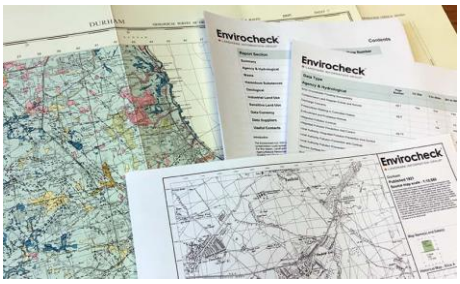



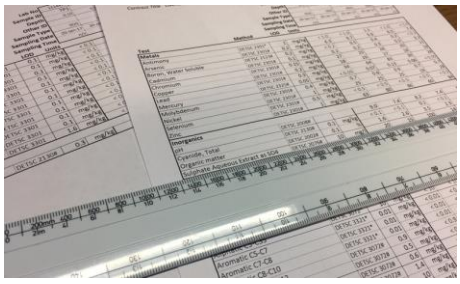

Phase 2: Site Investigation

Marine Scotland Boreholes, Ardersier Port, Inverness

Haventus Ardersier Port

S230232

Solmek Ltd

12 Yarm Road
Stockton-on-Tees
TS18 3NA
Tel: 01642 607083

www.solmek.com

info@solmek.com

PHASE 2 SITE INVESTIGATION REPORT

MARINE SCOTLAND BOREHOLES, ARDERSIER PORT, INVERNESS

TABLE OF CONTENTS

APPENDICES

Revision	Date	Prepared by	Signed
Final	June 2023	L Cassidy *Principal Environmental Engineer*	[Redacted]
		Checked by	
		R Woods *Managing Director*	[Redacted]
		Approved by	
		R Woods *Managing Director*	[Redacted]

1 INTRODUCTION

1.1 Authorisation

The site investigation described in this report was carried out by Solmek to the instructions of Haventus Ardersier Port, on land located within Ardersier Port to the east of Inverness. A site location plan is presented in Appendix A, Figure 1.

1.2 Background & Scope of Works

The port is to become an Energy Transition Facility involving the recycling of old oil rigs to be used as foundations for floating offshore wind farms. The proposed development will also include a concrete production plant using dredged sand from the port inlet.

This report covers investigation works to support the off-shore disposal of dredged material.

The following steps may be required in the investigation and remediation of potentially contaminated land:

- Phase 1: Desk Study
- Phase 2: Intrusive Investigation
- Phase 3: Remediation Statement
- Phase 4: Validation Reports

Phases 1 and 2 are generally required in the redevelopment of most sites. Phases 3 and 4 are subject to the findings of the initial stages.

A factual contamination assessment (Phase 2) was requested. The fieldwork and testing was generally carried out according to:

- BS 5930:2015+A1:2020 Code of Practice for Ground Investigations
- BS 10175:2011+A1:2013 Investigation of Potentially Contaminated Sites – Code of Practice.
- Rock and soil descriptions shall be in accordance with BS EN ISO 14689-1:2003, BS EN ISO 14688-1:2002 and BS EN ISO 14688-2:2004

This report forms part of a Stage 1 Risk Assessment (Generic Quantitative Risk Assessment) with respect to the Environment Agency's guidance document Environment Agency *Land Contamination Risk Management*, which replaced the now-withdrawn *Contaminated Land Report 11 – Model Procedures for the Management of Land Contamination (2004)*.

The information provided in this report is based on the investigation fieldwork and is subject to the comments and approval of the various regulatory authorities. There may be other conditions prevailing on the site which have not been disclosed by this investigation and which have not been taken into account by this report. Solmek reserve the right to alter conclusions and recommendations should further information be available or provided.

Any schematic representation or opinion of the possible configuration of ground conditions between exploratory holes is conjectural and given for guidance only and confirmation of intermediate ground conditions should be considered if deemed necessary.

2 SITE DESCRIPTION AND FIELDWORK

An initial site inspection, as recommended in BS 5930 and BS 10175, was undertaken on 21st November 2022.

The site is centred at Ordnance Survey Co-ordinates 280376E, 858540 and lies within an inlet at the mouth of the Moray Firth. The site comprises the inlet and an area external to the inlet within Moray Firth.

2.1 Fieldwork

The drilling fieldwork was carried out between 6th March and 27th March 2023. The extent of the investigation was:

- 30no. cable percussive boreholes (S-01 to S-30) drilled to a maximum depth of 22.60m below ground level (bgl).
    - The boreholes were positioned by Envirocentre, on behalf of the client, across the proposed dredge area.
- Retrieval of environmental samples for chemical testing.

The boreholes were backfilled with arisings upon completion.

Descriptions of the strata encountered in the boreholes together with details of sampling and groundwater are presented in Appendix B of this report.

A plan showing all exploratory locations can be found in Appendix A, Figure 2.

3 GROUND CONDITIONS

A summary of the ground conditions encountered is given below.

3.1 Made Ground Deposits

Made ground was not encountered within the boreholes.

3.2 Superficial Deposits

The superficial deposits were generally encountered between 5.20 and 21.60mbgl below the water level. The encountered deposits generally comprised grey gravelly sand, with the gravel content (where noted) generally comprising sandstone and shell fragments.

Locally no gravel was noted, whilst locally silty sand was present.

The superficial deposits were proven to a maximum depth of 22.60mbgl.

3.3 Bedrock

Bedrock was not encountered during this phase of investigation.

3.4 Groundwater

Due to the nature of the works (overwater drilling), no commentary on groundwater is necessary. With respect to the estuarine water thickness, during the drilling works, the depth from water level to the superficial deposits however ranged from 5.20 to 21.60mbgl.

The thickness of water overlying the superficial deposits fluctuates constantly due to tidal influences. Therefore, water levels significantly higher than those found during this investigation may be encountered.

4 CONTAMINATION TESTING RESULTS

This phase of works concerns the assessment of proposed dredge materials for off-shore disposal.

The chemical samples were generally retrieved in line with BS ISO 18400-105:2017 *Soil Quality. Sampling* and also in line with the laboratory (Socotec) specifications. The chemical results are presented in Appendix C.

4.1 Contamination Testing and Rationale

To provide information upon the possibility of ground contamination 83no samples of natural sand were selected for contamination testing. The depth of interest for testing was specified by Envirocentre, with 3no samples per borehole between -6.5 and -12.9mCD required. Locally, such samples were not possible due to the depth to the seabed in mCD being greater than the proposed dredge depth.

The samples selected are detailed below:

- S01 ES1 - 6.50-7.00m
- S01 ES7 - 9.50-10.00m
- S01 ES13 - 12.50-13.00m
- S02 ES1 - 6.50-7.00m
- S02 ES7 - 9.50-10.00m
- S02 ES13 - 12.50-13.00m
- S03 ES1 - 6.50-7.00m
- S03 ES7 - 9.50-10.00m
- S03 ES13 - 15.50-13.00m
- S04 ES1 - 6.50-7.00m
- S04 ES7 - 9.50-1.00m
- S04 ES13 - 12.50-13.00m
- S05 ES1 - 6.50-7.00m
- S05 ES7 - 9.50-10.00m
- S05 ES13 - 12.50-13.00m
- S07 ES1 - 6.50-7.00m
- S07 ES7 - 9.50-10.00m
- S07 ES13 - 12.50-13.00m
- S08 ES1 - 6.50-7.00m
- S08 ES7 - 9.50-10.00m
- S08 ES13 - 12.50-13.00m
- S06 ES1 - 6.50-7.00
- S06 ES7 - 9.50-10.00
- S06 ES13 - 12.50-13.00
- S09 ES1 - 6.50-7.00
- S09 ES7 - 9.50-10.00
- S09 ES13 - 12.50-13.00
- S10 ES1 - 6.50-7.00
- S10 ES7 - 9.50-10.00
- S10 ES13 - 12.50-13.00
- S11 ES1 - 6.50-7.00m
- S11 ES7 - 9.50-10.00m
- S11 ES13 - 12.50-13.00m
- S12 ES1 - 6.50-7.00
- S12 ES7 - 9.50-10.00
- S12 ES13 - 12.50-13.00
- S13 ES1 - 6.50-7.00
- S13 ES7 - 9.50-10.00
- S13 ES13 - 12.50-13.00
- S14 ES1 - 6.50-7.00
- S14 ES7 - 9.50-10.00
- S14 ES13 - 12.50-13.00
- S15 ES1 - 6.50-7.00m
- S15 ES7 - 9.50-10.00m
- S15 ES13 - 12.50-13.00m
- S16 ES1 - 6.50-7.00m
- S16 ES7 - 9.50-10.00m
- S16 ES13 - 12.50-13.00m
- S17 ES1 - 6.50-7.00

- S17 ES7 - 9.50-10.00
- S17 ES13 - 12.50-13.00
- S18 ES1 - 6.50-7.00m
- S18 ES7 - 9.50-10.00m
- S18 ES13 - 12.50-13.00m
- S19 ES1 - 6.50-7.00m
- S19 ES7 - 9.50-10.00m
- S19 ES13 - 12.50-13.00m
- S20 ES1 - 6.50-7.00m
- S20 ES7 - 9.50-10.00m
- S20 ES13 - 12.50-13.00m
- S21 ES1 - 6.50-7.00
- S21 ES7 - 9.50-10.00
- S21 ES13 - 12.50-13.00
- S22 ES1 - 6.50-7.00
- S22 ES7 - 9.50-10.00
- S22 ES13 - 12.50-13.00
- S23 ES1 - 6.50-7.00
- S23 ES7 - 9.50-10.00
- S23 ES13 - 12.50-13.00
- S24 ES1 - 6.50-7.00
- S24 ES7 - 9.50-10.00
- S24 ES13 - 12.50-13.00
- S25 ES1 - 6.50-7.00m
- S25 ES7 - 9.50-10.00m
- S25 ES13 - 12.50-13.00m
- S26 ES1 - 6.50-7.00m
- S26 ES7 - 9.50-10.00m
- S26 ES13 - 12.50-13.00m
- S27 ES1 - 6.50-7.00m
- S27 ES7 - 9.50-10.00m
- S27 ES13 - 12.50-13.00m
- S28 ES3 - 12.50-13.00
- S29 ES5 - 12.50-13.00

The samples were tested for the following contaminant suites:

- 83no. Marine Scotland Testing Suite

4.2 Test Results

The test results are presented in Appendix C.

SOLMEK

APPENDIX A:
Figures & Drawings

SOLMEK

12-16 Yarm Road, Stockton on Tees, TS18 3NA
Tel: 01642 607083 Email: info@solmek.com

Figure Title

Site Location Plan

Project Number

S230232

Project Name

Marine Scotland Boreholes, Ardersier, Inverness

Client

Ardersier Port

Date

June 2023

DRG Number

Figure 1

Scale

1:50000 @ A4 [DO NOT SCALE]

Legend Key

Project Bounds - Project Bounds

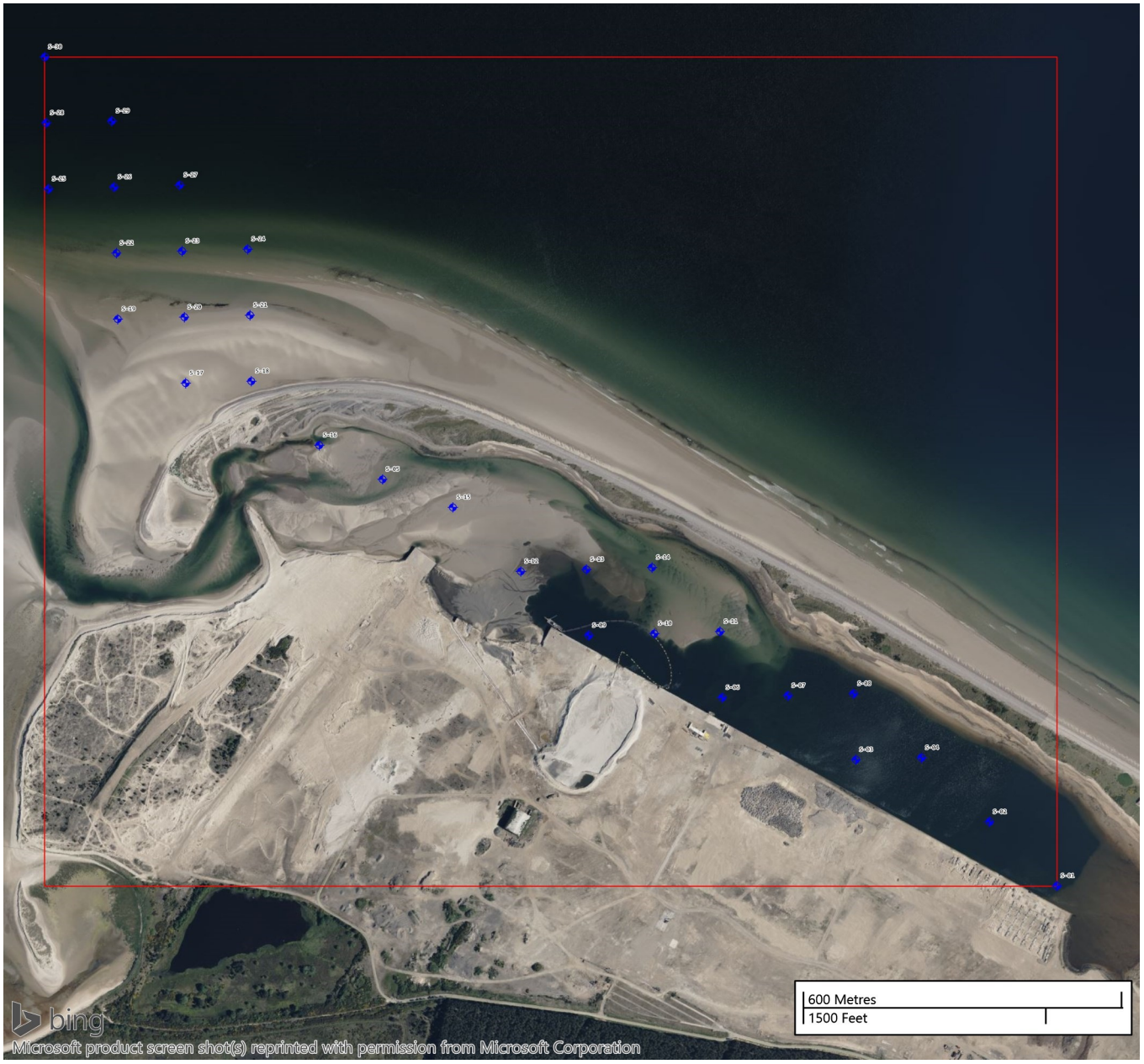

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Figure Title

Exploratory Hole Location Plan

Project Number

S230232

Project Name

Marine Scotland Boreholes, Ardersier, Inverness

Client

Ardersier Port

Date

June 2023

DRG Number

Figure 2

Scale

1:12000 @ A4 [DO NOT SCALE]

Legend Key

Locations By Type - BH

Project Bounds - Project Bounds

APPENDIX B:
Borehole Logs

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12-16 Yarm Road
Stockton on Tees
TS18 3NA
01642 607083
info@solmek.com

Borehole Log

Scale 1:125 Sheet 1 of 1

S-01

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	06/03/2023
Client:	Ardersier Port			**Ended:**	06/03/2023
Method:	Cable Percussive			**Backfilled:**	06/03/2023

GL (mCD):	4.00m	
Easting:	281382	
Northing:	857816	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing: Depth (m)	Type	Results
				WATER			
		6.50	-2.50	Dark greyish black silty SAND. Sand is fine to medium grained.			
		7.30	-3.30	Grey SAND. Sand is fine to coarse grained with occasional shells.			
					10.50	ES	
					11.00	ES	
		11.50	-7.50	Grey slightly gravelly silty SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone.	11.50	ES	
					12.00	ES	
					12.50	ES	
					13.00	ES	
					13.50	ES	
					14.00	ES	
					14.50	ES	
					15.00	ES	
					15.50	ES	
					16.00	ES	
					16.50	ES	
					17.00	ES	
					17.50	ES	
					18.00	ES	
					18.50	ES	
					19.00	ES	
					19.50	ES	
					20.00	ES	
					20.50	ES	
					21.00	ES	
		21.70	-17.70	End of Borehole at 21.700m			

Hole Diameter

Depth Base (m)	Diameter (mm)
21.70	150

Casing Depths

Depth Base (m)	Diameter (mm)
21.50	150

General Remarks

Drilled overwater - no handdug pit undertaken.

