



Our Ref: 70062270/004 14 November 2019 CONFIDENTIAL



Supplemental PCB Investigation Works at St Ambrose

BACKGROUND

WSP UK Ltd has been provided ongoing support to North Lanarkshire Council for the Buchanan and St Ambrose Campus site following the Scottish Government's independent review as published in their report titled "Buchanan And St Ambrose High School Campus Independent Review" dated 9th August 2019. As part of these works, RSK carried out ground investigations at the site. Both RSK and the Scottish Government recommended remediation of local soils at a hand pit location (HP50) due to the recorded concentrations of polychlorinated biphenyl (PCB) compounds. It was noted these works should be done "on a purely precautionary basis so as to restore confidence in the site".

WSP prepared a remedial strategy document (memorandum dated 09 August 2019) to support the rapid remediation of this area prior to schools re-opening in August 2019. This involved removal of surficial soils over a 6m x 6m area centred on HP50, placement of a geotextile membrane, surfacing with paving slabs, and validation testing of both removed and residual soils. RSK attended during these remedial works, obtained duplicate samples, and produced validation reporting for the remedial works, as reported in their 29 August 2019 report titled 'Buchanan and St. Ambrose Schools, Coatbridge Remedial Measures Verification Report' (ref. 355247-R1(00)).

WSP's validation samples did not detect PCBs in the soil validation samples, this is consistent with RSK's duplicate samples, though one RSK sample (VHP2) detected one PCB species (PCB28) at the limit of detection (0.002 mg/kg). RSK additionally analysed dioxins and furans in their validation samples. RSK reported that all dioxin and furan concentrations and the detected PCB species were below screening criteria, and that the mitigation measures were suitable to prevent exposure.

RSK concluded "Whilst the works have addressed the isolated location of HP50 where PCBs had been previously identified, it is recommended that further soil sampling be completed on a grid spacing in this part of the site to confirm the absence of PCBs. This will inform the need for any supplementary remediation works, if any." Following this, they have provided NLC with a proposal dated 19 September 2019 (ref. T355247-TL02(00)) with a proposed scope of works. NLC requested that WSP review this proposal and provide an alternate scope of works for NLC's

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consideration. In our memorandum dated 25th September 2019, WSP proposed to complete the proposed supplemental investigation coverage recommended by RSK, but provided detailed commentary to justify the exclusion of dioxin and furan testing (as scoped by RSK in all samples).

WSP were subsequently commissioned by NLC to carry out the works proposed in our memorandum dated 25th September 2019. This letter summarises the findings and provides a supplemental risk assessment of PCBs at the site.

SCOPE OF WORKS

Rationale

Due to the unexpected detection of PCBs at HP50 in previous ground investigations (which were completed on an average 50m grid), RSK recommended 15 no. hand pits on a refined 20m grid surrounding HP50, extending to previous exploratory hole locations where PCBs were not detected.

As previously noted, WSP considered that the remediation works recently completed at the site, whilst not considered necessary on the basis of the completed assessments, assisted in the overall process by demonstrating that any areas of even low potential risk have been subject to further assessment and remediation. In this context therefore, WSP does not consider that further works were strictly required based on an interpretation of the results from all phases of investigation and remediation. Notwithstanding this, however, it is recognised that any such further works can assist in demonstrating the level of conservatism adopted in the treatment of the site (particularly given the ongoing community engagement). Within this context, RSK's proposed coverage and hand pit locations is considered reasonable.

WSP observes that previous testing was completed on a 50m grid, equivalent to an 'exploratory' investigation given in BS10175. This guidance supports progression to a 'main' investigation (20-25m grid) where uncertainty or sensitivity is noted. Following the unexpected detection of PCBs in HP50 in previous investigations, the proposal to move to main investigation coverage is considered suitable to further reduce uncertainty regarding potential PCB impacts in the vicinity of HP50.

Following on the above, RSK's proposed targeted and coverage was incorporated into WSP's scope of works.

Delivered Scope of Works

The following investigation scope has been completed:

- Hand pitting at 15 locations, completed by Amey (directly appointed to NLC);
- Logging and soil sampling of hand pits by WSP staff;
- Analysis of 30 No. samples for PCB EC7 and WHO12 (two depths per hand pit); and
- Analysis of 8 No. samples for Soil Organic Matter.

Deviations from Proposed Scope of Works

The following previously-proposed works were not completed. A discussion regarding the deviations is given below.

Duplicate analysis of three selected soil samples for Quality Control (QC) purposes:
 Subsequent to our proposal, intermediate arrangements were made for RSK to attend site and collect the QC samples. However, following additional discussions between NLC and RSK prior to the works, it was decided that RSK would not attend for this purpose. However, due to the generally non-detect nature of PCBs recorded in supplemental works, and those detections

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being significantly and consistently below assessment criteria (discussed later in this letter), then the absence of QC samples by RSK or WSP is not considered to have a significant impact on the assessment of results.

 Analysis of Dioxins and Furans on samples where PCBs are detected. The rationale for excluding these analyses are given in the risk assessments below.

INVESTIGATION FINDINGS

Hand pitting works were carried out on 12th October 2019. An exploratory hole plan and hand pit logs are appended to this letter. No visual/olfactory evidence of chemical contamination was noted. The ground conditions encountered are consistent with previous investigations, with grass and topsoil overlying made ground comprising predominately re-worked natural materials (sands, gravels, and clays) with inclusions of anthropogenic materials including brick, concrete, plastic, timber, coal, clinker, and glass.

Soil organic matter concentrations ranged from 6.24 to 18.8%, reflecting the higher organic content of the topsoil and made ground.

PCBs were detected in the following locations:

- SHP02 0.4-0.5m: PCB congener 180 0.0066 mg/kg
- SHP03 0.1-0.3m: PCB congener 180 0.0123 mg/kg
- SHP11 0.1-0.3m: three PCB7 species as follows:
 - PCB congener 138 0.0256 mg/kg
 - PCB congener 153 0.0462 mg/kg
 - PCB congener 180 0.1030 mg/kg

The remaining 27 samples did not detect PCB compounds above laboratory detection limits.

The detected PCB species in supplemental investigations all fall within PCB7 congeners, which is a group of PCB species indicative of a transformer oil source. However, the actual source is not known; no electrical substations were observed in historical mapping in this area. PCB impacts at HP50 0.0-0.1m were previously found to be limited in extent by delineation, and this exploratory hole recorded the highest concentration of total PCB7 (5.52 mg/kg) in site investigations to date. The total PCB7 detections in supplemental works ranged from 0.0066 mg/kg to 0.175 mg/kg, the highest being 30 times lower in concentration than recorded at HP50. In review of the concentrations and distribution of PCB detections, a widespread source is not considered present, as soil samples with PCB detections are separated from other locations by exploratory holes where PCBs were not detected. Therefore, the low PCB concentrations (i.e. significantly below the screening criteria adopted as discussed below) in this area are considered infrequent and sporadic. These may have been introduced during groundworks during site development, but as previously noted, the source is unknown.

The risks associated with the PCB detections are assessed in the following section.

SUPPLEMENTAL PCB RISK ASSESSMENT

PCB7 Congeners

PCB risks associated with HP50 were previously mitigated at site by source removal, which has been documented in WSP memorandum dated 30 September 2019. As such, no further assessment is required for the historical impacts at this location.

WSP has derived a site-specific assessment criteria (SSAC) of 5.81 mg/kg for total PCB7 congeners, the details of which are provided in our Contamination Risk Assessment report dated

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August 2018 (ref. 70062270/001). The total PCB7 detections in supplemental works ranged from 0.0066 mg/kg to 0.175 mg/kg, notably below WSP's SSAC, indicating low risks and no need for remedial intervention.

PCB WHO12 Congeners

These were not detected in supplemental soil samples, indicating low risks.

Dioxins and Furans

Dioxins and dioxin-like PCBs cause toxic effects in similar ways and therefore should be assessed using a Toxic Equivalency Factor (TEF) approach. This TEF expresses the toxicity of dioxins, furans, and dioxin-like PCBs in terms of relative toxicity to the most toxic form of dioxin (2,3,7,8-TCDD). Eleven of the twelve dioxin-like PCBs are WHO12 species, which were not detected in supplemental samples, and the single PCB7 species used in the TEF calculations (PCB 118) was similarly not detected in supplemental samples. As such, there are no detected PCB species detected to combine with dioxins and furans in the TEF approach, so these calculations have not been carried out.

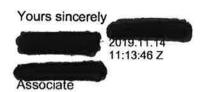
When considering dioxins and furans in isolation, both WSP and RSK have concluded that concentrations recorded at site are low risk for these compounds. WSP observed the concentration trends were, on average, lower than published background levels for urban soils, and RSK in their recent validation report found the dioxin and furan concentrations surrounding HP50 to be "considerably less" than their adopted assessment criteria. An assessment of suitable population (26 samples) of dioxin and furans analysis supports that these compounds are low risk at site. Further, the total dioxin and furan concentration in HP50 was 584 ng/kg, not notably higher than the average concentration of 520 ng/kg. As such, the detection of PCBs conforming to the transformer oil (PCB EC7) profile in HP50 does not give cause to suspect that elevated dioxin and furans would be present in the area surrounding HP50.

Consequently, WSP has not carried out supplemental dioxin and furan testing as:

- No PCB species used in TEF calculations were detected in the supplemental investigation; and
- Previous investigations and associated assessments by both WSP and RSK have reasonably demonstrated that dioxins and furans are low risk at site.

CLOSING

Supplemental PCB investigations have been completed in the area surrounding HP50 following RSK's previous recommendations. PCBs have been demonstrated to be largely absent from soils in this area, and assessed as low risk in isolated soils where PCBs were detected. As such, no further works are deemed necessary with regards to PCB impacts at the St. Ambrose site.

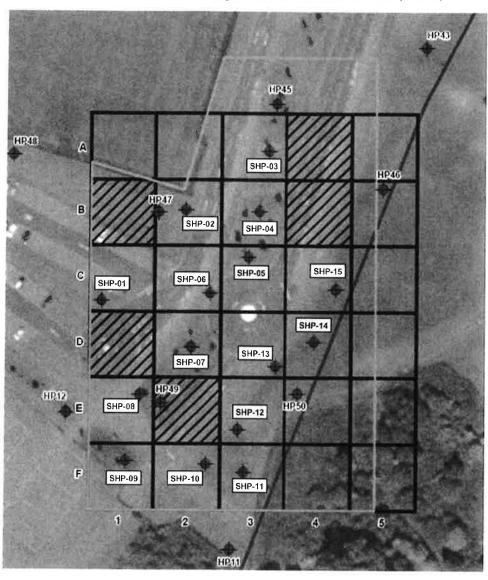


Encl. Exploratory Hole Location Plan; Hand Pit Logs; Laboratory Reports



Figure 1 – Exploratory Hole Location Plan

WSP locations overlain on extract from RSK figure titled Alternative Areas 20m Grid, Rev 01, dated 19/09/2019







Location	Easting	Northing
SHP-01	271745.2	665795.9
SHP-02	271770.2	665826.0
SHP-03	271799.2	665844.0
SHP-04	271792.3	665822.8
SHP-05	. 271788.3	665808.5
SHP-06	271847.7	665839.3
SHP-07	271772.9	665780.2
SHP-08	271755.6	665765.6
SHP-09	271761.5	665749.6
SHP-10	271776.4	665743.6
SHP-11	271790.0	665736.4
SHP-12	271787.6	665756.5
SHP-13	271795.1	665770.2
SHP-14	271805.2	665777.6
SHP-15	271813.8	665797.1

SHP-01 Strata depth and description

Depth (m)	Description
0 – 0.2	MADE GROUND: Grass over dark brown slightly gravelly slightly clayey fine to medium SAND with frequent rootlets. Gravel is angular fine to medium of mixed lithologies including occasional fragments of brick and mudstone (TOPSOIL).
0.20 - 0.5	MADE GROUND: Black slightly gravelly slightly clayey fine to medium SAND of mixed lithologies including black ash with occasional fragments of glass. Gravel is angular to sub-angular fine to medium of mixed lithologies including brick. Rare angular cobbles of concrete and brick.

