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Attention: Liam Clark

CERTIFICATE OF ANALYSIS

Date of report Generation:	15 July 2024
Customer:	PJA Civil Engineering
Sample Delivery Group (SDG):	240704-47
Your Reference:	Swansea Bay Stockpile Sampling
Location:	Swansea Bay Campus
Report No:	734587
Order Number:	24313

This report has been revised and directly supersedes 734430 in its entirety.

We received 48 samples on Thursday July 04, 2024 and 48 of these samples were scheduled for analysis which was completed on Monday July 15, 2024. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

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

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

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

Approved By:

Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 240704-47
Client Ref.: Swansea Bay Stockpile Samp

Report Number: 734587
Location: Swansea Bay Campus

Superseded Report: 734430

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30021497	SP1		0.00 - 0.00	02/07/2024
30021503	SP2		0.00 - 0.00	02/07/2024
30021508	SP3		0.00 - 0.00	02/07/2024
30021298	SP05		0.00 - 0.00	02/07/2024
30021523	SP06		0.00 - 0.00	02/07/2024
30021370	SP11		0.00 - 0.00	02/07/2024
30021397	SP15		0.00 - 0.00	02/07/2024
30021402	SP17		0.00 - 0.00	02/07/2024
30021465	SP18		0.00 - 0.00	02/07/2024
30021475	SP19		0.00 - 0.00	02/07/2024
30021533	SP20		0.00 - 0.00	02/07/2024
30021528	SP21		0.00 - 0.00	02/07/2024
30021480	SP24		0.00 - 0.00	02/07/2024
30021486	SP25		0.00 - 0.00	02/07/2024
30021491	SP26		0.00 - 0.00	02/07/2024
30021355	SP04i		0.00 - 0.00	02/07/2024
30021539	SP09i		0.00 - 0.00	02/07/2024
30021377	SP12i		0.00 - 0.00	02/07/2024
30021387	SP13i		0.00 - 0.00	02/07/2024
30021422	SP14i		0.00 - 0.00	02/07/2024
30021407	SP16i		0.00 - 0.00	02/07/2024
30021412	SP04ii		0.00 - 0.00	02/07/2024
30021544	SP09ii		0.00 - 0.00	02/07/2024
30021382	SP12ii		0.00 - 0.00	02/07/2024
30021392	SP13ii		0.00 - 0.00	02/07/2024
30021427	SP14ii		0.00 - 0.00	02/07/2024
30021417	SP16ii		0.00 - 0.00	02/07/2024
30021470	SP04iii		0.00 - 0.00	02/07/2024
30021303	SP09iii		0.00 - 0.00	02/07/2024
30021432	SP14iii		0.00 - 0.00	02/07/2024
30021308	SP09iv		0.00 - 0.00	02/07/2024
30021438	SP14iv		0.00 - 0.00	02/07/2024
30021335	SP09ix		0.00 - 0.00	02/07/2024
30021315	SP09v		0.00 - 0.00	02/07/2024
30021445	SP14v		0.00 - 0.00	02/07/2024
30021320	SP09vi		0.00 - 0.00	02/07/2024
30021450	SP14vi		0.00 - 0.00	02/07/2024
30021325	SP09vii		0.00 - 0.00	02/07/2024
30021455	SP14vii		0.00 - 0.00	02/07/2024
30021330	SP09viii		0.00 - 0.00	02/07/2024
30021460	SP14viii		0.00 - 0.00	02/07/2024
30021340	SP09x		0.00 - 0.00	02/07/2024
30021345	SP09xi		0.00 - 0.00	02/07/2024
30021350	SP09xii		0.00 - 0.00	02/07/2024
30021360	SP09xiii		0.00 - 0.00	02/07/2024
30021365	SP09xiv		0.00 - 0.00	02/07/2024
30021518	SPY		0.00 - 0.00	02/07/2024
30021513	SPZ		0.00 - 0.00	02/07/2024

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 240704-47

Report Number: 734587

Superseded Report: 734430

Client Ref.: Swansea Bay Stockpile Samp

Location: Swansea Bay Campus

Results Legend



Test



No Determination Possible

Sample Types -

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

Lab Sample No(s)