Chiselling

From (m)	To (m)	Time (hr)

Ground Water

Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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Borehole Log

Scale 1:125 Sheet 1 of 1

S-02

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	07/03/2023
Client:	Ardersier Port			**Ended:**	07/03/2023
Method:	Cable Percussive			**Backfilled:**	07/03/2023

GL (mCD):	2.39m	
Easting:	281257	
Northing:	857941	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
				WATER			
		7.30	-4.91	Dark greyish black silty SAND. Sand is fine to medium grained..			
		8.10	-5.71	Grey SAND. Sand is fine to coarse grained with occasional shells.			
					8.89	ES	
					9.39	ES	
					9.89	ES	
					10.39	ES	
					10.89	ES	
					11.39	ES	
					11.89	ES	
		12.40	-10.01	Grey silty SAND. Sand is fine to medium grained.	12.39	ES	
					12.89	ES	
					13.39	ES	
					13.89	ES	
					14.39	ES	
					14.89	ES	
					15.39	ES	
					15.89	ES	
					16.39	ES	
					16.89	ES	
					17.39	ES	
					17.89	ES	
					18.39	ES	
					18.89	ES	
		19.40	-17.01	End of Borehole at 19.400m	19.39	ES	

Hole Diameter		Casing Depths		General Remarks	Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
19.40	150	19.40	150	Drilled overwater - no handdug pit undertaken.								

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Borehole Log

Scale 1:125 Sheet 1 of 1

S-03

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	08/03/2023
Client:	Ardersier Port			**Ended:**	08/03/2023
Method:	Cable Percussive			**Backfilled:**	08/03/2023

GL (mCD):	2.32m	
Easting:	281007	
Northing:	858066	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
				WATER			
		8.20	-5.88	Dark greyish black silty SAND. Sand is fine to medium grained.	8.82	ES	
		9.10	-6.78	Grey SAND. Sand is fine to coarse grained with occasional shells.	9.32	ES	
					9.82	ES	
					10.32	ES	
					10.82	ES	
					11.32	ES	
					11.82	ES	
					12.32	ES	
					12.82	ES	
					13.32	ES	
					13.82	ES	
					14.32	ES	
					14.82	ES	
					15.32	ES	
					15.82	ES	
					16.32	ES	
					16.82	ES	
					17.32	ES	
					17.82	ES	
					18.32	ES	
					18.82	ES	
		19.40	-17.08	End of Borehole at 19.400m	19.32	ES	

Hole Diameter		Casing Depths		General Remarks	Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
19.40	150	19.40	150	Drilled overwater - no handdug pit undertaken.								

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Borehole Log

Scale 1:125 Sheet 1 of 1

S-04

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	07/03/2023
Client:	Ardersier Port			**Ended:**	07/03/2023
Method:	Cable Percussive			**Backfilled:**	07/03/2023

GL (mCD):	4.98m	
Easting:	281132	
Northing:	858066	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing: Depth (m)	Type	Results
				WATER			
		9.60	-4.62	Dark greyish black silty SAND. Sand is fine to medium grained.			
		10.40	-5.42	Grey SAND. Sand is fine to coarse grained with occasional shells.			
					11.48	ES	
					11.98	ES	
					12.48	ES	
					12.98	ES	
					13.48	ES	
					13.98	ES	
					14.48	ES	
					14.98	ES	
					15.48	ES	
					15.98	ES	
					16.48	ES	
					16.98	ES	
					17.48	ES	
					17.98	ES	
					18.48	ES	
					18.98	ES	
					19.48	ES	
					19.98	ES	
					20.48	ES	
					20.98	ES	
					21.48	ES	
		21.98	-17.00	End of Borehole at 21.980m	21.98	ES	

Hole Diameter

Depth Base (m)	Diameter (mm)
21.98	150

Casing Depths

Depth Base (m)	Diameter (mm)
19.50	150

General Remarks

Drilled overwater - no handdug pit undertaken.

Chiselling

From (m)	To (m)	Time (hr)

Ground Water

Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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Borehole Log

Scale 1:125 Sheet 1 of 1

S-05

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	09/03/2023
Client:	Ardersier Port			**Ended:**	09/03/2023
Method:	Cable Percussive			**Backfilled:**	09/03/2023

GL (mCD):	5.20m	
Easting:	280124	
Northing:	858623	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
				WATER			
		7.30	-2.10	Dark Grey SAND. Sand is fine to medium grained.			
					11.70	ES	
		12.10	-6.90	Grey SAND. Sand is fine to medium grained with broken shell fragments.	12.20	ES	
					12.70	ES	
					13.20	ES	
					13.70	ES	
					14.20	ES	
					14.70	ES	
					15.20	ES	
					15.70	ES	
					16.20	ES	
					16.70	ES	
					17.20	ES	
					17.70	ES	
					18.20	ES	
					18.70	ES	
					19.20	ES	
					19.70	ES	
					20.20	ES	
					20.70	ES	
					21.20	ES	
					21.70	ES	
		22.20	-17.00	End of Borehole at 22.200m	22.20	ES	

Hole Diameter

Depth Base (m)	Diameter (mm)
21.20	150

Casing Depths

Depth Base (m)	Diameter (mm)
21.00	150

General Remarks

Drilled overwater - no handdug pit undertaken.

Chiselling

From (m)	To (m)	Time (hr)

Ground Water

Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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Borehole Log

Scale 1:125 Sheet 1 of 1

S-06

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	13/03/2023
Client:	Ardersier Port			**Ended:**	13/03/2023
Method:	Cable Percussive			**Backfilled:**	13/03/2023

GL (mCD):	2.43m
Easting:	280757
Northing:	858191
Logged:	SD
Status:	DRAFT

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
				WATER			
		5.20	-2.77	Black silty SAND with occasional wood fragments.			
		7.80	-5.37	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.			
					8.93	ES	
					9.43	ES	
					9.93	ES	
					10.43	ES	
					10.93	ES	
					11.43	ES	
					11.93	ES	
					12.43	ES	
					12.93	ES	
					13.43	ES	
					13.93	ES	
					14.43	ES	
					14.93	ES	
					15.43	ES	
					15.93	ES	
					16.43	ES	
					16.93	ES	
					17.43	ES	
					17.93	ES	
					18.43	ES	
					18.93	ES	
		19.50	-17.07		19.43	ES	
				End of Borehole at 19.500m			

Hole Diameter		Casing Depths		General Remarks	Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
19.33	150	19.00	150	Drilled overwater - no handdug pit undertaken.								

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Borehole Log

Scale 1:125 Sheet 1 of 1

S-07

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	08/03/2023
Client:	Ardersier Port			**Ended:**	08/03/2023
Method:	Cable Percussive			**Backfilled:**	08/03/2023

GL (mCD):	4.30m	
Easting:	280882	
Northing:	858191	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description
				WATER
		7.80	-3.50	Dark greyish black silty SAND. Sand is fine to medium grained.
		8.40	-4.10	Grey SAND. Sand is fine to coarse grained with occasional shells.
		21.30	-17.00	End of Borehole at 21.300m

Samples and Insitu Testing

Depth (m)	Type	Results
10.80	ES	
11.30	ES	
11.80	ES	
12.30	ES	
12.80	ES	
13.30	ES	
13.80	ES	
14.30	ES	
14.80	ES	
15.30	ES	
15.80	ES	
16.30	ES	
16.80	ES	
17.30	ES	
17.80	ES	
18.30	ES	
18.80	ES	
19.30	ES	
19.80	ES	
20.30	ES	
20.80	ES	
21.30	ES	

Hole Diameter

Depth Base (m)	Diameter (mm)
21.30	150

Casing Depths

Depth Base (m)	Diameter (mm)
21.00	150

General Remarks

Drilled overwater - no handdug pit undertaken.

Chiselling

From (m)	To (m)	Time (hr)

Ground Water

Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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Borehole Log

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S-08

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	08/03/2023
Client:	Ardersier Port			**Ended:**	08/03/2023
Method:	Cable Percussive			**Backfilled:**	08/03/2023

GL (mCD):	4.98m
Easting:	281007
Northing:	858191
Logged:	SD
Status:	DRAFT

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing: Depth (m)	Type	Results
				WATER			
		10.60	-5.62	Dark greyish black silty SAND. Sand is fine to medium grained.	11.48	ES	
					11.98	ES	
					12.48	ES	
					12.98	ES	
		13.60	-8.62	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with broken shell fragments.	13.48	ES	
					13.98	ES	
					14.48	ES	
					14.98	ES	
					15.48	ES	
					15.98	ES	
					16.48	ES	
		17.00	-12.02	Grey SAND. Sand is fine to coarse grained.	16.98	ES	
					17.48	ES	
					17.98	ES	
					18.48	ES	
					18.98	ES	
					19.48	ES	
					19.98	ES	
					20.48	ES	
					20.98	ES	
					21.48	ES	
		22.00	-17.02	End of Borehole at 22.000m	21.98	ES	

Hole Diameter

Depth Base (m)	Diameter (mm)
22.00	150

Casing Depths

Depth Base (m)	Diameter (mm)
22.00	150

General Remarks

Drilled overwater - no handdug pit undertaken.

Chiselling

From (m)	To (m)	Time (hr)

Ground Water

Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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Borehole Log

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S-09

Contract no: S230232
Site: Marine Scotland Boreholes, Ardersier, Inverness
Client: Ardersier Port
Method:

Driller:
Plant used:
Started: 22/03/2023
Ended: 22/03/2023
Backfilled: 22/03/2023

GL (mCD): 5.58m
Easting: 280507
Northing: 858316
Logged:
Status: DRAFT

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
				WATER			
		7.70	-2.12	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.			
					12.08	ES	
					12.56	ES	
					13.08	ES	
					13.58	ES	
					14.08	ES	
					14.58	ES	
					15.08	ES	
					15.58	ES	
					16.08	ES	
					16.58	ES	
					17.08	ES	
					17.58	ES	
					18.08	ES	
					18.58	ES	
					19.08	ES	
					19.58	ES	
					20.08	ES	
					20.58	ES	
					21.08	ES	
					21.58	ES	
					22.08	ES	
		22.60	-17.02	End of Borehole at 22.600m	22.58	ES	

Hole Diameter

Depth Base (m)	Diameter (mm)
22.60	150

Casing Depths

Depth Base (m)	Diameter (mm)
22.60	150

General Remarks

Drilled overwater - no handdug pit undertaken.

Chiselling

From (m)	To (m)	Time (hr)

Ground Water

Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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S-10

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	13/03/2023
Client:	Ardersier Port			**Ended:**	13/03/2023
Method:	Cable Percussive			**Backfilled:**	13/03/2023

GL (mCD):	3.66m	
Easting:	280632	
Northing:	858316	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
				WATER			
		5.20	-1.54	Black silty SAND with occasional wood fragments.			
		7.80	-4.14	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.			
					10.16	ES	
					10.66	ES	
					11.16	ES	
					11.66	ES	
					12.16	ES	
					12.66	ES	
					13.16	ES	
					13.66	ES	
					14.16	ES	
					14.66	ES	
					15.16	ES	
					15.66	ES	
					16.16	ES	
					16.66	ES	
					17.16	ES	
					17.66	ES	
					18.16	ES	
					18.66	ES	
					19.16	ES	
					19.66	ES	
					20.16	ES	
		20.70	-17.04	End of Borehole at 20.700m	20.66	ES	

Hole Diameter		Casing Depths		General Remarks	Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
20.50	150	20.50	150	Drilled overwater - no handdug pit undertaken.								

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Borehole Log

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Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	16/03/2023
Client:	Ardersier Port			**Ended:**	16/03/2023
Method:	Cable Percussive			**Backfilled:**	16/03/2023

GL (mCD):	2.93m	
Easting:	280757	
Northing:	858316	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
				WATER			
		7.20	-4.27	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.			
					9.43	ES	
					9.93	ES	
					10.43	ES	
					10.93	ES	
					11.43	ES	
					11.93	ES	
					12.43	ES	
					12.93	ES	
					13.43	ES	
					13.93	ES	
					14.43	ES	
					14.93	ES	
					15.43	ES	
					15.93	ES	
					16.43	ES	
					16.93	ES	
					17.43	ES	
					17.93	ES	
					18.43	ES	
					18.93	ES	
					19.43	ES	
		20.00	-17.07		19.93	ES	
				End of Borehole at 20.000m			

Hole Diameter		Casing Depths		General Remarks
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	
19.80	150	19.50	150	Drilled overwater - no handdug pit undertaken.

Chiselling		
From (m)	To (m)	Time (hr)

Ground Water				
Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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S-12

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	10/03/2023
Client:	Ardersier Port			**Ended:**	10/03/2023
Method:	Cable Percussive			**Backfilled:**	10/03/2023

GL (mCD):	2.13m	
Easting:	280382	
Northing:	858441	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
				WATER			
		4.90	-2.77	Grey SAND. Sand is fine to coarse grained with occasional shell fragments.			
					8.63	ES	
					9.13	ES	
					9.63	ES	
					10.13	ES	
					10.63	ES	
					11.13	ES	
					11.63	ES	
					12.13	ES	
					12.63	ES	
					13.13	ES	
					13.63	ES	
					14.13	ES	
					14.63	ES	
					15.13	ES	
					15.63	ES	
					16.13	ES	
					16.63	ES	
					17.13	ES	
					17.63	ES	
					18.13	ES	
					18.63	ES	
					19.13	ES	
		19.50	-17.37	End of Borehole at 19.500m			

Hole Diameter		Casing Depths		General Remarks	Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
19.50	150	19.50	150	Drilled overwater - no handdug pit undertaken.								

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S-13

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	20/03/2023
Client:	Ardersier Port			**Ended:**	20/03/2023
Method:	Cable Percussive			**Backfilled:**	20/03/2023

GL (mCD):	4.38m	
Easting:	280507	
Northing:	858441	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
				WATER			
		6.70	-2.32	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.			
					10.88	ES	
					11.38	ES	
					11.88	ES	
					12.38	ES	
					12.88	ES	
					13.38	ES	
					13.88	ES	
					14.38	ES	
					14.88	ES	
					15.38	ES	
					15.88	ES	
					16.38	ES	
					16.88	ES	
					17.38	ES	
					17.88	ES	
					18.38	ES	
					18.88	ES	
					19.38	ES	
					19.88	ES	
					20.38	ES	
					20.88	ES	
		21.40	-17.02	End of Borehole at 21.400m	21.38	ES	

Hole Diameter

Depth Base (m)	Diameter (mm)
21.40	150

Casing Depths

Depth Base (m)	Diameter (mm)
21.40	150

General Remarks

Drilled overwater - no handdug pit undertaken.