SHP-02 Strata depth and description

Depth (m)	Description
0 – 0.2	MADE GROUND: Grass over dark brown slightly gravelly slightly clayey fine to medium SAND with frequent rootlets. Gravel is angular fine to medium of mixed lithologies including occasional fragments of brick and mudstone (TOPSOIL).
0.20 - 0.5	MADE GROUND: Black slightly gravelly slightly clayey fine to medium SAND of mixed lithologies including black ash with occasional fragments of glass. Gravel is angular to sub-angular fine to medium of mixed lithologies including brick.



SHP-03 Strata depth and description

Depth (m)	Description	
0 – 0.2	MADE GROUND: Grass over dark brown slightly gravelly slightly clayey fine to medium SAND with frequent rootlets. Gravel is angular fine to medium of mixed lithologies including occasional fragments of brick and mudstone (TOPSOIL).	
0.20 - 0.5	MADE GROUND: Black slightly gravelly slightly clayey fine to medium SAND of mixed lithologies including black ash with occasional fragments of glass. Gravel is angular to sub-angular fine to medium of mixed lithologies including brick.	

SHP-04 Strata depth and description

Depth (m)	Description
0 – 0.2	MADE GROUND: Grass over dark brown slightly gravelly slightly clayey fine to medium SAND with frequent rootlets. Gravel is angular fine to medium of mixed lithologies including occasional fragments of brick and mudstone (TOPSOIL).
0.20 - 0.5	MADE GROUND: Black slightly gravelly slightly clayey fine to medium SAND of mixed lithologies including black ash with occasional fragments of glass. Gravel is angular to sub-angular fine to medium of mixed lithologies including brick.

SHP-05 Strata depth and description

Depth (m)	Description
0 – 0.2	MADE GROUND: Grass over dark brown slightly gravelly slightly clayey fine to medium SAND with frequent rootlets. Gravel is angular fine to medium of mixed lithologies including occasional fragments of brick and mudstone (TOPSOIL).
0.20 - 0.5	MADE GROUND: Black slightly gravelly slightly clayey fine to medium SAND of mixed lithologies including black ash with occasional fragments of glass. Gravel is angular to sub-angular fine to medium of mixed lithologies including brick.

SHP-06 Strata depth and description

Depth (m)	Description
0-0.2	MADE GROUND: Grass over dark brown slightly gravelly slightly clayey fine to medium SAND with frequent rootlets. Gravel is angular fine to medium of mixed lithologies including occasional fragments of brick and mudstone (TOPSOIL).
0.20 - 0.5	MADE GROUND: Black slightly gravelly slightly clayey fine to medium SAND of mixed lithologies including black ash with occasional fragments of glass. Gravel is angular to sub-angular fine to medium of mixed lithologies including brick. Rare angular cobbles of concrete and brick.

SHP-07 Strata depth and description

Depth (m)	Description
0 – 0.2	MADE GROUND: Grass over dark brown slightly gravelly slightly clayey fine to medium SAND with frequent rootlets. Gravel is angular fine to medium of mixed lithologies including occasional fragments of brick and mudstone (TOPSOIL).



0.20 - 0.5

MADE GROUND: Black slightly gravelly slightly clayey fine to medium SAND of mixed lithologies including black ash with occasional fragments of glass. Gravel is angular to sub-angular fine to medium of mixed lithologies including brick.

SHP-08 Strata depth and description

Depth (m)	Description
0 – 0.2	MADE GROUND: Grass over dark brown slightly gravelly slightly clayey fine to medium SAND with frequent rootlets. Gravel is angular fine to medium of mixed lithologies including occasional fragments of brick and mudstone (TOPSOIL).
0.20 - 0.5	MADE GROUND: Black slightly gravelly slightly clayey fine to medium SAND of mixed lithologies including black ash with occasional fragments of glass. Gravel is angular to sub-angular fine to medium of mixed lithologies including brick. Rare angular cobbles of concrete and brick.

SHP-09 Strata depth and description

Depth (m)	Description
0 – 0.2	MADE GROUND: Grass over dark brown slightly gravelly slightly clayey fine to medium SAND with frequent rootlets. Gravel is angular fine to medium of mixed lithologies including occasional fragments of brick and mudstone (TOPSOIL).
0.20 - 0.5	MADE GROUND: Black slightly gravelly slightly clayey fine to medium SAND of mixed lithologies including black ash with occasional fragments of glass. Gravel is angular to sub-angular fine to medium of mixed lithologies including brick. Rare angular cobbles of concrete and brick.

SHP-10 Strata depth and description

Depth (m)	Description
0 – 0.2	MADE GROUND: Grass over dark brown slightly gravelly slightly clayey fine to medium SAND with frequent rootlets. Gravel is angular fine to medium of mixed lithologies including occasional fragments of brick and mudstone (TOPSOIL).
0.20 - 0.5	MADE GROUND: Black slightly gravelly slightly clayey fine to medium SAND of mixed lithologies including black ash with occasional fragments of glass. Gravel is angular to sub-angular fine to medium of mixed lithologies including brick. Rare angular cobbles of concrete and brick.

SHP-11 Strata depth and description

Depth (m)	Description
0 – 0.2	MADE GROUND: Grass over dark brown slightly gravelly slightly clayey fine to medium SAND with frequent rootlets. Gravel is angular fine to medium of mixed lithologies including occasional fragments of brick and mudstone (TOPSOIL).
0.20 - 0.5	MADE GROUND: Black slightly gravelly slightly clayey fine to medium SAND of mixed lithologies including black ash with occasional fragments of glass. Gravel is angular to sub-angular fine to medium of mixed llthologies including brick, coal and occasional clinker. Rare angular cobbles of concrete and brick.



SHP-12 Strata depth and description

Depth (m)	Description
0 - 0.2	MADE GROUND: Grass over dark brown slightly gravelly slightly clayey fine to medium SAND with frequent rootlets. Gravel is angular fine to medium of mixed lithologies including occasional fragments of brick and mudstone (TOPSOIL).
0.20 - 0.5	MADE GROUND: Black slightly gravelly slightly clayey fine to medium SAND of mixed lithologies including black ash with occasional fragments of glass. Gravel is angular to sub-angular fine to medium of mixed lithologies including brick, coal and occasional clinker.

SHP-13 Strata depth and description

Depth (m)	Description
0 – 0.2	MADE GROUND: Grass over dark brown slightly gravelly slightly clayey fine to medium SAND with frequent rootlets. Gravel is angular fine to medium of mixed lithologies including occasional fragments of brick and mudstone (TOPSOIL).
0.20 - 0.5	MADE GROUND: Black slightly gravelly slightly clayey fine to medium SAND of mixed lithologies including black ash with occasional fragments of glass. Gravel is angular to sub-angular fine to medium of mixed lithologies including brick, coal and occasional clinker.

SHP-14 Strata depth and description

Depth (m)	Description
0 - 0.2	MADE GROUND: Grass over dark brown slightly gravelly slightly clayey fine to medium SAND with frequent rootlets. Gravel is angular fine to medium of mixed lithologies including occasional fragments of brick and mudstone (TOPSOIL).
0.20 - 0.5	MADE GROUND: Black slightly gravely slightly clayey fine to medium SAND of mixed lithologies including black ash with occasional fragments of glass. Gravel is angular to sub-angular fine to medium of mixed lithologies including brick, coal and occasional clinker.

SHP-15 Strata depth and description

Depth (m)	Description
0 - 0.2	MADE GROUND: Grass over dark brown slightly gravelly slightly clayey fine to medium SAND with frequent rootlets. Gravel is angular fine to medium of mixed lithologies including occasional fragments of brick and mudstone (TOPSOIL).
0.20 - 0.5	MADE GROUND: Black slightly gravelly slightly clayey fine to medium SAND of mixed lithologies including black ash with occasional fragments of glass. Gravel is angular to sub-angular fine to medium of mixed lithologies including brick, coal and occasional clinker.



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CERTIFICATE OF ANALYSIS

Date of report Generation:

Customer:

Sample Delivery Group (SDG):

Your Reference: Location: Report No: on:

23 October 2019 WSP PB SCOTLAND

191015-79

70062270- st ambrose

St Ambrose 526681

This report has been revised and directly supersedes 526352 in its entirety.

We received 37 samples on Tuesday October 15, 2019 and 37 of these samples were scheduled for analysis which was completed on Wednesday October 23, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

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

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

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

Approved By:









ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291

Version: 2

Version Issued: 23/10/2019



Validated

SDG: Location:

191015-79 St Ambrose Client Reference: Order Number:

70062270- st ambrose 70062270-07S

Report Number: Superseded Report:

526681 526352

Received Sample Overview

	Received 5	ample Overview		
Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
20941939	SD01	ES	0.00 - 0.00	12/10/2019
20941825	SHP-01	ES	0 10 - 0 30	12/10/2019
20941851	SHP-01	ES	0.40 - 0.50	12/10/2019
20941904	SHP-02	ES	0.10 - 0,30	12/10/2019
20941963	SHP-02	ES	0.40 - 0.50	12/10/2019
20941968	SHP-03	ES	0.10 - 0.30	12/10/2019
20941973	SHP-03	ES	0.40 - 0.50	12/10/2019
20941980	SHP-04	ES	0.10 - 0.30	12/10/2019
20941985	SHP-04	ES	0 40 - 0 50	12/10/2019
20941990	SHP-05	ES	0.10 - 0.30	12/10/2019
20941828	SHP-05	ES	0.40 - 0.50	12/10/2019
20941830	SHP-06	ES	0 10 - 0.30	12/10/2019
20941832	SHP-06	ES	0,40 ~ 0.50	12/10/2019
20941834	SHP-07	ES	0 10 - 0.30	12/10/2019
20941837	SHP-07	ES	0.40 - 0.50	12/10/2019
20941839	SHP-08	ES	0 10 - 0.30	12/10/2019
20941841	SHP-08	ES	0.40 - 0.50	12/10/2019
20941843	SHP-09	ES	0.10 - 0.30	12/10/2019
20941845	SHP-09	ES	0.40 - 0.50	12/10/2019
20941848	SHP-10	EŞ	0.10 ~ 0.30	12/10/2019
20941856	SHP-10	ES	0,40 - 0.50	12/10/2019
20941861	SHP-11	ES	0,10 - 0,30	12/10/2019
20941866	SHP-11	ES	0.40 - 0.50	12/10/2019
20941871	SHP-12	ES	0.10 - 0.30	12/10/2019
20941875	SHP-12	ES	0.40 - 0.50	12/10/2019
20941882	SHP-13	ES	0.10 - 0.30	12/10/2019
20941887	SHP-13	ES	0.40 - 0.50	12/10/2019
20941892	SHP-14	ES	0.10 - 0.30	12/10/2019
20941894	SHP-14	ES	0.40 - 0.50	12/10/2019
20941898	SHP-15	ES	0.10 - 0.30	12/10/2019
20941908	SHP-15	ES	0.40 - 0.50	12/10/2019
20941913	TP10-VAL01	ES	0.20 - 0.30	12/10/2019
20941919	TP10-VAL02	ES	0.20 - 0.30	12/10/2019
20941925	TP10-VAL03	ES	0.20 - 0.30	12/10/2019
20941930	TP10-VAL04	ES	0.20 - 0.30	12/10/2019
20941934	TP10-VAL05	ES	0.50	12/10/2019
20941950	TS01	ES	0.00 - 0.00	12/10/2019

