.002	<0.01	0.5	2	25
U	ICPWATVAR	Barium	0.02	0.02	0.04	0.2	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	0.002	0.001	0.004	0.01	0.5	10	70
U	ICPMSW	Copper	0.003	0.004	0.006	0.04	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.002	<0.001	0.004	<0.01	0.5	10	30
U	ICPMSW	Nickel	<0.001	<0.001	<0.002	<0.01	0.4	10	40
U	ICPMSW	Lead	0.006	0.006	0.012	0.06	0.5	10	50
U	ICPMSW	Antimony	<0.001	<0.001	<0.002	<0.01	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.006	0.009	0.012	0.09	4	50	200
U	KONENS	Chloride	230	22	460	497	800	15000	25000
U	ISEF	Fluoride	0.3	0.3	0.6	3	10	150	500
U	ICPWATVAR	Sulphate as SO4	13	<3	26	<43	1000	20000	50000
N	WSLM27	Total Dissolved Solids	688	83.3	1376	1639	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	7.5	4.3	15	47	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

Tests where the accreditation is set to U are UKAS accredited, those where the accreditation is set to N are not UKAS accredited

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

IOM

working for a healthy and sustainable world

CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY: SOCOTEC UK Ltd
Environmental Chemistry
PO Box 100
Burton upon Trent
Staffordshire
DE15 0XD

CONTRACT NO: S08996-3

DATE OF ISSUE: 05.11.19

DATE SAMPLES RECEIVED: 29.10.19

DATE SAMPLES ANALYSED: 04.11.19

DESCRIPTION: Four soil/loose aggregate samples each weighing approximately 0.2kg.

ANALYSIS REQUESTED: Qualitative and quantitative analysis of soil/loose aggregate samples for mass determination of asbestos.

METHODS:

Qualitative - The samples were analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative - The analysis was carried out using our documented in-house method based on HSE Contract Research Report No. 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies *et al*, 1996) and HSG 248. Our method includes initial examination of the entire sample, detailed analysis of a representative sub-sample and quantification by hand picking/weighing and/or fibre counting/sizing as appropriate.

RESULTS:

Initial Screening

No asbestos was detected in any of the soil samples by stereo-binocular and polarised light microscopy.

A summary of the results is given in Table 1.

www.iom-world.org

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Tel: 0131 449 8000 Fax: 0131 449 8084 Email: iom@iom-world.org

IOM CONSULTING LIMITED, registered in Scotland No. SC205670

UKAS TESTING
0374

CONTRACT NO: S08996-3
DATE OF ISSUE: 05.11.19

RESULTS: (cont.)

Table 1: Qualitative Results

SOCOTEC Job I.D: S203021

IOM sample number	Client sample number	ACM type detected	PLM result
S67886	S1976247 TP05A 0.20	-	No Asbestos Detected
S67887	S1976248 TP05A 0.50	-	No Asbestos Detected
S67888	S1976249 TP17 0.50	-	No Asbestos Detected
S67889	S1976250 TP17 1.00	-	No Asbestos Detected

Our detection limit for this method is 0.001%.

COMMENTS:

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are outwith the scope of our UKAS accreditation.

AUTHORISED BY: .....
D Third
Scientific Technician

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Deeside
Site F9049-19 Wrexham - Wynnstay Avenue, Deva Way
Report No S203021M

Consignment No S88890
Date Logged 25-Oct-2019
In-House Report Due 05-Nov-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Sampled	MethodID	ANC	BTEXHSA		CEN Leac/mate		GROHSA	ICPMSS								ICPWSS	KONECR	LOI(%MM)	MCertS	PAHMSUS	PCBECD	PHSOIL	SFAPI		Sub020
				Acid Neut. Capacity	BTEX-HSA + MTBE analysis	MTBE (µg/kg)	CEN Leac(P)1	CEN Leac(P)2	GRO (AA-UK) HSA-GCFID	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Mercury (MS)	Nickel (MS)	Selenium (MS)	Zinc (MS)	SO4-- (H2O sol) mg/l	Chromium vi:	L.O.I. % @ 450C	MCertS Analysis	PAH (17) by GCMS	PCB-7 Congeners Analysis	pH units (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID and Quant (1 & 2)
					✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓
CL/1976247	TP05A 0.20	14/10/19			E	E			E															E	E	E	
CL/1976248	TP05A 0.50	14/10/19			E	E			E															E	E	E	
CL/1976249	TP17 0.50	14/10/19			E	E			E															E	E	E	
CL/1976250	TP17 1.00	14/10/19			E	E			E															E	E	E	

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key

A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key

	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.
The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Analytical and Deviating Sample Overview

Customer **SOCOTEC UK Deeside** Consignment No S88890
Site **F9049-19 Wrexham - Wynnstay Avenue, Deva Way** Date Logged 25-Oct-2019
Report No **S203021M** In-House Report Due 05-Nov-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	TMSS	TPHFIDUS		TPHUSSI	VOCHSAS	WSLM59
		Sampled	Tot.Moisture @ 105C	TPH Band (>C10-C40)	TPH by GCFID (AR)	TPH by GCFID (Si-UKCWG)>44	BTEX-HSA GCMS analysis	Total Organic Carbon
			✓	✓	✓	✓	✓	✓
CL/1976247	TP05A 0.20	14/10/19					E	
CL/1976248	TP05A 0.50	14/10/19					E	
CL/1976249	TP17 0.50	14/10/19					E	
CL/1976250	TP17 1.00	14/10/19					E	

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Report Number : EFS/203021

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
VOCHSAS	CL1976247	Due to matrix interference, the Surrogate (Dibromofluoromethane) recovery for this Test is below the required QMS specification. This has been confirmed by testing the pH of the sample which was above pH7.0. Surrogate is known to degrade in alkaline samples. All other Laboratory Process Controls meet the requirements of the QMS unless otherwise stated. These circumstances should be taken into consideration when utilising the data
BTEXHSA	CL1976247 TO CL1976250	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (M/P Xylenes) . These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	ANC	Oven Dried @ < 35°C	Quantitative digestion with Hydrochloric Acid back titration with 1M Sodium Hydroxide to pH 7
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes (BTEX) by Headspace GCFID
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace GCFID
Soil	ICPMSS	Oven Dried @ < 35°C	Determination of Metals in Marine Sediments and Soil samples by aqua regia digestion followed by ICPMS detection
Soil	ICPWSS	Oven Dried @ < 35°C	Determination of Water Soluble Sulphate in soil samples by water extraction followed by ICPOES detection
Soil	KONECR	Oven Dried @ < 35°C	Determination of Chromium vi in soil samples by water extraction followed by colorimetric detection
Soil	LOI(%MM)	Oven Dried @ < 35°C	Determination of loss on ignition for soil samples at specified temperature by gravimetry
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by hexane/acetone extraction followed by GCMS detection
Soil	PCBECD	As Received	Determination of Polychlorinated Biphenyl (PCB) congeners/aroclors by hexane/acetone extraction followed by GCECD detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-contractor.
Soil	TMSS	As Received	Determination of the Total Moisture content at 105ºC by loss on oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHFIDUS	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection.
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection including quantitation of Aromatic and Aliphatic fractions.
Soil	VOCHSAS	As Received	Determination of Volatile Organic Compounds (VOC) by Headspace GCMS
Soil	WSLM59	Oven Dried @ < 35°C	Determination of Organic Carbon in soil using sulphurous Acid digestion followed by high temperature combustion and IR detection
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	ISEF	As Received	Determination of Fluoride in water samples by Ion Selective Electrode (ISE)
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM2	As Received	Determination of the Electrical Conductivity (µS/cm) by electrical conductivity probe.
Water	WSLM27	As Received	Gravimetric Determination
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Deeside

Site : F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Report Number : S20_3021

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1976247	TP05A ES 4 0.20	Brown Gravel SILT
CL/1976248	TP05A ES 7 0.50	Brown Gravel CLAY
CL/1976249	TP17 ES 7 0.50	Brown Gravel SILT
CL/1976250	TP17 ES 10 1.00	Brown Clay SAND

TEST REPORT

1252

Report No. EFS/203022M (Ver. 1)

SOCOTEC UK Deeside
Unit 18
Drome Road
Deeside Industrial Park
Deeside
Flintshire
CH5 2NY

Site: F9049-19 Wrexham - Wynnstay Avenue, Deva Way

The 3 samples described in this report were registered for analysis by SOCOTEC UK Limited on 25-Oct-2019. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 06-Nov-2019

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS or MCERTS accredited. Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by SOCOTEC UK Limited.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 7)
Table of WAC Analysis Results (Pages 8 to 9)
Subcontracted Analysis Reports (Pages 10 to 11)
The accreditation status of subcontracted analysis is displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Pages 12 to 13)
Table of Additional Report Notes (Page 14)
Table of Method Descriptions (Pages 15 to 16)
Table of Report Notes (Page 17)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim

Becky Batham Operations Manager
Energy & Waste Services

Date of Issue: 06-Nov-2019

Accreditation Codes: **N** (Not Accredited), **U** (UKAS), **UM** (UKAS & MCERTS)
Tests marked '^' have been subcontracted to another laboratory.
(NVM) - denotes the sample matrix is dissimilar to matrices upon which the MCERTS validation was based, and is therefore not accredited for MCERTS.
All results are reported on a dry weight basis at 105^{o}C unless otherwise stated. (except QC samples)
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

			Units :	Mol/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			Method Codes :	ANC	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA
			Method Reporting Limits :	0.04	10	10	20	20	10	10	30	0.2	0.2	0.2	0.2	0.2	0.2	0.01	0.2	0.2
			Accreditation Code:	N	UM	UM	UM	U	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	Client Sample Description	Sample Date		Acid Neut. Capacity	Benzene	Ethyl Benzene	m/p Xylenes	MTBE	o Xylene	Toluene	Xylenes	GRO	GRO (>C5 - C6)	GRO (>C7 - C8)	GRO (>C8 - C10)	GRO (C5-C6 Aliphatic)	GRO (C5-C7 Aromatic)	GRO (C6-C7)	GRO (C6-C8 Aliphatic)
1976251	TP10A ES 4 0.50	22-Oct-19		0.36	<11.7	<11.7	<23.3*	<23.3	<11.7	<11.7	<35.0*	<0.233	<0.233	<0.233	<0.233	<0.233	<0.012	<0.233	<0.233
1976252	TP10B ES 10 0.30	22-Oct-19																	
1976253	TP10B ES 13 0.50	22-Oct-19		1.01	<14	<14	<28	<28	<14	<14	<42	<0.3	<0.3	<0.3	<0.3	<0.3	<0.01	<0.3	<0.3

SOCOTEC

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Client Name	SOCOTEC UK Deeside
Contact	Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	06-Nov-2019
Report Number	EFS/203022M
Table Number	1

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg
Method Codes :			GROHSA	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPWSS	KONECR	LOI(%MM)	PAHMSUS	PAHMSUS	PAHMSUS
Method Reporting Limits :			0.01	0.3	0.2	1.2	1.6	0.7	0.5	2	0.5	16	10	0.1	0.2	0.08	0.08	0.08
Accreditation Code:			UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	N	N	UM	U	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**GRO (C7-C8 Aromatic)**	**Arsenic (MS)**	**Cadmium (MS)**	**Chromium (MS)**	**Copper (MS)**	**Lead (MS)**	**Mercury (MS)**	**Nickel (MS)**	**Selenium (MS)**	**Zinc (MS)**	**SO4-- (H2O sol) mg/l**	**Chromium vi:**	**L.O.I. % @ 450C**	**Acenaphthene**	**Acenaphthylene**	**Anthracene**
1976251	TP10A ES 4 0.50	22-Oct-19	<0.012	6.3	<0.20	9	23.6	80	<0.50	10.2	0.6	53.9	20	<0.1	3.5	<0.09	<0.09	<0.09
1976252	TP10B ES 10 0.30	22-Oct-19		7	0.45	20	40.8	117.3	<0.49	13.0	<0.5	306.5	31	<0.1				
1976253	TP10B ES 13 0.50	22-Oct-19	<0.01	12.6	0.5	15.4	52	827.0	<0.49	16.8	1.2	115	49	<0.1	9.4	<0.11	<0.11	<0.11

SOCOTEC

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Client Name SOCOTEC UK Deeside

Contact Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/203022M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg
Method Codes :			PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PCBECD
Method Reporting Limits :			0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	1.28	5
Accreditation Code:			UM	UM	UM	UM	UM	UM	N	UM	UM	UM	UM	UM	UM	UM	U	UM
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(ghi)perylene**	**Benzo(k)fluoranthene**	**Chrysene**	**Coronene**	**Dibenzo(ah)anthracene**	**Fluoranthene**	**Fluorene**	**Indeno(123-cd)pyrene**	**Naphthalene**	**Phenanthrene**	**Pyrene**	**Total PAH (Sum of USEPA 16)**	**PCB 101**
1976251	TP10A ES 4 0.50	22-Oct-19	0.22	0.28	0.36	0.20	0.15	0.26	<0.09	<0.09	0.41	<0.09	0.29	<0.09	0.09	0.38	<3.19	<5.83
1976252	TP10B ES 10 0.30	22-Oct-19																
1976253	TP10B ES 13 0.50	22-Oct-19	0.11	0.14	0.20	0.13	<0.11	0.13	<0.11	<0.11	0.17	<0.11	0.17	<0.11	<0.11	0.15	<2.12	<6.97

SOCOTEC

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Contact Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**06-Nov-2019**
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Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	pH Units	mg/kg	mg/kg	%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PHSOIL	SFAPI	SFAPI	Sub020	TMSS	TPHFIDUS	TPHFIDUS	TPHUSSI	TPHUSSI	TPHUSSI
Method Reporting Limits :			5	5	5	5	5	5		0.5	0.5	0.1	0.1	10	10	4	4	4
Accreditation Code:			UM	UM	UM	UM	UM	UM	UM	UM	U	U	U	U	UM	U	U	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**PCB 118**	**PCB 138**	**PCB 153**	**PCB 180**	**PCB 28**	**PCB 52**	**pH units (AR)**	**Cyanide(Total) (AR)**	**Phenol Index.(AR)**	**^Asbestos ID and Quant (1 & 2)**	**Tot.Moisture @ 105C**	**TPH Band (>C10-C40)**	**TPH by GCFID (AR)**	**TPH Ali Band >C10-C12**	**TPH Ali Band >C12-C16**	**TPH Ali Band >C16-C21**
1976251	TP10A ES 4 0.50	22-Oct-19	<5.83	<5.83	<5.83	<5.83	<5.83	<5.83	7.5	<0.6	<0.6	NADIS	14.2	60.7	60.7	<4.66	<4.66	<4.66
1976252	TP10B ES 10 0.30	22-Oct-19							6.9	<0.6	<0.6	NADIS	16.7					
1976253	TP10B ES 13 0.50	22-Oct-19	<6.97	<6.97	<6.97	<6.97	<6.97	<6.97	7.1	<0.7	<0.7	NADIS	28.3	100.7	100.8	<5.58	<5.58	<5.58

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Client Name	**SOCOTEC UK Deeside**
Contact	Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/203022M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		Method Codes :	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI
		Method Reporting Limits :	11.88	8.75	5.62	4	4	20	20	4	4	4	8.75	5.62	4	4	20	20
		Accreditation Code:	U	U	N	N	U	U	N	U	U	U	U	N	N	U	U	N
LAB ID Number CL/	Client Sample Description	Sample Date	TPH Ali Band >C16-C35	TPH Ali Band >C21-C35	TPH Ali Band >C35-C44	TPH Ali Band >C40-C44	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Ali Band >C8-C44	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C35-C44	TPH Aro Band >C40-C44	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	TPH Aro Band >C8-C44
1976251	TP10A ES 4 0.50	22-Oct-19	<13.9	13.1	<6.55	<4.66	<4.66	<23.3	<23.3	<4.66	<4.66	12.5	28.9	<6.55	<4.66	<4.66	53.7	55.8
1976252	TP10B ES 10 0.30	22-Oct-19																
1976253	TP10B ES 13 0.50	22-Oct-19	34.6	33.9	<7.84	<5.58	<5.58	40.2	40	<5.58	6.07	16.3	28.7	<7.84	<5.58	6.25	63.3	66.1

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Contact	Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**06-Nov-2019**
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Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			µg/kg	ug/kg	µg/kg	µg/kg	µg/kg	µg/kg	% M/M										
Method Codes :			VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	WSLM59										
Method Reporting Limits :			1	1	4	2	5	6	0.02										
Accreditation Code:			UM	UM	UM	UM	UM	UM	N										
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Benzene**	**Ethyl Benzene**	**m/p Xylenes**	**o Xylene**	**Toluene**	**Xylenes**	**Total Organic Carbon**										
1976251	TP10A ES 4 0.50	**22-Oct-19**	<1	<2	<5	<2	<6	<7	2.33										
1976252	TP10B ES 10 0.30	**22-Oct-19**																	
1976253	TP10B ES 13 0.50	**22-Oct-19**	<1	<3	<6	<3	<7	<8	6.0										

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Client Name	**SOCOTEC UK Deeside**
Contact	Aoife Greene

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**06-Nov-2019**
Report Number	**EFS/203022M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.227
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	14.2
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.448
					Fraction of sample above 4 mm %	0.000
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP10A ES 4 0.50		S20_3022M	CL/1976251	06-Nov-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	2.33	3	5	6
N	LOI450	Loss on Ignition (%)	3.5			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0701	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.042	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	60.7	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<3.29	100		
U	PHSOIL	pH (pH units)	7.5		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	0.36		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1 mg/kg (dry weight)		
			mg/l except ºº		mg/kg (dry weight)				
U	WSLM3	pH (pH units) ºº	8.3	7	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	<100	<100					
U	ICPMSW	Arsenic	<0.001	<0.001	<0.002	<0.01	0.5	2	25
U	ICPWATVAR	Barium	0.01	<0.01	0.02	<0.1	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.006	0.004	0.012	0.04	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.004	0.001	0.008	0.01	0.5	10	30
U	ICPMSW	Nickel	<0.001	<0.001	<0.002	<0.01	0.4	10	40
U	ICPMSW	Lead	0.003	0.004	0.006	0.04	0.5	10	50
U	ICPMSW	Antimony	<0.001	<0.001	<0.002	<0.01	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.002	0.006	0.004	0.05	4	50	200
U	KONENS	Chloride	2	<1	4	<11	800	15000	25000
U	ISEF	Fluoride	0.7	0.5	1.4	5	10	150	500
U	ICPWATVAR	Sulphate as SO4	<3	<3	<6	<30	1000	20000	50000
N	WSLM27	Total Dissolved Solids	68	<60	136	<611	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	5.3	2.2	10.6	26	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

Tests where the accreditation is set to U are UKAS accredited, those where the accreditation is set to N are not UKAS accredited

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.227
Contact	Aoife Greene				Moisture content @ 105°C (% of Wet Weight)	28.3
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.448
					Fraction of sample above 4 mm %	0.000
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP10B ES 13 0.50		S20_3022M	CL/1976253	06-Nov-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
U	WSLM59	Total Organic Carbon (% M/M)	6	3	5	6
N	LOI450	Loss on Ignition (%)	9.4			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.084	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.049	1		
U	TPHFIDUS	Mineral Oil (mg/kg)	100.7	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<2.2	100		
U	PHSOIL	pH (pH units)	7.1		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	1.01		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1		
			mg/l except ºº		mg/kg (dry weight)		mg/kg (dry weight)		
U	WSLM3	pH (pH units) ºº	7.5	7	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	<100	<100					
U	ICPMSW	Arsenic	0.003	<0.001	0.006	<0.01	0.5	2	25
U	ICPWATVAR	Barium	0.07	0.02	0.14	0.3	20	100	300
U	ICPMSW	Cadmium	0.00014	<0.00002	0.00028	<0.0004	0.04	1	5
U	ICPMSW	Chromium	0.001	<0.001	0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.019	0.006	0.038	0.08	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.003	0.001	0.006	0.01	0.5	10	30
U	ICPMSW	Nickel	0.002	<0.001	0.004	<0.01	0.4	10	40
U	ICPMSW	Lead	0.051	0.002	0.102	0.09	0.5	10	50
U	ICPMSW	Antimony	0.002	0.001	0.004	0.01	0.06	0.7	5
U	ICPMSW	Selenium	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.013	0.002	0.026	0.03	4	50	200
U	KONENS	Chloride	3	<1	6	<13	800	15000	25000
U	ISEF	Fluoride	0.6	0.6	1.2	6	10	150	500
U	ICPWATVAR	Sulphate as SO4	6	<3	12	<34	1000	20000	50000
N	WSLM27	Total Dissolved Solids	<60	<60	<120	<600	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	11	3.6	22	46	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

Tests where the accreditation is set to U are UKAS accredited, those where the accreditation is set to N are not UKAS accredited

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Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

IOM

working for a healthy and sustainable world

CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY: SOCOTEC UK Ltd
Environmental Chemistry
PO Box 100
Burton upon Trent
Staffordshire
DE15 0XD

CONTRACT NO: S08996-4

DATE OF ISSUE: 05.11.19

DATE SAMPLES RECEIVED: 29.10.19

DATE SAMPLES ANALYSED: 04.11.19

DESCRIPTION: Three soil/loose aggregate samples each weighing approximately 0.6-1.0kg.