Chiselling

From (m)	To (m)	Time (hr)

Ground Water

Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	20/03/2023
Client:	Ardersier Port			**Ended:**	20/03/2023
Method:	Cable Percussive			**Backfilled:**	

GL (mCD):	3.78m	
Easting:	280632	
Northing:	858441	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing: Depth (m)	Type	Results
				WATER			
		5.20	-1.42	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.	10.28	ES	
					10.78	ES	
					11.28	ES	
					11.78	ES	
					12.28	ES	
					12.78	ES	
					13.28	ES	
					13.78	ES	
					14.28	ES	
					14.78	ES	
					15.28	ES	
					15.78	ES	
					16.28	ES	
					16.78	ES	
					17.28	ES	
					17.78	ES	
					18.28	ES	
					18.78	ES	
					19.28	ES	
					19.78	ES	
					20.28	ES	
		20.80	-17.02	End of Borehole at 20.800m	20.78	ES	

Hole Diameter		Casing Depths		General Remarks	Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
20.80	150	20.80	150	Drilled overwater - no handdug pit undertaken.								

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info@solmek.com

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Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	17/03/2023
Client:	Ardersier Port			**Ended:**	17/03/2023
Method:	Cable Percussive			**Backfilled:**	17/03/2023

GL (mCD):	4.20m	
Easting:	280257	
Northing:	858566	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
				WATER			
		7.40	-3.20	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.			
					10.70	ES	
					11.20	ES	
					11.70	ES	
					12.20	ES	
					12.70	ES	
					13.20	ES	
					13.70	ES	
					14.20	ES	
					14.70	ES	
					15.20	ES	
					15.70	ES	
					16.20	ES	
					16.70	ES	
					17.20	ES	
					17.70	ES	
					18.20	ES	
					18.70	ES	
					19.20	ES	
					19.70	ES	
					20.20	ES	
					20.70	ES	
		21.20	-17.00	End of Borehole at 21.200m	21.20	ES	

Hole Diameter		Casing Depths		General Remarks	Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
21.00	150	21.00	150	Drilled overwater - no handdug pit undertaken.								

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info@solmek.com

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S-16

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	09/03/2023
Client:	Ardersier Port			**Ended:**	09/03/2023
Method:	Cable Percussive			**Backfilled:**	09/03/2023

GL (mCD):	2.78m	
Easting:	280007	
Northing:	858691	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
				WATER			
		4.80	-2.02	Grey SAND. Sand is fine to coarse grained with occasional shell fragments.			
					9.28	ES	
					9.78	ES	
					10.28	ES	
					10.78	ES	
					11.28	ES	
					11.78	ES	
					12.28	ES	
					12.78	ES	
					13.28	ES	
					13.78	ES	
					14.28	ES	
					14.78	ES	
					15.28	ES	
					15.78	ES	
					16.28	ES	
					16.78	ES	
					17.28	ES	
					17.78	ES	
					18.28	ES	
					18.78	ES	
					19.28	ES	
		19.80	-17.02	End of Borehole at 19.800m	19.78	ES	

Hole Diameter		Casing Depths		General Remarks	Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
19.70	150	19.50	150	Drilled overwater - no handdug pit undertaken.								

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Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	27/03/2023
Client:	Ardersier Port			**Ended:**	27/03/2023
Method:	Cable Percussive			**Backfilled:**	27/03/2023

GL (mCD):	3.02m	
Easting:	279757	
Northing:	858816	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
				Brown SAND. Sand is fine to medium grained with occasional shell fragments.			
		0.70	2.32	Dark greyish black slightly gravelly silty SAND. Sand is fine to medium grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone and broken shell fragments.			
					9.52	ES	
					10.02	ES	
					10.52	ES	
					11.02	ES	
					11.52	ES	
					12.02	ES	
					12.52	ES	
					13.02	ES	
					13.52	ES	
					14.02	ES	
					14.52	ES	
					15.02	ES	
					15.52	ES	
					16.02	ES	
					16.52	ES	
					17.02	ES	
					17.52	ES	
					18.02	ES	
					18.52	ES	
					19.02	ES	
					19.52	ES	
		20.10	-17.08		20.02	ES	
				End of Borehole at 20.100m			

Hole Diameter		Casing Depths		General Remarks	Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
19.20	150	19.00	150	Drilled overwater - no handdug pit undertaken.								

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Borehole Log

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Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	15/03/2023
Client:	Ardersier Port			**Ended:**	15/03/2023
Method:	Cable Percussive			**Backfilled:**	15/03/2023

GL (mCD):	2.62m	
Easting:	279882	
Northing:	858816	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
				WATER			
		2.50	0.12	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.			
					9.12	ES	
					9.62	ES	
					10.12	ES	
					10.62	ES	
					11.12	ES	
					11.62	ES	
					12.12	ES	
					12.62	ES	
					13.12	ES	
					13.62	ES	
					14.12	ES	
					14.62	ES	
					15.12	ES	
					15.62	ES	
					16.12	ES	
					16.62	ES	
					17.12	ES	
					17.62	ES	
					18.12	ES	
					18.62	ES	
					19.12	ES	
		19.70	-17.08		19.62	ES	
				End of Borehole at 19.700m			

Hole Diameter

Depth Base (m)	Diameter (mm)
19.50	150

Casing Depths

Depth Base (m)	Diameter (mm)
19.50	150

General Remarks

Drilled overwater - no handdug pit undertaken.

Chiselling

From (m)	To (m)	Time (hr)

Ground Water

Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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01642 607083
info@solmek.com

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S-19

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	14/03/2023
Client:	Ardersier Port			**Ended:**	14/03/2023
Method:	Cable Percussive			**Backfilled:**	14/03/2023

GL (mCD):	2.61m	
Easting:	279632	
Northing:	858941	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
				WATER			
		8.60	-5.99	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.	9.11	ES	
					9.61	ES	
					10.11	ES	
					10.61	ES	
					11.11	ES	
					11.61	ES	
					12.11	ES	
					12.61	ES	
					13.11	ES	
					13.61	ES	
					14.11	ES	
					14.61	ES	
					15.11	ES	
					15.61	ES	
					16.11	ES	
					16.61	ES	
					17.11	ES	
					17.61	ES	
					18.11	ES	
					18.61	ES	
					19.11	ES	
		19.70	-17.09		19.61	ES	
				End of Borehole at 19.700m			

Hole Diameter

Depth Base (m)	Diameter (mm)
19.50	150

Casing Depths

Depth Base (m)	Diameter (mm)
19.50	150

General Remarks

Drilled overwater - no handdug pit undertaken.

Chiselling

From (m)	To (m)	Time (hr)

Ground Water

Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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12-16 Yarm Road
Stockton on Tees
TS18 3NA
01642 607083
info@solmek.com

Borehole Log

Scale 1:125 Sheet 1 of 1

S-20

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	14/03/2023
Client:	Ardersier Port			**Ended:**	14/03/2023
Method:	Cable Percussive			**Backfilled:**	14/03/2023

GL (mCD):	2.49m	
Easting:	279757	
Northing:	858941	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
				WATER			
		9.10	-6.61	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.	8.99	ES	
					9.49	ES	
					9.99	ES	
					10.49	ES	
					10.99	ES	
					11.49	ES	
					11.99	ES	
					12.49	ES	
					12.99	ES	
					13.49	ES	
					13.99	ES	
					14.49	ES	
					14.99	ES	
					15.49	ES	
					15.99	ES	
					16.49	ES	
					16.99	ES	
					17.49	ES	
					17.99	ES	
					18.49	ES	
					18.99	ES	
		19.50	-17.01	End of Borehole at 19.500m	19.49	ES	

Hole Diameter		Casing Depths		General Remarks	Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
19.40	150	19.40	150	Drilled overwater - no handdug pit undertaken.								

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12-16 Yarm Road
Stockton on Tees
TS18 3NA
01642 607083
info@solmek.com

Borehole Log

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S-21

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	14/03/2023
Client:	Ardersier Port			**Ended:**	14/03/2023
Method:	Cable Percussive			**Backfilled:**	14/03/2023

GL (mCD):	3.64m
Easting:	279882
Northing:	858941
Logged:	SD
Status:	DRAFT

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description
				WATER
		7.20	-3.56	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.
		20.70	-17.06	End of Borehole at 20.700m

Samples and Insitu Testing

Depth (m)	Type	Results
10.14	ES	
10.64	ES	
11.14	ES	
11.64	ES	
12.14	ES	
12.64	ES	
13.14	ES	
13.64	ES	
14.14	ES	
14.64	ES	
15.14	ES	
15.64	ES	
16.14	ES	
16.64	ES	
17.14	ES	
17.64	ES	
18.14	ES	
18.64	ES	
19.14	ES	
19.64	ES	
20.14	ES	
20.64	ES	

Hole Diameter

Depth Base (m)	Diameter (mm)
20.50	150

Casing Depths

Depth Base (m)	Diameter (mm)
20.50	150

General Remarks

Drilled overwater - no handdug pit undertaken.

Chiselling

From (m)	To (m)	Time (hr)

Ground Water

Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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TS18 3NA
01642 607083
info@solmek.com

Borehole Log

Scale 1:125 Sheet 1 of 1

S-22

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	21/03/2023
Client:	Ardersier Port			**Ended:**	21/03/2023
Method:	Cable Percussive			**Backfilled:**	21/03/2023

GL (mCD):	5.45m	
Easting:	279632	
Northing:	859066	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
				WATER			
		2.90	2.55	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.			
					11.95	ES	
					12.45	ES	
					12.95	ES	
					13.45	ES	
					13.95	ES	
					14.45	ES	
					14.95	ES	
					15.45	ES	
					15.95	ES	
					16.45	ES	
					16.95	ES	
					17.45	ES	
					17.95	ES	
					18.45	ES	
					18.95	ES	
					19.45	ES	
					19.95	ES	
					20.45	ES	
					20.95	ES	
					21.45	ES	
					21.95	ES	
		22.50	-17.05	End of Borehole at 22.500m	22.45	ES	

Hole Diameter

Depth Base (m)	Diameter (mm)
20.50	150

Casing Depths

Depth Base (m)	Diameter (mm)
20.50	150

General Remarks

Drilled overwater - no handdug pit undertaken.

Chiselling

From (m)	To (m)	Time (hr)

Ground Water

Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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Stockton on Tees
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info@solmek.com

Borehole Log

Scale 1:125 Sheet 1 of 1

S-23

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	21/03/2023
Client:	Ardersier Port			**Ended:**	21/03/2023
Method:	Cable Percussive			**Backfilled:**	21/03/2023

GL (mCD):	3.49m	
Easting:	279757	
Northing:	859066	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
				WATER			
		2.70	0.79	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.			
					9.99	ES	
					10.49	ES	
					10.99	ES	
					11.49	ES	
					11.99	ES	
					12.49	ES	
					12.99	ES	
					13.49	ES	
					13.99	ES	
					14.49	ES	
					14.99	ES	
					15.49	ES	
					15.99	ES	
					16.49	ES	
					16.99	ES	
					17.49	ES	
					17.99	ES	
					18.49	ES	
					18.99	ES	
					19.49	ES	
					19.99	ES	
		20.50	-17.01	End of Borehole at 20.500m	20.49	ES	

Hole Diameter

Depth Base (m)	Diameter (mm)
20.50	150

Casing Depths

Depth Base (m)	Diameter (mm)
20.50	150

General Remarks

Drilled overwater - no handdug pit undertaken.

Chiselling

From (m)	To (m)	Time (hr)

Ground Water

Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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12-16 Yarm Road
Stockton on Tees
TS18 3NA
01642 607083
info@solmek.com

Borehole Log

Scale 1:125 Sheet 1 of 1

S-24

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	23/03/2023
Client:	Ardersier Port			**Ended:**	23/03/2023
Method:	Cable Percussive			**Backfilled:**	23/03/2023

GL (mCD):	3.88m	
Easting:	279882	
Northing:	859066	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing: Depth (m)	Type	Results
				WATE			
		4.50	-0.62	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.			
					10.38	ES	
					10.88	ES	
					11.38	ES	
					11.88	ES	
					12.38	ES	
					12.88	ES	
					13.38	ES	
					13.88	ES	
					14.38	ES	
					14.88	ES	
					15.38	ES	
					15.88	ES	
					16.38	ES	
					16.88	ES	
					17.38	ES	
					17.88	ES	
					18.38	ES	
					18.88	ES	
					19.38	ES	
					19.88	ES	
					20.38	ES	
		21.00	-17.12		20.88	ES	
				End of Borehole at 21.000m			

Hole Diameter

Depth Base (m)	Diameter (mm)
21.00	150

Casing Depths

Depth Base (m)	Diameter (mm)
21.00	150

General Remarks

Drilled overwater - no handdug pit undertaken.

Chiselling

From (m)	To (m)	Time (hr)

Ground Water

Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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12-16 Yarm Road
Stockton on Tees
TS18 3NA
01642 607083
info@solmek.com

Borehole Log

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S-25

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	16/03/2023
Client:	Ardersier Port			**Ended:**	16/03/2023
Method:	Cable Percussive			**Backfilled:**	16/03/2023

GL (mCD):	3.46m
Easting:	279507
Northing:	859191
Logged:	SD
Status:	DRAFT

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing: Depth (m)	Type	Results
				WATER			
		7.50	-4.04	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.	9.96	ES	
					10.46	ES	
					10.96	ES	
					11.46	ES	
					11.96	ES	
					12.46	ES	
					12.96	ES	
					13.46	ES	
					13.96	ES	
					14.46	ES	
					14.96	ES	
					15.46	ES	
					15.96	ES	
					16.46	ES	
					16.96	ES	
					17.46	ES	
					17.96	ES	
					18.46	ES	
					18.96	ES	
					19.46	ES	
					19.96	ES	
		20.50	-17.04	End of Borehole at 20.500m	20.45	ES	

Hole Diameter

Depth Base (m)	Diameter (mm)
20.30	150

Casing Depths

Depth Base (m)	Diameter (mm)
20.30	150

General Remarks

Drilled overwater - no handdug pit undertaken.

Chiselling

From (m)	To (m)	Time (hr)

Ground Water

Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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12-16 Yarm Road
Stockton on Tees
TS18 3NA
01642 607083
info@solmek.com

Borehole Log

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S-26

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	16/03/2023
Client:	Ardersier Port			**Ended:**	16/03/2023
Method:	Cable Percussive			**Backfilled:**	16/03/2023

GL (mCD):	2.67m
Easting:	279632
Northing:	859191
Logged:	SD
Status:	DRAFT

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description
				WATER
		8.20	-5.53	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.
		19.70	-17.03	End of Borehole at 19.700m

Samples and Insitu Testing

Depth (m)	Type	Results
9.17	ES	
9.67	ES	
10.17	ES	
10.67	ES	
11.17	ES	
11.67	ES	
12.17	ES	
12.67	ES	
13.17	ES	
13.67	ES	
14.17	ES	
14.67	ES	
15.17	ES	
15.67	ES	
16.17	ES	
16.67	ES	
17.17	ES	
17.67	ES	
18.17	ES	
18.67	ES	
19.17	ES	
19.67	ES	

Hole Diameter

Depth Base (m)	Diameter (mm)
19.50	150

Casing Depths

Depth Base (m)	Diameter (mm)
19.50	150

General Remarks

Drilled overwater - no handdug pit undertaken.

Chiselling

From (m)	To (m)	Time (hr)

Ground Water

Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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TS18 3NA
01642 607083
info@solmek.com

Borehole Log

Scale 1:125 Sheet 1 of 1

S-27

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	15/03/2023
Client:	Ardersier Port			**Ended:**	15/03/2023
Method:	Cable Percussive			**Backfilled:**	15/03/2023

GL (mCD):	3.10m	
Easting:	279757	
Northing:	859191	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
				WATER			
		6.80	-3.70	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.			
					9.60	ES	
					10.10	ES	
					10.60	ES	
					11.10	ES	
					11.60	ES	
					12.10	ES	
					12.60	ES	
					13.10	ES	
					13.60	ES	
					14.10	ES	
					14.60	ES	
					15.10	ES	
					15.60	ES	
					16.10	ES	
					16.60	ES	
					17.10	ES	
					17.60	ES	
					18.10	ES	
					18.60	ES	
					19.10	ES	
					19.60	ES	
		20.10	-17.00	End of Borehole at 20.100m	20.10	ES	

Hole Diameter

Depth Base (m)	Diameter (mm)
20.00	150

Casing Depths

Depth Base (m)	Diameter (mm)
19.50	150

General Remarks

Drilled overwater - no handdug pit undertaken.