Maximum Sample/Coolbox Temperature (°C) :

ISO5567-3 Water quality - Sampling - Part3 During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C

16.6
ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs

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

CERTIFICATE OF ANALYSIS

A
(ALS)

ALS SDG: Location:		nt Re er Nu					0- st a 0-07S		se			Numi ded R			526681 526352						
Results Legend X Test No Determination Possible	Lab	Sample No(s)			20941839	20941825	20941851	20941904	20941963	20941968	20941973	20941980	20941985	20941990	20941828	20941830	20941832	20941834	20941837	20941839	14014607
Sample Types -		Customer ple Reference			8001	SHP-01	SHP-01	SHP-02	SHP-02	SHP-03	SHP-03	SHP-04	SHP-04	SHP-05	SHP-05	SHP-06	SHP-06	SHP-07	SHP-07	SHP-08	0077-00
S - Soli/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Propared Leachate	AG	AGS Reference Depth (m)			C.	ES	ms	ES	ES	ES	5										
PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage					0.00 - 0.00	0.10 - 0.30	0.40 - 0.50	0.10 - 0 30	0 40 - 0 50	0 10 - 0.30	0 40 - 0 50	0.10 - 0.30	0.40 - 0.50	0.10 - 0.30	0.40 - 0.50	0 10 - 0,30	0.40 - 0.50	0.10 - 0.30	0.40 - 0.50	0.10 - 0.30	0 - 0 - 0 - 0 - 0
RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Studge G - Gas OTH - Other		Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	(ALE210)														
	Sa	imple Type	w	co	co	co	co	ທ	S	S	σn	G	ဟ	ဟ	(A)	cn	S	Ø	v	G	U
Asbestos ID in Solid Samples	AU	NDPs: 0 Tests: 2	x																		
Dyanide Comp/Free/Total/Trilocyanate	AP	NDPs: 0 Tests: 2		x																	
EPH CWG GC (S)	Att	NDPs: 0 Tests; 2		x																	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2			x																
/letals in solld samples by OES	Afl	NDPs: 0 Tests: 7		x									*								
AH by GCMS	Aff	NDPs: 0 Tests: 2		x																	
CBs by GCMS	All	NDPs: 0 Tests: 32		x		x	x	x	х	х	х	x	x	х	x	x	x	x	x	x	х
н	All	NDPs: 0 Tests: 2		x						A	(0.00000)										
ample description	Au	NDPs; 0 Tests: 37		x		x	x	x	x	x	x	x	x	x	x	x	x	х	x	x	x
otal Organic Carbon	All	NDPs: 0 Tests: 10		x			x			x			x	x					x		
PH CWG GC (S)	All	NDPs: 0 Tests: 2		x																	
OC MS (S)	All	NDPs: 0 Tests: 2			x																

20941843	20941845	20941848	20941856	20941861	20941866	20941871	20941875	20941882	20941887	20941892	20941894	20941898	20941908	20941913	20941919	20941925	20941930	20941934		
SHP-09	SHP-09	SHP-10	SHP-10	SHP-11	SHP-11	SHP-12	SHP-12	SHP-13	SHP-13	SHP-14	SHP-14	SHP-15	SHP-15	TP10-VAL01	TP10-VAL02	TP10-VAL03	TP10-VAL04	TP10-VAL05		
ES	ES	E S	E S	m Ø	E S	8	ES	ES ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES		
0.10 - 0.30	0.40 - 0.50	0.10 - 0.30	0 40 - 0.50	0.10 - 0.30	0.40 - 0.50	0.10 - 0.30	0.40 - 0.50	0.10 - 0.30	0.40 - 0.50	0,10-0.30	0 40 - 0 50	0.10 - 0.30	0.40 - 0.50	0.20 - 0.30	0.20 - 0.30	0 20 - 0.30	0.20 - 0.30	0.50		0.00
250g Amber Jar (ALE210)	1kg TUB	(ALE210)																		
co	cn	w	v	co	S	S	S	G	cn	co	S	co	ဟ	တ	, o	co	ဟ	w	co	(
-																			x	
-																				x
																				x
														x	x	x	x	x		x
																				x
x	x	x	x	x	x	x	x	x	x	x	x	x	x							x
																				x
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	х		x
		x				4			x			x								x
																				x

526681

526352

Report Number: Superseded Report:

70062270-078

CERTIFICATE OF ANALYSIS Client Reference: 70082270- st ambrose

X



191015-79 SDG: Location: St Ambrose Order Number: Results Legend 20941950 Lab Sample No(s) X Test No Determination Possible Customer TS01 Sample Reference Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water Ë **AGS Reference** LE - Land Leachale PL - Prepared Leachate PR - Process Water 0.00 - 0.00 FR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Unfreated Sewage
RE - Recreational Water Depth (m) 60g VOC (ALE215) NE - Recreational water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other Container Sample Type S GRO by GC-FID (S) Αŧ Tests: 2 X VOC MS (S) ΑIJ NDPs: 0 Tests: 2



Validated

>10mm

SDG: Location: 191015-79 St Ambrose

 Client Reference:
 70062270- st ambrose

 Order Number:
 70082270-07S

Report Number: Superseded Report:

526681 526352

Sample Descriptions

Grain Sizes

very fine <0.00	63mm fine 0.0	63mm - 0.1mm	medium	0.1mm - 2mm Coa	rse 2mm -	10mm very c
Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
20941939	SD01	0.00 - 0.00	Dark Brov	vn Loamy Sand	Crushed Brick	Stones
20941825	SHP-01	0.10 - 0.30	Dark Brov	vn Sandy Silt Loam	Vegetation	Stones
20941851	SHP-01	0.40 - 0.50	Dark Brov	vn Silty Clay Loam	Crushed Brick	Slones
20941904	SHP-02	0.10 - 0.30	Dark Brov	n Sandy Silt Loam	Slones	Vegetallon
20941963	SHP-02	0,40 - 0,50	Dark Brov	n Sandy Silt Loam	Stones	Vegelation
20941968	8HP-03	0,10 - 0,30	Dark Brov	n Silly Clay Loam	Brick	Stones
20941973	SHP-03	0.40 - 0.50	Dark Brow	m Sandy Silt Loam	Stones	Vegelalion
20941980	SHP-04	0.10 - 0.30	Dark Brov	n Sandy Silt Loam	Stones	Vegelation
20941985	SHP-04	0.40 - 0.50	Dark Brow	n Silty Clay Loam	Crushed Brick	Plastic
20941828	SHP-05	0.40 - 0.50	Dark Brow	n Silly Clay Loam	Crushed Brick	Glass
20941990	SHP-05	0.10 - 0.30	Dark Brow	nt Sandy Silt Loam	Stones	Vegetation
20941830	SHP-06	0.10 - 0.30	Dark Brow	n Sill Loam	Stones	Vegetation
20941832	SHP-06	0.40 - 0.50	Dark Brow		Crushed Brick	Stones
20941834	SHP-07	-	S.S. PAGGGGGGG			
		0,10 - 0.30	Dark Brow	7 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Brick	Vegetation
20941837	SHP-07	0.40 - 0.50	Dark Brow	n Silly Clay Loam	Crushed Brick	Glass
20941839	SHP-08	0,10 - 0,30	Dark Brow	n Sandy Silt Loam	Crushed Brick	Vegetation
20941841	SHP-08	0.40 - 0.50	Dark Brow	n Silty Clay Loam	Glass	Crushed Brick
20941843	SHP-Q9	0.10 - 0.30	Dark Brow	n Silty Clay Loam	Stanes	Vegelation
20941845	SHP-09	0.40 - 0.50	Dark Brow	n Silty Clay Loam	Crushed Brick	Glass
20941848	SHP-10	0.10 - 0.30	Dark Brow	n Silty Clay Loam	Crushed Brick	Stones
20941856	SHP-10	0.40 - 0.50	Dark Brow	n Sandy Silt Loam	Stones	Vegetation
20941861	SHP-11	0.10 - 0.30	Dark Brow	n Sandy Sill Loam	Stones	Vegetation
20941866	SHP-11	0.40 - 0.50	Dark Brow	Sandy Silt Loam	Stones	Vegetation
20941871	SHP-12	0.10 - 0,30	Dark Brow	n Sandy Silt Loam	Stones	None
20941875	SHP-12	0.40 - 0.50	Dark Brow	n Sandy Silt Loam	Stones	Vegetation
20941882	SHP-13	0.10 - 0.30	Dark Brow	n Sandy Silt Loam	Stones	Vegetation
20941887	SHP-13	0.40 - 0.50	Dark Brow	n Sandy Silt Loam	Stones	Vegetation
20941892	SHP-14	0.10 - 0.30	Dark Brow	n Sandy Sill Loam	Stones	Vegetation
20941894	SHP-14	0.40 - 0.50	Dark Brow	n Sandy Silt Loam	Stones	Vegetation
20941898	SHP-15	0,10 - 0.30	Dark Brow	n Sandy Silt Loam	Stones	None
20941908	SHP-15	0.40 - 0.50	Dark Brow	n Sandy Silt Loam	Stones	Vegetation
20941913	TP10-VAL01	0.20 - 0.30	Dark Brow	n Silty Clay Loam	Stones	Crushed Brick
20941919	TP10-VAL02	0.20 - 0.30	Dark Brow	n Silty Clay Loam	Stones	Vegetation
20941925	TP10-VAL03	0.20 - 0.30	Black	Silly Clay Loam	Crushed Brick	Vegetation
20941930	TP10-VAL04	0.20 - 0.30	Black	Silty Clay Loam	Crushed Brick	Concrete/Aggregate
20941934	TP10-VAL05	0.50	Black	Sandy Clay Loam	Crushed Brick	Glass
20941950	TS01	0.00 - 0.00	Dark Brow		Vegetation	Stones



Validated

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

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

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

SDG: Location: 191015-79 St Ambrose

Client Reference: 70062270- st ambrose 70062270-07S

Report Number: Superseded Report:

526681 526352

# RETURN Regard # RETURN Regarded		Customer Sample Ref.	SD01	SHP-01	SHP-01	SHP-02	SHP-02	8HP-03
an Accuse 1 accretions. and Appeared accretion sample ding fitti Dispolved / fitter ed sumple tot extil Total sampline disminute. Subcontracted - refer in exhibiting and excretion less states	od for	Depth (m) Sample Type Date Sampled	0 00 - 0 00 SoiVSolid (S) 12/10/2019	0 10 - 0 30 Soil/Soild (S) 12/10/2019	0 40 - 0 50 Soil/Soild (S) 12/10/2019	0 10 - 0 30 Soil/Solid (S) 12/10/2019	0 40 - 0 50 Soil/Solid (S) 12/10/2019	0 10 - 0 30 Sol/Solid (S) 12/10/2019
" % securery of the surrogate standard to ch officiancy of the method. The results of ind	Well	Sample Time Date Received	15/10/2019	15/10/2019	15/10/2019	15/10/2019	15/10/2019	15/10/2019
compounds within samples eren't corrects recovery	for the	EDG Ref	191015-79 20941939	191015-79	191015-79	191015-79	191015-79	191015-79
(F) Trigger breach confirmed 1.3646 Sample destation (non opposits)		Lab Sample No (s) AGB Reference	E8 2094 1939	20941825 ES	20941851 ES	20941904 ES	20941983 ES	20941968 ES
Component	LQQ/Units	Method						
Moisture Content Ratio (% of as	%	PM024	4_1	19	- 21	18	18	24
received sample) Soil Organic Matter (SOM)	<0.35 %	TM132	<0.35	-	40.0			40.0
Oon Organic Maker (GOM)	V0.00 76	1101132	\0.35 #		18.8			18.3
pΗ	1 pH Units	TM133	8 44		"			
			М					
Cyanide, Total	<1 mg/kg	TM153	<1					
			M					
Cyanide, Free	<1 mg/kg	TM153	<1					
PCB congener 28	<0,003	TM168	<0.003	40.000	-2.200	-2.000	A 202	
r GB congener zo	mg/kg	INTO	<0.003 M	<0,003 M	<0.003	<0.003 M	<0.003	<0.003
PCB congener 52	<0.003	TM168	< 0.003	<0.003	<0,003	<0.003	<0.003	<0.003
	mg/kg		M		-0,003 M	V0.003	-0,003 M	<0.003
PCB congener 101	< 0.003	TM168	<0.003	<0,003	<0.003	<0.003	<0,003	< 0.003
	mg/kg		M	М	M	M	M	
PCB congener 118	<0.003	TM168	<0.003	<0.003	< 0.003	<0.003	< 0.003	<0.003
DCD approprie 430	mg/kg	THEOD	M	M	M	M	М	
PCB congener 138	<0.003	TM168	<0,003	<0.003	<0.003	<0.003	<0.003	< 0.003
PC8 congener 153	mg/kg <0.003	TM168	<0.003	<0.003	<0.003	<0.003	<0,003	<0.003
r od dangener 13a	mg/ka	TIVITO	√0,003 M	W.003	<0.003 M	<0.003 M	<0,003 M	<0.003
PCB congener 180	< 0.003	TM168	<0.003	<0.003	<0.003	<0.003	0.00664	<0.003
	mg/kg		M	М	Μ.	M	м	0,000
Sum of delected PCB 7	<0.021	TM168	<0.021	<0.021	<0.021	< 0.021	<0.021	< 0.021
Congeners	mg/kg							
PCB congener 81	<0,003	TM168	< 0.003	<0.003	<0.003	<0.003	<0,003	< 0.003
PCB congener 77	mg/kg	TM168	M	M	M	M	M	0.000
rob congener //	<0.003 mg/kg	IMIOR	<0,003 M	<0.003 M	<0.003 M	<0.003 M	<0.003 M	<0.003
PCB congener 123	<0.003	TM168	<0.003	<0.003	<0.003	<0.003	< 0.003	<0.003
	mg/kg		M	M	м	M	M	10.000
PCB congener 114	<0.003	TM168	<0.003	< 0.003	< 0.003	< 0.003	<0.003	<0.003
	mg/kg		M	M	М	М	м	
PCB congener 105	<0.003	TM168	<0.003	< 0.003	< 0.003	< 0.003	<0.003	< 0.003
DCD conscent 470	mg/kg	TAMOO	M	M	M	M	M	
PCB congener 126	<0,003 mg/kg	TM168	<0.003 M	< 0.003	< 0.003	<0.003	<0.003	< 0.003
PCB congener 167	<0.003	TM168	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
our congener to	mg/kg	1111100	M	M	-0,003 M	M	-0.003 M	<0.003
PCB cangener 156	< 0.003	TM168	<0.003	<0.003	<0.003	<0.003	<0.003	< 0.003
	mg/kg		M	М.	М	M	М	0.000
PCB congener 157	<0.003	TM168	<0.003	<0.003	<0.003	<0.003	<0,003	<0.003
700	mg/kg	Thire	M	M	M	M	М	
PCB congener 169	<0.003	TM168	<0.003	<0,003	<0.003	<0.003	< 0.003	< 0.003
PCB congener 189	mg/kg <0.003	TM168	<0.003	<0.003	MM	MM	M	<0.000
OB congone, 10a	mg/kg	TIVITUD	(M)	<0.003 M	<0.003 M	<0.003 M	<0.003 M	<0.003
Sum of delected WHO 12 PCBs	<0.036	TM168	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036
	mg/kg		-1-44	5.500	.0.000	-0.000	-0,000	10,000
Arsenic	<0.6 mg/kg	TM181	3.11					
			M					
Cadmium	<0,02 mg/kg	TM181	<0.02					
Chromium	c0.0 "	TM404	M_					
action (IIIO)	<0.9 mg/kg	TM181	10,3 M					
Copper	<1.4 mg/kg	TM181	5.7					
·rr-′	mg/mg		M .					
.ead	<0.7 mg/kg	TM181	9.24					
			M					
Mercury	<0.14 mg/kg	TM181	<0.14					
Halval	40.0 11	THAC	M					
lickel	<0.2 mg/kg	TM181	18.6					
Gelenium	<1 mg/kg	TM181	<1 M					
Section (MIT)	- congreg	111101	#					

Validated



 SDG:
 191015-79
 Client Reference:
 70062270- st ambrose
 Report Number:
 526681

 Location:
 St Ambrose
 Order Number:
 70062270-07S
 Superaeded Report:
 526352

	Results Legend	400 VIII	Customer Sample Ref.	SD01	SHP-01	SHP-01	SHP-02	SHP-02	SHP-03
W	(SO)F0(S) accredited mCER(S) accredited		İ					VIII 42	0111700
144	Aqueous / settled eample	- 1							
何 有有 用格	Drawfynd i Minrod x (mpto	1	Depth (m)	0 00 - 0 00	0 10 - 0 30	0.40 - 0.50	0.10 - 0.30	0 40 - 0 50	0 10 - 0 30
oLymfii '	Total / unfiltered sample Subcontracted system to subcontractes report to		Sample Type	Soil/Solid (S)	Soit/Solid (9)	Soil/Solid (S)	Sol//Solid (S)	Soil/Solid (S)	Soil/Solid (S)
	accreditation etable		Date Sampled	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2018
**	"A recovery of the surrogets standard to check to		Sample Time	l'				- INESTO	121012010
	afficiency of the crathod. The results of individual	al I	Date Received	15/10/2019	15/10/2019	15/10/2019	15/10/2019	15/10/2019	15/10/2019
	combonings rights immiges stall, cettacted for	the	SDG Ref	101015-79	191016-79	191015-79	191015-79	1910(5-79	191015-79
P	recovery Trigger breech confirmed	1	Lab Sample No (s)	20941939	20941825	20941851	20941904	20941963	20941958
1-3+10	Burnie division (see appendix)		AGS Reference	ES	ES	ES	ES	ES	ES
ompo		LOD/Units	Method						1.0
	- I								
inc		<1.9 mg/kg	TM181	42.9					
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CERTIFICATE OF ANALYSIS



SDG: 191015-79 Location: St Ambrose
 Client Reference:
 70082270- st ambrose

 Order Number:
 70082270-07S

70- st ambrose Report Number: 70-07S Superseded Report: 526681 526352

-	Results Legend		Customer Sample Ref	SHP-03	SHP-04	SHP-04	SHP-05	SHP-05	SHP-06
#9	mGERTS accredited Aqueous / settled sample								
diss fit tot safit	Dissolved / filtered sample Total / unfiltered sample		Depth (m) Sample Type	0 40 - 0 50 Soil/Solid (S)	0 10 - 0 30 Soil/Solid (S)	0 40 - 0 50 SoiVSoiid (S)	0.10 - 0.30 Sol/Solid (S)	0.40 - 0 50 Sol/Solid (S)	0 10 - 0 30
.19	Subcontracted - refer to subcontractor report accreditation studys		Date Sampled	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	Soil/Solid (S) 12/10/2019
72	'A recovery of the surrogate standard to ches officiency of the medical. The results of India		Sample Time Date Received	15/10/2019	15/10/2019	15/10/2019	16/10/2019	15/10/2019	15/10/2019
	compounds within samples sten't corrected receivery	for the	SDG Ref	191015-79	191015-79	191015-79	191015-79	191015-79	191015-79
(F) 15345@	Trigger breech confirmed Sample deviation (one appendix)		Lab Sample No (a) AGS Raferance	20941973 ES	20941980 ES	20941985 ES	20941990 ES	20941628 ES	20941830 ES
Compo		LOD/Unita	Method					,,,	
	Content Ratio (% of as	%	PM024	16	18	22	25	28	22
received									
Soil Orga	anic Matter (SOM)	<0.35 %	TM132			6 24	18.3		
PCB con	делег 28	<0.003	TM168	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
DCD		mg/kg	TIME	M	M	M	M	.M.	M
P C B COII	gener 52	<0.003 mg/kg	TM168	<0.003 M	<0.003 M	<0,003 M	<0.003 M	<0.003 M	<0.003 M
PCB con	gener 101	< 0.003	TM168	<0.003	<0.003	<0.003	<0.003	<0.003	< 0.003
		mg/kg		M	M	М	M	M	М
PCB con	gener 118	<0.003	TM168	< 0.003	<0.003	< 0.003	< 0.003	< 0.003	< 0.003
		mg/kg		M	M	М	M	M	М.
PCB con	gener 138	<0.003	TM168	<0.003	<0.003	<0.003	<0.003	< 0.003	< 0.003
PCR con	gener 153	mg/kg <0.003	TM168	<0.003	<0.003	M	M	M	M
1 00 0011	gonur 100	mg/kg	INITUO	<0.003	<0.003 M	<0.003 M	<0.003 M	<0.003 M	<0.003 M
PCB con	gener 180	<0.003	TM168	<0.003	<0,003	<0.003	0.0123	<0.003	<0.003
	V	mg/kg		M	M	M	M	м	M.
	etected PCB 7	<0.021	TM168	<0.021	<0.021	<0.021	<0.021	< 0.021	<0.021
Congene		mg/kg							
PCB con	gener 81	<0.003	TM168	<0,003	<0.003	< 0.003	< 0.003	<0.003	<0.003
PCB cong	2000 77	mg/kg <0.003	TM168	<0.003	<0.003	M	M.	M	M
r GB GOIN	Jeliei 73	mg/kg	TIVITO	<0.003 M	<0.003 M	<0,003 M	<0.003 M	<0.003 M	<0.003 M
PCB cong	gener 123	<0.003	TM168	<0.003	< 0.003	< 0.003	<0.003	< 0.003	<0.003
		mg/kg		м	М.	M	M	M	M
PCB cong	gener 114	<0.003	TM168	<0,003	< 0.003	<0.003	< 0.003	< 0.003	<0.003
		mg/kg		M	M	M	M	M	M
PCB cong	jener 105	<0.003	TM168	<0.003	<0.003	< 0.003	<0.003	<0.003	< 0.003
PCB cong	ionar 126	mg/kg <0,003	TM168	<0.003	<0.003	<0.003	<0.003	<0.003	M
T OD GONG	John 120	mg/kg	1101100	- W	M.	V0.003	V0_003	<0.003 M	<0.003 M
PCB cong	jener 167	<0.003	TM168	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
		mg/kg		M	М	M	М	M	М
PCB cong	ener 156	<0.003	TM168	< 0.003	<0.003	<0.003	<0.003	<0.003	<0.003
DOD	457	mg/kg	T11400	M.	M	M	M	M	M
PCB cong	ener 157	<0.003 mg/kg	TM168	<0.003 M	<0.003 M	<0.003 M	< 0.003	<0.003	<0.003
PCB cong	ener 169	< 0.003	TM168	<0.003	<0.003	< 0.003	<0,003	<0.003	< 0.003
		mg/kg	1,1,1,00	M	М	M	м	-0.005 M	-0 003 M
PCB cong	ener 189	<0.003	TM168	<0.003	< 0.003	<0.003	< 0.003	<0.003	<0.003
2 (1		mg/kg		M	М	M	M:	M.	M
Sum of de	elected WHO 12 PCBs	<0.036	TM168	<0.036	<0036	<0.036	< 0.036	<0.036	< 0.036
		mg/kg							
								l l	