ANALYSIS REQUESTED: Qualitative and quantitative analysis of soil/loose aggregate samples for mass determination of asbestos.

METHODS:

Qualitative - The samples were analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative - The analysis was carried out using our documented in-house method based on HSE Contract Research Report No. 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies *et al*, 1996) and HSG 248. Our method includes initial examination of the entire sample, detailed analysis of a representative sub-sample and quantification by hand picking/weighing and/or fibre counting/sizing as appropriate.

RESULTS:

Initial Screening

No asbestos was detected in any of the soil samples by stereo-binocular and polarised light microscopy.

A summary of the results is given in Table 1.

www.iom-world.org

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IOM CONSULTING LIMITED, registered in Scotland No. SC205670

UKAS TESTING
0374

CONTRACT NO: S08996-4
DATE OF ISSUE: 05.11.19

RESULTS: (cont.)

Table 1: Qualitative Results

SOCOTEC Job I.D: S203022

IOM sample number	Client sample number	ACM type detected	PLM result
S67890	S1976251 TP10A 0.50	-	No Asbestos Detected
S67891	S1976252 TP10B 0.30	-	No Asbestos Detected
S67892	S1976253 TP10B 0.50	-	No Asbestos Detected

Our detection limit for this method is 0.001%.

COMMENTS:

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are outwith the scope of our UKAS accreditation.

AUTHORISED BY: .....
D Third
Scientific Technician

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Deeside
Site F9049-19 Wrexham - Wynnstay Avenue, Deva Way
Report No S203022M

Consignment No S89083
Date Logged 25-Oct-2019
In-House Report Due 05-Nov-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Sampled	Acid Neut. Capacity	BTEX-HSA + MTBE analysis	MTBE (µg/kg)	CEN Leac(P)1	CEN Leac(P)2	REPORT A	GRO (AA-UK) HSA-GCFID	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Mercury (MS)	Nickel (MS)	Selenium (MS)	Zinc (MS)	SO4-- (H2O sol) mg/l	Chromium vi:	L.O.I. % @ 450C	MCertS Analysis	PAH (17) by GCMS	PCB-7 Congeners Analysis	pH units (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)
MethodID			ANC	BTEXHSA		CEN Leac(P)1		CustServ	GROHSA	ICPMSS									ICPWSS	KONECR	LOI(%MM)	MCertS	PAHMSUS	PCBECD	PHSOIL	SFAPI	
				✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
CL/1976251	TP10A 0.50	22/10/19																									
CL/1976252	TP10B 0.30	22/10/19																									
CL/1976253	TP10B 0.50	22/10/19																									

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.
The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Analytical and Deviating Sample Overview

Customer **SOCOTEC UK Deeside** Consignment No S89083
Site **F9049-19 Wrexham - Wynnstay Avenue, Deva Way** Date Logged 25-Oct-2019
Report No **S203022M** In-House Report Due 05-Nov-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	Sub020	TMSS	TPHFIDUS		TPHUSSI	VOCHSAS	WSLM59
		Sampled	^Asbestos ID and Quant (1 & 2)	Tot.Moisture @ 105C	TPH Band (>C10-C40)	TPH by GCFID (AR)	TPH by GCFID (Si-UKCWG)>44	BTEX-HSA GCMS analysis	Total Organic Carbon
			✓	✓	✓	✓	✓	✓	✓
CL/1976251	TP10A 0.50	22/10/19							
CL/1976252	TP10B 0.30	22/10/19							
CL/1976253	TP10B 0.50	22/10/19							

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
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E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Report Number : EFS/203022

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
BTEXHSA	CL1976251 CL1976253	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (M/P Xylenes) . These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	ANC	Oven Dried @ < 35°C	Quantitative digestion with Hydrochloric Acid back titration with 1M Sodium Hydroxide to pH 7
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes (BTEX) by Headspace GCFID
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace GCFID
Soil	ICPMSS	Oven Dried @ < 35°C	Determination of Metals in Marine Sediments and Soil samples by aqua regia digestion followed by ICPMS detection
Soil	ICPWSS	Oven Dried @ < 35°C	Determination of Water Soluble Sulphate in soil samples by water extraction followed by ICPOES detection
Soil	KONECR	Oven Dried @ < 35°C	Determination of Chromium vi in soil samples by water extraction followed by colorimetric detection
Soil	LOI(%MM)	Oven Dried @ < 35°C	Determination of loss on ignition for soil samples at specified temperature by gravimetry
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by hexane/acetone extraction followed by GCMS detection
Soil	PCBECD	As Received	Determination of Polychlorinated Biphenyl (PCB) congeners/aroclors by hexane/acetone extraction followed by GCECD detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-contractor.
Soil	TMSS	As Received	Determination of the Total Moisture content at 105ºC by loss on oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHFIDUS	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection.
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection including quantitation of Aromatic and Aliphatic fractions.
Soil	VOCHSAS	As Received	Determination of Volatile Organic Compounds (VOC) by Headspace GCMS
Soil	WSLM59	Oven Dried @ < 35°C	Determination of Organic Carbon in soil using sulphurous Acid digestion followed by high temperature combustion and IR detection
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	ISEF	As Received	Determination of Fluoride in water samples by Ion Selective Electrode (ISE)
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM2	As Received	Determination of the Electrical Conductivity (µS/cm) by electrical conductivity probe.
Water	WSLM27	As Received	Gravimetric Determination
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Deeside

Site : F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Report Number : S20_3022

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1976251	TP10A ES 4 0.50	Brown Clay SILT Gravel
CL/1976252	TP10B ES 10 0.30	Brown Clay SILT Gravel
CL/1976253	TP10B ES 13 0.50	Brown Clay SILT Gravel

TEST REPORT

Report No. EFS/203072M (Ver. 1)

SOCOTEC UK Deeside
Unit 18
Drome Road
Deeside Industrial Park
Deeside
Flintshire
CH5 2NY

Site: F9049-19 Wrexham - Wynnstay Avenue, Deva Way

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 26-Oct-2019. This report supersedes any versions previously issued by the laboratory.
The analysis was completed by: 14-Nov-2019

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS or MCERTS accredited.
Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by SOCOTEC UK Limited.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Table of SVOC (Tics) Results (Page 7)
Subcontracted Analysis Reports (Pages 8 to 10)
The accreditation status of subcontracted analysis is displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Page 11)
Table of Additional Report Notes (Page 12)
Table of Method Descriptions (Page 13)
Table of Report Notes (Page 14)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham Operations Manager
Energy & Waste Services

Date of Issue: 14-Nov-2019

Accreditation Codes: **N** (Not Accredited), **U** (UKAS), **UM** (UKAS & MCERTS)
Tests marked '^' have been subcontracted to another laboratory.
(NVM) - denotes the sample matrix is dissimilar to matrices upon which the MCERTS validation was based, and is therefore not accredited for MCERTS.
All results are reported on a dry weight basis at 105^{o}C unless otherwise stated. (except QC samples)
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Units :			%			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			DCMEXT	Sub024	Sub024	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
Method Reporting Limits :			0.05			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.2	0.5	0.1
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**DCM Extractable Material %**	**^Coal Tar Interpretation (Black Top)**	**^SVOC scan including bio markers (Forensic)**	**1,2,4-Trichlorobenzene**	**1,2-Dichlorobenzene**	**1,3-Dichlorobenzene**	**1,4-Dichlorobenzene**	**1-Methylnaphthalene**	**2,4,5-Trichlorophenol**	**2,4,6-Trichlorophenol**	**2,4-Dichlorophenol**	**2,4-Dimethylphenol**	**2,4-Dinitrophenol**	**2,4-Dinitrotoluene**	**2,6-Dinitrotoluene**	**2-Chloronaphthalene**
1976439	TP05A ES 1 0.10 (NVM)	**14-Oct-19**	3.76	Req	Req	<5.19	<5.19	<5.19	<5.19	<5.19	<5.19	<5.19	<5.19	<5.19	<26.0	<10.4	<26.0	<5.19

SOCOTEC

Bretby Business Park, Ashby Road

Burton-on-Trent, Staffordshire, DE15 0YZ

Tel +44 (0) 1283 554400

Fax +44 (0) 1283 554422

Client Name	**SOCOTEC UK Deeside**
Contact	Rebecca Fryer

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**14-Nov-2019**
Report Number	**EFS/203072M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
Method Reporting Limits :			0.1	0.1	0.1	0.5	0.1	0.1	14.5	0.2	0.1	0.1	0.5	0.5	0.1	0.6	0.5	0.1
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**2-Chlorophenol**	**2-Methylnaphthalene**	**2-Methylphenol**	**2-Nitroaniline**	**2-Nitrophenol**	**3- & 4-Methylphenol**	**3-Nitroaniline**	**4,6-Dinitro-2-methylphenol**	**4-Bromophenyl-phenylether**	**4-Chloro-3-methylphenol**	**4-Chloroaniline**	**4-Chlorophenol**	**4-Chlorophenyl-phenylether**	**4-Nitroaniline**	**4-Nitrophenol**	**Acenaphthene**
1976439	TP05A ES 1 0.10 (NVM)	14-Oct-19	<5.19	<5.19	<5.19	<26.0*	<5.19*	<5.19	<753	<10.4	<5.19	<5.19	<26.0	<26.0	<5.19	<31.2	<26.0	<5.19

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Client Name SOCOTEC UK Deeside

Contact Rebecca Fryer

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**14-Nov-2019**
Report Number	**EFS/203072M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
Method Reporting Limits :			0.1	0.1	0.2	0.2	0.2	0.5	0.2	0.5	0.5	0.1	0.1	0.1	0.5	0.2	0.2	0.1	
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Acenaphthylene**	**Anthracene**	**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(ghi)perylene**	**Benzo(k)fluoranthene**	**Benzoic Acid**	**Benzyl alcohol**	**Biphenyl**	**bis(2-Chloroethoxy)methane**	**bis(2-Chloroethyl)ether**	**bis(2-Chloroisopropyl)ether**	**bis(2-Ethylhexyl)phthalate**	**Butylbenzylphthalate**	**Chrysene**	
1976439	TP05A ES 1 0.10 (NVM)	**14-Oct-19**	<5.19	<5.19	<10.4	<10.4	<10.4	<26.0	<10.4	<26.0	<26.0	<5.19	<5.19	<5.19	<26.0	<10.4	<10.4	<5.19	

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Client Name	**SOCOTEC UK Deeside**
Contact	Rebecca Fryer

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**14-Nov-2019**
Report Number	**EFS/203072M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
Method Reporting Limits :			0.3	0.5	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.5	0.1
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Coronene**	**Dibenzo(ah)anthracene**	**Dibenzofuran**	**Diethylphthalate**	**Dimethylphthalate**	**Di-n-butylphthalate**	**Di-n-octylphthalate**	**Diphenyl Ether**	**Fluoranthene**	**Fluorene**	**Hexachlorobenzene**	**Hexachlorobutadiene**	**Hexachlorocyclopentadiene**	**Hexachloroethane**	**Indeno(123-cd)pyrene**	**Isophorone**
1976439	TP05A ES 1 0.10 (NVM)	**14-Oct-19**	<15.6	<26.0	<5.19	<5.19	<5.19	<5.19	<10.4	<5.19	<10.4	<10.4	<5.19	<5.19	<5.19	<5.19	<26.0	<5.19

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Client Name	**SOCOTEC UK Deeside**
Contact	Rebecca Fryer

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**14-Nov-2019**
Report Number	**EFS/203072M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%						
Method Codes :			SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	TMSS						
Method Reporting Limits :			0.1	0.5	0.9	0.1	0.5	0.1	0.1	0.2		0.1						
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Naphthalene**	**Nitrobenzene**	**N-Nitroso-di-n-propylamine**	**N-Nitrosodiphenylamine**	**Pentachlorophenol**	**Phenanthrene**	**Phenol**	**Pyrene**	**SVOC + TICs (AR)**	**Tot.Moisture @ 105C**						
1976439	TP05A ES 1 0.10 (NVM)	**14-Oct-19**	<5.19	<26.0	<46.7	<5.19	<26.0	<5.19	<5.19	<10.4	Req	3.7						

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Client Name	**SOCOTEC UK Deeside**
Contact	Rebecca Fryer

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**14-Nov-2019**
Report Number	**EFS/203072M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

SVOC (TICs)

Accredited?:No

Customer and Site Details:	SOCOTEC UK Deeside: F9049-19 Wrexham - Wynnstay Avenue, Deva Way		
Sample Details:	TP05A ES 1 0.10 (NVM)	**Job Number:**	S20_3072
LIMS ID Number:	CL1976439		
		Multiplier:	0.2
Date Booked in:	26-Oct-19	**Dilution Factor:**	1
Date Extracted:	30-Oct-19	**GPC (Y/N):**	N
Date Analysed:	30-Oct-19	**Matrix:**	Soil
QC Batch Number:	0	**Method:**	Ultrasonic
Directory/Quant File:	103019.GC11\ 0	**Operator:**	RP

Tentatively Identified Compounds	CAS #	R.T.	Concentration mg/kg	% Fit	Accr. code
None detected	-	-	<1.6	-	N

The compounds listed above have been tentatively identified by a computer based library search.
Compounds identified in the sample are not reported if they also occur in the method blank.
The % fit is an indication of the reliability of the compound assignment.
Due to the similarity between mass spectra of some isomeric compounds assignments may not be correct.
Other compounds may also be present but identification was not possible.
Concentrations are semi-quantitative, assume a response factor of 1 and use the nearest internal standard.
Concentrations are reported on a dry weight basis.

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

TEST REPORT ASC/41774

Customer:	Environmental Chemistry SOCOTEC Etwall Building Bretby Business Park Ashby Road Burton Upon Trent DE15 0YZ
Testing Facility:	Specialist Chemistry SOCOTEC Etwall Building Bretby Business Park Ashby Road Burton Upon Trent DE15 0YZ
Purchase Order Number:	S203072
Date Sample Received:	30 October 2019
Condition of Sample:	Ambient and Satisfactory
Approved by:	
Approver's name:	Darren Clarke
Job Title:	Senior Analyst
Test Report Date:	13 November 2019

This test report shall not be reproduced except in full, without written approval of the laboratory

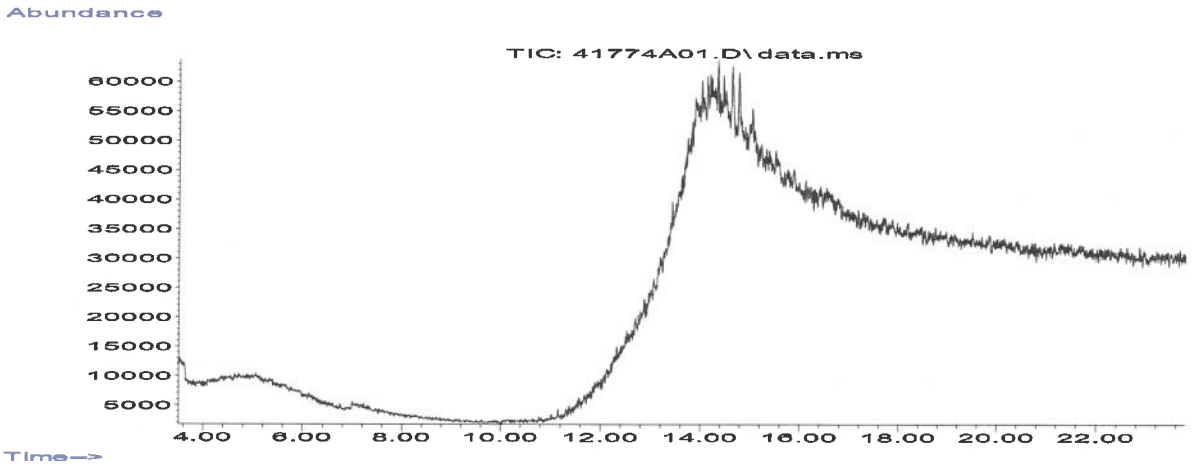
Sample and Method Descriptions

Number of Samples Received	Matrix / Sample Description	Method ID	Description
1	DCM extract	IHM	**IHM** – The DCM extract was analysed as received by split injection Gas Chromatography Mass Spectrometry (GC/MS) on a general scan to tentatively identify the semi-volatile organic compounds present. Specific compound groups were identified by mass ion monitoring.

This test report shall not be reproduced except in full, without written approval of the laboratory

Results

Customer Sample Reference: **S1976439– TP05A 0.10**
Laboratory Sample Reference: **ASC/41774.001**



Analysis of the DCM extract identified the presence of heavy boiling range hydrocarbon oil.
No evidence of diesel fuel oil or the biomarkers Dibenzothiophenes were detected.

The compounds detected are indicative of Bitumen. No Coal Tar was detected.