Customer Sample Reference

AGS Reference

Depth (m)

Container

Sample Type

Asbestos ID in Solid Samples

All

NDPs: 0
Tests: 48

X

X

X

X

X

X

X

Asbestos Quantification - Full

All

NDPs: 0
Tests: 2

X

EPH CWG GC (S)

All

NDPs: 0
Tests: 48

X

X

X

X

X

X

GRO by GC-FID (S)

All

NDPs: 0
Tests: 48

X

X

X

X

X

X

Hexavalent Chromium (s)

All

NDPs: 0
Tests: 48

X

X

X

X

X

X

Metals in solid samples by OES

All

NDPs: 0
Tests: 48

X

X

X

X

X

X

PAH by GCMS

All

NDPs: 0
Tests: 48

X

X

X

X

X

X

pH

All

NDPs: 0
Tests: 48

X

X

X

X

X

X

Sample description

All

NDPs: 0
Tests: 48

X

X

X

X

X

X

Total Organic Carbon

All

NDPs: 0
Tests: 48

X

X

X

X

X

X

TPH CWG GC (S)

All

NDPs: 0
Tests: 48

X

X

X

X

X

X

VOC MS (S)

All

NDPs: 0
Tests: 48

X

X

X

X

X

X



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Client Ref.: Swansea Bay Stockpile Samp

Location: Swansea Bay Campus

Results Legend



Test



No Determination Possible

Sample Types -

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

Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
30021422	SP14i		0.00 - 0.00	250g Amber Jar (ALE210)	S
30021387	SP13i		0.00 - 0.00	1kg TUB with Handle (ALE260)	S
30021377	SP12i		0.00 - 0.00	250g Amber Jar (ALE215)	S
30021539	SP09i		0.00 - 0.00	1kg TUB with Handle (ALE260)	S
30021355	SP04i		0.00 - 0.00	250g Amber Jar (ALE215)	S
30021491	SP26		0.00 - 0.00	1kg TUB with Handle (ALE260)	S
30021486	SP25		0.00 - 0.00	250g Amber Jar (ALE215)	S
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 48			
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2			
EPH CWG GC (S)	All	NDPs: 0 Tests: 48			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 48			
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 48			
Metals in solid samples by OES	All	NDPs: 0 Tests: 48			
PAH by GCMS	All	NDPs: 0 Tests: 48			
pH	All	NDPs: 0 Tests: 48			
Sample description	All	NDPs: 0 Tests: 48			
Total Organic Carbon	All	NDPs: 0 Tests: 48			
TPH CWG GC (S)	All	NDPs: 0 Tests: 48			
VOC MS (S)	All	NDPs: 0 Tests: 48			



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Report Number: 734587

Superseded Report: 734430

Client Ref.: Swansea Bay Stockpile Samp

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Results Legend



Test



No Determination Possible

Sample Types -

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

	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container		Sample Type	
	30021417	30021470	30021303	30021432	30021308	30021438	30021335	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
	SP16ii	SP04iii	SP09iii	SP14iii	SP09iv	SP14iv	SP09ix	250g Amber Jar (ALE215)	250g Amber Jar (ALE215)	250g Amber Jar (ALE215)	250g Amber Jar (ALE215)	250g Amber Jar (ALE215)
	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	60g VOC (ALE215)	60g VOC (ALE215)	60g VOC (ALE215)	60g VOC (ALE215)	60g VOC (ALE215)
	S	S	S	S	S	S	S	S	S	S	S	S
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 48										
EPH CWG GC (S)	All	NDPs: 0 Tests: 48										
GRO by GC-FID (S)	All	NDPs: 0 Tests: 48										
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 48										
Metals in solid samples by OES	All	NDPs: 0 Tests: 48										
PAH by GCMS	All	NDPs: 0 Tests: 48										
pH	All	NDPs: 0 Tests: 48										
Sample description	All	NDPs: 0 Tests: 48										
Total Organic Carbon	All	NDPs: 0 Tests: 48										
TPH CWG GC (S)	All	NDPs: 0 Tests: 48										
VOC MS (S)	All	NDPs: 0 Tests: 48										