Chiselling

From (m)	To (m)	Time (hr)

Ground Water

Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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12-16 Yarm Road
Stockton on Tees
TS18 3NA
01642 607083
info@solmek.com

Borehole Log

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S-28

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	23/03/2023
Client:	Ardersier Port			**Ended:**	23/03/2023
Method:	Cable Percussive			**Backfilled:**	23/03/2023

GL (mCD):	2.34m	
Easting:	279507	
Northing:	859316	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing: Depth (m)	Type	Results
				WATER			
		13.70	-11.36	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.	13.84	ES	
					14.34	ES	
					14.84	ES	
					15.34	ES	
					15.84	ES	
					16.34	ES	
					16.84	ES	
					17.34	ES	
					17.84	ES	
					18.34	ES	
					18.84	ES	
		19.40	-17.06	End of Borehole at 19.400m	19.34	ES	

Hole Diameter		Casing Depths		General Remarks	Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
19.40	150	19.40	150	Drilled overwater - no handdug pit undertaken.								

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Stockton on Tees
TS18 3NA
01642 607083
info@solmek.com

Borehole Log

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S-29

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	22/03/2023
Client:	Ardersier Port			**Ended:**	22/03/2023
Method:	Cable Percussive			**Backfilled:**	22/03/2023

GL (mCD):	2.40m	
Easting:	279632	
Northing:	859316	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
				WATER			
		12.70	-10.30	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.	12.90	ES	
					13.40	ES	
					13.90	ES	
					14.40	ES	
					14.90	ES	
					15.40	ES	
					15.90	ES	
					16.40	ES	
					16.90	ES	
					17.40	ES	
					17.90	ES	
					18.40	ES	
					18.90	ES	
		19.50	-17.10		19.40	ES	
				End of Borehole at 19.500m			

Hole Diameter		Casing Depths		General Remarks	Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
19.50	150	19.50	150	Drilled overwater - no handdug pit undertaken.								

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Stockton on Tees
TS18 3NA
01642 607083
info@solmek.com

Borehole Log

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S-30

Contract no:	S230232	**Site:**	Marine Scotland Boreholes, Ardersier, Inverness	**Driller:**	Bainbridge Brothers Ltd
				Plant used:	Dando 2000
				Started:	22/03/2023
Client:	Ardersier Port			**Ended:**	22/03/2023
Method:	Cable Percussive			**Backfilled:**	22/03/2023

GL (mCD):	4.66m	
Easting:	279507	
Northing:	859441	
Logged:	SD	
Status:	DRAFT	

Backfill / Installation	Legend	Depth (m)	Level (m CD)	Stratum Description	Samples and Insitu Testing: Depth (m)	Type	Results
				WATER			
		21.60	-16.94	Grey slightly gravelly SAND. Sand is fine to coarse grained. Gravel is fine to medium grained, sub-rounded to rounded of sandstone with occasional shell fragments.	21.66	ES	
		22.00	-17.34	End of Borehole at 22.000m			

Hole Diameter		Casing Depths		General Remarks	Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
22.00	150	22.00	150	Drilled overwater - no handdug pit undertaken.								

APPENDIX C:
Contamination Laboratory Results

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01805

Issue Version: 1

Customer: Solmek, 12 Yarm Road, Stockton-on-Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S17

Date Sampled: 27-Mar-23

Date Samples Received: 29-Mar-23

Test Report Date: 21-Apr-23

Condition of samples: Cold Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01805
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S17

		Units	%	%	%	%	%	N/A
		Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
		Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
		Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S17 ES1 6.50-7.00	MAR01805.001	Sediment	10.0	90.0	0.00	97.54	2.46	NAIIS
S17 ES7 9.50-10.00	MAR01805.002	Sediment	11.1	88.9	0.00	97.82	2.18	NAIIS
S17 ES13 12.50-13.00	MAR01805.003	Sediment	9.74	90.3	0.00	97.72	2.28	NAIIS

* See Report Notes

NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01805
Issue Version 1
Customer Reference S230232 - Ardersier Port - S17

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S17 ES1 6.50-7.00	MAR01805.001	Sediment	3.8	<0.04	15.9	11.7	0.01	14.9	4.7	27.0
S17 ES7 9.50-10.00	MAR01805.002	Sediment	3.2	<0.04	14.6	10.1	<0.01	14.1	2.4	20.8
S17 ES13 12.50-13.00	MAR01805.003	Sediment	3.2	<0.04	15.5	10.6	<0.01	15.1	2.5	23.5
Certified Reference Material SETOC 768 (% Recovery)			98	111	97	109	98	96	95	102
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01805
Issue Version 1
Customer Reference S230232 - Ardersier Port - S17

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S17 ES1 6.50-7.00	MAR01805.001	Sediment	<1	<1
S17 ES7 9.50-10.00	MAR01805.002	Sediment	<1	<1
S17 ES13 12.50-13.00	MAR01805.003	Sediment	<1	<1
Certified Reference Material BCR-646 (% Recovery)			80	85
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01805
Issue Version 1
Customer Reference S230232 - Ardersier Port - S17

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S17 ES1 6.50-7.00	MAR01805.001	Sediment	<5	<5	<5	<5	<5	<5
S17 ES7 9.50-10.00	MAR01805.002	Sediment	<5	<5	<5	5.70	<5	<5
S17 ES13 12.50-13.00	MAR01805.003	Sediment	<1	<1	<1	<1	<1	<1
Certified Reference Material NIST1941b (% Recovery)			91	111	64	68	65	91
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01805
Issue Version 1
Customer Reference S230232 - Ardersier Port - S17

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	N	N	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S17 ES1 6.50-7.00	MAR01805.001	Sediment	<5	<5	<5	<5	<5	<5
S17 ES7 9.50-10.00	MAR01805.002	Sediment	<5	<5	6.53	<5	13.5	<5
S17 ES13 12.50-13.00	MAR01805.003	Sediment	<1	<1	<1	<1	<1	<1
Certified Reference Material NIST1941b (% Recovery)			83	77	87	113	79	54
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01805
Issue Version 1
Customer Reference S230232 - Ardersier Port - S17

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	UKAS	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S17 ES1 6.50-7.00	MAR01805.001	Sediment	<5	<5	<5	<5	49200
S17 ES7 9.50-10.00	MAR01805.002	Sediment	<5	<5	7.88	15.1	28100
S17 ES13 12.50-13.00	MAR01805.003	Sediment	<1	<1	<1	<1	1780
Certified Reference Material NIST1941b (% Recovery)			88	61	79	73	84~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01805
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S17

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S17 ES1 6.50-7.00	MAR01805.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S17 ES7 9.50-10.00	MAR01805.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S17 ES13 12.50-13.00	MAR01805.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			66	92	90	96	102	102	94
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01805
Issue Version 1
Customer Reference S230232 - Ardersier Port - S17

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01805.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01805.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01805.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/303/304	MAR01805.001-002	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/303/304	MAR01805.001-003	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (BKF, CHRYSENE) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01805.002	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01805
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S17

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions

Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	**MAR01755**
Issue Version	2
Customer	Solmek Ltd, 12-16 Yarm Road, Stockton on Tees, TS18 3NA
Customer Reference	S230232 - Marine Scotland Sediment Analysis
Date Sampled	06-08-Mar-23
Date Received	13-Mar-23
Date Reported	14-Apr-23
Condition of samples	Frozen Unsatisfactory

Plastic containers damaged in transit for samples 002 & 010.

[Redacted]

Authorised by:	Jane Colbourne
Position:	Customer Service Specialist

Any additional opinions or interpretations found in this report, are outside the scope of UKAS accreditation.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01755
Issue Version 2
Customer Reference S230232 - Marine Scotland Sediment Analysis

		Units	%	%	%	%	%	N/A
		Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
		Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
		Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S01 - 1 - 6.50-7.00m	MAR01755.001	Sediment	12.6	87.4	0.00	97.11	2.89	NAIIS
S01 - 7 - 9.50-10.00m	MAR01755.002	Sediment	22.0	78.0	0.00	92.86	7.14	NAIIS
S01 - 13 - 12.50-13.00m	MAR01755.003	Sediment	18.7	81.3	60.70	14.96	24.35	NAIIS
S02 - 1 - 6.50-7.00m	MAR01755.004	Sediment	22.8	77.2	0.00	80.68	19.32	NAIIS
S02 - 7 - 9.50-10.00m	MAR01755.005	Sediment	24.4	75.6	0.00	95.71	4.29	NAIIS
S02 - 13 - 12.50-13.00m	MAR01755.006	Sediment	26.4	73.6	0.34	94.04	5.62	NAIIS
S03 - 1 - 6.50-7.00m	MAR01755.007	Sediment	40.9	59.1	0.00	83.21	16.79	NAIIS
S03 - 7 - 9.50-10.00m	MAR01755.008	Sediment	28.2	71.8	0.00	94.22	5.78	NAIIS
S03 - 13 - 15.50-13.00m	MAR01755.009	Sediment	17.2	82.8	0.00	90.51	9.49	NAIIS
S04 - 1 - 6.50-7.00m	MAR01755.010	Sediment	55.9	44.1	0.00	61.80	38.20	NAIIS
S04 - 7 - 9.50-1.00m	MAR01755.011	Sediment	25.3	74.7	0.34	94.48	5.18	NAIIS
S04 - 13 - 12.50-13.00m	MAR01755.012	Sediment	24.3	75.7	0.38	94.98	4.65	NAIIS
S07 - 1 - 6.50-7.00m	MAR01755.013	Sediment	20.0	80.0	0.00	96.43	3.57	NAIIS
S07 - 7 - 9.50-10.00m	MAR01755.014	Sediment	24.1	75.9	2.90	92.97	4.13	NAIIS
S07 - 13 - 12.50-13.00m	MAR01755.015	Sediment	29.6	70.4	0.00	84.85	15.15	NAIIS
S08 - 1 - 6.50-7.00m	MAR01755.016	Sediment	29.9	70.1	0.00	57.09	42.91	NAIIS
S08 - 7 - 9.50-10.00m	MAR01755.017	Sediment	30.0	70.0	9.01	79.97	11.01	NAIIS
S08 - 13 - 12.50-13.00m	MAR01755.018	Sediment	23.8	76.2	0.00	85.69	14.31	NAIIS

* See Report Notes
NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01755
Issue Version 2
Customer Reference S230232 - Marine Scotland Sediment Analysis

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S01 - 1 - 6.50-7.00m	MAR01755.001	Sediment	1.1	<0.04	10.0	7.7	0.02	8.2	2.3	24.6
S01 - 7 - 9.50-10.00m	MAR01755.002[D5]	Sediment	1.7	<0.04	5.5	4.8	0.01	5.0	1.3	15.1
S01 - 13 - 12.50-13.00m	MAR01755.003	Sediment	1.2	<0.04	13.6	8.1	0.01	11.6	2.9	30.1
S02 - 1 - 6.50-7.00m	MAR01755.004	Sediment	1.4	<0.04	4.4	4.4	0.06	4.8	1.7	16.5
S02 - 7 - 9.50-10.00m	MAR01755.005	Sediment	1.2	<0.04	4.4	5.3	0.02	4.2	1.1	11.7
S02 - 13 - 12.50-13.00m	MAR01755.006	Sediment	2.2	<0.04	6.8	4.6	0.01	5.7	1.7	19.4
S03 - 1 - 6.50-7.00m	MAR01755.007	Sediment	2.5	<0.04	6.9	7.9	0.02	5.5	4.4	36.9
S03 - 7 - 9.50-10.00m	MAR01755.008	Sediment	2.4	<0.04	16.4	10	0.01	14.6	3.1	30.0
S03 - 13 - 15.50-13.00m	MAR01755.009	Sediment	3.3	<0.04	18.3	10.8	0.01	15.6	3.5	42.0
S04 - 1 - 6.50-7.00m	MAR01755.010[D5]	Sediment	6.2	<0.04	27.6	21.4	0.08	16.2	11.1	89.5
S04 - 7 - 9.50-1.00m	MAR01755.011	Sediment	2.4	<0.04	11.9	8.3	0.02	11.5	2.3	21.9
S04 - 13 - 12.50-13.00m	MAR01755.012	Sediment	2.2	<0.04	15.4	8.9	0.01	13.9	2.9	28.0
S07 - 1 - 6.50-7.00m	MAR01755.013	Sediment	2.3	<0.04	14.8	8.6	0.01	11.9	2.3	20.5
S07 - 7 - 9.50-10.00m	MAR01755.014	Sediment	3.2	<0.04	16.3	10.4	0.01	15.0	2.8	27.4
S07 - 13 - 12.50-13.00m	MAR01755.015	Sediment	2.5	<0.04	18.0	11.1	0.01	16.4	3.9	33.4
S08 - 1 - 6.50-7.00m	MAR01755.016	Sediment	9.9	<0.04	27.9	23.2	0.06	17.6	19.2	125
S08 - 7 - 9.50-10.00m	MAR01755.017	Sediment	5.2	<0.04	17.7	11.1	0.02	13.9	5.9	44.0
S08 - 13 - 12.50-13.00m	MAR01755.018	Sediment	4.0	<0.04	23.1	13.3	0.03	18.2	5.6	51.4
Certified Reference Material SETOC 768 (% Recovery)			104	85	101	102	100	99	104	115
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes
D5 - Plastic tub damaged in transit. See Report Notes & Deviating Sample page.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01755
Issue Version	2
Customer Reference	S230232 - Marine Scotland Sediment Analysis

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S01 - 1 - 6.50-7.00m	MAR01755.001	Sediment	<5	<5
S01 - 7 - 9.50-10.00m	MAR01755.002	Sediment	<5	<5
S01 - 13 - 12.50-13.00m	MAR01755.003	Sediment	<1	<1
S02 - 1 - 6.50-7.00m	MAR01755.004	Sediment	<5	<5
S02 - 7 - 9.50-10.00m	MAR01755.005	Sediment	<1	<1
S02 - 13 - 12.50-13.00m	MAR01755.006	Sediment	<5	<5
S03 - 1 - 6.50-7.00m	MAR01755.007	Sediment	<5	<5
S03 - 7 - 9.50-10.00m	MAR01755.008	Sediment	<5	<5
S03 - 13 - 15.50-13.00m	MAR01755.009	Sediment	<1	<1
Certified Reference Material BCR-646 (% Recovery)			55	63
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01755
Issue Version	2
Customer Reference	S230232 - Marine Scotland Sediment Analysis

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S04 - 1 - 6.50-7.00m	MAR01755.010	Sediment	13.3	16.9
S04 - 7 - 9.50-1.00m	MAR01755.011	Sediment	<5	<5
S04 - 13 - 12.50-13.00m	MAR01755.012	Sediment	<1	<1
S07 - 1 - 6.50-7.00m	MAR01755.013	Sediment	<5	<5
S07 - 7 - 9.50-10.00m	MAR01755.014	Sediment	<1	<1
S07 - 13 - 12.50-13.00m	MAR01755.015	Sediment	<5	<5
S08 - 1 - 6.50-7.00m	MAR01755.016	Sediment	10.3	18.4
S08 - 7 - 9.50-10.00m	MAR01755.017	Sediment	<5	<5
S08 - 13 - 12.50-13.00m	MAR01755.018	Sediment	<5	<5
Certified Reference Material BCR-646 (% Recovery)			80	87
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01755
Issue Version 2
Customer Reference S230232 - Marine Scotland Sediment Analysis