END OF TEST REPORT

This test report shall not be reproduced except in full, without written approval of the laboratory
ASC Report Template, V4, Jan 2019

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Deeside
Site F9049-19 Wrexham - Wynnstay Avenue, Deva Way
Report No S203072M

Consignment No S88890
Date Logged 26-Oct-2019
In-House Report Due 08-Nov-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Sampled	MethodID	CustServ	DCMEXT	MCertS	Sub024		SVOCSW	TMSS
				Report B	DCM Extractable Material %	MCertS Analysis	^SVOC scan including bio markers (Forensic)	^Coal Tar Interpretation (Black Top)	SVOC + TICs (AR)	Tot.Moisture @ 105C
						✓			✓	✓
CL/1976439	TP05A 0.10	14/10/19			E				E	

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key

A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key

	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.
The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Report Number : EFS/203072

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
SVOCSW	CL1976439	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (2-Nitrophenol) . These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	DCMEXT	Oven Dried @ < 35°C	Determination of % DCM extractable material by gravimetric analysis
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-contractor.
Soil	SVOCSW	As Received	Determination of Semi-Volatile Organic Compounds by dichloromethane/acetone extraction followed by GCMS detection
Soil	TMSS	As Received	Determination of the Total Moisture content at 105ºC by loss on oven drying gravimetric analysis (% based upon wet weight)

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l
Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Deeside

Site : F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Report Number : S20_3072

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1976439	TP05A ES 1 0.10 (NVM)	Brown Cobbles GRAVEL

TEST REPORT

Report No. EFS/203074M (Ver. 1)

SOCOTEC UK Deeside
Unit 18
Drome Road
Deeside Industrial Park
Deeside
Flintshire
CH5 2NY

Site: F9049-19 Wrexham - Wynnstay Avenue, Deva Way

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 26-Oct-2019. This report supersedes any versions previously issued by the laboratory.
The analysis was completed by: 11-Nov-2019

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS or MCERTS accredited.
Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by SOCOTEC UK Limited.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Table of SVOC (Tics) Results (Page 7)
Subcontracted Analysis Reports (Pages 8 to 10)
The accreditation status of subcontracted analysis is displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Page 11)
Table of Additional Report Notes (Page 12)
Table of Method Descriptions (Page 13)
Table of Report Notes (Page 14)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham Operations Manager
Energy & Waste Services

Date of Issue: 11-Nov-2019

Accreditation Codes: **N** (Not Accredited), **U** (UKAS), **UM** (UKAS & MCERTS)
Tests marked '^' have been subcontracted to another laboratory.
(NVM) - denotes the sample matrix is dissimilar to matrices upon which the MCERTS validation was based, and is therefore not accredited for MCERTS.
All results are reported on a dry weight basis at 105^{o}C unless otherwise stated. (except QC samples)
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Units :			%			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			DCMEXT	Sub024	Sub024	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
Method Reporting Limits :			0.05			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.2	0.5	0.1
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**DCM Extractable Material %**	**^Coal Tar Interpretation (Soil)**	**^SVOC scan including bio markers (Forensic)**	**1,2,4-Trichlorobenzene**	**1,2-Dichlorobenzene**	**1,3-Dichlorobenzene**	**1,4-Dichlorobenzene**	**1-Methylnaphthalene**	**2,4,5-Trichlorophenol**	**2,4,6-Trichlorophenol**	**2,4-Dichlorophenol**	**2,4-Dimethylphenol**	**2,4-Dinitrophenol**	**2,4-Dinitrotoluene**	**2,6-Dinitrotoluene**	**2-Chloronaphthalene**
1976449	TP07A ES 1 0.05 (NVM)	**17-Oct-19**	3.62	Req	Req	<1.033	<1.033	<1.033	<1.033	<1.033	<1.033	<1.033	<1.033	<1.033	<5.17	<2.07	<5.17	<1.033

SOCOTEC

Bretby Business Park, Ashby Road

Burton-on-Trent, Staffordshire, DE15 0YZ

Tel +44 (0) 1283 554400

Fax +44 (0) 1283 554422

Client Name	**SOCOTEC UK Deeside**
Contact	Rebecca Fryer

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**11-Nov-2019**
Report Number	**EFS/203074M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
Method Reporting Limits :			0.1	0.1	0.1	0.5	0.1	0.1	14.5	0.2	0.1	0.1	0.5	0.5	0.1	0.6	0.5	0.1
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**2-Chlorophenol**	**2-Methylnaphthalene**	**2-Methylphenol**	**2-Nitroaniline**	**2-Nitrophenol**	**3- & 4-Methylphenol**	**3-Nitroaniline**	**4,6-Dinitro-2-methylphenol**	**4-Bromophenyl-phenylether**	**4-Chloro-3-methylphenol**	**4-Chloroaniline**	**4-Chlorophenol**	**4-Chlorophenyl-phenylether**	**4-Nitroaniline**	**4-Nitrophenol**	**Acenaphthene**
1976449	TP07A ES 1 0.05 (NVM)	17-Oct-19	<1.033	<1.033	<1.033	<5.17	<1.033*	<1.033	<150	<2.07	<1.033	<1.033	<5.17	<5.17	<1.033	<6.20	<5.17	<1.033

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Contact	Rebecca Fryer

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Sample Analysis

Date Printed	**11-Nov-2019**
Report Number	**EFS/203074M**
Table Number	**1**

Where individual results are flagged see report notes for status.
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Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
Method Reporting Limits :			0.1	0.1	0.2	0.2	0.2	0.5	0.2	0.5	0.5	0.1	0.1	0.1	0.5	0.2	0.2	0.1
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Acenaphthylene**	**Anthracene**	**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(ghi)perylene**	**Benzo(k)fluoranthene**	**Benzoic Acid**	**Benzyl alcohol**	**Biphenyl**	**bis(2-Chloroethoxy)methane**	**bis(2-Chloroethyl)ether**	**bis(2-Chloroisopropyl)ether**	**bis(2-Ethylhexyl)phthalate**	**Butylbenzylphthalate**	**Chrysene**
1976449	TP07A ES 1 0.05 (NVM)	**17-Oct-19**	<1.033	2.36	7.77	9.41	12.8	<5.17*	4.27	<5.17	<5.17	<1.033	<1.033	<1.033	<5.17	<2.07	<2.07	7.98

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Client Name	**SOCOTEC UK Deeside**
Contact	Rebecca Fryer

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**11-Nov-2019**
Report Number	**EFS/203074M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW
Method Reporting Limits :			0.3	0.5	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.5	0.1
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Coronene**	**Dibenzo(ah)anthracene**	**Dibenzofuran**	**Diethylphthalate**	**Dimethylphthalate**	**Di-n-butylphthalate**	**Di-n-octylphthalate**	**Diphenyl Ether**	**Fluoranthene**	**Fluorene**	**Hexachlorobenzene**	**Hexachlorobutadiene**	**Hexachlorocyclopentadiene**	**Hexachloroethane**	**Indeno(123-cd)pyrene**	**Isophorone**
1976449	TP07A ES 1 0.05 (NVM)	17-Oct-19	<3.10	<5.17	<1.033	<1.033	<1.033	<1.033	<2.07	<1.033	18.5	<2.07	<1.033	<1.033	<1.033	<1.033*	5.39*	<1.033

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Contact	Rebecca Fryer

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**11-Nov-2019**
Report Number	**EFS/203074M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%						
Method Codes :			SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	TMSS						
Method Reporting Limits :			0.1	0.5	0.9	0.1	0.5	0.1	0.1	0.2		0.1						
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Naphthalene**	**Nitrobenzene**	**N-Nitroso-di-n-propylamine**	**N-Nitrosodiphenylamine**	**Pentachlorophenol**	**Phenanthrene**	**Phenol**	**Pyrene**	**SVOC + TICs (AR)**	**Tot.Moisture @ 105C**						
1976449	TP07A ES 1 0.05 (NVM)	**17-Oct-19**	<1.033	<5.17	<9.30	<1.033	<5.17	4.34	<1.033	18.9	Req	3.2						

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Contact	Rebecca Fryer

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**11-Nov-2019**
Report Number	**EFS/203074M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

SVOC (TICs)

Accredited?:No

Customer and Site Details:	SOCOTEC UK Deeside: F9049-19 Wrexham - Wynnstay Avenue, Deva Way		
Sample Details:	TP07A ES 1 0.05 (NVM)	**Job Number:**	S20_3074
LIMS ID Number:	CL1976449		
		Multiplier:	2
Date Booked in:	26-Oct-19	**Dilution Factor:**	10
Date Extracted:	01-Nov-19	**GPC (Y/N):**	N
Date Analysed:	06-Nov-19	**Matrix:**	Soil
QC Batch Number:	206	**Method:**	Ultrasonic
Directory/Quant File:	110419.GC11\ 0	**Operator:**	JWM

Tentatively Identified Compounds	CAS #	R.T.	Concentration mg/kg	% Fit	Accr. code
ERYTHRO-1-METHYL-1-(1'-METHYL-2'-PROPINYL)-2-OXO	051738-16-0	6.20	10.650	52	N
4H-Cyclopenta[def]phenanthrene	000203-64-5	6.46	7.728	91	N
Phenanthrene, 2,5-dimethyl-	003674-66-6	6.78	7.383	96	N
Anthracene, 2-ethyl-	052251-71-5	6.70	6.615	87	N
Phenanthrene, 1-methyl-	000832-69-9	6.39	6.494	90	N
11H-Benzo[b]fluorene	000243-17-4	7.44	6.107	93	N
28-Nor-17.alpha.(H)-hopane	053584-60-4	12.29	5.973	83	N
Fluoranthene, 2-methyl-	033543-31-6	7.71	4.751	96	N
.beta. ISO METHYL IONONE	000079-89-0	12.79	4.368	86	N
Docosane	000629-97-0	7.89	4.151	86	N
3,4,4,6-Tetramethyl-2-(p-ethoxyphenylimino)-tetrahydro-1,3-o	053004-26-5	12.94	4.077	95	N
3-Amino-4,6-dimethylthieno[2,3-b]pyridine-2-carbonitrile	052505-57-4	6.98	3.805	50	N
Pyrene, 1-methyl-	002381-21-7	7.57	3.772	92	N
Unknown peak	-	13.31	3.735	-	N

The compounds listed above have been tentatively identified by a computer based library search.
Compounds identified in the sample are not reported if they also occur in the method blank.
The % fit is an indication of the reliability of the compound assignment.
Due to the similarity between mass spectra of some isomeric compounds assignments may not be correct.
Other compounds may also be present but identification was not possible.
Concentrations are semi-quantitative, assume a response factor of 1 and use the nearest internal standard.
Concentrations are reported on a dry weight basis.

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

TEST REPORT ASC/41742

Customer:	Environmental Chemistry SOCOTEC Etwall Building Bretby Business Park Ashby Road Burton Upon Trent DE15 0YZ
Testing Facility:	Specialist Chemistry SOCOTEC Etwall Building Bretby Business Park Ashby Road Burton Upon Trent DE15 0YZ
Purchase Order Number:	S203074
Date Sample Received:	28 October 2019
Condition of Sample:	Ambient and Satisfactory
Approved by:	
Approver's name:	Darren Clarke
Job Title:	Senior Analyst
Test Report Date:	11 November 2019

This test report shall not be reproduced except in full, without written approval of the laboratory

SOCOTEC

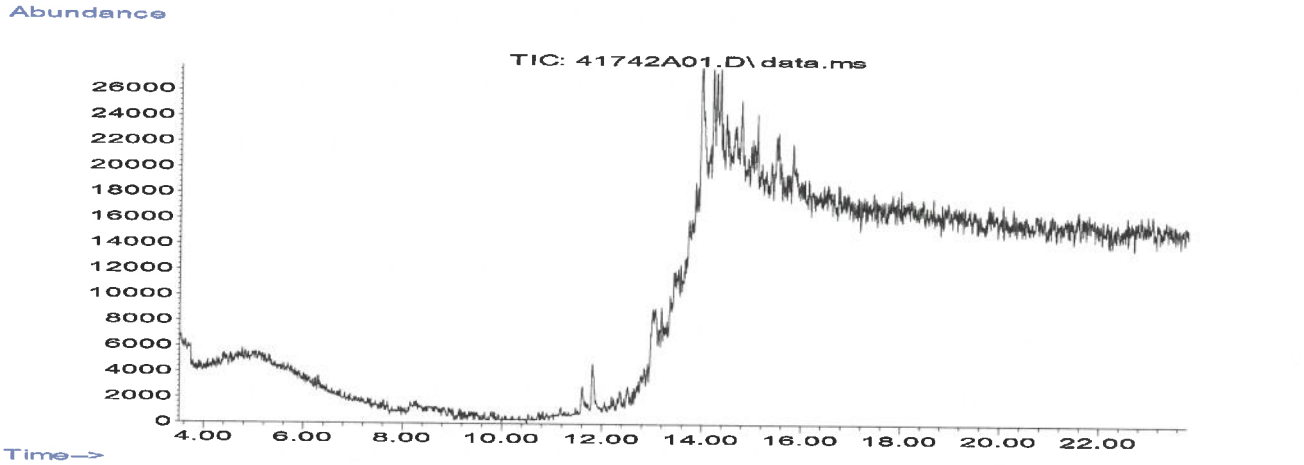
Sample and Method Descriptions

Number of Samples Received	Matrix / Sample Description	Method ID	Description
1	DCM extract	IHM	**IHM** – The DCM extract was analysed as received by split injection Gas Chromatography Mass Spectrometry (GC/MS) on a general scan to tentatively identify the semi-volatile organic compounds present. Specific compound groups were identified by mass ion monitoring.

This test report shall not be reproduced except in full, without written approval of the laboratory

Results

Customer Sample Reference: **S1976449– TP07A 0.05**
Laboratory Sample Reference: **ASC/41742.001**



Analysis of the DCM extract identified the presence of heavy boiling range hydrocarbon oil.
Trace levels of Polycyclic Aromatic Hydrocarbons (PAHs) were detected that would be associated with the oil. No evidence of diesel fuel oil or the biomarkers Dibenzothiophenes were detected.

The compounds detected are indicative of Bitumen. No Coal Tar was detected.

END OF TEST REPORT

This test report shall not be reproduced except in full, without written approval of the laboratory

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Deeside
Site F9049-19 Wrexham - Wynnstay Avenue, Deva Way
Report No S203074M

Consignment No S89045
Date Logged 26-Oct-2019
In-House Report Due 08-Nov-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Sampled	MethodID	CustServ	DCMEXT	MCertS	Sub024		SVOCSW	TMSS
				Report B	DCM Extractable Material %	MCertS Analysis	^SVOC scan including bio markers (Forensic)	^Coal Tar Interpretation (Soil)	SVOC + TICs (AR)	Tot.Moisture @ 105C
						✓			✓	✓
CL/1976449	TP07A 0.05	17/10/19			E					

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key

A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key

	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.
The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Report Number : EFS/203074

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
SVOCSW	CL1976449	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (Hexachloroethane, 2-Nitrophenol, Indeno[1,2,3-cd]pyrene, Benzo[g,h,i]perylene) . These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	DCMEXT	Oven Dried @ < 35°C	Determination of % DCM extractable material by gravimetric analysis
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-contractor.
Soil	SVOCSW	As Received	Determination of Semi-Volatile Organic Compounds by dichloromethane/acetone extraction followed by GCMS detection
Soil	TMSS	As Received	Determination of the Total Moisture content at 105ºC by loss on oven drying gravimetric analysis (% based upon wet weight)

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Deeside

Site : F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Report Number : S20_3074

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1976449	TP07A ES 1 0.05 (NVM)	Brown Gravel COBBLES Silt

TEST REPORT

1252

Report No. EFS/203099M (Ver. 1)

SOCOTEC UK Deeside
Unit 18
Drome Road
Deeside Industrial Park
Deeside
Flintshire
CH5 2NY

Site: F9049-19 Wrexham - Wynnstay Avenue, Deva Way

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 26-Oct-2019. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 07-Nov-2019

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS or MCERTS accredited. Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by SOCOTEC UK Limited.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 7)
Table of WAC Analysis Results (Page 8)
Subcontracted Analysis Reports (Pages 9 to 10)
The accreditation status of subcontracted analysis is displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Pages 11 to 12)
Table of Method Descriptions (Pages 13 to 14)
Table of Report Notes (Page 15)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham Operations Manager
Energy & Waste Services

Date of Issue: 07-Nov-2019

Accreditation Codes: **N** (Not Accredited), **U** (UKAS), **UM** (UKAS & MCERTS)
Tests marked '^' have been subcontracted to another laboratory.
(NVM) - denotes the sample matrix is dissimilar to matrices upon which the MCERTS validation was based, and is therefore not accredited for MCERTS.
All results are reported on a dry weight basis at 105^{o}C unless otherwise stated. (except QC samples)
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Units :			Mol/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			ANC	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA
Method Reporting Limits :			0.04	10	10	20	20	10	10	30	0.2	0.2	0.2	0.2	0.2	0.01	0.2	0.2
Accreditation Code:			N	UM	UM	UM	U	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Acid Neut. Capacity**	**Benzene**	**Ethyl Benzene**	**m/p Xylenes**	**MTBE**	**o Xylene**	**Toluene**	**Xylenes**	**GRO**	**GRO (>C5 - C6)**	**GRO (>C7 - C8)**	**GRO (>C8 - C10)**	**GRO (C5-C6 Aliphatic)**	**GRO (C5-C7 Aromatic)**	**GRO (C6-C7)**	**GRO (C6-C8 Aliphatic)**
1976547	TP06E ES 15 0.50 (NVM)	**16-Oct-19**	16.7	<10.74§	<10.74§	<21.48§	<21.48§	<10.74§	<10.74§	<32.22§	<0.2148§	<0.2148§	<0.2148§	<0.2148§	<0.2148§	<0.0107§	<0.2148§	<0.2148§

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Client Name SOCOTEC UK Deeside

Contact Rebecca Fryer

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**07-Nov-2019**
Report Number	**EFS/203099M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg
Method Codes :			GROHSA	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPWSS	KONECR	LOI(%MM)	PAHMSUS	PAHMSUS	PAHMSUS
Method Reporting Limits :			0.01	0.3	0.2	1.2	1.6	0.7	0.5	2	0.5	16	10	0.1	0.2	0.08	0.08	0.08
Accreditation Code:			UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	N	N	UM	U	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**GRO (C7-C8 Aromatic)**	**Arsenic (MS)**	**Cadmium (MS)**	**Chromium (MS)**	**Copper (MS)**	**Lead (MS)**	**Mercury (MS)**	**Nickel (MS)**	**Selenium (MS)**	**Zinc (MS)**	**SO4-- (H2O sol) mg/l**	**Chromium vi:**	**L.O.I. % @ 450C**	**Acenaphthene**	**Acenaphthylene**	**Anthracene**
1976547	TP06E ES 15 0.50 (NVM)	16-Oct-19	<0.0107§	2.09§	1.414§	4.88§	6.27§	249.81§	<0.50§	4.18§	0.50§	138.59§	28§	<0.1	0.4	<0.086§	<0.086§	<0.086§

SOCOTEC

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Client Name SOCOTEC UK Deeside

Contact Rebecca Fryer

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**07-Nov-2019**
Report Number	**EFS/203099M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg
Method Codes :			PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PCBECD
Method Reporting Limits :			0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	1.28	5
Accreditation Code:			UM	UM	UM	UM	UM	UM	N	UM	UM	UM	UM	UM	UM	UM	U	UM
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(ghi)perylene**	**Benzo(k)fluoranthene**	**Chrysene**	**Coronene**	**Dibenzo(ah)anthracene**	**Fluoranthene**	**Fluorene**	**Indeno(123-cd)pyrene**	**Naphthalene**	**Phenanthrene**	**Pyrene**	**Total PAH (Sum of USEPA 16)**	**PCB 101**
1976547	TP06E ES 15 0.50 (NVM)	**16-Oct-19**	0.118§	0.118§	0.172§	0.097§	<0.086§	0.118§	<0.09	<0.086§	0.226§	<0.086§	0.140§	<0.086§	<0.086§	0.215§	<1.880§	<5.371§

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Units :			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	pH Units	mg/kg	mg/kg	%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PCBECD	PHSOIL	SFAPI	SFAPI	Sub020	TMSS	TPHFIDUS	TPHFIDUS	TPHUSSI	TPHUSSI	TPHUSSI
Method Reporting Limits :			5	5	5	5	5	5		0.5	0.5	0.1	0.1	10	10	4	4	4
Accreditation Code:			UM	UM	UM	UM	UM	UM	UM	UM	U	U	U	U	UM	U	U	U
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**PCB 118**	**PCB 138**	**PCB 153**	**PCB 180**	**PCB 28**	**PCB 52**	**pH units (AR)**	**Cyanide(Total) (AR)**	**Phenol Index.(AR)**	**^Asbestos ID and Quant (1 & 2)**	**Tot.Moisture @ 105C**	**TPH Band (>C10-C40)**	**TPH by GCFID (AR)**	**TPH Ali Band >C10-C12**	**TPH Ali Band >C12-C16**	**TPH Ali Band >C16-C21**
1976547	TP06E ES 15 0.50 (NVM)	**16-Oct-19**	<5.371§	<5.371§	<5.371§	<5.371§	<5.371§	<5.371§	9.3 §	<0.54§	<0.54§	NADIS	6.9 §	48.76§	49.19§	<4.296§	<4.296§	<4.296§