SDG: Location: 191015-79 St Ambrose

Client Reference: 70062270- st ambrose 70062270-07S

Report Number: Superseded Report:

526681 526352

(ALS)		Ot 7 milor GGD		redinosi. 70	002270-073	Gaper Goded IV	328382	
Results Legend		Customer Semple Ref.	SHP-06	SHP-07	SHP-07	SHP-08	SHP-08	SHP-09
W INCERTS according					OIII -VI	0111 40	GITF-DØ	AHE-03
aq Aqueous I settled sample stes fit Discotved / filterad sample	- 1	Depth (m)	0.40 - 0.50	0 10 - 0 30	0 40 - 0 50	010-030	0 40 - 0 50	0 10 - 0 30
tot until Total i unfirtared e em ple Subçueliración - rufus las subsentración rep	ed No	Sample Type	Soil/Solid (S)	Soi//Solid (S)	Soll/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	SolfSolid (S)
a correction of the eurogate straderd to ch	ark the	Date Exmpled Eample Time	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
efficiency of the method. The results of (no compounds within parentee aren't conscious	Myldusi	Dala Received	15/10/2019	15/10/2019	15/10/2019	15/10/2019	15/10/2019	15/10/2019
LECTOROLY	a na oc	SDG Ref	191015-79	191015-79	191015-79	191015-79	19 (015-79	191015-79
(F) Trigger breach confirmed 1-3-6(8) Sample deviation (see appendix.)		Lab Sample No.(4) AGS Reference	20941832 ES	20941834 ES	20941837 ES	20941839 ES	20941841 ES	20941843 ES
Component	LOD/Units	Method						
Moisture Content Ratio (% of as	%	PM024	15	20	25	23	26	33
received sample)								
Soil Organic Matter (SOM)	<0.35 %	TM132			15.5			
					#			
PCB congener 28	< 0.003	TM168	< 0.015	<0.003	<0.003	< 0.003	< 0.003	< 0.003
	mg/kg		M	M	M	M	M	
PCB congener 52	< 0.003	TM168	<0.015	< 0.003	<0.003	<0.003	< 0.003	< 0.003
	mg/kg		M	М	M	М	M	
PCB congener 101	<0.003	TM168	<0.015	<0,003	<0.003	<0.003	< 0.003	< 0.003
	mg/kg		M	M	M	M	M	Δ
PCB congener 118	<0.003	TM168	<0.015	<0.003	<0 003	<0.003	<0.003	<0.003
000	rng/kg		M	M	М	М	M	N
PCB congener 138	< 0.003	TM168	< 0.015	<0.003	<0.003	<0.003	<0.003	< 0.003
DOD 462	rng/kg		M	M	М.	M	M	
PCB congener 153	<0.003	TM168	<0.015	<0.003	< 0.003	< 0.003	<0.003	< 0.003
202	mg/kg		M	М	М	M	M	M
PCB congener 180	<0.003	TM168	<0.015	<0.003	<0.003	<0.003	<0.003	< 0.003
0	mg/kg		M	M	М	M	M	N
Sum of detected PCB 7	<0.021	TM168	<0.105	<0.021	<0.021	<0.021	< 0.021	<0.021
Congeners	mg/kg	<u> </u>						
PCB congener 81	< 0.003	TM168	< 0.015	< 0 003	<0.003	<0.003	<0.003	<0.003
	mg/kg		M	M	M	M	M	M
PCB congener 77	<0.003	TM168	<0,015	<0.003	<0.003	<0.003	< 0.003	< 0.003
	mg/kg		M	M	M	M	M	М
PCB congener 123	<0.003	TM168	<0.015	< 0.003	<0.003	< 0.003	<0.003	< 0.003
	mg/kg	-	M	M	M	M	М.	M
PCB congener 114	<0,003	TM168	<0.015	< 0.003	<0.003	<0.003	<0.003	< 0.003
BOB 105	ma/ka		M	M	M	M	M	M
PCB congener 105	<0.003	TM168	< 0.015	< 0.003	<0.003	<0.003	<0.003	<0.003
DOD 400	mg/kg		M	M	M	M	М	M
PCB congener 126	<0.003	TM168	<0.015	<0.003	< 0.003	<0.003	<0.003	<0.003
	mg/kg		M	M	M	M	М	М
PCB congener 167	<0.003	TM168	<0,015	<0.003	<0.003	<0,003	<0.003	<0.003
750	mg/kg		M	M	M	M	. M.	M
PCB congener 156	<0.003	TM168	<0.015	< 0.003	< 0.003	<0.003	< 0.003	< 0.003
200 457	mg/kg	T14400	M	M	M	M	M	M
PCB congener 157	<0.003	TM168	<0.015	<0.003	<0.003	<0.003	<0.003	< 0.003
268	mg/kg	71400	M	M	M	M	M	M
PCB congener 169	<0.003 mg/kg	TM168	< 0.015	<0,003	<0.003	< 0.003	<0.003	<0.003
PCB congener 189	<0.003	TM100	-0.046	M -0.000	M	M	M	M
OD COURGUE! 103	<0.003 mg/kg	TM168	<0.015 M	<0.003	<0.003	<0.003	<0.003	<0.003
Sum of detected WHO 12 PCBs	<0.036	TM168	<0.18	M 026	M 60.036	M	M = 0.000	M
John of doleolog 14110 12 FODS	mg/kg	1 IN1 1 00	~v=10	<0.036	<0.036	<0.036	<0.036	< 0.036
	aiging							
				-				
			- 4				1	
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				1				
71								
							.	

CERTIFICATE OF ANALYSIS

ALS

 SDG:
 191015-79
 Client Reference:
 70062270- st ambrose
 Report Number:
 526681

 Location:
 St Ambrose
 Order Number:
 70062270-07S
 Superseded Report:
 526352

	Results Regard		Customer Sample Ref.	SHP-09	SHP-10	SHP-10	\$HP-11	SHP-11	SHP-12
H	mCERTS accredited								
	Aqueous / settled sample Dispelyed filtered sample	1	Depth (m)	0 40 - 0 50	0 10 - 0 30	0.40 - 0.50	0.10 - 0.30	0 40 - 0 50	0 10 - 0 30
tet.unfill	Total i unfiltered earuple Subcontracted - refer to exbountractor repo	rifor	Sample Type	Sol/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	SolVSolid (S)	SaWSalid (S)	Soll/Solid (S)
140	notived test an admittal. Management of the personnels essentiand to also		Date Sampled Sample Time	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
	efficiency of the cretical. The results of just compounds within complete area's consucted	er.al	Date Received	15/10/2019	15/10/2019	15/10/2019	15/10/2019	15/10/2019	15/10/2019
	compounts within sumples aren't consulted recursity	fec The	SDG Ref	191015-79	191015-79	191015-79	191015-79	191015-79	191015-79
	Trigger breach confirmed Earnale deviation (see appendix)		Lub Sample No (e) AGS Reference	20941845 ES	2094 [848 ES	20941856 ES	20941881	2094 (868	20941871
Compor		LOD/Units	Method	Ea	E3	Eò	ES	ES	ES
	Content Ratio (% of as	%	PM024	19	20	19	27	00	04
received	· ·	1 "	1 10024	13	20	19	21	28	24
-	nic Malter (SOM)	< 0.35 %	TM132		13.8				
QUI OIG	mile matter (even)	10.33 /6	1101102		13.0				
PCB con	nener 28	<0.003	TM168	<0.003	<0.003	<0.003	<0.003	40.000	10.000
I OD COIL	gener 20	mg/kg	, willoo	<0.005 M	-0.003 M			<0.003	<0.003
PCB con	noner 52	<0.003	TM168	<0.003	<0.003	M <0.003	M.	M	M
, ob can	gener oz	mg/kg	1101100	-0.003 M		<0.003	<0.003	<0.003	<0.003
DCB con	gener 101	<0.003	TM168		M 40.000	M	M	M	M
r CD COII	gener rot	mg/kg	TIVITOD	<0.003	<0.003	<0.003	<0.003	<0.003	< 0.003
DCD con	gener 118		Thuco	M	M	M	M	М.	M
PCB COII	gener 116	<0.003	TM168	< 0.003	<0.003	<0.003	< 0.003	<0.003	< 0.003
DCD	1000c 120	mg/kg	THIAN	M	M	M	M	M	M
LCB COU	gener 138	<0.003	TM168	<0.003	<0.003	<0.003	0.0256	<0.003	< 0.003
DOD	452	mg/kg	711105	M	M	M	M	ММ	M
PCB con	jener 153	<0.003	TM168	<0.003	<0.003	<0,003	0.0462	<0.003	< 0.003
Des	100	mg/kg	-	M	M	M	M	М	M
PCB cong	gener 180	< 0.003	TM168	< 0.003	<0.003	< 0.003	0,103	< 0.003	< 0.003
		mg/kg		M	M	M	М	M	М
	elected PCB 7	<0.021	TM168	<0.021	<0.021	<0.021	0.175	< 0.021	<0.021
Congene		mg/kg							
PCB cong	jener 81	< 0.003	TM168	< 0.003	< 0.003	<0.003	<0.003	< 0.003	< 0.003
		mg/kg		М	M	M	М.	М	М
PCB cong	ener 77	<0.003	TM168	< 0.003	< 0.003	< 0.003	< 0.003	<0.003	< 0.003
		mg/kg		M	M	М.	М	м	M
PCB cong	ener 123	< 0.003	TM168	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
		mg/kg		М	M	М	М.	M	M.
PCB cong	ener 114	< 0.003	TM168	< 0.003	<0.003	< 0.003	<0.003	<0.003	<0.003
		mg/kg		М	M	М	М	M	M
PCB cong	ener 105	< 0.003	TM168	<0.003	<0.003	<0.003	<0.003	<0.003	< 0.003
		mg/kg		M	M	M	-0.005 M	-0.003 M	<0.003 M
PCB cong	ener 126	<0.003	TM168	<0.003	<0.003	<0.003	<0.003	<0.003	< 0.003
		mg/kg		м	м	-0.003 M	-0,003 M	-0.5053 M	
PCB cong	ener 167	<0.003	TM168	<0.003	<0.003	<0.003	<0.003		M
. ob odng	ond: 107	mg/kg	1341100	м	V0.003	(0.003 M		<0.003	<0.003
PCB cong	ener 156	<0.003	TM168	< 0.003	<0.003	<0.003	M	M	M
OD cong	DIGI 100	mg/kg	1101100	M_			<0.003	<0.003	<0.003
PCB cong	nnor 167	<0.003	TM168		M	M	M	M	M
r ob cong	ellel 131		1101100	<0.003	<0,003	<0.003	<0,003	<0.003	<0.003
PCB cong	onor 160	mg/kg	THICO	M	M	M	M	M	M
PCB CONG	eller 109	<0.003	TM16B	<0.003	<0.003	<0.003	<0.003	<0.003	< 0.003
DOD	400	mg/kg	711100	M	М	M	М	M	M
PCB cong	ener 169	<0.003	TM168	<0.003	<0.003	<0.003	<0.003	<0.003	< 0.003
0 1.1.		mg/kg		M	М	M	M	M	M
Sum of de	lected WHO 12 PCBs	<0.036	TM168	<0.036	<0.036	<0.036	<0.036	<0.036	< 0.036
		rng/kg							
								I	
				I			i	1	
			1						
			1						
			1						