[illegible]



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Client Ref.: Swansea Bay Stockpile Samp

Location: Swansea Bay Campus

Results Legend



Test



No Determination Possible

Sample Types -

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

Lab Sample No(s)

Customer Sample Reference

AGS Reference

Depth (m)

Container

Sample Type

Asbestos ID in Solid Samples

All

NDPs: 0

Tests: 48

X

X

X

X

X

X

X

EPH CWG GC (S)

All

NDPs: 0

Tests: 48

X

X

X

X

X

X

GRO by GC-FID (S)

All

NDPs: 0

Tests: 48

X

X

X

X

X

X

Hexavalent Chromium (s)

All

NDPs: 0

Tests: 48

X

X

X

X

X

X

Metals in solid samples by OES

All

NDPs: 0

Tests: 48

X

X

X

X

X

X

PAH by GCMS

All

NDPs: 0

Tests: 48

X

X

X

X

X

X

pH

All

NDPs: 0

Tests: 48

X

X

X

X

X

X

Sample description

All

NDPs: 0

Tests: 48

X

X

X

X

X

X

Total Organic Carbon

All

NDPs: 0

Tests: 48

X

X

X

X

X

X

TPH CWG GC (S)

All

NDPs: 0

Tests: 48

X

X

X

X

X

X

VOC MS (S)

All

NDPs: 0

Tests: 48

X

X

X

X

X

X

[illegible]



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Report Number: 734587
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Superseded Report: 734430

Sample Descriptions

Grain Sizes

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

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30021497	SP1	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
30021503	SP2	0.00 - 0.00	Dark Brown	Sandy Loam	Crushed Brick	Vegetation
30021508	SP3	0.00 - 0.00	Dark Brown	Sandy Loam	Crushed Brick	Vegetation
30021298	SP05	0.00 - 0.00	Dark Brown	Sandy Loam	Crushed Brick	Stones
30021523	SP06	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
30021370	SP11	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
30021397	SP15	0.00 - 0.00	Dark Brown	Sandy Loam	Crushed Brick	Vegetation
30021402	SP17	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
30021465	SP18	0.00 - 0.00	Light Brown	Loamy Sand	Stones	Vegetation
30021475	SP19	0.00 - 0.00	Light Brown	Loamy Sand	Stones	Vegetation
30021533	SP20	0.00 - 0.00	Light Brown	Loamy Sand	Stones	Vegetation
30021528	SP21	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
30021480	SP24	0.00 - 0.00	Grey	Loamy Sand	Stones	Vegetation
30021486	SP25	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
30021491	SP26	0.00 - 0.00	Light Brown	Loamy Sand	Stones	Vegetation
30021355	SP04i	0.00 - 0.00	Dark Brown	Sandy Loam	Crushed Brick	Stones
30021539	SP09i	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
30021377	SP12i	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
30021387	SP13i	0.00 - 0.00	Dark Brown	Sandy Loam	Crushed Brick	Glass & Stones
30021422	SP14i	0.00 - 0.00	Light Brown	Sand	Vegetation	Stones
30021407	SP16i	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
30021412	SP04ii	0.00 - 0.00	Dark Brown	Sandy Loam	Crushed Brick	Vegetation
30021544	SP09ii	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
30021382	SP12ii	0.00 - 0.00	Light Brown	Loamy Sand	Stones	Vegetation
30021392	SP13ii	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
30021427	SP14ii	0.00 - 0.00	Light Brown	Sand	Stones	Vegetation
30021417	SP16ii	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
30021470	SP04iii	0.00 - 0.00	Dark Brown	Sandy Loam	Crushed Brick	Vegetation
30021303	SP09iii	0.00 - 0.00	Dark Brown	Sandy Loam	Brick	Stones
30021432	SP14iii	0.00 - 0.00	Light Brown	Sand	Stones	Vegetation
30021308	SP09iv	0.00 - 0.00	Dark Brown	Loamy Sand	Brick	Stones
30021438	SP14iv	0.00 - 0.00	Light Brown	Sand	Stones	Vegetation
30021335	SP09ix	0.00 - 0.00	Dark Brown	Sandy Loam	Crushed Brick	Stones
30021315	SP09v	0.00 - 0.00	Dark Brown	Loamy Sand	Crushed Brick	Stones
30021445	SP14v	0.00 - 0.00	Light Brown	Sand	Stones	Vegetation
30021320	SP09vi	0.00 - 0.00	Dark Brown	Sandy Loam	Crushed Brick	Vegetation
30021450	SP14vi	0.00 - 0.00	Light Brown	Sand	Stones	Vegetation
30021325	SP09vii	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
30021455	SP14vii	0.00 - 0.00	Light Brown	Sand	Stones	Vegetation