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Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Codes :			TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI
Method Reporting Limits :			11.88	8.75	5.62	4	4	20	20	4	4	4	8.75	5.62	4	4	20	20
Accreditation Code:			U	U	N	N	U	U	N	U	U	U	U	N	N	U	U	N
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**TPH Ali Band >C16-C35**	**TPH Ali Band >C21-C35**	**TPH Ali Band >C35-C44**	**TPH Ali Band >C40-C44**	**TPH Ali Band >C8-C10**	**TPH Ali Band >C8-C40**	**TPH Ali Band >C8-C44**	**TPH Aro Band >C10-C12**	**TPH Aro Band >C12-C16**	**TPH Aro Band >C16-C21**	**TPH Aro Band >C21-C35**	**TPH Aro Band >C35-C44**	**TPH Aro Band >C40-C44**	**TPH Aro Band >C8-C10**	**TPH Aro Band >C8-C40**	**TPH Aro Band >C8-C44**
1976547	TP06E ES 15 0.50 (NVM)	**16-Oct-19**	20.09§	17.62§	<6.04	<4.30	<4.296§	23.85§	24.2	<4.296§	<4.296§	10.279§	34.91§	<6.04	<4.30	14.18§	68.85§	69.0

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Sample Analysis

Date Printed	**07-Nov-2019**
Report Number	**EFS/203099M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

Units :			µg/kg	ug/kg	µg/kg	µg/kg	µg/kg	µg/kg	% M/M										
Method Codes :			VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	VOCHSAS	WSLM59										
Method Reporting Limits :			1	1	4	2	5	6	0.02										
Accreditation Code:			UM	UM	UM	UM	UM	UM	N										
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Benzene**	**Ethyl Benzene**	**m/p Xylenes**	**o Xylene**	**Toluene**	**Xylenes**	**Total Organic Carbon**										
1976547	TP06E ES 15 0.50 (NVM)	**16-Oct-19**	<1§	<2§	<4§	<2§	<5§	<6§	0.448§										

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Contact	Rebecca Fryer

F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Sample Analysis

Date Printed	**07-Nov-2019**
Report Number	**EFS/203099M**
Table Number	**1**

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

WASTE ACCEPTANCE CRITERIA TESTING
BSEN 12457/3

Client	SOCOTEC UK Deeside				**Leaching Data**	
					Weight of sample (kg)	0.237
Contact	Rebecca Fryer				Moisture content @ 105°C (% of Wet Weight)	6.9
					Equivalent Weight based on drying at 105°C (kg)	0.225
Site	F9049-19 Wrexham - Wynnstay Avenue, Deva Way				Volume of water required to carry out 2:1 stage (litres)	0.438
					Fraction of sample above 4 mm %	80.700
Sample Description		**Report No**	**Sample No**	**Issue Date**	Fraction of non-crushable material %	0.000
TP06E ES 15 0.50		s20_3099M	CL/1976547	07-Nov-19	Volume to undertake analysis (2:1 Stage) (litres)	0.300
					Weight of Deionised water to carry out 8:1 stage (kg)	1.650

Note: The >4mm fraction is crushed using a disc mill

Accreditation	Method Code	Solid Waste Analysis (Dry Basis)	Concentration in Solid (Dry Weight Basis)	Landfill Waste Acceptance Criteria Limit Values		
				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
N	WSLM59	Total Organic Carbon (% M/M)	0.448§	3	5	6
N	LOI450	Loss on Ignition (%)	0.4			10
U	BTEXHSA	Sum of BTEX (mg/kg)	<0.0643	6		
U	PCBUSECD	Sum of 7 Congener PCB's (mg/kg)	<0.035	1		
N	TPHFIDUS	Mineral Oil (mg/kg)	48.76§	500		
N	PAHMSUS	PAH Sum of 17 (mg/kg)	<1.97	100		
N	PHSOIL	pH (pH units)	9.3 §		>6	
N	ANC	Acid Neutralisation Capacity (mol/kg) @pH 7	16.7		To be evaluated	To be evaluated

Accreditation	Method Code	Leachate Analysis	2:1 Leachate	8:1 Leachate	Calculated amount leached @ 2:1	Calculated cumulative amount leached @ 10:1	Landfill Waste Acceptance Criteria Limit Values for BSEN 12457/3 @ L/S 10 litre kg-1 mg/kg (dry weight)		
			mg/l except ºº		mg/kg (dry weight)				
U	WSLM3	pH (pH units) ºº	7.7	8.6	Calculated data not UKAS Accredited				
U	WSLM2	Conductivity (µs/cm) ºº	245	<100					
U	ICPMSW	Arsenic	0.001	0.001	0.002	0.01	0.5	2	25
U	ICPWATVAR	Barium	0.03	0.02	0.06	0.2	20	100	300
U	ICPMSW	Cadmium	<0.00002	<0.00002	<0.00004	<0.0002	0.04	1	5
U	ICPMSW	Chromium	<0.001	<0.001	<0.002	<0.01	0.5	10	70
U	ICPMSW	Copper	0.002	<0.001	0.004	<0.01	2	50	100
U	ICPMSW	Mercury	<0.00003	<0.00003	<0.00006	<0.0003	0.01	0.2	2
U	ICPMSW	Molybdenum	0.021	0.004	0.042	0.06	0.5	10	30
U	ICPMSW	Nickel	0.001	<0.001	0.002	<0.01	0.4	10	40
U	ICPMSW	Lead	<0.001	<0.001	<0.002	<0.01	0.5	10	50
U	ICPMSW	Antimony	0.005	0.002	0.01	0.02	0.06	0.7	5
U	ICPMSW	Selenium	0.001	<0.001	0.002	<0.01	0.1	0.5	7
U	ICPMSW	Zinc	0.002	<0.002	0.004	<0.02	4	50	200
U	KONENS	Chloride	22	3	44	55	800	15000	25000
U	ISEF	Fluoride	0.6	0.3	1.2	3	10	150	500
U	ICPWATVAR	Sulphate as SO4	37	6	74	101	1000	20000	50000
N	WSLM27	Total Dissolved Solids	191	<60	382	<775	4000	60000	100000
U	SFAPI	Phenol Index	<0.05	<0.05	<0.1	<0.5	1		
N	WSLM13	Dissolved Organic Carbon	6.6	0.73	13.2	15	500	800	1000

Template Ver. 1

Landfill Waste Acceptance Criteria limit values correct as of 11th March 2009.

Tests where the accreditation is set to U are UKAS accredited, those where the accreditation is set to N are not UKAS accredited

Where individual results are flagged see report notes for status.
Results corrected to dry weight at 105°C where appropriate, in accordance with the MCERTS standard.

IOM

working for a healthy and sustainable world

CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY: SOCOTEC UK Ltd
Environmental Chemistry
PO Box 100
Burton upon Trent
Staffordshire
DE15 0XD

CONTRACT NO: S09041-11

DATE OF ISSUE: 06.11.19

DATE SAMPLE RECEIVED: 30.10.19

DATE SAMPLE ANALYSED: 06.11.19

DESCRIPTION: One soil/loose aggregate sample weighing approximately 0.3kg.

ANALYSIS REQUESTED: Qualitative and quantitative analysis of a soil/loose aggregate sample for mass determination of asbestos.

METHODS:

Qualitative - The sample was analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative - The analysis was carried out using our documented in-house method based on HSE Contract Research Report No. 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies *et al*, 1996) and HSG 248. Our method includes initial examination of the entire sample, detailed analysis of a representative sub-sample and quantification by hand picking/weighing and/or fibre counting/sizing as appropriate.

RESULTS:

Initial Screening

No asbestos was detected in the soil sample by stereo-binocular and polarised light microscopy.

A summary of the results is given in Table 1.

www.iom-world.org

Registered Address: Research Avenue North, Riccarton, Edinburgh, EH14 4AP, United Kingdom
Tel: 0131 449 8000 Fax: 0131 449 8084 Email: iom@iom-world.org

IOM CONSULTING LIMITED, registered in Scotland No. SC205670

UKAS TESTING
0374

CONTRACT NO: S09041-11
DATE OF ISSUE: 06.11.19

RESULTS: (cont.)

Table 1: Qualitative Results

SOCOTEC Job I.D: S203099

IOM sample number	Client sample number	ACM type detected	PLM result
S67949	S1976547 TP06E 0.5	-	No Asbestos Detected

Our detection limit for this method is 0.001%.

COMMENTS:

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are outwith the scope of our UKAS accreditation.

AUTHORISED BY: .....
D Third
Scientific Technician

SOCOTEC UK Ltd Environmental Chemistry
Analytical and Deviating Sample Overview

Customer SOCOTEC UK Deeside
Site F9049-19 Wrexham - Wynnstay Avenue, Deva Way
Report No S203099M

Consignment No S88925
Date Logged 26-Oct-2019
In-House Report Due 06-Nov-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	ANC	BTEXHSA	CEN Leachate		CustServ	GROHSA	ICPMSS								ICPWSS	KONECR	LOI(%MM)	MCertS	PAHMSUS	PCBECD	PHSOIL	SFAPI		Sub020
		Sampled	Acid Neut. Capacity	MTBE (µg/kg)	CEN Leac(P)1	CEN Leac(P)2	REPORT A	GRO (AA-UK) HSA-GCFID	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Mercury (MS)	Nickel (MS)	Selenium (MS)	Zinc (MS)	SO4-- (H2O sol) mg/l	Chromium vi:	L.O.I. % @ 450C	MCertS Analysis	PAH (17) by GCMS	PCB-7 Congeners Analysis	pH units (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID and Quant (1 & 2)
				✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓
CL/1976547	TP06E 0.5	16/10/19		E				E																E	E	E	

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key

A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key

	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.
The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Deeside
Site F9049-19 Wrexham - Wynnstay Avenue, Deva Way
Report No S203099M

Consignment No S88925
Date Logged 26-Oct-2019
In-House Report Due 06-Nov-2019

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Sampled	MethodID	TMSS	TPHFIDUS		TPHUSSI	VOCHSAS	WSLM59
				Tot.Moisture @ 105C	TPH Band (>C10-C40)	TPH by GCFID (AR)	TPH by GCFID (Si-UKCWG)>44	BTEX-HSA GCMS analysis	Total Organic Carbon
				✓	✓	✓	✓	✓	✓
CL/1976547	TP06E 0.5	16/10/19						E	

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

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Requested Analysis Key

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The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	ANC	Oven Dried @ < 35°C	Quantitative digestion with Hydrochloric Acid back titration with 1M Sodium Hydroxide to pH 7
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes (BTEX) by Headspace GCFID
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace GCFID
Soil	ICPMSS	Oven Dried @ < 35°C	Determination of Metals in Marine Sediments and Soil samples by aqua regia digestion followed by ICPMS detection
Soil	ICPWSS	Oven Dried @ < 35°C	Determination of Water Soluble Sulphate in soil samples by water extraction followed by ICPOES detection
Soil	KONECR	Oven Dried @ < 35°C	Determination of Chromium vi in soil samples by water extraction followed by colorimetric detection
Soil	LOI(%MM)	Oven Dried @ < 35°C	Determination of loss on ignition for soil samples at specified temperature by gravimetry
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by hexane/acetone extraction followed by GCMS detection
Soil	PCBECD	As Received	Determination of Polychlorinated Biphenyl (PCB) congeners/aroclors by hexane/acetone extraction followed by GCECD detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-contractor.
Soil	TMSS	As Received	Determination of the Total Moisture content at 105ºC by loss on oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHFIDUS	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection.
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection including quantitation of Aromatic and Aliphatic fractions.
Soil	VOCHSAS	As Received	Determination of Volatile Organic Compounds (VOC) by Headspace GCMS
Soil	WSLM59	Oven Dried @ < 35°C	Determination of Organic Carbon in soil using sulphurous Acid digestion followed by high temperature combustion and IR detection
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	ISEF	As Received	Determination of Fluoride in water samples by Ion Selective Electrode (ISE)
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM2	As Received	Determination of the Electrical Conductivity (µS/cm) by electrical conductivity probe.
Water	WSLM27	As Received	Gravimetric Determination
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Deeside

Site : F9049-19 Wrexham - Wynnstay Avenue, Deva Way

Report Number : S20_3099

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1976547	TP06E ES 15 0.50 (NVM)	Brown Silt GRAVEL

Trial Pit Photographs

TP03A - Photo 1

TP03A - Photo 2

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	1
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP03A - Photo 3

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	2
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP03A - Photo 4

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	3
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP03A - Photo 5 - Gas Service

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Notes:	**Project**	**Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane**	**Plate**
	Project No.	**F9049-19**	**4**
	Carried out for	**Morgan Sindall**	

Trial Pit Photographs

TP03A – Photo 6

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	5
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP03A – Photo 7 - Reinstatement

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	6
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP03B - Photo 1

TP03B - Photo 2

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	1
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP03B - Photo 3

TP03B - Photo 4

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	2
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP03C - Photo 1

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	1
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP03C - Photo 2

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	2
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP05 - Photo 1

TP05 - Photo 2

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	1
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP05 - Photo 3

TP05 - Photo 4

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	2
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP05 - Photo 5

TP05 - Photo 6

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	3
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP05 - Photo 7

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	4
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP05E - Photo 1

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	1
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP05E - Photo 2

TP05E - Photo 3

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	2
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP05E - Photo 4

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	3
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP06 - Photo 1

TP06 - Photo 2

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	1
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP06 - Photo 3

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	2
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP06D & TP06E

TP06E - Gas Pipe

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	1
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP07 - Photo 1

TP07 - Photo 2

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	1
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP07 - Photo 3

TP07 - Photo 4

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	2
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP07D - Photo 1

TP07D - Photo 2

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	3
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP09 - Photo 1

TP09 - Photo 2

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	1
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP09 - Photo 3

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	2
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP10A - Photo 1

TP10A - Photo 2

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	1
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP10A - Photo 3

TP10B - Photo 1 - Asbestos

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	2
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP10B - Photo 2

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	3
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP10B - Photo 3

TP10B - Photo 4

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	4
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP10B - Photo 5

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	5
	Carried out for	Morgan Sindall	

Photographs

TP11 - Photo 1

TP11 - Photo 2

Notes:	Project	Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane	Plate
	Project No.	F9049-19	1
	Carried out for	Morgan Sindall	

Photographs

TP11 - Photo 3 - Spoil

TP11 - Photo 4 - Reinstatement

Notes:	Project	Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane	Plate
	Project No.	F9049-19	2
	Carried out for	Morgan Sindall	

Photographs

TP13 - Photo 1

TP13 - Photo 2

Notes:	Project	Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane	Plate
	Project No.	F9049-19	1
	Carried out for	Morgan Sindall	

Photographs

BH14 - Photo 1

BH14 - Photo 2 - Spoil

Notes:	Project	Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane	Plate
	Project No.	F9049-19	1
	Carried out for	Morgan Sindall	

Photographs

TP15 - Photo 1

TP 15 - Photo 2 - Reinstatement

Notes:	Project	Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane	Plate
	Project No.	F9049-19	1
	Carried out for	Morgan Sindall	

Photographs

TP16 - Photo 1

TP16 - Photo 2 - Spoil

Notes:	Project	Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane	Plate
	Project No.	F9049-19	1
	Carried out for	Morgan Sindall	

Photographs

TP16 - Photo 3 - Reinstatement

Notes:	Project	Wrexham - Wynnstay Avenue, Deva Way & Hullah Lane	Plate
	Project No.	F9049-19	2
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP17 - Photo 1

TP17 - Photo 2

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	1
	Carried out for	Morgan Sindall	

Trial Pit Photographs

TP17 - Photo 3

TP17 - Photo 4

Notes:	Project	Wrexham – Wynnstay Avenue, Deva Way &Hullah Lane	Plate
	Project No.	F9049-19	2
	Carried out for	Morgan Sindall	

Groundwater Monitoring

Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
BH1 (1)	SP	6.50	16/01/2019 11:00:00	1.55	
BH1 (1)	SP	6.50	31/01/2019 10:50:00	1.53	
BH1 (1)	SP	6.50	26/02/2019 12:22:00	1.51	
BH2 (1)	SP	6.50	16/01/2019 10:50:00	1.41	
BH2 (1)	SP	6.50	31/01/2019 11:20:00	1.33	
BH2 (1)	SP	6.50	26/02/2019 12:45:00	1.37	

Notes: Type: SP - Standpipe

Project	WYNNSTAY AVENUE, WREXHAM
Project No.	F8054-18
Carried out for	Morgan Sindall

Table

FINAL

Appendix B

Aquifer Testing Raw Data and Hydrogeological Impact Assessment

Variable Head Permeability Test

SOCOTEC

TYPE OF TEST	Borehole
	Falling Head
BOREHOLE No.	BH1
TEST NUMBER	1
DATE OF TEST	09 Jan 2019

DETAILS OF INSTALLATION:

Depth of borehole	5.00	m BGL
Depth of casing	5.00	m BGL
Groundwater level for analysis	2.40	m BGL
Height of casing above ground level (datum)	0.00	m

CONDITIONS OF TEST ZONE

Ref BS 5930:1999+A2 (2010) Figure 6

Soil flush with bottom in uniform soil (b)

Diameter of borehole (D)	150	mm
Length of response zone (L)	0	mm
Intake Factor (F)	0.41	m

Elapsed time, t (minutes)	Depth to water from datum (m)	Head, H_t (m)	Head Ratio H_t/H_0
0	0.00	2.40	1.00
0.5	0.01	2.39	1.00
1	0.01	2.39	1.00
1.5	0.01	2.39	1.00
2	0.01	2.39	1.00
2.5	0.01	2.39	1.00
3	0.01	2.39	1.00
3.5	0.01	2.39	1.00
4	0.01	2.39	1.00
4.5	0.01	2.39	1.00
5	0.02	2.38	0.99
6	0.02	2.38	0.99
7	0.02	2.38	0.99
8	0.02	2.38	0.99
9	0.02	2.38	0.99
10	0.02	2.38	0.99
15	0.02	2.38	0.99
20	0.03	2.37	0.99
25	0.03	2.37	0.99
30	0.03	2.37	0.99
35	0.04	2.36	0.98
40	0.04	2.36	0.98
45	0.04	2.36	0.98
50	0.05	2.35	0.98
55	0.05	2.35	0.98
60	0.05	2.35	0.98

REMARKS

Depth to groundwater prior to test	2.40	m BGL

Depth to water measured from top of casing

Permeability calculated using BS 5930:1999 (Section 25.4.6) (General Approach)

Permeability calculated from minimal change in head ratio, result should be treated with caution.