CERTIFICATE OF ANALYSIS



 SDG:
 191015-79
 Client Reference:
 70062270- st ambrose
 Report Number:
 526681

 Location:
 St Ambrose
 Order Number:
 70062270-07S
 Superseded Report:
 526352

Results Legend	69. DE	Customer Semple Ref	SHP-12	SHP 13	SHP-13	SHP-14	SHP-14	SHP-15
N mCERTS accomitted sq Aqueous I estated sample								
otes fit Die solved / Ritural sample, lot. with a Total / unitioned sample		Deptile (rs.)	0 40 - 0 50	0 (0 - 0 30	0 40 - 0 50	0 10 - 0 30	0 40 - 0 50	0 10 - 0 30
Subsorbacted greter to autocontractor rep	ertfor	Sample Type Date Sampled	Sol/Solid (S) 12/10/2019	So//Solid (S) 12/10/2019	So//Solid (S) 12/10/2019	Sol/Solid (S) 12/10/2019	Soil/Solid (S) 12/10/2019	Sol/Solid (S)
accredity for status 4 recovery of the surrogate sharderd to st		Sample Time	1210/2015	12/10/2015	12/10/2015	12/10/2019	12/10/2019	12/10/2019
officiency of the method. The results of its compounds within assigned trent correct		Data Received	15/10/2019	15/10/2019	15/10/2019	15/10/2019	15/10/2019	15/10/2019
recovery (F) Trigger breach coeffirmed		BDG Ref Lab Sample No (s)	191015-79 20941875	19 10 15-79 2094 1862	191015-79 20941887	191015-79 20941892	191015-79 20941894	191015-79 20941898
I-leig Sample derlette joes spandix)		AGS Reference	ES	ES	E8	ES	ES	ES
Component	LOD/Units	Method						
Moisture Content Ratio (% of as	%	PM024	23	19	17	29	25	26
received sample)								
Soil Organic Matter (SOM)	<0.35 %	TM132			11.5			15
PCB congener 28	<0.003	TM168	<0.003	<0.003	< 0.003	<0.003	<0,003	<0.003
PCB congener 52	mg/kg <0.003	TM168	<0.003	<0.003	<0.003	<0.003	<0,003	<0.003
DOD 404	mg/kg	1 711/00	M	M	M	M	M	M
PCB congener 101	<0.003	TM168	<0.003	< 0.003	< 0.003	<0 003	<0.003	<0.003
202	mg/kg		M	M	M	M	M	M
PCB congener 118	<0,003	TM168	<0,003	< 0.003	<0.003	< 0.003	<0.003	< 0.003
	mg/kg		M	M	M	M	M	M
PCB congener 138	<0,003	TM168	< 0.003	< 0.003	<0.003	<0.003	<0.003	< 0.003
	mg/kg		M	M	M	M	М	M
PCB congener 153	<0.003	TM168	< 0.003	<0.003	< 0.003	<0.003	<0.003	< 0.003
	mg/kg		M	M	M	M	М	M
PCB congener 180	< 0.003	TM168	<0.003	< 0.003	< 0.003	< 0.003	<0,003	< 0.003
	mg/kg		M	М	M	М.	М	M
Sum of detected PCB 7	<0.021	TM168	<0.021	<0,021	< 0.021	<0.021	<0.021	<0.021
Congeners	mg/kg							
PCB congener 81	< 0.003	TM168	< 0.003	< 0.003	< 0.003	< 0.003	<0.003	< 0.003
	mg/kg		M	М.	M	M	м	- M
PCB congener 77	< 0.003	TM168	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
	mg/kg		M	-0.003 M	M	-0.003 M	V0.005	<0.003 M
PCB congener 123	<0.003	TM168	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
	mg/kg	,,4100	M	M	<0.003 M	<0.003 M	<0.003 M	
PCB congener 114	<0.003	TM168	<0.003	<0.003	<0.003			M <0.003
, ob congener in	mg/kg	TWITO	C0.003			<0.003	<0.003	<0.003
PCB congener 105	<0.003	TM168	<0.003	M M	M <0.003	M	M	M.
OD congent 100	mg/kg	TWITOO	<0.003 M	<0.003	<0.003	<0.003	<0.003	< 0.003
PCB congener 126	<0.003	TM168	<0.003	M	M = 0.000	M	M	M
, an confidence (\$0		IMIDA		<0.003	<0.003	<0.003	<0.003	<0.003
PCB conceptor 167	mg/kg	TAMES	M M	M.	M	M	M	M
PCB congener 167	<0.003	TM168	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
DCB congener 450	mg/kg	TAMAGE	M	M	M	M	M	M
PCB congener 156	<0.003	TM168	<0,003	<0.003	<0.003	<0.003	<0.003	<0.003
DOD	mg/kg		M	M	M	M	M	M
PCB congener 157	<0.003	TM168	<0.003	< 0.003	<0.003	<0.003	<0.003	< 0.003
202	ma/ka		M	M	M	М.	M	M
PCB congener 169	< 0.003	TM168	<0.003	<0.003	<0.003	<0.003	<0.003	< 0.003
	rng/kg		M	M	M	M	M	M
PCB congener 189	<0.003	TM168	< 0.003	<0.003	<0.003	< 0.003	<0.003	<0.003
	mg/kg		М	M	М.	M	M	M
Sum of detected WHO 12 PCBs	<0.036	TM168	<0.036	<0.036	<0.036	< 0.036	<0.036	<0.036
	mg/kg							
	-							
		-						
					-1			

CERTIFICATE OF ANALYSIS

ALS

 SDG:
 191015-79
 Client Reference:
 70062270- st ambrose
 Report Number:
 526581

 Location:
 St Ambrose
 Order Number:
 70062270-07S
 Superseded Report:
 526352

Results Legend		Customer Semple Ref	SHP-15	TP10-VAL01	TP10-VAL02	TP16-VAL03	TP10-VAL04	TP10.VAL05
8 15017025 nooredited M mCERTS accredited eq Aqueous / settled sample			dill -id	11 10-94201	17 10-974,602	IF IOVACOS	TP10-VALU4	TP 10=VALUS
dipa.mq Discovered / Piterest semples tot.neff() Total Junkflared semple.		Depth (m) Sample Type	0 40 - 0 50	9 20 - 0 30	0 20 - 0 30	0 20 - 0 30	0 20 - 0 30	0.50
Subcock acted - refer to endoced rector re accord/tellon visitue		Date Sampled	Soil/Soild (S) 12/10/2019	Soil/Solid (S) 12/(0/2019	Soil/Solid (S) 12/10/2019	Soil/Solid (S) 12/10/2019	Sol/Solid (S) 12/10/2019	Soil/Solld (S) 12/10/2019
% recovery of the surrogate etanderd to a efficiency of the method. The results of in	dividual	Sample Time Date Received	15/10/2019	15/10/2019	15/10/2019	15/10/2019	15/10/2019	15/10/2019
consposed within applying story and contest	nd Fee this	SDG Ref	191015-79 20941908	191015-79	191015-79	191015-79	191015-79	191015-79
(F) Trigger breach confirmed 1-3-5@ Sample Sanfetten (see expendis)		Lab Sample No (e) AGS Rafarence	ES	20941913 ES	20941918 ES	20941925 ES	20941930 ES	20941934 ES
Component	LOD/Unite							
Moisture Content Ratio (% of as received sample)	%	PM024	28	37	32	26	35	21
PCB congener 28	<0,003	TM168	<0.003	-				
	mg/kg		M					
PCB congener 52	< 0.003	TM168	<0.003					
	mg/kg		M					
PCB congener 101	<0.003 mg/kg	TM168	<0,003					
PCB congener 118	<0.003	TM168	<0.003					
	mg/kg	11100	M					
PCB congener 138	< 0.003	TM168	< 0,003					
DAD	mg/kg		M					
PCB congener 153	<0.003 mg/kg	TM168	<0.003					
PCB congener 180	<0.003	TM168	<0.003					
	mg/kg	1111100	10 003 M					
Sum of detected PCB 7	<0.021	TM168	<0.021					
Congeners	mg/kg							
PCB congener 81	<0.003	TM168	<0.003					
PCB congener 77	<0.003	TM168	<0.003					
T OD Gollgerick 17	mg/kg	HVIIOS	~0.003 M					
PCB congener 123	<0.003	TM168	<0 003					
	mg/kg		М					
PCB congener 114	< 0.003	TM168	<0.003					
PCB congener 105	mg/kg <0.003	TM168	<0.003					
T OB CONGENIER 100	mg/kg	TIVITOS	-0.003 M					
PCB congener 126	<0.003	TM168	< 0.003					
	mg/kg		M					
PCB congener 167	<0.003	TM168	<0.003					
PCB congener 156	mg/kg <0.003	TM168	<0.003		-			
1 Ob congener 100	mg/kg	TWITOO	<0.003 M					
PCB congener 157	< 0.003	TM168	< 0.003					
	mg/kg		M					
PCB congener 169	<0.003	TM168	< 0.003					
PCB congener 189	mg/kg <0.003	TM168	<0.003					
TOD congener 165	mg/kg	710100	40.003 M					
Sum of detected WHO 12 PCBs	< 0.036	TM168	<0.036					
	mg/kg							
Lead	<0.7 mg/kg	TM181		234	209	165	442	340
	1	t - t		M	M	M	М.	M
						l, li		
	-	-						
				[i				
							-	
		 			-			

SDG: Location: 191015-79 St Ambrose

Client Reference: 70062270- st ambrose 70062270-07S

Report Number: Superseded Report:

526681 526352

til en aq A bles filt D tot unfilt T	8017025 socredited GCRT9 accombited Liquisous I estitud sample Krandhus I filturad sample official Junifleyed sample official Junifleyed sample occaditation status,	ette	Customer Sampis Ref Depth (m) Sample Type Date Sampled Sample Time	7501 0 00 - 0 00 SowSorid (S) 12/10/2019	
	i receivery of the surregicte standard to the Richestry of the method. The results of inci-	vidual	Sample Time Date Received	15/10/2019	
re	ompounds within samples aren't corrected scovery	Ror the	SDG Ref	191015-79	
(F) Ti 1-3+≱@ Si	rigges breech confirmed ample deviation (see appendix)		Lab Sample No (s) AGS Reference	20941950 ES	
Compani		LOD/Units	Method		
Moisture (Content Ratlo (% of as	%	PM024	20	
received s	ample)				
Soil Organ	nic Matter (SOM)	<0.35 %	TM132	6.91	
			1		#
эΗ		1 pH Units	TM133	6.67	
					М
Cyanide, T	Total	<1 mg/kg	TM153	<1	
					М
Cyanide, F	ree	<1 mg/kg	TM153	<1	
					M
CB conge	ener 28	< 0.003	TM168	< 0.003	
		mg/kg			М
CB conge	ener 52	<0.003	TM168	<0,003	
		mg/kg			M
CB conge	ener 101	<0.003	TM168	<0.003	
J.		mg/kg			М
СВ сопде	ener 118	<0.003	TM168	< 0.003	.21
3.		mg/kg			М
CB conge	ener 138	<0,003	TM168	< 0.003	
		mg/kg		-0.000	М
CB conge	ener 153	<0.003	TM168	< 0.003	, ,,
		mg/kg	1,,,,,,,	-0000	М
CB conge	ener 180	<0.003	TM168	< 0.003	191
oo oongo	1101 100	mg/kg	TWITOD	40.000	M
um of dele	ected PCB 7	<0,021	TM168	<0.021	IVI
ongeners		mg/kg	1191100	10.021	
CB conge		<0.003	TM168	<0,003	-
ou conge	1101 01	mg/kg	1101100	0,000	М
CB conge	ner 77	<0.003	TM168	<0.003	193
OD GOINGE	ilei //		TIVITOS	<0.003	.,
CB conge	nor 123	mg/kg <0.003	TM168	<0.001	М
OD CONGE	HGI 120	mg/kg	TIVITOD	<0.003	
CB conge	nor 114	<0.003	TM168	<0.003	М
ob conge	1161 114		IMIOS	<0.003	
CB conge	nor 105	mg/kg <0.003	TM168	<0.003	М
JB conge	1161 100	mg/kg	116/100	<0.003	
CB conge	nor 196		TAMES	40.000	М
D CONGE	161 120	<0.003	TM168	<0.003	
'B cores	nor 167	mg/kg	Thatas	40.000	М
CB conge	let 101	<0.003	TM168	<0.003	,
20 00000	oor 156	mg/kg	T14400	-0.000	М
CB conger	100	<0.003	TM168	< 0.003	ا
D 05	457	mg/kg	TMATE	.0.00-	М
B conger	let 107	<0.003	TM168	<0.003	
Π οπ	20.150	mg/kg	Thirds	-0.000	М
B conger	let 109	<0.003	TM168	< 0.003	
D 00	n = 400	mg/kg	T14400		М
B conger	IEL 198	<0.003	TM168	<0.003	., I
	-1-1 10010 40 700	mg/kg	711/02		М
m of dete	cted WHO 12 PCBs	<0.036	TM168	<0.036	
		mg/kg			_
senic		<0.6 mg/kg	TM181	8.49	
					М
dmium		<0.02 mg/kg	TM181	0.741	
					М
romlum		<0.9 mg/kg	TM181	14.3	
					М
ррег		<1.4 mg/kg	TM181	43.5	T
					М
ad		<0.7 mg/kg	TM181	104	
					М
ercury		<0.14 mg/kg	TM181	<0.14	
					М
ke)		<0.2 mg/kg	TM181	37.4	
					М

CERTIFICATE OF ANALYSIS

ALS

 SDG:
 191015-79
 Client Reference:
 70062270- st ambrose
 Report Number:
 526681

 Location:
 St Ambrose
 Order Number:
 70062270-07S
 Superseded Report:
 526352

_	Results Legend							
	ISOSTEES accomplised in CERTS accomplised		Customer Sample Rei	TSOI				
BQ dies füt	Aqueous festiled sample Discolved / filtered swiple.		Dapth (m)	0.00 - 0.00	1			
tetuetit	Total Junfiltered sample.		Sample Type	Soi#Soild (S)				
	Subcontracted - refer to subcontractor report accreditation stable		Date Sampled Sample Time	12/10/2019				
7.	% recovery of the surregate standard to shee efficiency of the method. The requite of inches	à the dual	Sample Time Dale Received	15/10/2019				
	officiancy of the method. The requits of inclui- d are planted as BVA subrighed area's contacted if recovery.	hi the	SDG Ref	191015-79		1		1
(F)	Trigger breach confirmed Sample deviation (see appendix)		Lab Sample No (a) AGS Reference	20941950		1		
Compo		LOD/Units	AGS Reference Method	EŞ				
Zinc	nent	<1.9 mg/kg	method TM181	233			 	
ZIIIC		/1/9 Hight	J IIVIIOI			1		
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CERTIFICATE OF ANALYSIS

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BDG: 191015-79 ocation: St Ambrose Client Reference: Order Number:

70062270- st ambrose 70062270-07S

Report Number: Superseded Report: 526681 526352

(ALS) Location:		St Ambrose	Orde	er Number:	70062270-07S	Superseded Report:	526352
PAH by GCMS							
# PEGINGS parpelled		Customer Bemple Ref.	SD01	TS01			
M mCERTS accordited, eq Aqueous I settled sample		1				1 1	
dispilit Depolved i filtered sample.		Depth (m)	0 00 - 0 00	0 00 - 0 00			
Subcontracted - rafer to enlocastractor repo	etfor	Sample Type Date Sampled	Sol//Solid (S) 12/10/2019	SolVSolid (S) 12/10/2019		1	
* Seconditation status "" "It recovery of the surrogate standard to ch	scil, the	Sample Time	12/0/2019	12/10/2019			
compounds within samples aren't conscise	distribution of the state of th	Date Received	15/10/2019	15/10/2019			1
receivery (F) Trigger breach confirmed		SDG Ref	191015-79 20941939	191015-79 20941950			
2.30 Per Security of the appendix		Lab Sample No (s) AGS Reference	ES	ES			
Component	LOD/Unite	Method					
Naphthalene-d8 % recovery**	%	TM218	88.2	86.5			
Acenaphthene-d10 %	%	TM218	91.1	91.1			
recovery**							
Phenanthrene-d10 % recovery**	%	TM218	90.3	90 2			
Chrysene-d12 % recovery™	%	TM218	85.4	85,3			
Perylene-d12 % recovery**	%	TM218	107	103			
Naphthalene	< 0.009	TM218	<0.009	< 0.009			
	mg/kg		M		М		
Acenaphthylene	< 0.012	TM218	<0.012	<0.012			
	mg/kg		M		М		
Acenaphthene	<0.008	TM218	<0.008	0.0162			1
	mg/kg		M		м	<u> </u>	
Fluorene	<0.01 mg/kg	TM218	<0.01	0.0172			
			М		М	1	1
Phenanthrene	<0.015	TM218	<0.015	0.209			
	mg/kg		M		м		
Anthracene	< 0.016	TM218	<0.016	0.0518			
	mg/kg		М		м	1 1	1
Fluoranthene	< 0.017	TM218	<0.017	0.396			
	mg/kg		M	0.000	м		
Pyrene	<0.015	TM218	<0.015	0.372			
,	mg/kg		M		М		
Benz(a)anthracene	< 0.014	TM218	< 0.014	0.224			
	mg/kg		M		М		
Chrysene	<0.01 mg/kg	TM218	<0.01	0.199			
			M		м		
Benzo(b)fluoranthene	< 0.015	TM218	<0.015	0.331			
	mg/kg		M		м	1 1	
Benzo(k)fluoranthene	< 0.014	TM218	<0.014	0.1			
	mg/kg		M	V-1	м		
Benzo(a)pyrene	<0.015	TM218	<0.015	0.244			
	mg/kg		M		м	1	
Indeno(1,2,3-cd)pyrene	< 0.018	TM218	0.0201	0.172			
* * * * ******************************	mg/kg		M	W.112	м		
Olbenzo(a,h)anthracene	<0.023	TM218	<0.023	0.03			
1-1-7-3	mg/kg		M		м		1
Benzo(g,h,i)perylene	<0.024	TM218	<0.024	0.19			
	mg/kg		-0.024 M	0,19	м		
PAH, Total Detected USEPA 16	<0.118	TM218	<0.118	2 55			
	mg/kg		-0.710	255			
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							7 - 7 //
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CERTIFICATE OF ANALYSIS

SDG: Location:

191015-79 St Ambrose

 Client Reference:
 70062270- st ambrose

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 70062270-07S

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526681 526352

TPH CWC (S)		ot into oud	5.00	7	0002270-073	Superocueur its	526352	
TPH CWG (S)		Customer Sample Ref.	\$001	TS01				r
M m CERTS scorested.		original designation	5001	1801				
nq Aqueous / a stilled nample dies Bill Disselved / Ritared sample		Depth (m)	0 00 - 0 00	0 00 - 0 00	1 1			
fat caffet Total / porfitored earnpile. Subcontractor - refer to aubopartmeter	respect for	Sample Type	Soil/Soild (S)	Soil/Solid (S)	1 1			
eccredits from electus ** The conservery of the cure reports attenditure!	in check the	Date Sampled Sample Time	12/10/2019	12/10/2019	1 1			1
efficiency of the method. The results a	Placividual	Date Received	15/10/2019	15/10/2019	1 1			
(F) Trigger breach confirmed		SDG Ref	191015-79 20941939	191015-79 20941950	1 1			
1.3430 Sample devistan (see appendic)		Leb Sample No (s) AGS Reference	ES	ES	1 1			
Component GRO Surrogale % recovery [™]	LOD/Units	Method TM089	110	74	-			
	/*	1111003	110					
Aliphatics >C5-C6	<0.01 mg/kg	TM089	<0.01	<0.01				
Aliphatics >C6-C8	<0.01 mg/kg	TM089	< 0.01	<0.01				
AF 1 11 1 00 010								
Aliphatics > C8-C10	<0.01 mg/kg	TM089	< 0.01	<0.01				
Aliphatics >C10-C12	<1 mg/kg	TM414	<1	<1	+			
7	Tringing	110(414						
Aliphatics >C12-C16	<1 mg/kg	TM414	<1	2.32				
				_				
Aliphatics >C16-C35	<1 mg/kg	TM414	<1	35.2				
Alimbetian a COE CAA		711111						
Aliphatics >C35-C44	<1 mg/kg	TM414	<1	6,48				
Total Aliphatics >C10-C44	<5 mg/kg	TM414	<5	44.5	-			
Total Filiphatics - 010 014	13 Inging	1101414	-5	44,3				
Total Aliphatics & Aromatics	<10 mg/kg	TM414	<10	91.1				
>C10-C44								
Aromatics >EC5-EC7	<0.01 mg/kg	TM089	<0.01	<0.01				
Aromatics >EC7-EC8	<0.01 mg/kg	TM089	<0.01	<0.01				
Aromatics >EC8-EC10	<0.01 mg/kg	TM089	<0.01	-0.01				
Aldillalics > ECO-EC (0	<0.01 Hig/kg	1 111009	(0.01	<0.01				
Aromatics > EC10-EC12	<1 mg/kg	TM414	<1	<1	1			
Aromalics > EC12-EC16	<1 mg/kg	TM414	<1	1.04				
Aromatics > EC16-EC21	<1 mg/kg	TM414	<1	7.4				
Aromatics > EC16-EC35	<1 mg/kg	TM414	<1	43.4	 			
710110007 2010 2000	1 Highly	HALAIA		43.4				
Aromatics > EC21-EC35	<1 mg/kg	TM414	<1	36	1			
						4		
Aromatics >EC35-EC44	<1 mg/kg	TM414	<1	2.17				
Aromatics > EC40-EC44	<1 mg/kg	TM414	<1	<1	1 1			
Total Aromatics > EC10-EC44	<5 mg/kg	TM414	<5	46.6				
Total Homado: EOTO GOTT	15 mg/kg	1171717	.5	40.0				
Total Aliphatics & Aromatics	<10 mg/kg	TM414	<10	91.1				
>C5-C44								
Total Aliphatics >C5-C10	<0.05 mg/kg	TM089	< 0.05	< 0.05				
Talal Association FOR FOR A								
Total Aromatics >EC5-EC10	<0.05 mg/kg	TM089	<0,05	<0,05				
GRO > C5-C10	<0.02 mg/kg	TM089	<0.02	<0.02	+			
	4.0 E mgmg	14.000	-0,02	-0.02	1 1			
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CERTIFICATE OF ANALYSIS