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Client Ref.: Swansea Bay Stockpile Samp

Location: Swansea Bay Campus

			Colour	Description	Inclusions	Inclusions 2
30021330	SP09viii	0.00 - 0.00	Light Brown	Sandy Loam	Stones	Vegetation
30021460	SP14viii	0.00 - 0.00	Light Brown	Sand	Stones	Vegetation
30021340	SP09x	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
30021345	SP09xi	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
30021350	SP09xii	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
30021360	SP09xiii	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
30021365	SP09xiv	0.00 - 0.00	Dark Brown	Sandy Silt Loam	Stones	Vegetation
30021518	SPY	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
30021513	SPZ	0.00 - 0.00	Dark Brown	Sandy Loam	Crushed Brick	Vegetation

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

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

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



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Location: Swansea Bay Campus

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Superseded Report: 734430

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Asbestos Identification - Solid Samples

Results Legend

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

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP1 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021497 TM048	09/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP2 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021503 TM048	09/07/24	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP3 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021508 TM048	09/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP05 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021298 TM048	09/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP06 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021523 TM048	09/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP11 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021370 TM048	08/07/24	Ashia Jackson	Loose fibres in soil	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP15 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021397 TM048	08/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP17 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021402 TM048	09/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



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Client Ref.: Swansea Bay Stockpile Samp

Location: Swansea Bay Campus

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP18 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021465 TM048	08/07/2024	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP19 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021475 TM048	08/07/2024	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP20 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021533 TM048	09/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP21 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021528 TM048	08/07/2024	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP24 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021480 TM048	09/07/24	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP25 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021486 TM048	09/07/24	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP26 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021491 TM048	09/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP04i 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021355 TM048	09/07/24	Danielle Duncan	Fibre bundles in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP09i 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021539 TM048	09/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 240704-47

Report Number: 734587

Superseded Report: 734430

Client Ref.: Swansea Bay Stockpile Samp

Location: Swansea Bay Campus

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP12i 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021377 TM048	08/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP13i 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021387 TM048	08/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP14i 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021422 TM048	09/07/24	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP16i 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021407 TM048	09/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP04ii 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021412 TM048	09/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP09ii 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021544 TM048	09/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP12ii 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021382 TM048	08/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP13ii 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021392 TM048	09/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP14ii 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021427 TM048	09/07/24	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 240704-47

Report Number: 734587

Superseded Report: 734430

Client Ref.: Swansea Bay Stockpile Samp

Location: Swansea Bay Campus

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP16ii 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021417 TM048	09/07/24	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP04iii 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021470 TM048	09/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP09iii 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021303 TM048	08/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP14iii 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021432 TM048	08/07/2024	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP09iv 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021308 TM048	08/07/2024	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP14iv 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021438 TM048	08/07/2024	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP09ix 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021335 TM048	08/07/2024	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP09v 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021315 TM048	09/07/24	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP14v 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021445 TM048	08/07/2024	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 240704-47

Report Number: 734587

Superseded Report: 734430

Client Ref.: Swansea Bay Stockpile Samp

Location: Swansea Bay Campus

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP09vi 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021320 TM048	09/07/24	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP14vi 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021450 TM048	08/07/2024	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP09vii 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021325 TM048	09/07/24	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP14vii 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021455 TM048	08/07/2024	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP09viii 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021330 TM048	09/07/24	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP14viii 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021460 TM048	08/07/2024	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP09x 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021340 TM048	08/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP09xi 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021345 TM048	08/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP09xii 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021350 TM048	08/07/2024	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