CALCULATED VALUES

Differential head at start of test, H_0	2.40	m
Differential head at end of test, H_f	2.35	m
Time Elapsed at end of test	60	mins

General Approach

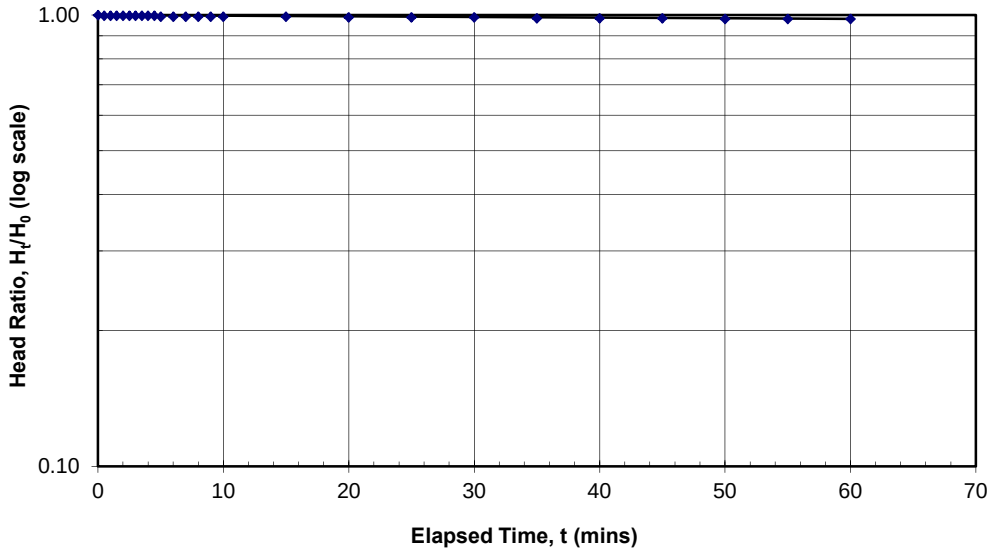
Coordinates of best fit line to data:

t_1 = 0.0 mins H_1/H_0 = 1.000

t_2 = 60.0 mins H_2/H_0= 0.980

Permeability (k) 2.4E-07 m/sec

Head Ratio against Time



Notes:

Project	WYNNSTAY AVENUE, WREXHAM
Project No.	F8054-18
Carried out for	Morgan Sindall

Test **BH1T1**

Variable Head Permeability Test

LOCATION TYPE	Standpipe
TEST TYPE	Falling Head

DETAILS OF TEST ZONE:

Top of response zone	3.00	m BGL
Base of response zone	6.50	m BGL
Diameter of borehole (D)	150	mm
Height of tubing above ground level (datum)	0.00	m
Diameter of standpipe tubing	50	mm

BOREHOLE No.	BH1
TEST NUMBER	1
DATE OF TEST	14-Feb-19

TEST ZONE CONDITIONS

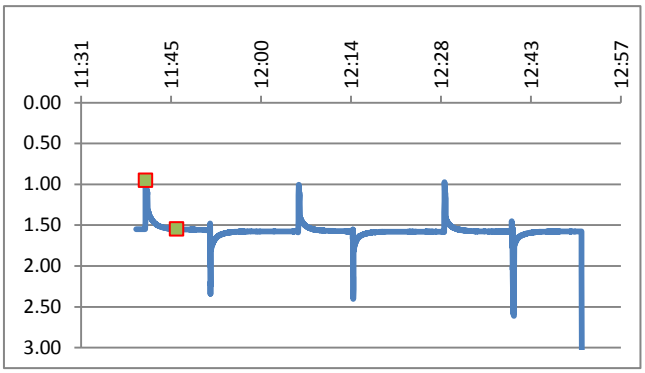
Diameter of response zone (D)	150	mm
Length of response zone (L)	3500	mm
Standpipe piezometer		
Shape factor (F) after Hvorslev (1951)	6.52	m

GROUNDWATER CONDITIONS

Depth to groundwater prior to test	1.65	m BGL
Groundwater level for analysis (Based on end of test water depth)	1.56	m BGL

TEST DATA

Elapsed time, t (minutes)	Depth to water below datum (m)	Head, H_t (m)	Head Ratio H_t/H_0
0	0.95	0.61	1.00
0.5	1.35	0.21	0.34
1	1.42	0.14	0.23
1.5	1.47	0.09	0.15
2	1.51	0.05	0.08
2.5	1.52	0.04	0.07
3	1.53	0.03	0.05
3.5	1.54	0.02	0.03
4	1.55	0.01	0.02
4.5	1.56	0.00	0.00
5	1.56	0.00	0.00
6	1.56	0.00	0.00
7	1.56	0.00	0.00
8	1.56	0.00	0.00
9	1.56	0.00	0.00
10	1.56	0.00	0.00



CALCULATED VALUES

Permeability calculation based on BS EN ISO 22282-2 : 2012 Section B.4.2 (Hvorslev method - general approach)

Differential head at start of test, H_0	0.61	m
Differential head at end of test, H_f	0.00	m
Time elapsed at end of test	10	mins
Proportion of test recovery	100	%

Coordinates of best fit line to data:

t_1 = 0.0 mins H_1/H_0 = 0.480

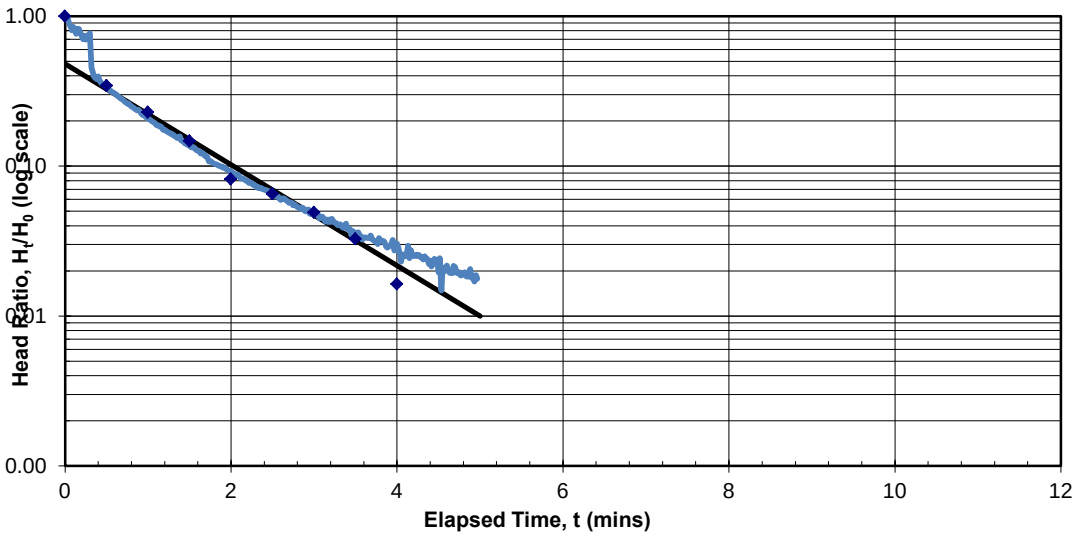
t_2 = 5.0 mins H_2/H_0= 0.010

Permeability (k) = 3.9E-06 m/sec

REMARKS

Slug testing carried out using dataloggers

Head Ratio against Time



AGS

Testing: JP/AE
Checked: RF
Approved: PH

Notes:

Project: Wynnstay Avenue, Wrexham
Project No.: F8054-18
Carried out for: Morgan Sindall

Test: **BH1T1**

Variable Head Permeability Test

SOCOTEC

LOCATION TYPE	Standpipe
TEST TYPE	Rising Head

DETAILS OF TEST ZONE:

Top of response zone	3.00	m BGL
Base of response zone	6.50	m BGL
Diameter of borehole (D)	150	mm
Height of tubing above ground level (datum)	0.00	m
Diameter of standpipe tubing	50	mm

BOREHOLE No.	BH1
TEST NUMBER	2
DATE OF TEST	14-Feb-19

TEST ZONE CONDITIONS

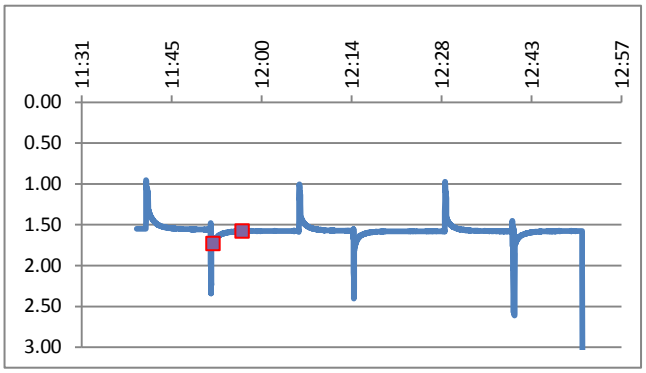
Diameter of response zone (D)	150	mm
Length of response zone (L)	3500	mm
Standpipe piezometer		
Shape factor (F) after Hvorslev (1951)	6.52	m

GROUNDWATER CONDITIONS

Depth to groundwater prior to test	1.55	m BGL
Groundwater level for analysis (Based on end of test water depth)	1.55	m BGL

TEST DATA

Elapsed time, t (minutes)	Depth to water below datum (m)	Head, H_t (m)	Head Ratio H_t/H_0
0	1.73	0.18	1.00
0.5	1.66	0.11	0.61
1	1.63	0.08	0.44
1.5	1.61	0.06	0.33
2	1.59	0.04	0.22
2.5	1.58	0.03	0.17
3	1.57	0.02	0.11
3.5	1.57	0.02	0.11
4	1.56	0.01	0.06
4.5	1.56	0.01	0.06
5	1.56	0.01	0.06
6	1.55	0.00	0.00
7	1.55	0.00	0.00
8	1.55	0.00	0.00
9	1.55	0.00	0.00
10	1.55	0.00	0.00



CALCULATED VALUES

Permeability calculation based on BS EN ISO 22282-2 : 2012 Section B.4.2 (Hvorslev method - general approach)

Differential head at start of test, H_0	0.18	m
Differential head at end of test, H_f	0.00	m
Time elapsed at end of test	10	mins
Proportion of test recovery	100	%

Coordinates of best fit line to data:

t_1 = 0.0 mins H_1/H_0 = 1.000

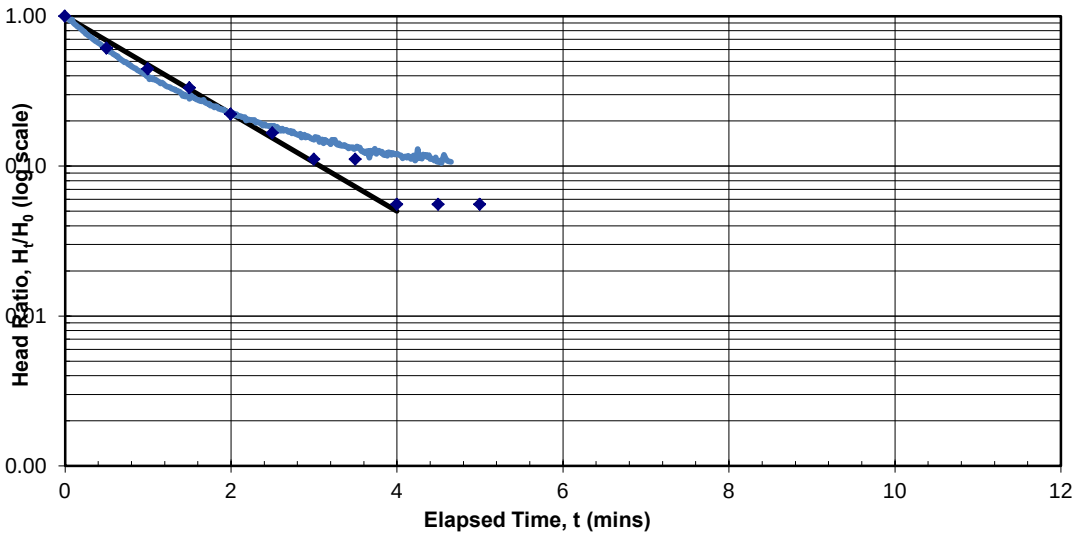
t_2 = 4.0 mins H_2/H_0= 0.050

Permeability (k) = 3.8E-06 m/sec

REMARKS

Slug testing carried out using dataloggers

Head Ratio against Time



AGS

Testing: JP/AE
Checked: RF
Approved: PH

Notes:

Project: Wynnstay Avenue, Wrexham
Project No.: F8054-18
Carried out for: Morgan Sindall

Test: **BH1T1**

Variable Head Permeability Test

LOCATION TYPE	Standpipe
TEST TYPE	Falling Head

DETAILS OF TEST ZONE:

Top of response zone	3.00	m BGL
Base of response zone	6.50	m BGL
Diameter of borehole (D)	150	mm
Height of tubing above ground level (datum)	0.00	m
Diameter of standpipe tubing	50	mm

BOREHOLE No.	BH1
TEST NUMBER	3
DATE OF TEST	14-Feb-19

TEST ZONE CONDITIONS

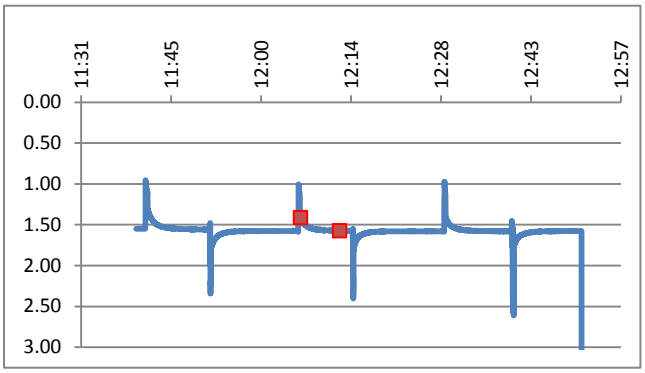
Diameter of response zone (D)	150	mm
Length of response zone (L)	3500	mm
Standpipe piezometer		
Shape factor (F) after Hvorslev (1951)	6.52	m

GROUNDWATER CONDITIONS

Depth to groundwater prior to test	1.55	m BGL
Groundwater level for analysis (Based on end of test water depth)	1.55	m BGL

TEST DATA

Elapsed time, t (minutes)	Depth to water below datum (m)	Head, H_t (m)	Head Ratio H_t/H_0
0	1.42	0.13	1.00
0.5	1.48	0.07	0.54
1	1.51	0.04	0.31
1.5	1.52	0.03	0.23
2	1.53	0.02	0.15
2.5	1.54	0.01	0.08
3	1.55	0.00	0.00
3.5	1.55	0.00	0.00
4	1.55	0.00	0.00
5	1.55	0.00	0.00
6	1.55	0.00	0.00
7	1.55	0.00	0.00
8	1.55	0.00	0.00



CALCULATED VALUES

Permeability calculation based on BS EN ISO 22282-2 : 2012 Section B.4.2 (Hvorslev method - general approach)

Differential head at start of test, H_0	0.13	m
Differential head at end of test, H_f	0.00	m
Time elapsed at end of test	8	mins
Proportion of test recovery	100	%

Coordinates of best fit line to data:

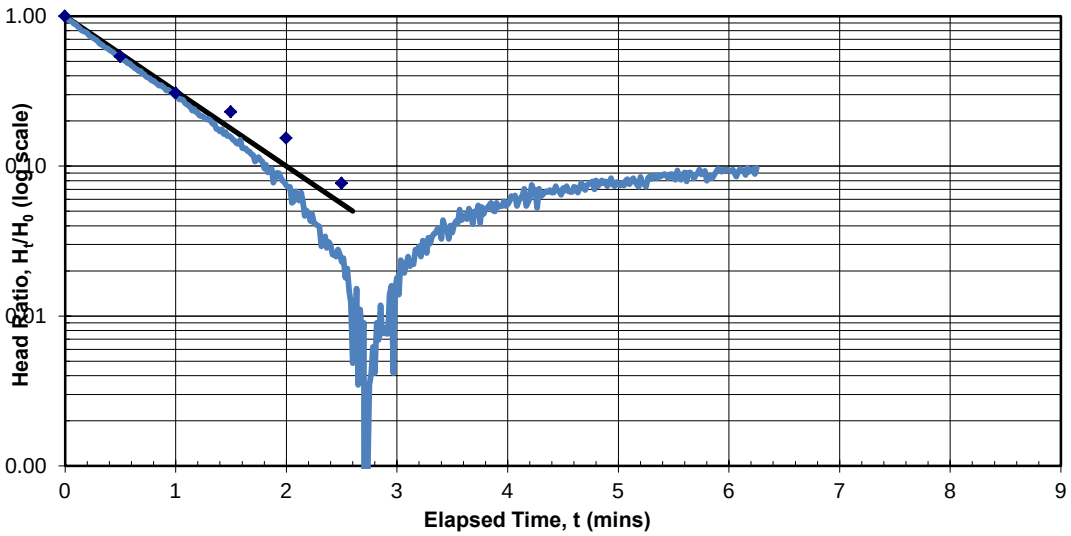
t_1 = 0.0 mins	H_1/H_0 = 1.000
t_2 = 2.6 mins	H_2/H_0= 0.050

Permeability (k) = 5.8E-06 m/sec

REMARKS

Slug testing carried out using dataloggers

Head Ratio against Time



AGS

Testing: JP/AE
Checked: RF
Approved: PH

Notes:

Project: Wynnstay Avenue, Wrexham
Project No.: F8054-18
Carried out for: Morgan Sindall

Test: **BH1T1**

Variable Head Permeability Test

SOCOTEC

LOCATION TYPE	Standpipe
TEST TYPE	Rising Head

DETAILS OF TEST ZONE:

Top of response zone	3.00	m BGL
Base of response zone	6.50	m BGL
Diameter of borehole (D)	150	mm
Height of tubing above ground level (datum)	0.00	m
Diameter of standpipe tubing	50	mm

BOREHOLE No.	BH1
TEST NUMBER	4
DATE OF TEST	14-Feb-19

TEST ZONE CONDITIONS

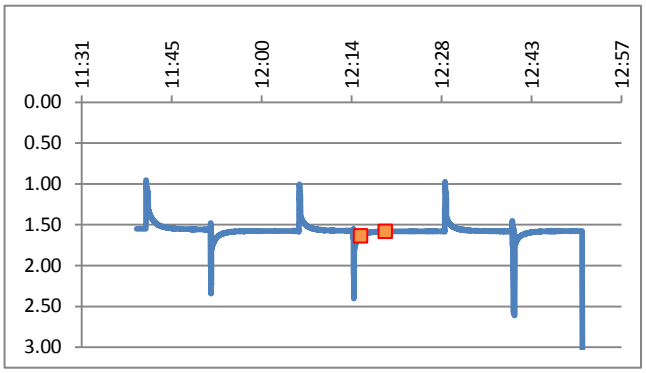
Diameter of response zone (D)	150	mm
Length of response zone (L)	3500	mm
Standpipe piezometer		
Shape factor (F) after Hvorslev (1951)	6.52	m

GROUNDWATER CONDITIONS

Depth to groundwater prior to test	1.55	m BGL
Groundwater level for analysis (Based on end of test water depth)	1.55	m BGL

TEST DATA

Elapsed time, t (minutes)	Depth to water below datum (m)	Head, H_t (m)	Head Ratio H_t/H_0
0	1.63	0.08	1.00
0.5	1.61	0.06	0.75
1	1.59	0.04	0.50
1.5	1.58	0.03	0.38
2	1.57	0.02	0.25
2.5	1.56	0.01	0.13
3	1.56	0.01	0.13
2.5	1.56	0.01	0.13
4	1.56	0.01	0.13
5	1.55	0.00	0.00
6	1.55	0.00	0.00
7	1.55	0.00	0.00
8	1.55	0.00	0.00
9	1.55	0.00	0.00
10	1.55	0.00	0.00



CALCULATED VALUES

Permeability calculation based on BS EN ISO 22282-2 : 2012 Section B.4.2 (Hvorslev method - general approach)

Differential head at start of test, H_0	0.08	m
Differential head at end of test, H_f	0.00	m
Time elapsed at end of test	10	mins
Proportion of test recovery	100	%