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S01 - 1 - 6.50-7.00m	MAR01755.001	Sediment	<5	<5	<5	<5	<5	<5
S01 - 7 - 9.50-10.00m	MAR01755.002	Sediment	<5	<5	<5	<5	<5	<5
S01 - 13 - 12.50-13.00m	MAR01755.003	Sediment	<1	<1	<1	<1	<1	<1
S02 - 1 - 6.50-7.00m	MAR01755.004	Sediment	<1	<1	<1	2.97	4.35	4.68
S02 - 7 - 9.50-10.00m	MAR01755.005	Sediment	<1	<1	<1	1.72	2.12	1.27
S02 - 13 - 12.50-13.00m	MAR01755.006	Sediment	<5	<5	<5	<5	<5	<5
S03 - 1 - 6.50-7.00m	MAR01755.007	Sediment	<5	<5	<5	10.4	16.8	16.5
S03 - 7 - 9.50-10.00m	MAR01755.008	Sediment	<5	<5	<5	<5	<5	<5
S03 - 13 - 15.50-13.00m	MAR01755.009	Sediment	<1	<1	<1	<1	1.06	1.10
Certified Reference Material NIST 1941b (% Recovery)			88	97	65	77	75	94
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
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*See report notes

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Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01755
Issue Version	2
Customer Reference	S230232 - Marine Scotland Sediment Analysis

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S01 - 1 - 6.50-7.00m	MAR01755.001	Sediment	<5	<5	<5	<5	<5	<5
S01 - 7 - 9.50-10.00m	MAR01755.002	Sediment	<5	<5	<5	<5	<5	<5
S01 - 13 - 12.50-13.00m	MAR01755.003	Sediment	<1	<1	<1	<1	<1	<1
S02 - 1 - 6.50-7.00m	MAR01755.004	Sediment	3.18	5.81	3.59	<1	6.38	<1
S02 - 7 - 9.50-10.00m	MAR01755.005	Sediment	1.16	2.02	2.03	<1	3.79	<1
S02 - 13 - 12.50-13.00m	MAR01755.006	Sediment	<5	<5	<5	<5	<5	<5
S03 - 1 - 6.50-7.00m	MAR01755.007	Sediment	11.3	19.6	14.8	<5	21.8	<5
S03 - 7 - 9.50-10.00m	MAR01755.008	Sediment	<5	<5	<5	<5	<5	<5
S03 - 13 - 15.50-13.00m	MAR01755.009	Sediment	1.06	1.34	1.44	<1	1.78	<1
Certified Reference Material NIST 1941b (% Recovery)			77	88	98	103	89	54
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries

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*See report notes

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Test Report ID MAR01755
Issue Version 2
Customer Reference S230232 - Marine Scotland Sediment Analysis

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	UKAS	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S01 - 1 - 6.50-7.00m	MAR01755.001	Sediment	<5	<5	<5	<5	9980
S01 - 7 - 9.50-10.00m	MAR01755.002	Sediment	<5	<5	<5	<5	6180
S01 - 13 - 12.50-13.00m	MAR01755.003	Sediment	<1	<1	<1	1.05	8970
S02 - 1 - 6.50-7.00m	MAR01755.004	Sediment	3.36	<1	2.39	7.35	8640
S02 - 7 - 9.50-10.00m	MAR01755.005	Sediment	1.10	<1	2.30	3.61	1990
S02 - 13 - 12.50-13.00m	MAR01755.006	Sediment	<5	<5	<5	<5	25500
S03 - 1 - 6.50-7.00m	MAR01755.007	Sediment	12.6	<5	<5	33.3	36800
S03 - 7 - 9.50-10.00m	MAR01755.008	Sediment	<5	<5	<5	<5	34900
S03 - 13 - 15.50-13.00m	MAR01755.009	Sediment	<1	<1	<1	2.70	6030
Certified Reference Material NIST 1941b (% Recovery)			80	60	77	80	89~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries
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*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01755
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Customer Reference	S230232 - Marine Scotland Sediment Analysis

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S04 - 1 - 6.50-7.00m	MAR01755.010	Sediment	<5	<5	11.8	50.7	66.8	74.0
S04 - 7 - 9.50-1.00m	MAR01755.011	Sediment	<5	<5	<5	<5	<5	<5
S04 - 13 - 12.50-13.00m	MAR01755.012	Sediment	<5	<5	<5	<5	<5	<5
S07 - 1 - 6.50-7.00m	MAR01755.013	Sediment	<5	<5	<5	<5	<5	<5
S07 - 7 - 9.50-10.00m	MAR01755.014	Sediment	<5	<5	<5	<5	<5	<5
S07 - 13 - 12.50-13.00m	MAR01755.015	Sediment	<5	<5	<5	<5	<5	<5
S08 - 1 - 6.50-7.00m	MAR01755.016	Sediment	<5	<5	<5	19.8	30.3	26.8
S08 - 7 - 9.50-10.00m	MAR01755.017	Sediment	<5	<5	<5	<5	<5	<5
S08 - 13 - 12.50-13.00m	MAR01755.018	Sediment	<5	<5	<5	<5	<5	<5
Certified Reference Material NIST 1941b (% Recovery)			83	112	65	62	57	85
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries

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Certificate of Analysis

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Issue Version 2
Customer Reference S230232 - Marine Scotland Sediment Analysis

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S04 - 1 - 6.50-7.00m	MAR01755.010	Sediment	47.6	79.4	64.2	<5	98.3	<5
S04 - 7 - 9.50-1.00m	MAR01755.011	Sediment	<5	<5	<5	<5	<5	<5
S04 - 13 - 12.50-13.00m	MAR01755.012	Sediment	<5	<5	<5	<5	<5	<5
S07 - 1 - 6.50-7.00m	MAR01755.013	Sediment	<5	<5	<5	<5	<5	<5
S07 - 7 - 9.50-10.00m	MAR01755.014	Sediment	<5	<5	<5	<5	<5	<5
S07 - 13 - 12.50-13.00m	MAR01755.015	Sediment	<5	<5	<5	<5	<5	<5
S08 - 1 - 6.50-7.00m	MAR01755.016	Sediment	24.5	37.0	26.8	<5	41.1	<5
S08 - 7 - 9.50-10.00m	MAR01755.017	Sediment	<5	<5	<5	<5	9.77	<5
S08 - 13 - 12.50-13.00m	MAR01755.018	Sediment	<5	<5	<5	<5	<5	<5
Certified Reference Material NIST 1941b (% Recovery)			73	79	83	86	82	53
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
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*See report notes

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Customer Reference S230232 - Marine Scotland Sediment Analysis

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	UKAS	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S04 - 1 - 6.50-7.00m	MAR01755.010	Sediment	53.7	<5	47.8	110	54000
S04 - 7 - 9.50-1.00m	MAR01755.011	Sediment	<5	<5	<5	<5	4260
S04 - 13 - 12.50-13.00m	MAR01755.012	Sediment	<5	<5	<5	<5	4180
S07 - 1 - 6.50-7.00m	MAR01755.013	Sediment	<5	<5	<5	<5	2840
S07 - 7 - 9.50-10.00m	MAR01755.014	Sediment	<5	<5	<5	<5	4130
S07 - 13 - 12.50-13.00m	MAR01755.015	Sediment	<5	<5	<5	<5	10200
S08 - 1 - 6.50-7.00m	MAR01755.016	Sediment	20.6	<5	16.9	58.7	54900
S08 - 7 - 9.50-10.00m	MAR01755.017	Sediment	<5	<5	<5	10.9	8510
S08 - 13 - 12.50-13.00m	MAR01755.018	Sediment	<5	<5	<5	<5	9380
Certified Reference Material NIST 1941b (% Recovery)			74	59	74	70	95~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries
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Test Report ID	MAR01755
Issue Version	2
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		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	N*	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S01 - 1 - 6.50-7.00m	MAR01755.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S01 - 7 - 9.50-10.00m	MAR01755.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S01 - 13 - 12.50-13.00m	MAR01755.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S02 - 1 - 6.50-7.00m	MAR01755.004	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S02 - 7 - 9.50-10.00m	MAR01755.005	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S02 - 13 - 12.50-13.00m	MAR01755.006	Sediment	0.09	0.09	0.13	0.24	0.17	0.16	0.22
S03 - 1 - 6.50-7.00m	MAR01755.007	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S03 - 7 - 9.50-10.00m	MAR01755.008	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S03 - 13 - 15.50-13.00m	MAR01755.009	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST 1941b (% Recovery)			54	80	87	101	91	84	101
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

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*See report notes

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Test Report ID	MAR01755
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		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	N*	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S04 - 1 - 6.50-7.00m	MAR01755.010	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	0.10
S04 - 7 - 9.50-1.00m	MAR01755.011	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S04 - 13 - 12.50-13.00m	MAR01755.012	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S07 - 1 - 6.50-7.00m	MAR01755.013	Sediment	0.10	0.15	0.19	0.32	0.08	0.19	0.26
S07 - 7 - 9.50-10.00m	MAR01755.014	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S07 - 13 - 12.50-13.00m	MAR01755.015	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S08 - 1 - 6.50-7.00m	MAR01755.016	Sediment	<0.08	<0.08	<0.08	<0.08	0.10	0.09	<0.08
S08 - 7 - 9.50-10.00m	MAR01755.017	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S08 - 13 - 12.50-13.00m	MAR01755.018	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST 1941b (% Recovery)			63	84	88	99	93	83	105
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

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Certificate of Analysis

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Test Report ID MAR01755
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Customer Reference S230232 - Marine Scotland Sediment Analysis

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01755.001-018	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01755.001-018	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01755.001-018	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01755.001, .002, .004, .006-008, .011, .013, .015, .017-018	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/302	MAR01755.001-018	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (PCB153) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01755.001, .002, .006-008, .010-018	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/303/304	MAR01755.001-018	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01755.001-018	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	MAR01755.002 & 010	Plastic tub damaged in transit. Sample transferred to suitable container on arrival.
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01755
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Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions

Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

SOCOTEC

Test Report ID MAR01768

Issue Version: 1

Customer: Solmek Ltd, 12-16 Yarm Road, Stockton on Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S12

Date Sampled: 10-Mar-23

Date Samples Received: 17-Mar-23

Test Report Date: 11-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01768
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S12

		Units	%	%	%	%	%	N/A
		Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
		Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
		Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S12 ES1 6.50-7.00	MAR01768.001	Sediment	40.7	59.3	0.00	42.09	57.19	NAIIS
S12 ES7 9.50-10.00	MAR01768.002	Sediment	29.3	70.7	0.00	90.36	9.64	NAIIS
S12 ES13 12.50-13.00	MAR01768.003	Sediment	25.2	74.8	0.56	92.14	7.30	NAIIS

* See Report Notes

NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01768
Issue Version 1
Customer Reference S230232 - Ardersier Port - S12

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S12 ES1 6.50-7.00	MAR01768.001	Sediment	6.0	0.17	22.2	16.3	0.09	14.2	13.5	63.6
S12 ES7 9.50-10.00	MAR01768.002	Sediment	3.5	0.08	18.6	12.3	0.04	15.0	4.8	44.7
S12 ES13 12.50-13.00	MAR01768.003	Sediment	3.1	0.25	21.2	13.9	0.03	16.4	4.5	45.3
Certified Reference Material SETOC 768 (% Recovery)			97	84	94	103	91	92	91	93
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01768
Issue Version 1
Customer Reference S230232 - Ardersier Port - S12

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S12 ES1 6.50-7.00	MAR01768.001	Sediment	<5	<5
S12 ES7 9.50-10.00	MAR01768.002	Sediment	<5	<5
S12 ES13 12.50-13.00	MAR01768.003	Sediment	<5	<5
Certified Reference Material BCR-646 (% Recovery)			76	79
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01768
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S12

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	N*	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S12 ES1 6.50-7.00	MAR01768.001	Sediment	3.76	3.66	8.45	22.3	29.5	28.6
S12 ES7 9.50-10.00	MAR01768.002	Sediment	<1	<1	<1	2.15	2.54	3.43
S12 ES13 12.50-13.00	MAR01768.003	Sediment	<1	<1	<1	<1	<1	<1
Certified Reference Material NIST1941b (% Recovery)			68	104	67	63	65	94
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01768
Issue Version 1
Customer Reference S230232 - Ardersier Port - S12

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S12 ES1 6.50-7.00	MAR01768.001	Sediment	29.2	28.4	24.8	5.67	50.1	4.68
S12 ES7 9.50-10.00	MAR01768.002	Sediment	2.50	4.32	2.97	<1	4.96	<1
S12 ES13 12.50-13.00	MAR01768.003	Sediment	<1	1.30	1.22	<1	1.97	<1
Certified Reference Material NIST1941b (% Recovery)			74	85	89	110	76	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01768
Issue Version 1
Customer Reference S230232 - Ardersier Port - S12

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	N*	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S12 ES1 6.50-7.00	MAR01768.001	Sediment	28.7	3.41	30.0	47.3	42500
S12 ES7 9.50-10.00	MAR01768.002	Sediment	2.08	<1	2.56	6.54	10900
S12 ES13 12.50-13.00	MAR01768.003	Sediment	<1	<1	<1	2.34	4460
Certified Reference Material NIST1941b (% Recovery)			80	56	75	69	86~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01768
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S12

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S12 ES1 6.50-7.00	MAR01768.001	Sediment	<0.08	<0.08	0.09	<0.08	0.15	0.10	<0.08
S12 ES7 9.50-10.00	MAR01768.002	Sediment	0.24	0.40	0.44	0.50	0.61	0.41	0.34
S12 ES13 12.50-13.00	MAR01768.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			61	110	96	93	100	100	66
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01768
Issue Version 1
Customer Reference S230232 - Ardersier Port - S12

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01768.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01768.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01768.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01768.001-003	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/303/304	MAR01768.001-003	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (BAA, NAPTH) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01768.001-003	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01768.001-003	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01768
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S12

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions

Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01769

Issue Version: 1

Customer: Solmek Ltd, 12-16 Yarm Road, Stockton on Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S06

Date Sampled: 13-Mar-23

Date Samples Received: 17-Mar-23

Test Report Date: 11-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01769
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S06

		Units	%	%	%	%	%	N/A
		Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
		Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
		Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S06 ES1 6.50-7.00	MAR01769.001	Sediment	28.9	71.1	0.00	94.53	5.47	NAIIS
S06 ES7 9.50-10.00	MAR01769.002	Sediment	21.8	78.2	0.00	95.48	4.52	NAIIS
S06 ES13 12.50-13.00	MAR01769.003	Sediment	21.2	78.8	0.55	93.21	6.24	NAIIS

* See Report Notes

NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01769
Issue Version 1
Customer Reference S230232 - Ardersier Port - S06

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S06 ES1 6.50-7.00	MAR01769.001	Sediment	1.9	0.13	15.4	13.4	0.02	14.6	4.0	37.9
S06 ES7 9.50-10.00	MAR01769.002	Sediment	1.8	0.14	16.0	14.0	0.02	15.2	3.4	36.2
S06 ES13 12.50-13.00	MAR01769.003	Sediment	3.5	0.18	18.0	12.5	0.02	16.4	3.5	44.6
Certified Reference Material SETOC 768 (% Recovery)			97	84	94	103	91	92	91	93
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01769
Issue Version 1
Customer Reference S230232 - Ardersier Port - S06

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S06 ES1 6.50-7.00	MAR01769.001	Sediment	<5	<5
S06 ES7 9.50-10.00	MAR01769.002	Sediment	<5	<5
S06 ES13 12.50-13.00	MAR01769.003	Sediment	<5	<5
Certified Reference Material BCR-646 (% Recovery)			76	75
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01769
Issue Version 1
Customer Reference S230232 - Ardersier Port - S06

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	N*	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S06 ES1 6.50-7.00	MAR01769.001	Sediment	<1	<1	1.09	2.24	2.54	1.90
S06 ES7 9.50-10.00	MAR01769.002	Sediment	<1	<1	<1	<1	<1	<1
S06 ES13 12.50-13.00	MAR01769.003	Sediment	<1	<1	<1	<1	<1	<1
Certified Reference Material NIST1941b (% Recovery)			68	104	67	63	65	94
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01769
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S06

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S06 ES1 6.50-7.00	MAR01769.001	Sediment	1.66	2.87	2.67	<1	5.10	<1
S06 ES7 9.50-10.00	MAR01769.002	Sediment	<1	1.15	<1	<1	1.59	<1
S06 ES13 12.50-13.00	MAR01769.003	Sediment	<1	<1	<1	<1	<1	<1
Certified Reference Material NIST1941b (% Recovery)			74	85	89	110	76	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.