SDG: 240704-47

Report Number: 734587

Superseded Report: 734430

Client Ref.: Swansea Bay Stockpile Samp

Location: Swansea Bay Campus

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP09xiii 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021360 TM048	08/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP09xiv 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021365 TM048	08/07/24	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPY 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021518 TM048	09/07/24	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPZ 0.00 - 0.00 SOLID 02/07/2024 00:00:00 04/07/2024 09:00:00 240704-47 30021513 TM048	09/07/24	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 240704-47 Report Number: 734587 Superseded Report: 734430
Client Ref.: Swansea Bay Stockpile Samp Location: Swansea Bay Campus

Asbestos Quantification - Full

Results Legend

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

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	SP11	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.00 - 0.00					
Sample Type	SOLID					
Date Sampled	02/07/2024 00:00:00					
Date Received	04/07/2024 09:00:00					
SDG	240704-47					
Original Sample	30021370					
Method Number	TM304					
Cust. Sample Ref.	SP04i	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.00 - 0.00					
Sample Type	SOLID					
Date Sampled	02/07/2024 00:00:00					
Date Received	04/07/2024 09:00:00					
SDG	240704-47					
Original Sample	30021355					
Method Number	TM304					



CERTIFICATE OF ANALYSIS

Validated

SDG: 240704-47

Report Number: 734587

Superseded Report: 734430

Client Ref.: Swansea Bay Stockpile Samp

Location: Swansea Bay Campus

Table of Results - Appendix

Method No	Description
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM151	Determination of Hexavalent Chromium using Kone analyser
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM304	Asbestos Quantification in Soil: Fibres identified by morphology only
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM048	Identification of Asbestos in Bulk Material
TM218	The determination of PAH in soil samples by GC-MS

NA = not applicable.

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 240704-47
Client Ref.: Swansea Bay Stockpile Samp

Report Number: 734587
Location: Swansea Bay Campus

Superseded Report: 734430

Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	30021497	30021503	30021508	30021298	30021523	30021370	30021397	30021402	30021465	30021475
	SP1	SP2	SP3	SP05	SP06	SP11	SP15	SP17	SP18	SP19
	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
AGS Ref. Depth Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Asbestos ID in Solid Samples	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	08-Jul-2024	08-Jul-2024	09-Jul-2024	08-Jul-2024	08-Jul-2024
Asbestos Quantification - Full						11-Jul-2024				
EPH CWG GC (S)	13-Jul-2024	13-Jul-2024	13-Jul-2024	13-Jul-2024	11-Jul-2024	10-Jul-2024	13-Jul-2024	13-Jul-2024	11-Jul-2024	09-Jul-2024
GRO by GC-FID (S)	09-Jul-2024	10-Jul-2024	09-Jul-2024	10-Jul-2024	11-Jul-2024	09-Jul-2024	11-Jul-2024	09-Jul-2024	09-Jul-2024	10-Jul-2024
Hexavalent Chromium (s)	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024
Metals in solid samples by OES	09-Jul-2024	09-Jul-2024	10-Jul-2024	10-Jul-2024	09-Jul-2024	09-Jul-2024	10-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024
PAH by GCMS	11-Jul-2024	15-Jul-2024	11-Jul-2024	12-Jul-2024	15-Jul-2024	15-Jul-2024	11-Jul-2024	15-Jul-2024	15-Jul-2024	15-Jul-2024
pH	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	08-Jul-2024	08-Jul-2024
Sample description	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024
Total Organic Carbon	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	11-Jul-2024	10-Jul-2024	09-Jul-2024	09-Jul-2024	10-Jul-2024
TPH CWG GC (S)	13-Jul-2024	13-Jul-2024	13-Jul-2024	13-Jul-2024	11-Jul-2024	10-Jul-2024	13-Jul-2024	13-Jul-2024	11-Jul-2024	10-Jul-2024
VOC MS (S)	09-Jul-2024	10-Jul-2024	10-Jul-2024	09-Jul-2024	10-Jul-2024	09-Jul-2024	10-Jul-2024	09-Jul-2024	09-Jul-2024	10-Jul-2024