Coordinates of best fit line to data:

t_1 = 0.0 mins H_1/H_0 = 1.000

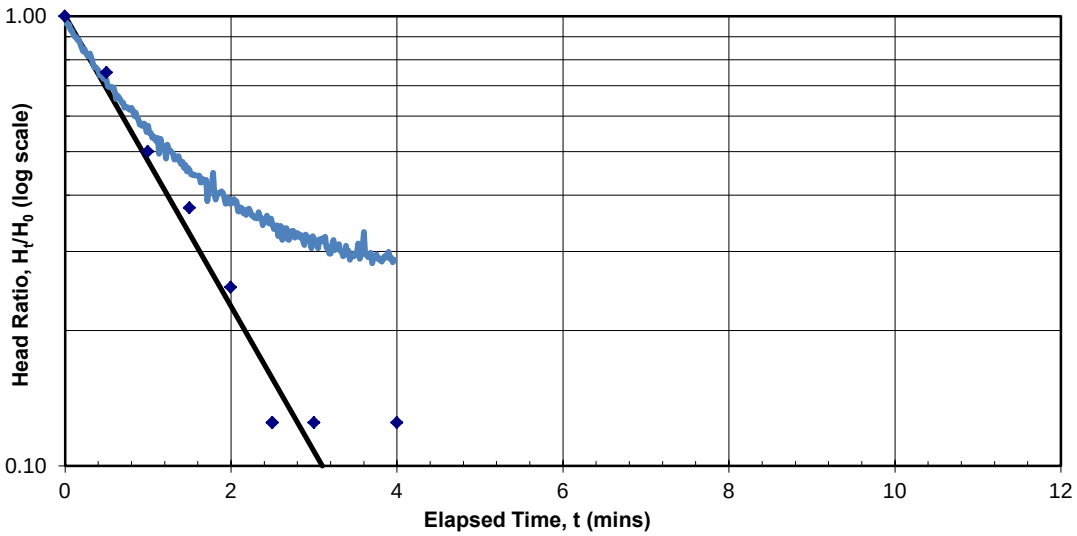
t_2 = 3.1 mins H_2/H_0= 0.100

Permeability (k) = 3.7E-06 m/sec

REMARKS

Slug testing carried out using dataloggers

Head Ratio against Time



AGS

Testing: JP/AE
Checked: RF
Approved: PH

Notes:

Project: Wynnstay Avenue, Wrexham

Project No.: F8054-18

Carried out for: Morgan Sindall

Test: BH1T1

Variable Head Permeability Test

LOCATION TYPE	Standpipe
TEST TYPE	Falling Head

DETAILS OF TEST ZONE:

Top of response zone	3.00	m BGL
Base of response zone	6.50	m BGL
Diameter of borehole (D)	150	mm
Height of tubing above ground level (datum)	0.00	m
Diameter of standpipe tubing	50	mm

BOREHOLE No.	BH1
TEST NUMBER	5
DATE OF TEST	14-Feb-19

TEST ZONE CONDITIONS

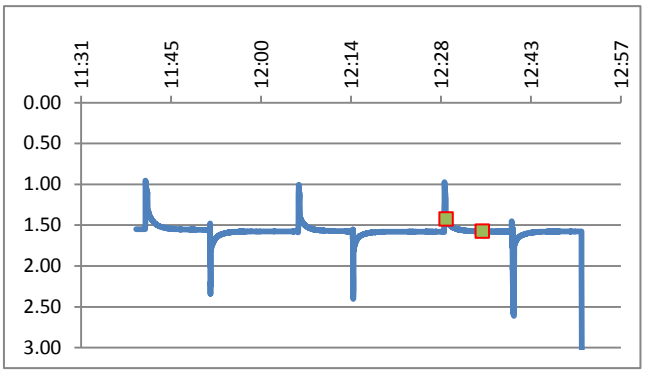
Diameter of response zone (D)	150	mm
Length of response zone (L)	3500	mm
Standpipe piezometer		
Shape factor (F) after Hvorslev (1951)	6.52	m

GROUNDWATER CONDITIONS

Depth to groundwater prior to test	1.55	m BGL
Groundwater level for analysis (Based on end of test water depth)	1.55	m BGL

TEST DATA

Elapsed time, t (minutes)	Depth to water below datum (m)	Head, H_t (m)	Head Ratio H_t/H_0
0	1.43	0.12	1.00
0.5	1.48	0.07	0.58
1	1.51	0.04	0.33
1.5	1.50	0.05	0.42
2	1.53	0.02	0.17
2.5	1.54	0.01	0.08
3	1.54	0.01	0.08
3.5	1.54	0.01	0.08
4	1.54	0.01	0.08
4.5	1.55	0.00	0.00
5	1.55	0.00	0.00
6	1.55	0.00	0.00
7	1.55	0.00	0.00
8	1.55	0.00	0.00
9	1.55	0.00	0.00
10	1.55	0.00	0.00



CALCULATED VALUES

Permeability calculation based on BS EN ISO 22282-2 : 2012 Section B.4.2 (Hvorslev method - general approach)

Differential head at start of test, H_0	0.12	m
Differential head at end of test, H_f	0.00	m
Time elapsed at end of test	10	mins
Proportion of test recovery	100	%

Coordinates of best fit line to data:

t_1 = 0.0 mins H_1/H_0 = 1.000

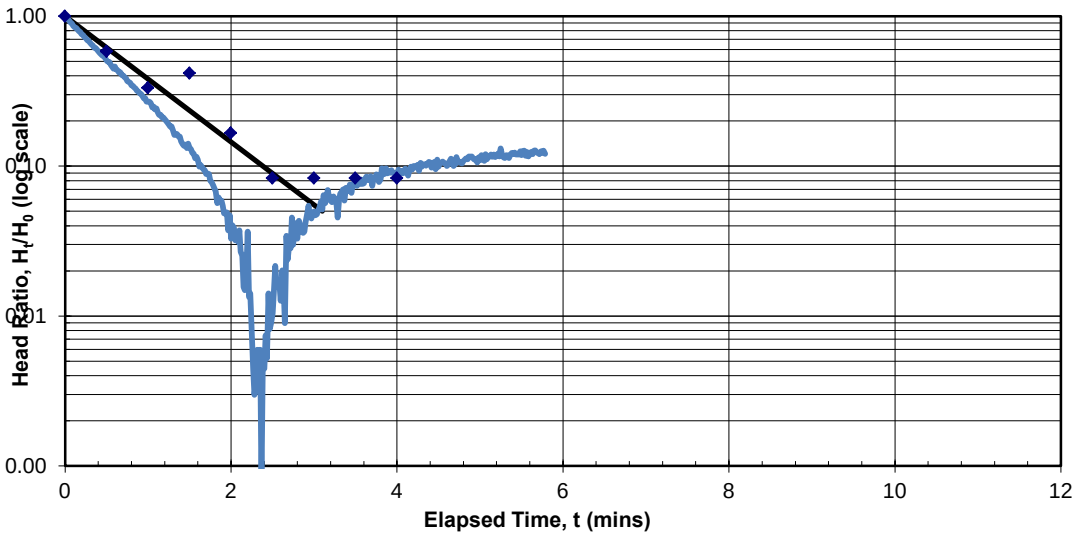
t_2 = 3.1 mins H_2/H_0= 0.050

Permeability (k) = 4.9E-06 m/sec

REMARKS

Slug testing carried out using dataloggers

Head Ratio against Time



AGS

Testing: JP/AE
Checked: RF
Approved: PH

Notes:

Project: Wynnstay Avenue, Wrexham
Project No.: F8054-18
Carried out for: Morgan Sindall

Test: BH1T5

Variable Head Permeability Test

LOCATION TYPE	Standpipe
TEST TYPE	Rising Head

DETAILS OF TEST ZONE:

Top of response zone	3.00	m BGL
Base of response zone	6.50	m BGL
Diameter of borehole (D)	150	mm
Height of tubing above ground level (datum)	0.00	m
Diameter of standpipe tubing	50	mm

BOREHOLE No.	BH1
TEST NUMBER	6
DATE OF TEST	14-Feb-19

TEST ZONE CONDITIONS

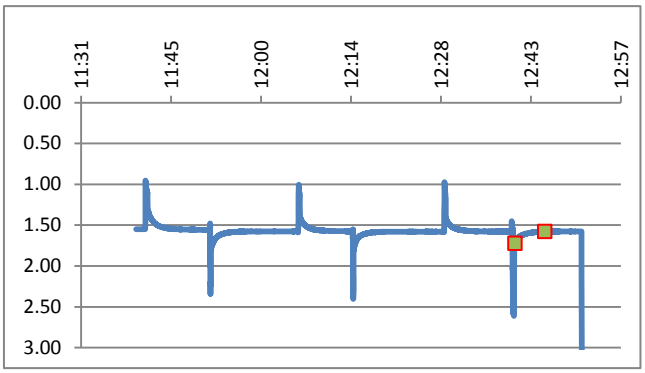
Diameter of response zone (D)	150	mm
Length of response zone (L)	3500	mm
Standpipe piezometer		
Shape factor (F) after Hvorslev (1951)	6.52	m

GROUNDWATER CONDITIONS

Depth to groundwater prior to test	1.55	m BGL
Groundwater level for analysis (Based on end of test water depth)	1.55	m BGL

TEST DATA

Elapsed time, t (minutes)	Depth to water below datum (m)	Head, H_t (m)	Head Ratio H_t/H_0
0	1.72	0.17	1.00
0.5	1.65	0.10	0.59
1	1.62	0.07	0.41
1.5	1.60	0.05	0.29
2	1.58	0.03	0.18
2.5	1.57	0.02	0.12
3	1.56	0.01	0.06
3.5	1.55	0.00	0.00
4	1.55	0.00	0.00
4.5	1.55	0.00	0.00
5	1.55	0.00	0.00
6	1.55	0.00	0.00
7	1.55	0.00	0.00
8	1.55	0.00	0.00
9	1.55	0.00	0.00
10	1.55	0.00	0.00



CALCULATED VALUES

Permeability calculation based on BS EN ISO 22282-2 : 2012 Section B.4.2 (Hvorslev method - general approach)

Differential head at start of test, H_0	0.17	m
Differential head at end of test, H_f	0.00	m
Time elapsed at end of test	10	mins
Proportion of test recovery	100	%

Coordinates of best fit line to data:

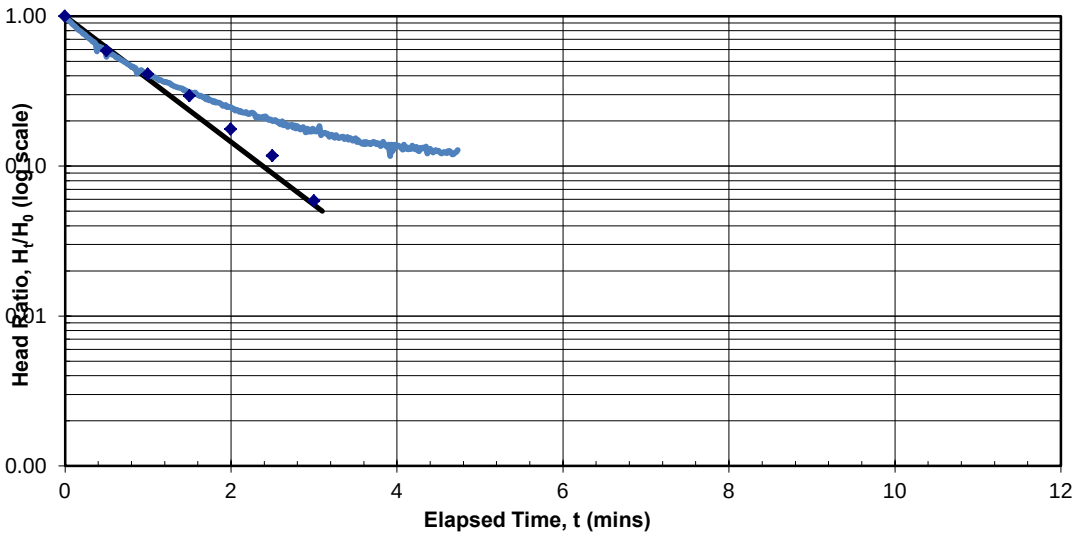
t_1 = 0.0 mins	H_1/H_0 = 1.000
t_2 = 3.1 mins	H_2/H_0= 0.050

Permeability (k) = 4.9E-06 m/sec

REMARKS

Slug testing carried out using dataloggers

Head Ratio against Time



AGS

Testing: JP/AE
Checked: RF
Approved: PH

Notes:

Project: Wynnstay Avenue, Wrexham
Project No.: F8054-18
Carried out for: Morgan Sindall

Test: **BH1T6**

ARUP

Job No. 241513		Rev. 1
Prepared by TSR	Date 06/09/2019	Checked by LB

Client: Welsh Water

Job Title: Wrexham Hydrogeological Impact Assessment

Title: BH1 - Variable head test analysis

Rising head test (BS22282-2)

Time (min)	Dip (mbd)	y (m)	yt/y0
0.0	1.72	0.17	1.00
0.5	1.65	0.10	0.59
1.0	1.62	0.07	0.41
1.5	1.60	0.05	0.29
2.0	1.58	0.03	0.18
2.5	1.57	0.02	0.12
3.0	1.56	0.01	0.06
3.5	1.55	0.00	0.00
4.0	1.55	0.00	0.00
4.5	1.55	0.00	0.00
5.0	1.55	0.00	0.00
6.0	1.55	0.00	0.00
7.0	1.55	0.00	0.00
8.0	1.55	0.00	0.00
9.0	1.55	0.00	0.00
10.0	1.55	0.00	0.00

Datum	=	unknown
BH diameter, D (m)	=	0.15
Pipe radius, r (m)	=	0.025
BH radius, R (m)	=	0.075
BH area, A (m2)	=	0.02
Initial SWL (mbd)	=	1.55
Test length, L (m)	=	3.5
L/D	=	23.33
Shape factor, F	=	5.7
Hyd. Cond., K (m/s)	=	5.72E-06

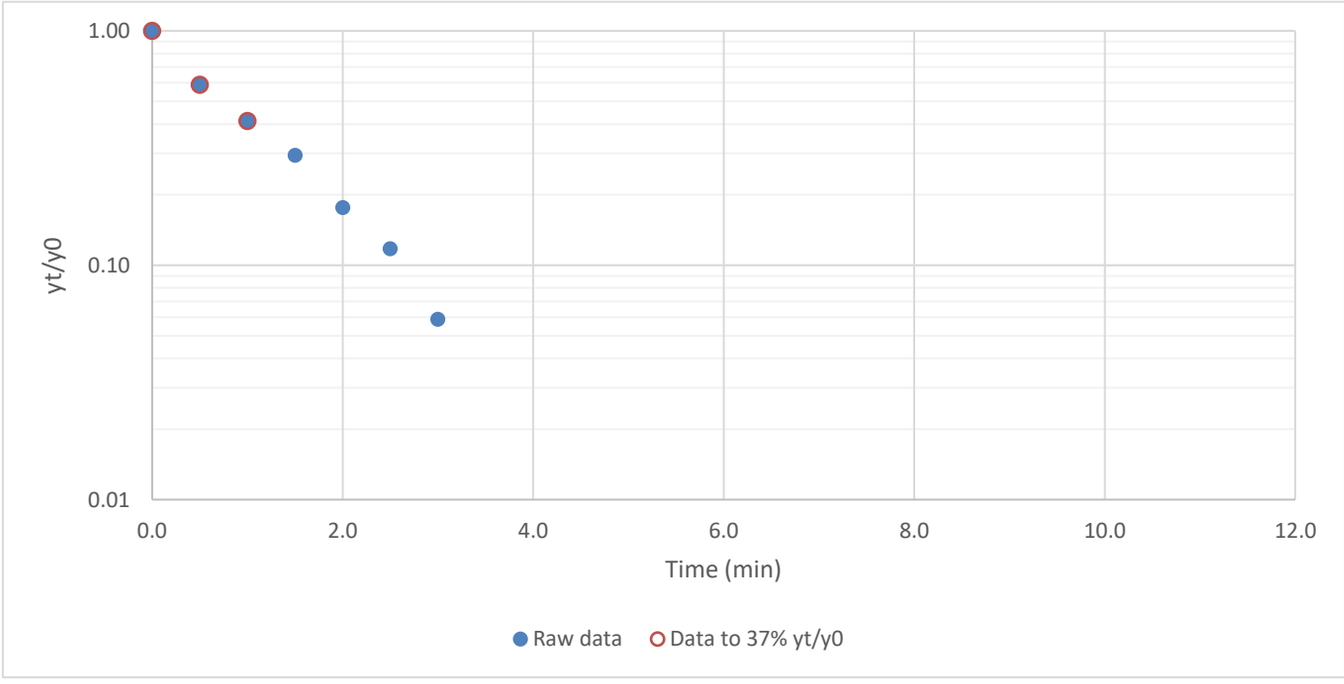
Shape factor equation adopted:

$$F = \frac{2 \cdot \pi \cdot L}{\ln\left(2 \cdot L/D\right)}$$

Valid for L/D > 10

Hydraulic conductivity

$$k = \frac{r^2 \cdot \ln\left(L/R\right)}{2 \cdot L \cdot t_o}$$



Variable Head Permeability Test

SOCOTEC

TYPE OF TEST	Borehole
	Falling Head

DETAILS OF INSTALLATION:

Depth of borehole	4.00	m BGL
Depth of casing	4.00	m BGL
Groundwater level for analysis	1.69	m BGL
Height of casing above ground level (datum)	0.50	m

Elapsed time, t (minutes)	Depth to water from datum (m)	Head, H_t (m)	Head Ratio H_t/H_0
0	0.00	2.19	1.00
0.5	0.01	2.18	1.00
1	0.01	2.18	1.00
1.5	0.01	2.18	1.00
2	0.01	2.18	1.00
2.5	0.01	2.18	1.00
3	0.02	2.17	0.99
3.5	0.02	2.17	0.99
4	0.02	2.17	0.99
4.5	0.02	2.17	0.99
5	0.02	2.17	0.99
6	0.03	2.16	0.99
7	0.03	2.16	0.99
8	0.03	2.16	0.99
9	0.04	2.15	0.98
10	0.04	2.15	0.98
15	0.05	2.14	0.98
20	0.05	2.14	0.98
25	0.05	2.14	0.98
30	0.06	2.13	0.97

BOREHOLE No.	BH2
TEST NUMBER	1
DATE OF TEST	08 Jan 2019

CONDITIONS OF TEST ZONE

Ref BS 5930:1999+A2 (2010) Figure 6

Soil flush with bottom in uniform soil (b)

Diameter of borehole (D)	150	mm
Length of response zone (L)	0	mm
Intake Factor (F)	0.41	m

REMARKS

Depth to groundwater prior to test	1.69	m BGL

Depth to water measured from top of casing

Permeability calculated using BS 5930:1999 (Section 25.4.6) (General Approach)

Permeability calculated from minimal change in head ratio, result should be treated with caution.

Test terminated after 30 minutes with client agreement.