*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01769
Issue Version 1
Customer Reference S230232 - Ardersier Port - S06

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	N*	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S06 ES1 6.50-7.00	MAR01769.001	Sediment	1.35	<1	2.40	5.57	4720
S06 ES7 9.50-10.00	MAR01769.002	Sediment	<1	<1	1.17	2.00	3980
S06 ES13 12.50-13.00	MAR01769.003	Sediment	<1	<1	<1	1.04	4100
Certified Reference Material NIST1941b (% Recovery)			80	56	75	69	86~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01769
Issue Version 1
Customer Reference S230232 - Ardersier Port - S06

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S06 ES1 6.50-7.00	MAR01769.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S06 ES7 9.50-10.00	MAR01769.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S06 ES13 12.50-13.00	MAR01769.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			61	110	96	93	100	100	66
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01769
Issue Version 1
Customer Reference S230232 - Ardersier Port - S06

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01769.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01769.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01769.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01769.001-003	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/303/304	MAR01769.001-003	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (BAA, NAPTH) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01769.001-002	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01769.001	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01769
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S06

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions

Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01770

Issue Version: 1

Customer: Solmek Ltd, 12-16 Yarm Road, Stockton on Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S10

Date Sampled: 13-Mar-23

Date Samples Received: 17-Mar-23

Test Report Date: 11-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01770
Issue Version 1
Customer Reference S230232 - Ardersier Port - S10

			Units	%	%	%	%	%	N/A
			Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
			Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
			Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S10 ES1 6.50-7.00	MAR01770.001	Sediment	19.5	80.5	7.50	87.12	5.38	NAIIS
S10 ES7 9.50-10.00	MAR01770.002	Sediment	18.1	81.9	2.15	89.99	7.86	NAIIS
S10 ES13 12.50-13.00	MAR01770.003	Sediment	19.7	80.3	0.00	97.21	2.79	NAIIS

* See Report Notes
NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01770
Issue Version 1
Customer Reference S230232 - Ardersier Port - S10

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S10 ES1 6.50-7.00	MAR01770.001	Sediment	2.4	0.14	17.4	16.1	0.02	13.6	6.4	101
S10 ES7 9.50-10.00	MAR01770.002	Sediment	2.4	0.12	17.5	17.4	0.02	13.5	7.6	115
S10 ES13 12.50-13.00	MAR01770.003	Sediment	1.9	0.19	11.9	11.4	0.07	9.5	4.3	60.4
Certified Reference Material SETOC 768 (% Recovery)			97	84	94	103	91	92	91	93
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01770
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S10

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S10 ES1 6.50-7.00	MAR01770.001	Sediment	<5	<5
S10 ES7 9.50-10.00	MAR01770.002	Sediment	<5	<5
S10 ES13 12.50-13.00	MAR01770.003	Sediment	<1	<1
Certified Reference Material BCR-646 (% Recovery)			76	75
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01770
Issue Version 1
Customer Reference S230232 - Ardersier Port - S10

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	N*	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S10 ES1 6.50-7.00	MAR01770.001	Sediment	3.28	<1	1.75	3.76	4.30	3.20
S10 ES7 9.50-10.00	MAR01770.002	Sediment	<1	<1	1.00	2.27	2.86	2.01
S10 ES13 12.50-13.00	MAR01770.003	Sediment	<1	<1	<1	<1	<1	<1
Certified Reference Material NIST1941b (% Recovery)			68	104	67	63	65	94
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01770
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S10

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S10 ES1 6.50-7.00	MAR01770.001	Sediment	2.80	5.04	4.79	<1	9.06	1.91
S10 ES7 9.50-10.00	MAR01770.002	Sediment	2.16	2.47	2.76	<1	5.75	<1
S10 ES13 12.50-13.00	MAR01770.003	Sediment	<1	<1	<1	<1	1.28	<1
Certified Reference Material NIST1941b (% Recovery)			74	85	89	110	76	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.

*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01770
Issue Version 1
Customer Reference S230232 - Ardersier Port - S10

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	N*	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S10 ES1 6.50-7.00	MAR01770.001	Sediment	2.52	<1	6.34	8.51	6540
S10 ES7 9.50-10.00	MAR01770.002	Sediment	1.77	<1	4.05	6.54	7580
S10 ES13 12.50-13.00	MAR01770.003	Sediment	<1	<1	1.05	1.66	5240
Certified Reference Material NIST1941b (% Recovery)			80	56	75	69	86~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01770
Issue Version 1
Customer Reference S230232 - Ardersier Port - S10

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S10 ES1 6.50-7.00	MAR01770.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S10 ES7 9.50-10.00	MAR01770.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S10 ES13 12.50-13.00	MAR01770.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			57	108	94	95	110	86	80
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01770
Issue Version 1
Customer Reference S230232 - Ardersier Port - S10

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01770.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01770.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01770.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01770.001-002	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/303/304	MAR01770.001-003	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (BAA, NAPTH) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01770.001-002	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01770.001-002	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01770
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S10

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions

Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01771

Issue Version: 1

Customer: Solmek Ltd, 12-16 Yarm Road, Stockton on Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S21

Date Sampled: 14-Mar-23

Date Samples Received: 17-Mar-23

Test Report Date: 11-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01771
Issue Version 1
Customer Reference S230232 - Ardersier Port - S21

		Units	%	%	%	%	%	N/A
		Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
		Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
		Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S21 ES1 6.50-7.00	MAR01771.001	Sediment	23.3	76.7	0.33	76.91	22.76	NAIIS
S21 ES7 9.50-10.00	MAR01771.002	Sediment	26.6	73.4	1.31	92.13	6.56	NAIIS
S21 ES13 12.50-13.00	MAR01771.003	Sediment	28.5	71.5	0.00	95.14	4.86	NAIIS

* See Report Notes
NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01771
Issue Version 1
Customer Reference S230232 - Ardersier Port - S21

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S21 ES1 6.50-7.00	MAR01771.001	Sediment	2.4	0.19	16.6	11.3	0.20	11.4	5.1	43.7
S21 ES7 9.50-10.00	MAR01771.002	Sediment	3.7	0.26	19.7	11.1	0.35	14.0	4.5	50.2
S21 ES13 12.50-13.00	MAR01771.003	Sediment	3.1	0.27	15.8	10.3	0.26	13.3	3.9	54.1
Certified Reference Material SETOC 768 (% Recovery)			97	84	94	103	91	92	91	93
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

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Test Report ID MAR01771
Issue Version 1
Customer Reference S230232 - Ardersier Port - S21

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S21 ES1 6.50-7.00	MAR01771.001	Sediment	<5	<5
S21 ES7 9.50-10.00	MAR01771.002	Sediment	<5	<5
S21 ES13 12.50-13.00	MAR01771.003	Sediment	<5	<5
Certified Reference Material BCR-646 (% Recovery)			76	75
QC Blank			<1	<1

* See Report Notes

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Test Report ID MAR01771
Issue Version 1
Customer Reference S230232 - Ardersier Port - S21

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	N*	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S21 ES1 6.50-7.00	MAR01771.001	Sediment	<1	<1	2.75	5.81	6.70	6.32
S21 ES7 9.50-10.00	MAR01771.002	Sediment	<1	<1	<1	1.44	1.99	1.68
S21 ES13 12.50-13.00	MAR01771.003	Sediment	<1	<1	<1	<1	<1	<1
Certified Reference Material NIST1941b (% Recovery)			68	104	67	63	65	94
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01771
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S21

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S21 ES1 6.50-7.00	MAR01771.001	Sediment	5.66	6.63	6.41	<1	12.1	1.18
S21 ES7 9.50-10.00	MAR01771.002	Sediment	2.31	2.08	1.65	<1	2.98	<1
S21 ES13 12.50-13.00	MAR01771.003	Sediment	<1	<1	<1	<1	1.13	<1
Certified Reference Material NIST1941b (% Recovery)			74	85	89	110	76	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01771
Issue Version 1
Customer Reference S230232 - Ardersier Port - S21

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	N*	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S21 ES1 6.50-7.00	MAR01771.001	Sediment	4.55	1.15	7.52	13.4	11400
S21 ES7 9.50-10.00	MAR01771.002	Sediment	1.50	<1	2.64	3.94	7960
S21 ES13 12.50-13.00	MAR01771.003	Sediment	<1	<1	<1	1.55	3530
Certified Reference Material NIST1941b (% Recovery)			80	56	75	69	86~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01771
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S21

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S21 ES1 6.50-7.00	MAR01771.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S21 ES7 9.50-10.00	MAR01771.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S21 ES13 12.50-13.00	MAR01771.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			61	110	96	93	100	100	66
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01771
Issue Version 1
Customer Reference S230232 - Ardersier Port - S21

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01771.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01771.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01771.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01771.001-003	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/303/304	MAR01771.001-003	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (BAA, NAPTH) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01771.001-002	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01771.001-002	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01771
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S21

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions

Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01772

Issue Version: 1

Customer: Solmek Ltd, 12-16 Yarm Road, Stockton on Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S05

Date Sampled: 09-Mar-23

Date Samples Received: 17-Mar-23

Test Report Date: 12-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01772
Issue Version 1
Customer Reference S230232 - Ardersier Port - S05

			Units	%	%	%	%	%	N/A
			Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
			Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
			Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S05 ES1 6.50-7.00m	MAR01772.001	Sediment	43.1	56.9	0.00	71.48	28.52	NAIIS
S05 ES7 9.50-10.00m	MAR01772.002	Sediment	31.2	68.8	0.00	90.98	9.02	NAIIS
S05 ES13 12.50-13.00m	MAR01772.003	Sediment	31.7	68.3	0.00	91.86	8.14	NAIIS

* See Report Notes
NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01772
Issue Version 1
Customer Reference S230232 - Ardersier Port - S05

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S05 ES1 6.50-7.00m	MAR01772.001	Sediment	3.7	0.12	20.4	12.6	0.05	14.8	11.9	59.6
S05 ES7 9.50-10.00m	MAR01772.002	Sediment	2.9	<0.04	17.1	10.5	0.03	18.0	5.1	43.7
S05 ES13 12.50-13.00m	MAR01772.003	Sediment	4.1	0.1	19.8	12.0	0.03	19.5	5.1	50.4
Certified Reference Material SETOC 768 (% Recovery)			95	119	98	106	124	100	102	96
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01772
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S05

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S05 ES1 6.50-7.00m	MAR01772.001	Sediment	<5	20.7
S05 ES7 9.50-10.00m	MAR01772.002	Sediment	<5	<5
S05 ES13 12.50-13.00m	MAR01772.003	Sediment	<5	<5
Certified Reference Material BCR-646 (% Recovery)			79	77
QC Blank			<1	<1

* See Report Notes

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Test Report ID MAR01772
Issue Version 1
Customer Reference S230232 - Ardersier Port - S05

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S05 ES1 6.50-7.00m	MAR01772.001	Sediment	9.37	3.37	16.1	42.7	55.7	54.7
S05 ES7 9.50-10.00m	MAR01772.002	Sediment	<1	<1	<1	2.09	2.77	2.88
S05 ES13 12.50-13.00m	MAR01772.003	Sediment	<1	<1	<1	<1	1.33	1.22
Certified Reference Material NIST1941b (% Recovery)			73	101	70	66	67	98
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01772
Issue Version 1
Customer Reference S230232 - Ardersier Port - S05

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S05 ES1 6.50-7.00m	MAR01772.001	Sediment	49.7	55.5	46.5	10.4	84.5	8.13
S05 ES7 9.50-10.00m	MAR01772.002	Sediment	2.10	2.64	2.61	<1	4.02	<1
S05 ES13 12.50-13.00m	MAR01772.003	Sediment	1.37	1.03	1.26	<1	1.92	<1
Certified Reference Material NIST1941b (% Recovery)			91	93	86	124	79	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01772
Issue Version 1
Customer Reference S230232 - Ardersier Port - S05

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	UKAS	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S05 ES1 6.50-7.00m	MAR01772.001	Sediment	56.8	4.83	50.1	89.2	62200
S05 ES7 9.50-10.00m	MAR01772.002	Sediment	2.24	<1	1.83	4.67	8140
S05 ES13 12.50-13.00m	MAR01772.003	Sediment	<1	<1	1.19	2.80	8170
Certified Reference Material NIST1941b (% Recovery)			88	61	77	70	95~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01772
Issue Version 1
Customer Reference S230232 - Ardersier Port - S05

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S05 ES1 6.50-7.00m	MAR01772.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	0.10	<0.08
S05 ES7 9.50-10.00m	MAR01772.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S05 ES13 12.50-13.00m	MAR01772.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			60	101	86	82	113	96	69
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01772
Issue Version 1
Customer Reference S230232 - Ardersier Port - S05

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01772.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01772.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01772.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01772.001-003	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/303/304	MAR01772.001-003	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01772.001-003	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01772
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S05

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions					
Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01773

Issue Version: 1

Customer: Solmek Ltd, 12-16 Yarm Road, Stockton on Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S11

Date Sampled: 16-Mar-23

Date Samples Received: 20-Mar-23

Test Report Date: 12-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01773
Issue Version 1
Customer Reference S230232 - Ardersier Port - S11

			Units	%	%	%	%	%	N/A
			Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
			Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
			Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S11 ES1 6.50-7.00m	MAR01773.001	Sediment	28.2	71.8	0.00	83.17	16.83	NAIIS
S11 ES7 9.50-10.00m	MAR01773.002	Sediment	39.3	60.7	0.00	81.88	18.12	NAIIS
S11 ES13 12.50-13.00m	MAR01773.003	Sediment	37.2	62.8	0.57	89.70	9.72	NAIIS

* See Report Notes
NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01773
Issue Version 1
Customer Reference S230232 - Ardersier Port - S11

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S11 ES1 6.50-7.00m	MAR01773.001	Sediment	6.9	0.17	30.7	31.2	0.05	20.9	17.8	212
S11 ES7 9.50-10.00m	MAR01773.002	Sediment	5.4	<0.04	22.0	28.5	0.03	15.9	14.0	209
S11 ES13 12.50-13.00m	MAR01773.003	Sediment	4.8	<0.04	21.0	26.7	0.03	14.0	12.7	196
Certified Reference Material SETOC 768 (% Recovery)			95	119	98	106	124	100	102	96
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01773
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S11

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S11 ES1 6.50-7.00m	MAR01773.001	Sediment	<5	<5
S11 ES7 9.50-10.00m	MAR01773.002	Sediment	<5	<5
S11 ES13 12.50-13.00m	MAR01773.003	Sediment	<5	<5
Certified Reference Material BCR-646 (% Recovery)			79	77
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01773
Issue Version 1
Customer Reference S230232 - Ardersier Port - S11

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S11 ES1 6.50-7.00m	MAR01773.001	Sediment	1.90	1.85	4.87	30.3	33.1	35.2
S11 ES7 9.50-10.00m	MAR01773.002	Sediment	3.40	2.12	4.38	18.9	32.6	33.4
S11 ES13 12.50-13.00m	MAR01773.003	Sediment	4.57	1.22	4.81	15.5	20.0	18.2
Certified Reference Material NIST1941b (% Recovery)			73	101	70	66	67	98
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01773
Issue Version 1
Customer Reference S230232 - Ardersier Port - S11

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S11 ES1 6.50-7.00m	MAR01773.001	Sediment	25.1	31.2	40.1	4.81	74.6	1.78
S11 ES7 9.50-10.00m	MAR01773.002	Sediment	28.5	33.3	26.1	6.42	33.8	2.51
S11 ES13 12.50-13.00m	MAR01773.003	Sediment	14.5	18.5	16.7	2.75	31.5	3.45
Certified Reference Material NIST1941b (% Recovery)			91	93	86	124	79	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01773
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S11

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	UKAS	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S11 ES1 6.50-7.00m	MAR01773.001	Sediment	27.7	<1	32.6	65.2	24000
S11 ES7 9.50-10.00m	MAR01773.002	Sediment	32.2	2.06	14.6	55.0	67700
S11 ES13 12.50-13.00m	MAR01773.003	Sediment	15.0	1.83	18.1	34.6	23100
Certified Reference Material NIST1941b (% Recovery)			88	61	77	70	95~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.