Lab Sample No(s) Customer Sample Ref.	30021533	30021528	30021480	30021486	30021491	30021355	30021539	30021377	30021387	30021422
	SP20	SP21	SP24	SP25	SP26	SP04i	SP09i	SP12i	SP13i	SP14i
	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
AGS Ref. Depth Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Asbestos ID in Solid Samples	09-Jul-2024	08-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	08-Jul-2024	08-Jul-2024	09-Jul-2024
Asbestos Quantification - Full						12-Jul-2024				
EPH CWG GC (S)	11-Jul-2024	10-Jul-2024	10-Jul-2024	11-Jul-2024	10-Jul-2024	13-Jul-2024	10-Jul-2024	10-Jul-2024	13-Jul-2024	11-Jul-2024
GRO by GC-FID (S)	09-Jul-2024	10-Jul-2024	11-Jul-2024	10-Jul-2024	10-Jul-2024	09-Jul-2024	10-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024
Hexavalent Chromium (s)	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024
Metals in solid samples by OES	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	10-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024
PAH by GCMS	15-Jul-2024	12-Jul-2024	12-Jul-2024	15-Jul-2024	12-Jul-2024	11-Jul-2024	12-Jul-2024	15-Jul-2024	15-Jul-2024	11-Jul-2024
pH	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	08-Jul-2024
Sample description	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024
Total Organic Carbon	11-Jul-2024	10-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024
TPH CWG GC (S)	11-Jul-2024	10-Jul-2024	11-Jul-2024	11-Jul-2024	10-Jul-2024	13-Jul-2024	10-Jul-2024	10-Jul-2024	13-Jul-2024	11-Jul-2024
VOC MS (S)	10-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024	09-Jul-2024	10-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024

Lab Sample No(s) Customer Sample Ref.	30021407	30021412	30021544	30021382	30021392	30021427	30021417	30021470	30021303	30021432
	SP16i	SP04ii	SP09ii	SP12ii	SP13ii	SP14ii	SP16ii	SP04iii	SP09iii	SP14iii
	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
AGS Ref. Depth Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Asbestos ID in Solid Samples	09-Jul-2024	09-Jul-2024	09-Jul-2024	08-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	08-Jul-2024	08-Jul-2024
EPH CWG GC (S)	09-Jul-2024	13-Jul-2024	10-Jul-2024	11-Jul-2024	13-Jul-2024	10-Jul-2024	10-Jul-2024	13-Jul-2024	10-Jul-2024	10-Jul-2024
GRO by GC-FID (S)	11-Jul-2024	09-Jul-2024	11-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	10-Jul-2024	11-Jul-2024	09-Jul-2024
Hexavalent Chromium (s)	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024
Metals in solid samples by OES	09-Jul-2024	10-Jul-2024	10-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024
PAH by GCMS	15-Jul-2024	11-Jul-2024	15-Jul-2024	15-Jul-2024	15-Jul-2024	11-Jul-2024	11-Jul-2024	11-Jul-2024	12-Jul-2024	11-Jul-2024
pH	08-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	08-Jul-2024	08-Jul-2024	09-Jul-2024	09-Jul-2024	08-Jul-2024
Sample description	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024
Total Organic Carbon	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	10-Jul-2024	10-Jul-2024
TPH CWG GC (S)	11-Jul-2024	13-Jul-2024	11-Jul-2024	11-Jul-2024	13-Jul-2024	10-Jul-2024	10-Jul-2024	13-Jul-2024	11-Jul-2024	10-Jul-2024
VOC MS (S)	10-Jul-2024	09-Jul-2024	10-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	10-Jul-2024	09-Jul-2024