CALCULATED VALUES

Differential head at start of test, H_0	2.19	m
Differential head at end of test, H_f	2.13	m
Time Elapsed at end of test	30	mins

General Approach

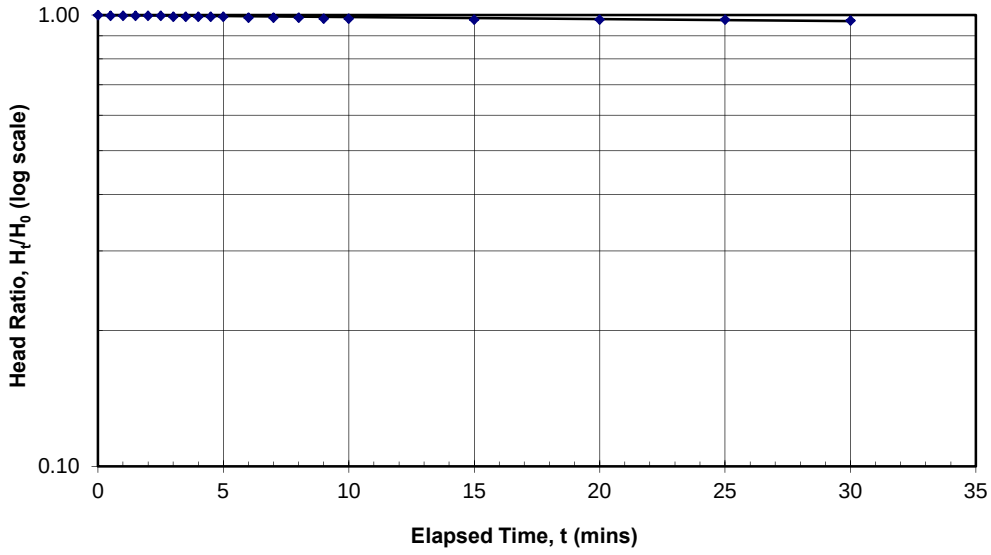
Coordinates of best fit line to data:

t_1 = 0.0 mins H_1/H_0 = 1.000

t_2 = 30.0 mins H_2/H_0 = 0.970

Permeability (k) 7.2E-07 m/sec

Head Ratio against Time



Notes:

Project	WYNNSTAY AVENUE, WREXHAM
Project No.	F8054-18
Carried out for	Morgan Sindall

Test **BH2T1**

Variable Head Permeability Test

LOCATION TYPE	Standpipe
TEST TYPE	Falling Head

DETAILS OF TEST ZONE:

Top of response zone	3.00	m BGL
Base of response zone	6.00	m BGL
Diameter of borehole (D)	150	mm
Height of tubing above ground level (datum)	0.00	m
Diameter of standpipe tubing	50	mm

BOREHOLE No.	BH2
TEST NUMBER	1
DATE OF TEST	14-Feb-19

TEST ZONE CONDITIONS

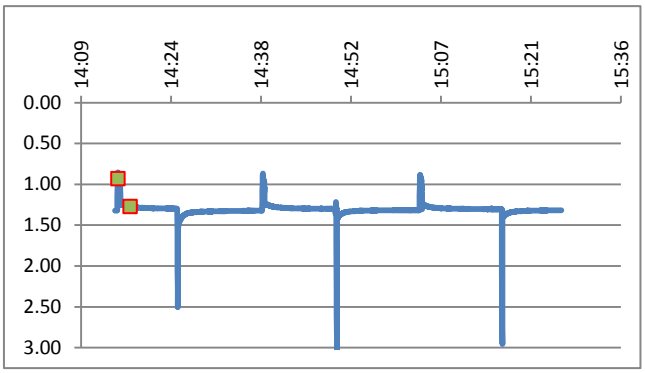
Diameter of response zone (D)	150	mm
Length of response zone (L)	3000	mm
Standpipe piezometer		
Shape factor (F) after Hvorslev (1951)	5.81	m

GROUNDWATER CONDITIONS

Depth to groundwater prior to test	1.34	m BGL
Groundwater level for analysis (Based on end of test water depth)	1.32	m BGL

TEST DATA

Elapsed time, t (minutes)	Depth to water below datum (m)	Head, H_t (m)	Head Ratio H_t/H_0
0	1.26	0.06	1.00
0.5	1.28	0.04	0.67
1	1.30	0.02	0.33
1.5	1.30	0.02	0.33
2	1.31	0.01	0.17
2.5	1.32	0.00	0.00
3	1.32	0.00	0.00
3.5	1.32	0.00	0.00
4	1.32	0.00	0.00
4.5	1.32	0.00	0.00
5	1.32	0.00	0.00
6	1.32	0.00	0.00
7	1.32	0.00	0.00
8	1.32	0.00	0.00



CALCULATED VALUES

Permeability calculation based on BS EN ISO 22282-2 : 2012 Section B.4.2 (Hvorslev method - general approach)

Differential head at start of test, H_0	0.06	m
Differential head at end of test, H_f	0.00	m
Time elapsed at end of test	8	mins
Proportion of test recovery	100	%

Coordinates of best fit line to data:

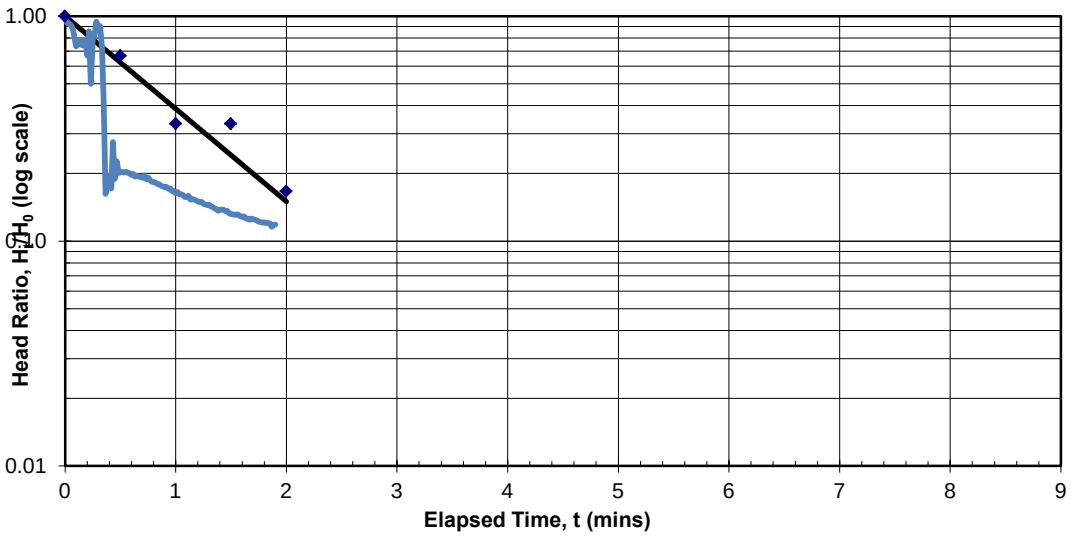
t_1 = 0.0 mins	H_1/H_0 = 1.000
t_2 = 2.0 mins	H_2/H_0= 0.150

Permeability (k) = 5.3E-06 m/sec

REMARKS

Slug testing carried out using dataloggers

Head Ratio against Time



AGS

Testing: JP/AE
Checked: RF
Approved: PH

Notes:

Project Wynnstay Avenue, Wrexham
Project No. F8054-18
Carried out for Morgan Sindall

Test BH2T1

Variable Head Permeability Test

LOCATION TYPE	Standpipe
TEST TYPE	Rising Head

DETAILS OF TEST ZONE:

Top of response zone	3.00	m BGL
Base of response zone	6.00	m BGL
Diameter of borehole (D)	150	mm
Height of tubing above ground level (datum)	0.00	m
Diameter of standpipe tubing	50	mm

BOREHOLE No.	BH2
TEST NUMBER	2
DATE OF TEST	14-Feb-19

TEST ZONE CONDITIONS

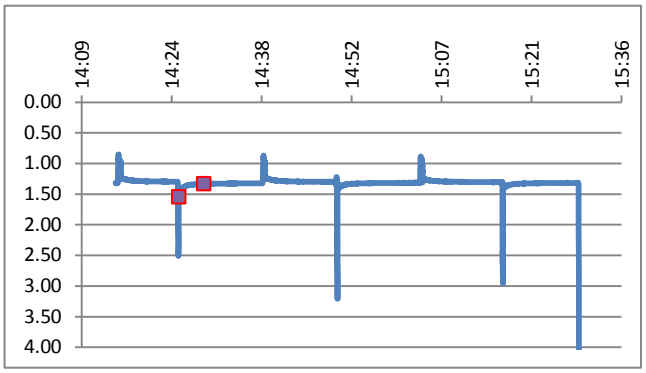
Diameter of response zone (D)	150	mm
Length of response zone (L)	3000	mm
Standpipe piezometer		
Shape factor (F) after Hvorslev (1951)	5.81	m

GROUNDWATER CONDITIONS

Depth to groundwater prior to test	1.34	m BGL
Groundwater level for analysis (Based on end of test water depth)	1.34	m BGL

TEST DATA

Elapsed time, t (minutes)	Depth to water below datum (m)	Head, H_t (m)	Head Ratio H_t/H_0
0	1.48	0.14	1.00
0.5	1.43	0.09	0.64
1	1.39	0.05	0.36
1.5	1.37	0.03	0.21
2	1.36	0.02	0.14
2.5	1.36	0.02	0.14
3	1.36	0.02	0.14
3.5	1.35	0.01	0.07
4	1.35	0.01	0.07
4.5	1.34	0.00	0.00
5	1.34	0.00	0.00
6	1.34	0.00	0.00
7	1.34	0.00	0.00
8	1.34	0.00	0.00
9	1.34	0.00	0.00
10	1.34	0.00	0.00



CALCULATED VALUES

Permeability calculation based on BS EN ISO 22282-2 : 2012 Section B.4.2 (Hvorslev method - general approach)

Differential head at start of test, H_0	0.14	m
Differential head at end of test, H_f	0.00	m
Time elapsed at end of test	10	mins
Proportion of test recovery	100	%

Coordinates of best fit line to data:

t_1 = 0.0 mins H_1/H_0 = 1.000

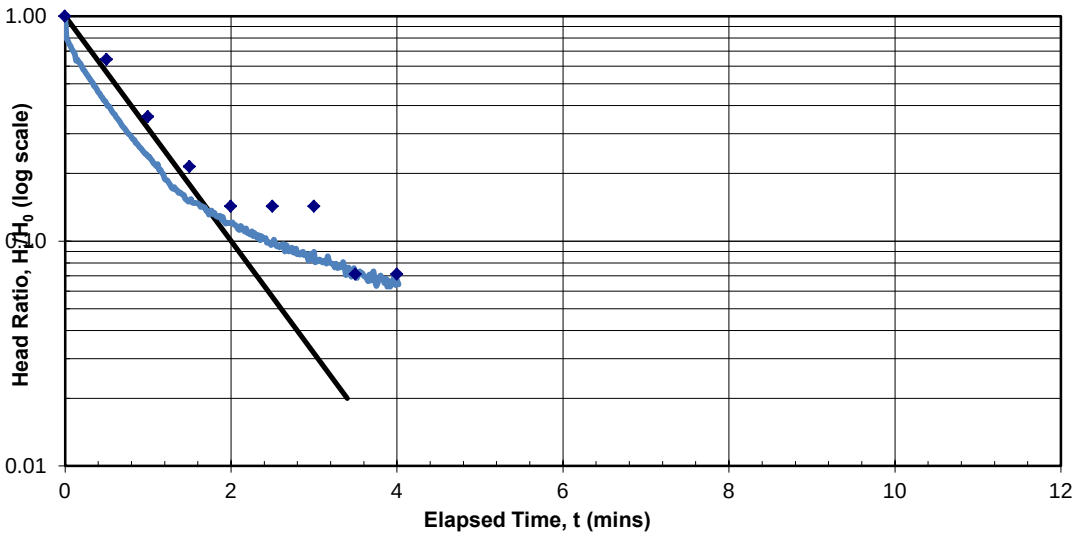
t_2 = 3.4 mins H_2/H_0= 0.020

Permeability (k) = 6.5E-06 m/sec

REMARKS

Slug testing carried out using dataloggers

Head Ratio against Time



AGS

Testing: JP/AE
Checked: RF
Approved: PH

Notes:

Project: Wynnstay Avenue, Wrexham
Project No.: F8054-18
Carried out for: Morgan Sindall

Test: **BH2T1**

Variable Head Permeability Test

SOCOTEC

LOCATION TYPE	Standpipe
TEST TYPE	Falling Head

DETAILS OF TEST ZONE:

Top of response zone	3.00	m BGL
Base of response zone	6.00	m BGL
Diameter of borehole (D)	150	mm
Height of tubing above ground level (datum)	0.00	m
Diameter of standpipe tubing	50	mm

BOREHOLE No.	BH2
TEST NUMBER	3
DATE OF TEST	14-Feb-19

TEST ZONE CONDITIONS

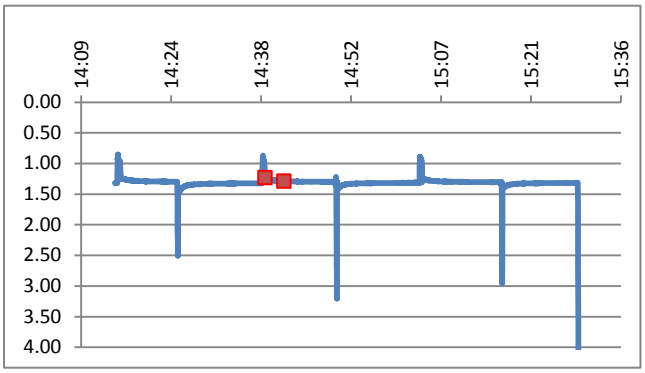
Diameter of response zone (D)	150	mm
Length of response zone (L)	3000	mm
Standpipe piezometer		
Shape factor (F) after Hvorslev (1951)	5.81	m

GROUNDWATER CONDITIONS

Depth to groundwater prior to test	1.34	m BGL
Groundwater level for analysis (Based on end of test water depth)	1.33	m BGL

TEST DATA

Elapsed time, t (minutes)	Depth to water below datum (m)	Head, H_t (m)	Head Ratio H_t/H_0
0	1.26	0.07	1.00
0.5	1.28	0.05	0.71
1	1.29	0.04	0.57
1.5	1.30	0.03	0.43
2	1.31	0.02	0.29
2.5	1.31	0.02	0.29
3	1.32	0.01	0.14
3.5	1.32	0.01	0.14
4	1.32	0.01	0.14
4.5	1.32	0.01	0.14
5	1.32	0.01	0.14
6	1.33	0.00	0.00
7	1.33	0.00	0.00
8	1.33	0.00	0.00



CALCULATED VALUES

Permeability calculation based on BS EN ISO 22282-2 : 2012 Section B.4.2 (Hvorslev method - general approach)

Differential head at start of test, H_0	0.07	m
Differential head at end of test, H_f	0.00	m
Time elapsed at end of test	8	mins
Proportion of test recovery	100	%

Coordinates of best fit line to data:

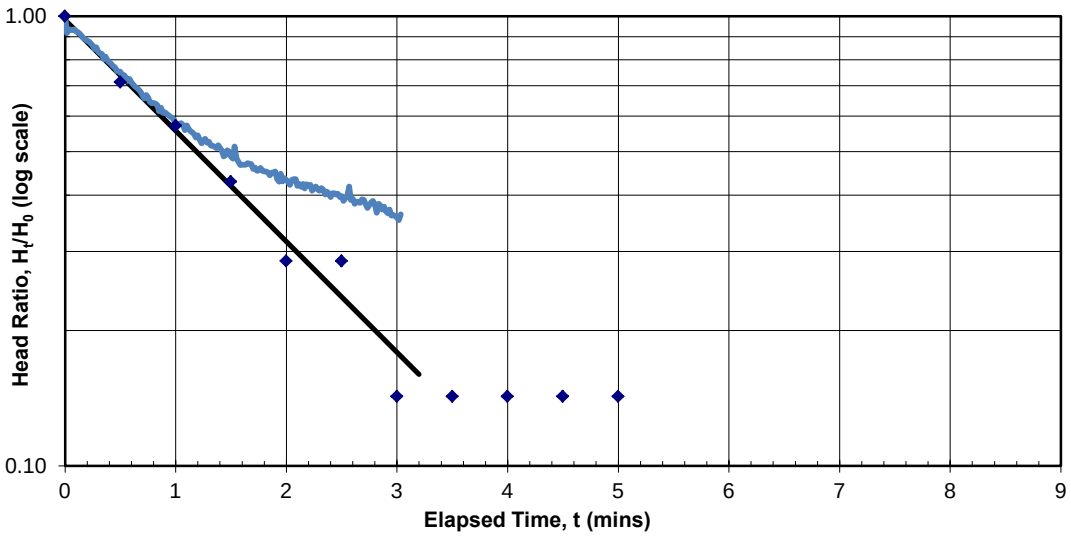
t_1 = 0.0 mins	H_1/H_0 = 0.980
t_2 = 3.2 mins	H_2/H_0= 0.160

Permeability (k) = 3.2E-06 m/sec

REMARKS

Slug testing carried out using dataloggers

Head Ratio against Time



AGS

Testing: JP/AE Checked: RF Approved: PH	Notes:	Project	Wynnstay Avenue, Wrexham	Test BH2T1
		Project No.	F8054-18	
		Carried out for	Morgan Sindall	

Variable Head Permeability Test

SOCOTEC

LOCATION TYPE	Standpipe
TEST TYPE	Rising Head

DETAILS OF TEST ZONE:

Top of response zone	3.00	m BGL
Base of response zone	6.00	m BGL
Diameter of borehole (D)	150	mm
Height of tubing above ground level (datum)	0.00	m
Diameter of standpipe tubing	50	mm

BOREHOLE No.	BH2
TEST NUMBER	4
DATE OF TEST	14-Feb-19

TEST ZONE CONDITIONS

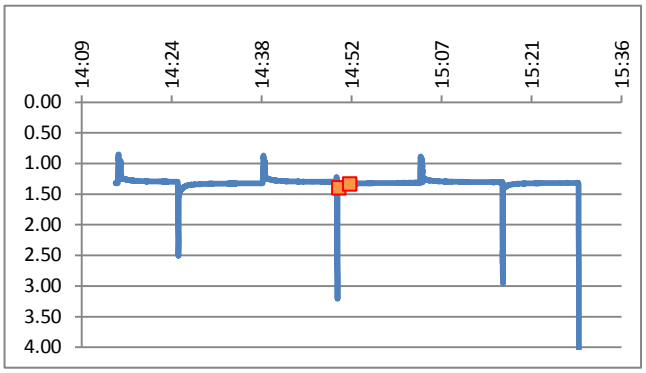
Diameter of response zone (D)	150	mm
Length of response zone (L)	3000	mm
Standpipe piezometer		
Shape factor (F) after Hvorslev (1951)	5.81	m

GROUNDWATER CONDITIONS

Depth to groundwater prior to test	1.34	m BGL
Groundwater level for analysis (Based on end of test water depth)	1.34	m BGL

TEST DATA

Elapsed time, t (minutes)	Depth to water below datum (m)	Head, H_t (m)	Head Ratio H_t/H_0
0	1.44	0.10	1.00
0.5	1.40	0.06	0.60
1	1.38	0.04	0.40
1.5	1.36	0.02	0.20
2	1.36	0.02	0.20
2.5	1.35	0.01	0.10
3	1.35	0.01	0.10
3.5	1.35	0.01	0.10
4	1.35	0.01	0.10
4.5	1.35	0.01	0.10
5	1.34	0.00	0.00
6	1.34	0.00	0.00
7	1.34	0.00	0.00
8	1.34	0.00	0.00
9	1.34	0.00	0.00
10	1.34	0.00	0.00



CALCULATED VALUES

Permeability calculation based on BS EN ISO 22282-2 : 2012 Section B.4.2 (Hvorslev method - general approach)

Differential head at start of test, H_0	0.10	m
Differential head at end of test, H_f	0.00	m
Time elapsed at end of test	10	mins
Proportion of test recovery	100	%

Coordinates of best fit line to data:

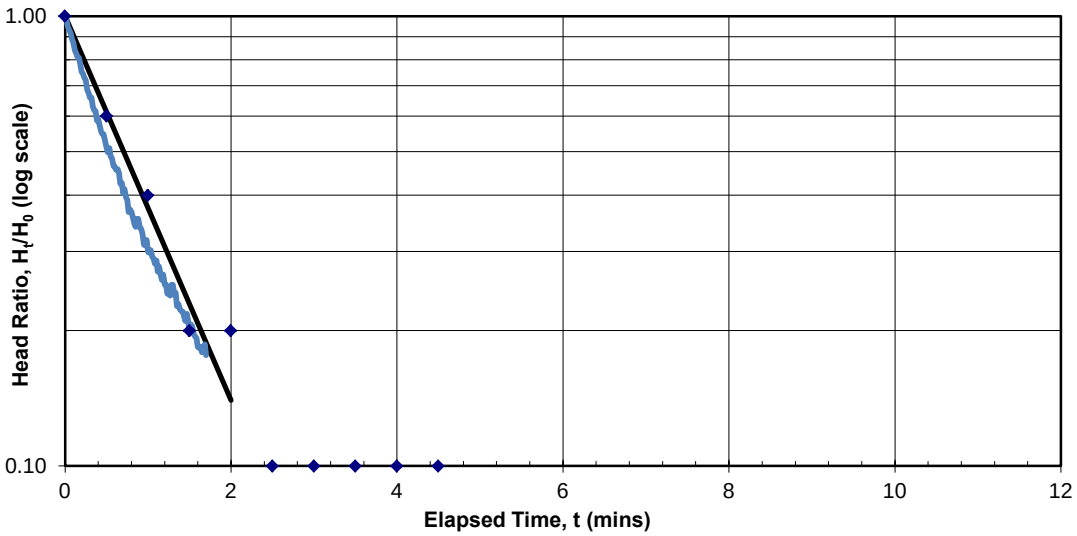
t_1 = 0.0 mins	H_1/H_0 = 1.000
t_2 = 2.0 mins	H_2/H_0= 0.140

Permeability (k) = 5.5E-06 m/sec

REMARKS

Slug testing carried out using dataloggers

Head Ratio against Time



AGS

Testing: JP/AE
Checked: RF
Approved: PH

Notes:

Project: Wynnstay Avenue, Wrexham
Project No.: F8054-18
Carried out for: Morgan Sindall

Test: **BH2T1**

Variable Head Permeability Test

LOCATION TYPE	Standpipe
TEST TYPE	Falling Head

DETAILS OF TEST ZONE:

Top of response zone	3.00	m BGL
Base of response zone	6.50	m BGL
Diameter of borehole (D)	150	mm
Height of tubing above ground level (datum)	0.00	m
Diameter of standpipe tubing	50	mm

BOREHOLE No.	BH1
TEST NUMBER	5
DATE OF TEST	14-Feb-19

TEST ZONE CONDITIONS

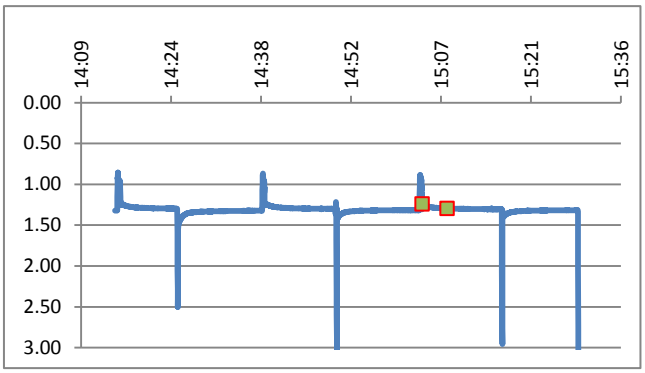
Diameter of response zone (D)	150	mm
Length of response zone (L)	3500	mm
Standpipe piezometer		
Shape factor (F) after Hvorslev (1951)	6.52	m

GROUNDWATER CONDITIONS

Depth to groundwater prior to test	1.34	m BGL
Groundwater level for analysis (Based on end of test water depth)	1.33	m BGL

TEST DATA

Elapsed time, t (minutes)	Depth to water below datum (m)	Head, H_t (m)	Head Ratio H_t/H_0
0	1.27	0.06	1.00
0.5	1.29	0.04	0.67
1	1.30	0.03	0.50
1.5	1.31	0.02	0.33
2	1.31	0.02	0.33
2.5	1.31	0.02	0.33
3	1.32	0.01	0.17
3.5	1.32	0.01	0.17
4	1.32	0.01	0.17
4.5	1.32	0.01	0.17
5	1.32	0.01	0.17
6	1.33	0.00	0.00
7	1.33	0.00	0.00
8	1.33	0.00	0.00
9	1.33	0.00	0.00
10	1.33	0.00	0.00
11	1.33	0.00	0.00



CALCULATED VALUES

Permeability calculation based on BS EN ISO 22282-2 : 2012 Section B.4.2 (Hvorslev method - general approach)

Differential head at start of test, H_0	0.06	m
Differential head at end of test, H_f	0.00	m
Time elapsed at end of test	11	mins
Proportion of test recovery	100	%

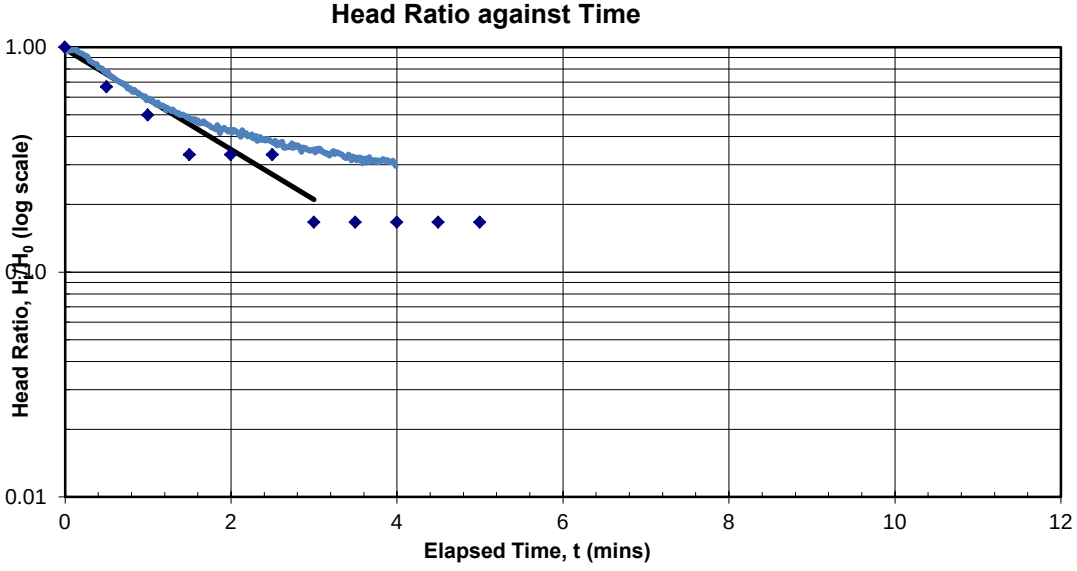
Coordinates of best fit line to data:

t_1 = 0.0 mins	H_1/H_0 = 0.980
t_2 = 3.0 mins	H_2/H_0= 0.210

Permeability (k) = 2.6E-06 m/sec

REMARKS

Slug testing carried out using dataloggers



AGS

Testing: JP/AE
Checked: RF
Approved: PH

Notes:

Project: Wynnstay Avenue, Wrexham
Project No.: F8054-18
Carried out for: Morgan Sindall

Test: **BH1T5**

Variable Head Permeability Test

SOCOTEC

LOCATION TYPE	Standpipe
TEST TYPE	Rising Head

DETAILS OF TEST ZONE:

Top of response zone	3.00	m BGL
Base of response zone	6.00	m BGL
Diameter of borehole (D)	150	mm
Height of tubing above ground level (datum)	0.00	m
Diameter of standpipe tubing	50	mm

BOREHOLE No.	BH2
TEST NUMBER	6
DATE OF TEST	14-Feb-19

TEST ZONE CONDITIONS

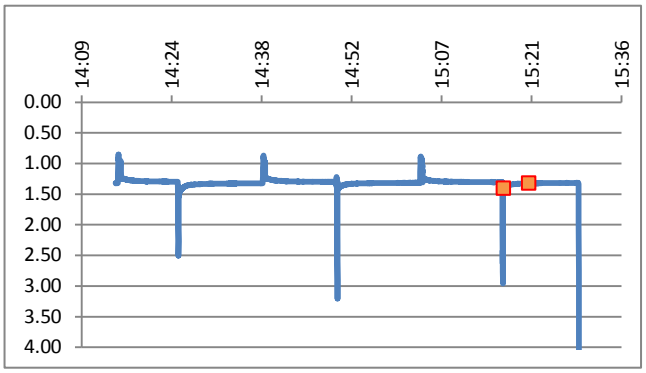
Diameter of response zone (D)	150	mm
Length of response zone (L)	3000	mm
Standpipe piezometer		
Shape factor (F) after Hvorslev (1951)	5.81	m

GROUNDWATER CONDITIONS

Depth to groundwater prior to test	1.34	m BGL
Groundwater level for analysis (Based on end of test water depth)	1.34	m BGL

TEST DATA

Elapsed time, t (minutes)	Depth to water below datum (m)	Head, H_t (m)	Head Ratio H_t/H_0
0	1.43	0.09	1.00
0.5	1.39	0.05	0.56
1	1.37	0.03	0.33
1.5	1.36	0.02	0.22
2	1.36	0.02	0.22
2.5	1.36	0.02	0.22
3	1.36	0.02	0.22
3.5	1.35	0.01	0.11
4	1.35	0.01	0.11
4.5	1.35	0.01	0.11
5	1.35	0.01	0.11
6	1.34	0.00	0.00
7	1.34	0.00	0.00
8	1.34	0.00	0.00
9	1.34	0.00	0.00
10	1.34	0.00	0.00
11	1.34	0.00	0.00



CALCULATED VALUES

Permeability calculation based on BS EN ISO 22282-2 : 2012 Section B.4.2 (Hvorslev method - general approach)

Differential head at start of test, H_0	0.09	m
Differential head at end of test, H_f	0.00	m
Time elapsed at end of test	11	mins
Proportion of test recovery	100	%

Coordinates of best fit line to data:

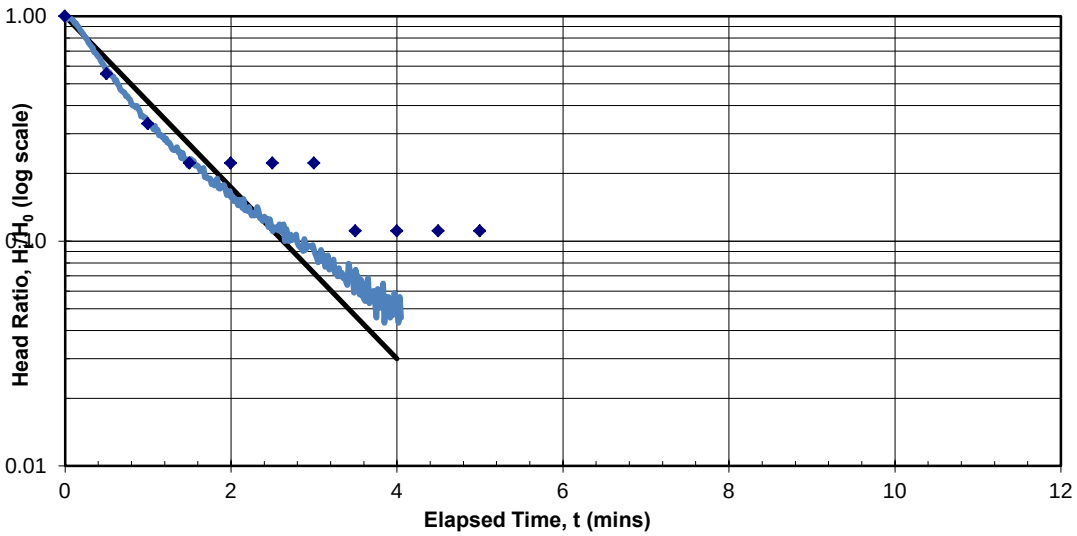
t_1 = 0.0 mins	H_1/H_0 = 1.000
t_2 = 4.0 mins	H_2/H_0= 0.030

Permeability (k) = 4.9E-06 m/sec

REMARKS

Slug testing carried out using dataloggers

Head Ratio against Time



AGS

Testing: JP/AE Checked: RF Approved: PH	Notes:	Project	Wynnstay Avenue, Wrexham	Test BH2T1
		Project No.	F8054-18	
		Carried out for	Morgan Sindall	

ARUP

Job No. 241513		Rev. 1
Prepared by TSR	Date 06/09/2019	Checked by LB

Client: Welsh Water

Job Title: Wrexham Hydrogeological Impact Assessment

Title: BH2 - Variable head test analysis

Rising head test (BS22282-2)

Time (min)	Dip (mbd)	y (m)	yt/y0
0.0	1.43	0.09	1.00
0.5	1.43	0.09	1.00
1.0	1.39	0.05	0.56
1.5	1.37	0.03	0.33
2.0	1.36	0.02	0.22
2.5	1.36	0.02	0.22
3.0	1.36	0.02	0.22
3.5	1.36	0.02	0.22
4.0	1.35	0.01	0.11
4.5	1.35	0.01	0.11
5.0	1.35	0.01	0.11
6.0	1.35	0.01	0.11
7.0	1.34	0.00	0.00
8.0	1.34	0.00	0.00
9.0	1.34	0.00	0.00
10.0	1.34	0.00	0.00
11.0	1.34	0.00	0.00

Datum	=	unknown
BH diameter, D (m)	=	0.15
Pipe radius, r (m)	=	0.025
BH radius, R (m)	=	0.075
BH area, A (m2)	=	0.02
Initial SWL (mbd)	=	1.34
Test length, L (m)	=	3.5
L/D	=	23.33
Shape factor, F	=	5.7
Hyd. Cond., K (m/s)	=	5.72E-06

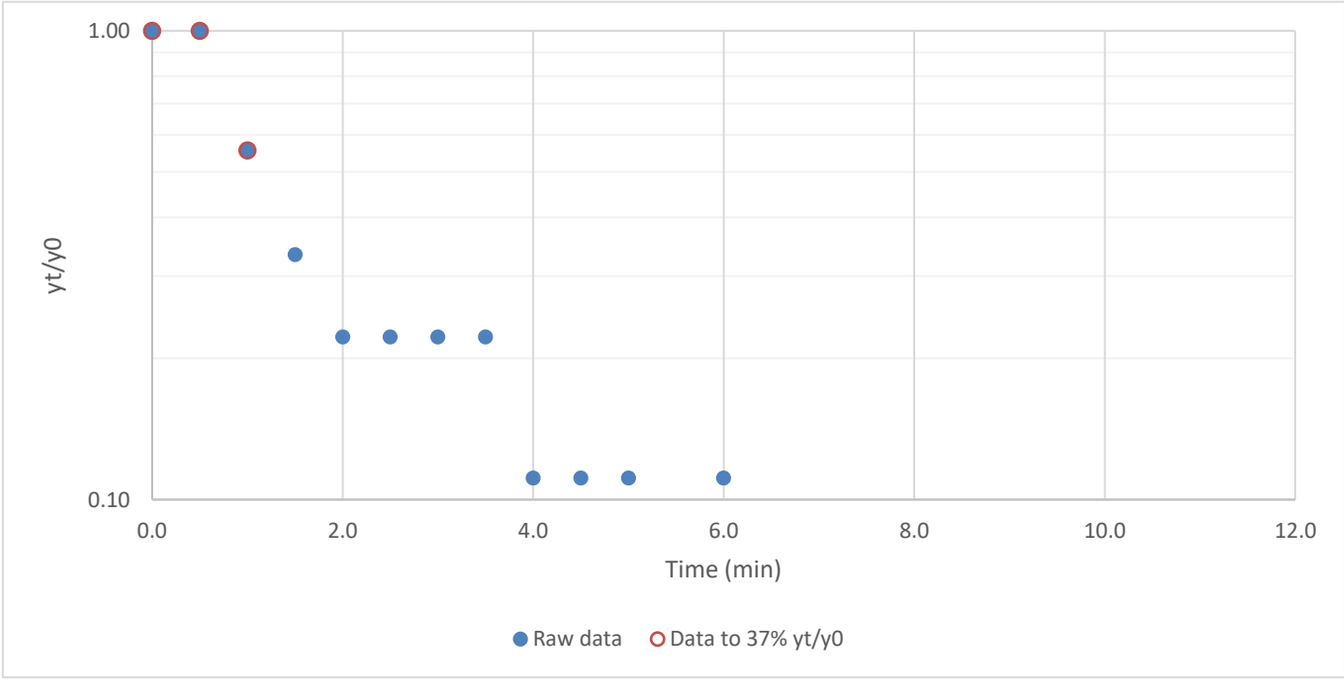
Shape factor equation adopted:

$$F = \frac{2 \cdot \pi \cdot L}{\ln\left(2 \cdot L/D\right)}$$

Valid for L/D > 10

Hydraulic conductivity

$$k = \frac{r^2 \cdot \ln\left(L/R\right)}{2 \cdot L \cdot t_o}$$



Radius of Influence and Flow Rates from a Fully Penetrating Analysis

Analysis - Confined Aquifer. Partial penetration of equivalent well. Feed by radial flow (groundwater only)

Assumptions: Radial flow to well, partially penetrating well, confined aquifer, circular source at distance Ro (Theim equation)

from Cashman and Preene, 2013

Qpp = B*Qfp where:
Qfp = (2πkD (H-hw)) / (ln[R0/re])

Project: Wrexham Hydrogeological Impact Assessment

EGL (Equivalent ground level) =	0	BEGL
GWL (Groundwater level) =	1.5	BEGL
BoE (Base of Excavation) =	4.8	BEGL
EXL (Drawdown level) =	5.8	BEGL
DD req (Total Drawdown required) =	4.3	m
Saturated thickness of thickness face =	1.8	m
Top of aquifer =	0	BEGL
Bottom of aquifer =	15	BEGL
H =	13.5	m
hw =	9.2	m
D =	15	m
a (length of excavation) =	40	m
b (width of excavation) =	50	m
r (radius of wellpoints) =	0.075	m
K =	5.72E-06	m/s
Recharge, P (summer) =	0.0014	m/day
Recharge, P (winter) =	0.0027	m/day

* Assumed minimum base of aquifer. Base of aquifer not proved during ground investigations.

Used to convert a rectangular pit to a circular one.

re, Effective Radius for excavation m	a m	b m	π	
25.23	40	50	3.14	re = √(ab/π)

Radius of Influence calculator: Marinelli and Niccoli, 2000

Scenario	H m	hs m	K m/day	P m/d	re m	Ro m
Summer	4.3	1.8	4.94E-01	0.0014	25.23	84.87
Winter	4.3	1.8	4.94E-01	0.0027	25.23	69.00

Flow rate calaculator

Scenario	π	K m/s	T m2/s	H m	hw m	Ro m	re m	Q l/s	Q m3/d
Summer	3.14	5.72E-06	8.58E-05	13.5	9.2	84.87	25.23	1.91	165.12
Winter	3.14	5.72E-06	8.58E-05	13.5	9.2	69.00	25.23	2.30	199.11

Partially Penetrating Assessment

Partial Penetrating Assessment- Confined	
rw	0.08
H	13.5
rw/H	**0.0055556**
P (Top of Aquifer - Toe	8.3
D	15
P + D/2D	**0.7766667**
B (FROM GRAPH)	**0.8**

Assumed toe of wellpoint 2.5m below drawdown required; 2.5m suction head for wellpoints

From Preene and Cashman p203

Scenario	Qfp (l/s)	B	Qpp (BQfp) (l/s)	Qpp (m3/d)
Summer	1.91	0.8	**1.53**	**132.10**
Winter	2.30	0.8	**1.84**	**159.28**