*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01773
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S11

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S11 ES1 6.50-7.00m	MAR01773.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S11 ES7 9.50-10.00m	MAR01773.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S11 ES13 12.50-13.00m	MAR01773.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			60	101	86	82	113	96	69
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01773
Issue Version 1
Customer Reference S230232 - Ardersier Port - S11

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01773.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01773.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01773.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01773.001-003	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/303/304	MAR01773.001-003	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01773.001-003	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01773
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S11

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions					
Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01774

Issue Version: 1

Customer: Solmek Ltd, 12-16 Yarm Road, Stockton on Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S15

Date Sampled: 17-Mar-23

Date Samples Received: 20-Mar-23

Test Report Date: 12-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01774
Issue Version 1
Customer Reference S230232 - Ardersier Port - S15

			Units	%	%	%	%	%	N/A
			Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
			Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
			Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S15 ES1 6.50-7.00m	MAR01774.001	Sediment	36.7	63.3	2.33	66.36	31.32	NAIIS
S15 ES7 9.50-10.00m	MAR01774.002	Sediment	29.3	70.7	1.09	77.79	21.11	NAIIS
S15 ES13 12.50-13.00m	MAR01774.003	Sediment	30.5	69.5	1.84	86.99	11.18	NAIIS

* See Report Notes
NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01774
Issue Version 1
Customer Reference S230232 - Ardersier Port - S15

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S15 ES1 6.50-7.00m	MAR01774.001	Sediment	3.5	<0.04	15.0	12.0	0.07	10.0	9.1	55.3
S15 ES7 9.50-10.00m	MAR01774.002	Sediment	5.8	0.05	25.9	21.7	0.05	16.8	13.6	127
S15 ES13 12.50-13.00m	MAR01774.003	Sediment	2.8	<0.04	13.8	9.3	0.02	9.3	3.8	34.0
Certified Reference Material SETOC 768 (% Recovery)			95	119	98	106	124	100	102	96
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01774
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S15

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S15 ES1 6.50-7.00m	MAR01774.001	Sediment	<5	<5
S15 ES7 9.50-10.00m	MAR01774.002	Sediment	<5	<5
S15 ES13 12.50-13.00m	MAR01774.003	Sediment	<5	<5
Certified Reference Material BCR-646 (% Recovery)			79	77
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01774
Issue Version 1
Customer Reference S230232 - Ardersier Port - S15

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S15 ES1 6.50-7.00m	MAR01774.001	Sediment	3.73	1.93	7.11	22.1	26.0	27.6
S15 ES7 9.50-10.00m	MAR01774.002	Sediment	1.02	<1	2.15	8.02	11.3	10.8
S15 ES13 12.50-13.00m	MAR01774.003	Sediment	<1	<1	2.84	5.49	7.24	6.24
Certified Reference Material NIST1941b (% Recovery)			73	101	70	66	67	98
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01774
Issue Version 1
Customer Reference S230232 - Ardersier Port - S15

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S15 ES1 6.50-7.00m	MAR01774.001	Sediment	23.9	26.5	23.0	4.82	45.3	3.59
S15 ES7 9.50-10.00m	MAR01774.002	Sediment	9.98	11.1	8.75	1.78	15.0	1.16
S15 ES13 12.50-13.00m	MAR01774.003	Sediment	4.99	6.42	6.01	<1	10.80	<1
Certified Reference Material NIST1941b (% Recovery)			91	93	86	124	79	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01774
Issue Version 1
Customer Reference S230232 - Ardersier Port - S15

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	UKAS	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S15 ES1 6.50-7.00m	MAR01774.001	Sediment	26.4	3.95	26.2	48.5	41100
S15 ES7 9.50-10.00m	MAR01774.002	Sediment	10.2	1.23	6.61	19.2	20900
S15 ES13 12.50-13.00m	MAR01774.003	Sediment	5.46	<1	3.96	11.2	10200
Certified Reference Material NIST1941b (% Recovery)			88	61	77	70	95~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01774
Issue Version 1
Customer Reference S230232 - Ardersier Port - S15

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S15 ES1 6.50-7.00m	MAR01774.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S15 ES7 9.50-10.00m	MAR01774.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S15 ES13 12.50-13.00m	MAR01774.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			60	101	86	82	113	96	69
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01774
Issue Version 1
Customer Reference S230232 - Ardersier Port - S15

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01774.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01774.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01774.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01774.001-003	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/303/304	MAR01774.001-003	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01774.001-003	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01774
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S15

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions					
Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

SOCOTEC

Test Report ID MAR01775

Issue Version: 1

Customer: Solmek Ltd, 12-16 Yarm Road, Stockton on Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S16

Date Sampled: 09-Mar-23

Date Samples Received: 20-Mar-23

Test Report Date: 12-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01775
Issue Version 1
Customer Reference S230232 - Ardersier Port - S16

			Units	%	%	%	%	%	N/A
			Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
			Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
			Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S16 ES1 6.50-7.00m	MAR01775.001	Sediment	22.9	77.1	0.00	79.91	20.09	NAIIS
S16 ES7 9.50-10.00m	MAR01775.002	Sediment	19.7	80.3	0.00	92.71	7.29	NAIIS
S16 ES13 12.50-13.00m	MAR01775.003	Sediment	20.5	79.5	1.30	91.86	6.84	NAIIS

* See Report Notes
NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01775
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S16

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S16 ES1 6.50-7.00m	MAR01775.001	Sediment	3.6	<0.04	21.8	13.7	0.04	17.8	8.3	57.3
S16 ES7 9.50-10.00m	MAR01775.002	Sediment	2.3	0.16	20.3	12.8	0.04	20.8	5.5	55.4
S16 ES13 12.50-13.00m	MAR01775.003	Sediment	2.8	0.23	19.8	11.2	0.03	17.0	3.8	64.9
Certified Reference Material SETOC 768 (% Recovery)			95	119	98	106	124	100	102	96
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01775
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S16

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S16 ES1 6.50-7.00m	MAR01775.001	Sediment	<5	11.3
S16 ES7 9.50-10.00m	MAR01775.002	Sediment	<1	2.37
S16 ES13 12.50-13.00m	MAR01775.003	Sediment	<1	<1
Certified Reference Material BCR-646 (% Recovery)			79	77
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01775
Issue Version 1
Customer Reference S230232 - Ardersier Port - S16

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S16 ES1 6.50-7.00m	MAR01775.001	Sediment	1.95	<1	3.08	7.13	9.24	9.02
S16 ES7 9.50-10.00m	MAR01775.002	Sediment	<1	<1	1.06	2.99	3.75	3.54
S16 ES13 12.50-13.00m	MAR01775.003	Sediment	<1	<1	<1	<1	<1	<1
Certified Reference Material NIST1941b (% Recovery)			73	101	70	66	67	98
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01775
Issue Version 1
Customer Reference S230232 - Ardersier Port - S16

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S16 ES1 6.50-7.00m	MAR01775.001	Sediment	7.86	9.14	8.26	1.42	14.9	1.73
S16 ES7 9.50-10.00m	MAR01775.002	Sediment	2.34	3.32	3.42	<1	6.35	<1
S16 ES13 12.50-13.00m	MAR01775.003	Sediment	1.05	<1	<1	<1	1.20	<1
Certified Reference Material NIST1941b (% Recovery)			91	93	86	124	79	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01775
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S16

			Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
			Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
			Limit of Detection	1	1	1	1	100
			Accreditation	UKAS	UKAS	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**		**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S16 ES1 6.50-7.00m	MAR01775.001	Sediment		8.92	1.64	11.2	18.4	14500
S16 ES7 9.50-10.00m	MAR01775.002	Sediment		2.57	<1	2.41	7.41	6210
S16 ES13 12.50-13.00m	MAR01775.003	Sediment		<1	<1	<1	1.96	7100
Certified Reference Material NIST1941b (% Recovery)				88	61	77	70	95~
QC Blank				<1	<1	<1	<1	<100

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.

*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01775
Issue Version 1
Customer Reference S230232 - Ardersier Port - S16

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S16 ES1 6.50-7.00m	MAR01775.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S16 ES7 9.50-10.00m	MAR01775.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S16 ES13 12.50-13.00m	MAR01775.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			60	101	86	82	113	96	69
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01775
Issue Version 1
Customer Reference S230232 - Ardersier Port - S16

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01775.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01775.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01775.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01775.001	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/303/304	MAR01775.001-002	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01775.001-002	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01775
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S16

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions					
Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

SOCOTEC

Test Report ID MAR01776

Issue Version: 2

Customer: Solmek Ltd, 12-16 Yarm Road, Stockton on Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S18

Date Sampled: 14-Mar-23

Date Samples Received: 17-Mar-23

Test Report Date: 12-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

This is a revised report and replaces all previously issued versions

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01776
Issue Version 2
Customer Reference S230232 - Ardersier Port - S18

			Units	%	%	%	%	%	N/A
			Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
			Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
			Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S18 ES1 6.50-7.00m	MAR01776.001	Sediment	32.1	67.9	0.34	90.57	9.09	NAIIS
S18 ES7 9.50-10.00m	MAR01776.002	Sediment	32.7	67.3	0.00	92.30	7.70	NAIIS
S18 ES13 12.50-13.00m	MAR01776.003	Sediment	31.2	68.8	0.00	91.43	8.57	NAIIS

* See Report Notes
NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01776
Issue Version	2
Customer Reference	S230232 - Ardersier Port - S18

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S18 ES1 6.50-7.00m	MAR01776.001	Sediment	2.7	0.14	19.7	12.3	0.03	14.0	4.8	48.4
S18 ES7 9.50-10.00m	MAR01776.002	Sediment	2.0	0.12	19.2	12.5	0.02	13.0	4.2	40.8
S18 ES13 12.50-13.00m	MAR01776.003	Sediment	2.4	0.17	20.7	12.0	0.03	15.4	4.6	42.8
Certified Reference Material SETOC 768 (% Recovery)			95	119	98	106	124	100	102	96
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01776
Issue Version	2
Customer Reference	S230232 - Ardersier Port - S18

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S18 ES1 6.50-7.00m	MAR01776.001	Sediment	<5	<5
S18 ES7 9.50-10.00m	MAR01776.002	Sediment	<5	<5
S18 ES13 12.50-13.00m	MAR01776.003	Sediment	<5	<5
Certified Reference Material BCR-646 (% Recovery)			79	77
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01776
Issue Version 2
Customer Reference S230232 - Ardersier Port - S18

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S18 ES1 6.50-7.00m	MAR01776.001	Sediment	1.16	<1	2.73	6.31	6.81	4.96
S18 ES7 9.50-10.00m	MAR01776.002	Sediment	1.09	<1	2.80	6.55	7.42	5.67
S18 ES13 12.50-13.00m	MAR01776.003	Sediment	3.06	<1	5.32	9.57	9.97	6.67
Certified Reference Material NIST1941b (% Recovery)			73	101	70	66	67	98
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01776
Issue Version 2
Customer Reference S230232 - Ardersier Port - S18

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S18 ES1 6.50-7.00m	MAR01776.001	Sediment	4.02	5.83	6.52	<1	16.3	<1
S18 ES7 9.50-10.00m	MAR01776.002	Sediment	5.40	6.45	7.42	<1	15.7	<1
S18 ES13 12.50-13.00m	MAR01776.003	Sediment	5.86	7.66	10.2	<1	22.1	2.64
Certified Reference Material NIST1941b (% Recovery)			91	93	86	124	79	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01776
Issue Version	2
Customer Reference	S230232 - Ardersier Port - S18

			Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
			Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
			Limit of Detection	1	1	1	1	100
			Accreditation	UKAS	UKAS	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**		**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S18 ES1 6.50-7.00m	MAR01776.001	Sediment		4.29	1.55	8.23	15.0	6230
S18 ES7 9.50-10.00m	MAR01776.002	Sediment		5.38	1.49	7.42	16.6	6030
S18 ES13 12.50-13.00m	MAR01776.003	Sediment		5.37	1.87	19.3	23.4	3940
Certified Reference Material NIST1941b (% Recovery)				88	61	77	70	95~
QC Blank				<1	<1	<1	<1	<100

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.