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 SDG:
 191015-79
 Client Reference:
 70062270- st ambrose
 Report Number:
 526681

 Location:
 St Ambrose
 Order Number:
 70062270-07S
 Superseded Report:
 526352

VOC	VIS (S) Results Legend								
سجسا	Results Legend		Cuatomer Sempla Ref	SD01	TS01	П			
R.	mCERTS accredited					- 1			
pe diguifit	Aquacus I estiled sample Dissolves I filtered sample.		Dopth (m)	0 00 - 0 00	0.00 - 0.00	- 1			
fot.enfi1	Total I wollflist ad sum pla	1	Sample Type	Spil/Solid (S)	SalVSolid (S)	- 1			
	Subsorbacted - refer to subcontractor rep accredited on status	oort for	Data Sampled	12/10/2019	12/10/2019	- [1
- 54	No receivery of the numeropate shareful to it officially of the numbed. The number of in-	hed the	Sample Time			- 1		1	1
1	efficiency of the marked. The assume of in- surpounds within samples aren't consci-	district in the second	Date Received	15/10/2019	15/10/2019	- 1			1
	THEOLOGY	belief out	SDG Ref	191015-79	191015-79	- 1			l
(F)	Trigger breach confirmed Sample deviation (see appendix)		Lab Sample No (s) AGS Reference	20941939	20941950	- 1			l
		LODUL		ES	ES	- 1			
Compo		LOD/Units	Method			-	 		
метпун	Fertiary Butyl Ether	<0.01 mg/kg	TM116	<0.1	<0.1	-1			
				M		М			
Benzene	3	< 0.009	TM116	< 0.09	< 0.09				
		mg/kg]	M	1	М			
Toluene		<0.007	TM116	<0.07	< 0.07	-			
Toldono			TIWITIO						
		mg/kg		M		М	 		
Ethylber	izene	< 0.004	TM116	< 0.04	< 0.04				
		mg/kg		M		М			
p/m-Xyle	ane	<0.01 mg/kg	TM116	<0,1	<0.1			1	
, , , , , ,		-old i nightg	1			,,			
14.1			_	#		#	 		
o-Xylene	•	<0,01 mg/kg	TM116	<0.1	<0.1			1	
				M	t	М			
Tert-amy	rl melhyl ether	<0.01 mg/kg	TM116	<0.1	<0.1				
		, s. mgmg	"""	#	1	#		1	
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SDG:

191015-79 St Ambrase

 Client Reference:
 70062270- st ambrose

 Order Number:
 70062270-075

Report Number: Superseded Report:

526681 526352

Asbestos Identification - Solid Samples

* Subcontract (F) Trigger bras 55•10 Sample dev	sh confirmed	Date of Analysis	Analysed By	Analysed By Comments	Amosite (Prown) As bestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust, Sample Ref. Oepth (m) Sample Type Date Sampled Date Receleved SDG Original Sample Method Number	SD01ES 0.00 - 0.00 SOLID 12/10/2019 00:00:00 15/10/2019 19:04:00 191015-79 20941939 TM048	18/10/2019	Agnieszka Chelmowska	2	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust, Sample Ref. Depth (m) Sample Type Date Sampled Date Receleved SDG Original Sample Method Number	TS01ES 0,00 - 0,00 SOLID 12/10/2019 00:00:00 15/10/2019 19:04:00 191015-79 20941950 TM048	18/10/2019	Marcin Magdziarek		Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected



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SDG: Location: 191015-79 St Ambrose

Cilent Reference: Order Number:

70062270- st ambrose 70062270-07S

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Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM048	HSG 248, Asbestos: The analysts' gulde for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
PB0MT	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2,5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546,	The determination of PAH in soil samples by GC-MS
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Solls by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S)



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SDG: Location: 191015-79 St Ambrose
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Test Completion Dates

	4				Duto					
Lab Sample No(s)	20941939	20941825	20941851	20941904	20941963	20941968	20941973	20941980	20941985	20941828
Customer Sample Ref.	SD01	Si-P (m)	SHIP OX	S-P-02	5HP 02	SHIT 23	SHO	50%60	91701	59'85
AGS Ref.	ES	ES	ES							
Depth	0,00 - 0.00	0.10 - 0.30	0.40 - 0.50	0.10 - 0.30	0.40 - 0.50	0.10 - 0.30	0.40 - 0.50	0.10 - 0.30	0.40 - 0.50	0.40 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soll/Solid (S)	Soil/Solid (S)	Soll/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soll/Solid (S)	Soll/Solid (S)	Soll/Solid (S
Asbestos ID in Solid Samples	18 Oct-2019					1	(-7		()	1
Cyanide Comp/Free/Total/Thiocyanate	18-Oct-2019							_	_	-
EPH CWG GC (8)	17-Oct-2019		-						-	
GRO by GC-FID (S)	21-Oct-2019									
Metals in solid samples by OES	17-Oct-2019									
PAH by GCMS	21-Oct-2019									
PCBs by GCMS	22-Oct-2019	22-Oct-2019	23-Oct-2019	22-Oct-2019	22-Oct-2019	23-Oct-2019	22-Oct-2019	22-Oct-2019	22-Oct-2019	23-Oct-2019
pH	22-Oct-2019						CARCE MARKS	CONTRACTOR CONTRACTOR	.555.531.60 (4)	
Sample description	16-Oct-2019	18-Oct-2019	16 Oct-2019	16-Oct-2019	16-Oct-2019	16-Oct-2019	16-Oct-2019	16-Oct-2019	16-Oct-2019	16-Oct 2019
Total Organic Carbon	18-Oct-2019		21-Oct-2019			21-Oct-2019			21-Oct-2019	
TPH CWG GC (9)	21-Oct-2019									
VOC MS (S)	22-Oct-2019									
Lab Sample No(s)	20941990	20941830	20941832	20941834	20941837	20941839	20941841	20941843	20941845	20941848
Customer Sample Ref.	5×1P 35	3:19:05	39,466	SHN	54763	900	13 11 126	984	-509709	799745
AGS Ref.	ES	ES	ES							
Depth	0.10 - 0.30	0.10 - 0.30	0.40 - 0.50	0.10 - 0,30	0.40 - 0.50	0.10 - 0.30	0.40 - 0.50	0.10 - 0.30	0.40 - 0.50	0.10 - 0.30
Туре	Soil/Solid (S)	Sall/Solid (S)	Soll/Solid (S)	Soll/Solld (S)	Soll/Solid (S)	Soll/Solid (S)	Soil/Solld (S)	Soil/Solld (S)	Soil/Solld (S)	Soil/Solld (S
PCBs by GCMS	22-Oct-2019	22-Oct-2019	22-Oct-2019	23-Oct-2019	22-Oct-2019	22-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019
Sample description	16-Oct-2019	16-Oct-2019	18-Oct-2019	16-Oct-2019	16-Oct-2019	16-Oct-2019	16-Oct-2019	15-Oct-2019	16-Oct-2019	16-Oct-2019
					21-Oct-2019					21-Oct-2019

Lab Sample No(s)		20941861	20941866	20941871	20941875	20941882	20941887	20941892	20941894	20941898
Customer Sample Ref. AGS Ref.		ES	ES	ES	ES	ES	ES	SHP M	SHAN	1977-15
Depth	0,40 - 0.50	0.10 - 0.30	0.40 - 0.50	0.10 - 0.30	0.40 - 0.50	0.10 - 0.30	0,40 - 0,50	0.10 - 0.30	0.40 - 0.50	0.10 - 0.30
Туре		Soll/Solid (S)	Soil/Solid (S)	Soil/Solld (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Soild (S)	Sail/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
PCBs by CCMS	22-Oct-2019	22-Oct-2019	22-Oct-2019	22-Oct-2019	22-Oct-2019	22-Oct-2019	22-Oct-2019	22-Oct-2019	22-Oct-2019	22-Oct-2019
Sample description Total Organic Carbon	16-Oct-2019	16-Oct-2019	16-Oct-2019	16-Oct-2019	16-Oct-2019	16-Oct-2019	16-Oct-2019 18-Oct-2019	18-Oct-2019	16-Oct-2019	16-Oct-2019 18-Oct-2019

Lab Sample No(s)	20941908	20941913	20941919	20941925	20941930	20941934	20941950
Customer Sample Ref.	3(845)	- IFIG YN DE	TIMO VALOZ	TP10-VALIO	TP10-VALIN	TP10-VAL(6	1501
AGS Ref.	ES						
Depth	0.40 - 0.50	0.20 - 0.30	0.20 - 0.30	0.20 - 0.30	0.20 - 0.30	0.50	0.00 - 0.00
Туре	Soll/Solid (S)	Soil/Solld (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solld (S)	Sall/Solid (S)	Soil/Soild (S)
Asbestos ID in Solid Samples							18-Oct-2019
Cyanide Comp/Free/Total/Thicoyanate							18-Oct-2019
EPH CWG GC (8)							18-Oct-2019
GRO by GC-FID (S)							21-Oct-2019
Metals in solid samples by CES		21-Oct-2019	21-Oct-2019	18-Oct-2019	18-Oct-2019	17-Oct-2019	21-Oct-2019
PAH by GCMS							21-Oct-2019
PCBs by GCMS	22-Oct-2019						22-Oct-2019
PH							22-Oct-2019
Sample description	16-Oct-2019	16-Oct-2019	16-Oct-2019	16-Oct-2019	16-Oct-2010	16-Oct-2019	16-Oct 2019
Total Organic Carbon		Ü.					21-Oct-2019
TPH CWG GC (S)							21-Od-2019
VOC MS (S)							22-Oct-2019



SDG: Location: 191015-79 St Ambrose Client Reference: Order Number: 70062270- st ambrose 70062270-07S Report Number: Superseded Report: 526681 526352

Appendix

General

- 1 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs
- 2 If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.
- 3 With respect to tumaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control
- 4. We take responsibility for any test performed by sub-contractors (marked with an asterisk) We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
- 5 If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.
- 6 NDP No determination possible due to insufficient/unsuitable sample
- 7 Results relate only to the items lested
- LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content
- 9 Surrogate recoveries Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics lests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.
- 10. Stones/dobris are not routinely removed. We always endeavour to take a representative sub-sample from the received sample.
- 11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
- 12 Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 13 For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.
- 14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all lests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis
- 15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Allhough this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.
- 16. We are accredited to MCERTS for sand, clay and loam/lopsoil, or any of these materials whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

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

18. Sample Deviations

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

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

19 Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbeslos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025 if a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not delected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/potarised light microscopy and central stop dispersion staining, based on HSG 248 (2005)

The results for identification of asbestos in soils are obtained from a homogenised subsample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Astesta Type	Common Name		
Chrysol le	White Ashestrs		
Amosile	Brown Asbestos		
Cro iš ubide	Blue Ashe stos		
Fibrous Atlantile	14		
Floro us Anthop hyll ite	- 1		
F brous Tremelie			

Visual Estimation Of Fibre Content

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

Respirable Fibres

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

Standing Committee of Analysts, The Quantification of Asbestos in Soil (2107).

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 284

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