Lab Sample No(s) Customer Sample Ref.	30021308	30021438	30021335	30021315	30021445	30021320	30021450	30021325	30021455	30021330
	SP09iv	SP14iv	SP09ix	SP09v	SP14v	SP09vi	SP14vi	SP09vii	SP14vii	SP09viii
	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
AGS Ref. Depth Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Asbestos ID in Solid Samples	08-Jul-2024	08-Jul-2024	08-Jul-2024	09-Jul-2024	08-Jul-2024	09-Jul-2024	08-Jul-2024	09-Jul-2024	08-Jul-2024	09-Jul-2024
EPH CWG GC (S)	13-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024	11-Jul-2024
GRO by GC-FID (S)	11-Jul-2024	09-Jul-2024	10-Jul-2024	11-Jul-2024	09-Jul-2024	11-Jul-2024	09-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024
Hexavalent Chromium (s)	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024
Metals in solid samples by OES	10-Jul-2024	09-Jul-2024	09-Jul-2024	10-Jul-2024	09-Jul-2024	10-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024
PAH by GCMS	12-Jul-2024	11-Jul-2024	11-Jul-2024	12-Jul-2024	11-Jul-2024	11-Jul-2024	11-Jul-2024	11-Jul-2024	12-Jul-2024	11-Jul-2024
pH	09-Jul-2024	08-Jul-2024	08-Jul-2024	09-Jul-2024	08-Jul-2024	08-Jul-2024	08-Jul-2024	08-Jul-2024	08-Jul-2024	08-Jul-2024
Sample description	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024
Total Organic Carbon	10-Jul-2024	10-Jul-2024	10-Jul-2024	09-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024	09-Jul-2024	09-Jul-2024
TPH CWG GC (S)	13-Jul-2024	10-Jul-2024	10-Jul-2024	11-Jul-2024	10-Jul-2024	11-Jul-2024	10-Jul-2024	10-Jul-2024	11-Jul-2024	10-Jul-2024
VOC MS (S)	10-Jul-2024	09-Jul-2024	09-Jul-2024	10-Jul-2024	09-Jul-2024	10-Jul-2024	09-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024



CERTIFICATE OF ANALYSIS

Validated

SDG: 240704-47

Report Number: 734587

Superseded Report: 734430

Client Ref.: Swansea Bay Stockpile Samp

Location: Swansea Bay Campus

Lab Sample No(s)
Customer Sample Ref.

AGS Ref.
Depth
Type

	30021460	30021340	30021345	30021350	30021360	30021365	30021518	30021513
	SP14viii	SP09x	SP09xi	SP09xii	SP09xiii	SP09xiv	SPY	SPZ
	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Asbestos ID in Solid Samples	08-Jul-2024	08-Jul-2024	08-Jul-2024	08-Jul-2024	08-Jul-2024	08-Jul-2024	09-Jul-2024	09-Jul-2024
EPH CWG GC (S)	11-Jul-2024	11-Jul-2024	11-Jul-2024	11-Jul-2024	11-Jul-2024	10-Jul-2024	11-Jul-2024	13-Jul-2024
GRO by GC-FID (S)	09-Jul-2024	11-Jul-2024	11-Jul-2024	11-Jul-2024	11-Jul-2024	10-Jul-2024	09-Jul-2024	09-Jul-2024
Hexavalent Chromium (s)	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024
Metals in solid samples by OES	09-Jul-2024	09-Jul-2024	10-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024
PAH by GCMS	12-Jul-2024	12-Jul-2024	12-Jul-2024	12-Jul-2024	15-Jul-2024	15-Jul-2024	15-Jul-2024	11-Jul-2024
pH	08-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024
Sample description	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024	05-Jul-2024
Total Organic Carbon	11-Jul-2024	09-Jul-2024	10-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024
TPH CWG GC (S)	11-Jul-2024	11-Jul-2024	11-Jul-2024	11-Jul-2024	11-Jul-2024	10-Jul-2024	11-Jul-2024	13-Jul-2024
VOC MS (S)	09-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024



CERTIFICATE OF ANALYSIS

SDG: 240704-47

Report Number: 734587

Superseded Report: 734430

Client Ref: Swansea Bay Stockpile Sa

Location: Swansea Bay Campus

Appendix

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

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

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

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

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

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

7. Results relate only to the items tested.

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

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

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

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

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

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

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

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

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

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

General

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

19. Sample Deviations

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

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

20. Asbestos

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

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

Respirable Fibres

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

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

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