*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01776
Issue Version	2
Customer Reference	S230232 - Ardersier Port - S18

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S18 ES1 6.50-7.00m	MAR01776.001	Sediment	0.17	0.19	0.18	0.19	<0.08	0.11	0.15
S18 ES7 9.50-10.00m	MAR01776.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S18 ES13 12.50-13.00m	MAR01776.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			55	103	95	92	95	94	87
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01776
Issue Version 2
Customer Reference S230232 - Ardersier Port - S18

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01776.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01776.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01776.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01776.001-003	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/303/304	MAR01776.001-003	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01776.001-003	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01776
Issue Version	2
Customer Reference	S230232 - Ardersier Port - S18

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions					
Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01777

Issue Version: 1

Customer: Solmek Ltd, 12-16 Yarm Road, Stockton on Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S19

Date Sampled: 14-Mar-23

Date Samples Received: 20-Mar-23

Test Report Date: 12-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01777
Issue Version 1
Customer Reference S230232 - Ardersier Port - S19

			Units	%	%	%	%	%	N/A
			Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
			Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
			Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S19 ES1 6.50-7.00m	MAR01777.001	Sediment	25.5	74.5	0.00	96.85	3.15	NAIIS
S19 ES7 9.50-10.00m	MAR01777.002	Sediment	24.8	75.2	3.65	89.71	6.65	NAIIS
S19 ES13 12.50-13.00m	MAR01777.003	Sediment	18.4	81.6	1.81	92.25	5.94	NAIIS

* See Report Notes
NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01777
Issue Version 1
Customer Reference S230232 - Ardersier Port - S19

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S19 ES1 6.50-7.00m	MAR01777.001	Sediment	2.4	0.05	16.8	10.9	0.02	13.8	3.3	31.9
S19 ES7 9.50-10.00m	MAR01777.002	Sediment	2.5	0.13	14.5	10.8	0.05	13.4	3.5	30.3
S19 ES13 12.50-13.00m	MAR01777.003	Sediment	3.7	0.21	90.9	11.6	0.03	63.5	4.0	68.2
Certified Reference Material SETOC 768 (% Recovery)			95	119	98	106	124	100	102	96
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01777
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S19

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S19 ES1 6.50-7.00m	MAR01777.001	Sediment	<5	<5
S19 ES7 9.50-10.00m	MAR01777.002	Sediment	<5	<5
S19 ES13 12.50-13.00m	MAR01777.003	Sediment	<1	1.74
Certified Reference Material BCR-646 (% Recovery)			79	77
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01777
Issue Version 1
Customer Reference S230232 - Ardersier Port - S19

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S19 ES1 6.50-7.00m	MAR01777.001	Sediment	<1	<1	<1	1.94	2.01	1.74
S19 ES7 9.50-10.00m	MAR01777.002	Sediment	<1	<1	<1	1.53	1.69	1.88
S19 ES13 12.50-13.00m	MAR01777.003	Sediment	<1	<1	3.21	10.4	12.5	8.30
Certified Reference Material NIST1941b (% Recovery)			72	98	70	65	61	86
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01777
Issue Version 1
Customer Reference S230232 - Ardersier Port - S19

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S19 ES1 6.50-7.00m	MAR01777.001	Sediment	1.28	2.14	2.15	<1	4.60	<1
S19 ES7 9.50-10.00m	MAR01777.002	Sediment	1.32	2.14	1.76	<1	3.61	<1
S19 ES13 12.50-13.00m	MAR01777.003	Sediment	8.13	10.6	11.0	1.28	22.8	<1
Certified Reference Material NIST1941b (% Recovery)			86	85	86	128	78	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01777
Issue Version 1
Customer Reference S230232 - Ardersier Port - S19

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	UKAS	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S19 ES1 6.50-7.00m	MAR01777.001	Sediment	1.20	3.51	3.65	4.55	3260
S19 ES7 9.50-10.00m	MAR01777.002	Sediment	1.11	<1	1.91	4.45	4950
S19 ES13 12.50-13.00m	MAR01777.003	Sediment	7.47	<1	5.87	21.7	4810
Certified Reference Material NIST1941b (% Recovery)			93	61	77	71	100~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01777
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S19

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	N*	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S19 ES1 6.50-7.00m	MAR01777.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S19 ES7 9.50-10.00m	MAR01777.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S19 ES13 12.50-13.00m	MAR01777.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			54	104	89	91	98	92	80
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01777
Issue Version 1
Customer Reference S230232 - Ardersier Port - S19

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01777.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01777.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01777.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01777.001-002	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/302	MAR01777.001-003	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (PCB28) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01777.001-003	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01777.001-003	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01777
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S19

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions

Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01778

Issue Version: 1

Customer: Solmek Ltd, 12-16 Yarm Road, Stockton on Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S20

Date Sampled: 14-Mar-23

Date Samples Received: 20-Mar-23

Test Report Date: 12-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01778
Issue Version 1
Customer Reference S230232 - Ardersier Port - S20

			Units	%	%	%	%	%	N/A
			Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
			Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
			Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S20 ES1 6.50-7.00m	MAR01778.001	Sediment	29.4	70.6	0.00	97.23	2.77	NAIIS
S20 ES7 9.50-10.00m	MAR01778.002	Sediment	20.5	79.5	0.00	95.86	4.14	NAIIS
S20 ES13 12.50-13.00m	MAR01778.003	Sediment	26.0	74.0	0.84	94.66	4.50	NAIIS

* See Report Notes
NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01778
Issue Version 1
Customer Reference S230232 - Ardersier Port - S20

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S20 ES1 6.50-7.00m	MAR01778.001	Sediment	1.6	0.12	21.7	9.2	0.03	15.3	3.1	33.7
S20 ES7 9.50-10.00m	MAR01778.002	Sediment	1.6	<0.04	13.0	9.5	<0.01	9.1	3.0	26.9
S20 ES13 12.50-13.00m	MAR01778.003	Sediment	1.6	<0.04	12.0	9.7	<0.01	10.0	2.9	31.6
Certified Reference Material SETOC 768 (% Recovery)			95	119	98	106	124	100	102	96
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01778
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S20

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S20 ES1 6.50-7.00m	MAR01778.001	Sediment	<5	<5
S20 ES7 9.50-10.00m	MAR01778.002	Sediment	<1	1.71
S20 ES13 12.50-13.00m	MAR01778.003	Sediment	<5	<5
Certified Reference Material BCR-646 (% Recovery)			74	75
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01778
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S20

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S20 ES1 6.50-7.00m	MAR01778.001	Sediment	<1	<1	1.32	4.05	4.60	5.24
S20 ES7 9.50-10.00m	MAR01778.002	Sediment	3.04	2.55	7.13	6.96	6.83	4.03
S20 ES13 12.50-13.00m	MAR01778.003	Sediment	<1	<1	<1	1.19	1.61	1.19
Certified Reference Material NIST1941b (% Recovery)			72	98	70	65	61	86
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01778
Issue Version 1
Customer Reference S230232 - Ardersier Port - S20

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S20 ES1 6.50-7.00m	MAR01778.001	Sediment	3.28	4.80	4.73	<1	8.11	<1
S20 ES7 9.50-10.00m	MAR01778.002	Sediment	3.95	6.76	7.14	<1	20.4	3.82
S20 ES13 12.50-13.00m	MAR01778.003	Sediment	1.00	1.66	1.20	<1	2.35	<1
Certified Reference Material NIST1941b (% Recovery)			86	85	86	128	78	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01778
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S20

			Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
			Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
			Limit of Detection	1	1	1	1	100
			Accreditation	UKAS	UKAS	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**		**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S20 ES1 6.50-7.00m	MAR01778.001	Sediment		2.74	2.03	3.81	9.37	7240
S20 ES7 9.50-10.00m	MAR01778.002	Sediment		3.88	1.41	19.8	17.9	2970
S20 ES13 12.50-13.00m	MAR01778.003	Sediment		<1	<1	1.06	3.19	2700
Certified Reference Material NIST1941b (% Recovery)				93	61	77	71	100~
QC Blank				<1	<1	<1	<1	<100

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.

*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01778
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S20

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	N*	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S20 ES1 6.50-7.00m	MAR01778.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S20 ES7 9.50-10.00m	MAR01778.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S20 ES13 12.50-13.00m	MAR01778.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			54	104	89	91	98	92	80
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01778
Issue Version 1
Customer Reference S230232 - Ardersier Port - S20

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01778.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01778.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01778.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01778.001, .003	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/302	MAR01778.001-003	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (PCB28) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01778.001-003	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01778.001-003	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01778
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S20

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions

Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01779

Issue Version: 1

Customer: Solmek Ltd, 12-16 Yarm Road, Stockton on Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S25

Date Sampled: 16-Mar-23

Date Samples Received: 20-Mar-23

Test Report Date: 12-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01779
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S25

		Units	%	%	%	%	%	N/A
		Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
		Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
		Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S25 ES1 6.50-7.00m	MAR01779.001	Sediment	29.1	70.9	4.47	83.63	11.90	NAIIS
S25 ES7 9.50-10.00m	MAR01779.002	Sediment	21.4	78.6	3.89	87.58	8.53	NAIIS
S25 ES13 12.50-13.00m	MAR01779.003	Sediment	21.0	79.0	5.98	86.87	7.15	NAIIS

* See Report Notes

NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01779
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S25

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S25 ES1 6.50-7.00m	MAR01779.001	Sediment	4.3	0.05	20.2	12.8	<0.01	13.1	5.0	40.2
S25 ES7 9.50-10.00m	MAR01779.002	Sediment	3.7	<0.04	16.6	12.8	<0.01	12.8	4.2	35.7
S25 ES13 12.50-13.00m	MAR01779.003	Sediment	3.8	0.07	20.5	14.0	<0.01	14.9	4.1	43.1
Certified Reference Material SETOC 768 (% Recovery)			95	119	98	106	124	100	102	96
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01779
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S25

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S25 ES1 6.50-7.00m	MAR01779.001	Sediment	<5	<5
S25 ES7 9.50-10.00m	MAR01779.002	Sediment	<5	<5
S25 ES13 12.50-13.00m	MAR01779.003	Sediment	<5	<5
Certified Reference Material BCR-646 (% Recovery)			74	75
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01779
Issue Version 1
Customer Reference S230232 - Ardersier Port - S25

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S25 ES1 6.50-7.00m	MAR01779.001	Sediment	<1	<1	1.86	3.23	3.73	3.52
S25 ES7 9.50-10.00m	MAR01779.002	Sediment	<1	1.00	9.82	12.2	12.6	8.58
S25 ES13 12.50-13.00m	MAR01779.003	Sediment	<1	<1	<1	<1	1.28	1.03
Certified Reference Material NIST1941b (% Recovery)			72	98	70	65	61	86
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01779
Issue Version 1
Customer Reference S230232 - Ardersier Port - S25

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S25 ES1 6.50-7.00m	MAR01779.001	Sediment	3.39	3.87	3.88	<1	7.51	1.09
S25 ES7 9.50-10.00m	MAR01779.002	Sediment	6.86	11.2	11.9	1.14	30.9	1.08
S25 ES13 12.50-13.00m	MAR01779.003	Sediment	1.99	1.51	1.03	<1	1.75	<1
Certified Reference Material NIST1941b (% Recovery)			86	85	86	128	78	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01779
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S25

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	UKAS	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S25 ES1 6.50-7.00m	MAR01779.001	Sediment	2.39	1.16	4.73	8.27	7570
S25 ES7 9.50-10.00m	MAR01779.002	Sediment	6.27	<1	11.3	26.4	5150
S25 ES13 12.50-13.00m	MAR01779.003	Sediment	<1	<1	1.18	3.11	8040
Certified Reference Material NIST1941b (% Recovery)			93	61	77	71	100~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.

*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01779
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S25

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	N*	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S25 ES1 6.50-7.00m	MAR01779.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S25 ES7 9.50-10.00m	MAR01779.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S25 ES13 12.50-13.00m	MAR01779.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			54	104	89	91	98	92	80
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01779
Issue Version 1
Customer Reference S230232 - Ardersier Port - S25

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01779.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01779.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01779.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01779.001-003	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/302	MAR01779.001-003	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (PCB28) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01779.001-003	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01779.001-003	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01779
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S25

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions					
Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

SOCOTEC

Test Report ID MAR01780

Issue Version: 1

Customer: Solmek Ltd, 12-16 Yarm Road, Stockton on Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S26

Date Sampled: 16-Mar-23

Date Samples Received: 20-Mar-23

Test Report Date: 12-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01780
Issue Version 1
Customer Reference S230232 - Ardersier Port - S26

			Units	%	%	%	%	%	N/A
			Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
			Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
			Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S26 ES1 6.50-7.00m	MAR01780.001	Sediment	28.3	71.7	0.95	94.40	4.65	NAIIS
S26 ES7 9.50-10.00m	MAR01780.002	Sediment	18.9	81.1	1.15	94.79	4.06	NAIIS
S26 ES13 12.50-13.00m	MAR01780.003	Sediment	21.8	78.2	0.19	91.12	8.69	NAIIS

* See Report Notes
NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01780
Issue Version 1
Customer Reference S230232 - Ardersier Port - S26

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S26 ES1 6.50-7.00m	MAR01780.001	Sediment	3.3	<0.04	19.0	12.3	<0.01	13.5	3.9	44.5
S26 ES7 9.50-10.00m	MAR01780.002	Sediment	3.5	<0.04	20.2	13.3	<0.01	15.3	3.8	50.1
S26 ES13 12.50-13.00m	MAR01780.003	Sediment	3.4	<0.04	17.9	11.9	0.03	12.1	4.3	56.6
Certified Reference Material SETOC 768 (% Recovery)			95	119	98	106	124	100	102	96
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01780
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S26

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S26 ES1 6.50-7.00m	MAR01780.001	Sediment	<5	<5
S26 ES7 9.50-10.00m	MAR01780.002	Sediment	<1	<1
S26 ES13 12.50-13.00m	MAR01780.003	Sediment	<5	<5
Certified Reference Material BCR-646 (% Recovery)			74	75
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01780
Issue Version 1
Customer Reference S230232 - Ardersier Port - S26

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S26 ES1 6.50-7.00m	MAR01780.001	Sediment	<1	<1	<1	1.73	1.98	1.80
S26 ES7 9.50-10.00m	MAR01780.002	Sediment	<1	<1	<1	1.20	1.51	1.10
S26 ES13 12.50-13.00m	MAR01780.003	Sediment	<1	<1	<1	1.36	1.56	1.58
Certified Reference Material NIST1941b (% Recovery)			72	98	70	65	61	86
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01780
Issue Version 1
Customer Reference S230232 - Ardersier Port - S26

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S26 ES1 6.50-7.00m	MAR01780.001	Sediment	1.82	1.63	2.09	<1	4.02	<1
S26 ES7 9.50-10.00m	MAR01780.002	Sediment	1.63	1.57	1.55	<1	3.17	<1
S26 ES13 12.50-13.00m	MAR01780.003	Sediment	1.21	1.83	1.64	<1	3.21	<1
Certified Reference Material NIST1941b (% Recovery)			86	85	86	128	78	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01780
Issue Version 1
Customer Reference S230232 - Ardersier Port - S26

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	UKAS	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S26 ES1 6.50-7.00m	MAR01780.001	Sediment	<1	<1	2.11	5.05	6610
S26 ES7 9.50-10.00m	MAR01780.002	Sediment	1.18	<1	1.83	4.21	10100
S26 ES13 12.50-13.00m	MAR01780.003	Sediment	1.06	<1	1.30	4.28	5850
Certified Reference Material NIST1941b (% Recovery)			93	61	77	71	100~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01780
Issue Version 1
Customer Reference S230232 - Ardersier Port - S26

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	N*	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S26 ES1 6.50-7.00m	MAR01780.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S26 ES7 9.50-10.00m	MAR01780.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S26 ES13 12.50-13.00m	MAR01780.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			54	104	89	91	98	92	80
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01780
Issue Version 1
Customer Reference S230232 - Ardersier Port - S26

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01780.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01780.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01780.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01780.001& .003	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/302	MAR01780.001-003	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (PCB28) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01780.001-003	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01780.001-003	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01780
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S26

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions					
Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01781

Issue Version: 1

Customer: Solmek Ltd, 12-16 Yarm Road, Stockton on Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S27

Date Sampled: 15-Mar-23

Date Samples Received: 20-Mar-23

Test Report Date: 12-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01781
Issue Version 1
Customer Reference S230232 - Ardersier Port - S27

			Units	%	%	%	%	%	N/A
			Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
			Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
			Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S27 ES1 6.50-7.00m	MAR01781.001	Sediment	21.0	79.0	0.00	96.41	3.59	NAIIS
S27 ES7 9.50-10.00m	MAR01781.002	Sediment	27.8	72.2	0.43	92.74	6.83	NAIIS
S27 ES13 12.50-13.00m	MAR01781.003	Sediment	20.9	79.1	0.00	93.02	6.98	NAIIS

* See Report Notes
NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01781
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S27

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S27 ES1 6.50-7.00m	MAR01781.001	Sediment	2.7	<0.04	17.5	11.1	<0.01	12.2	4.2	43.7
S27 ES7 9.50-10.00m	MAR01781.002	Sediment	2.6	<0.04	18.7	12.2	<0.01	12.4	4.0	39.6
S27 ES13 12.50-13.00m	MAR01781.003	Sediment	2.6	0.14	18.9	12.2	0.03	12.6	4.6	43.9
Certified Reference Material SETOC 768 (% Recovery)			95	119	98	106	124	100	102	96
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01781
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S27

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S27 ES1 6.50-7.00m	MAR01781.001	Sediment	<1	<1
S27 ES7 9.50-10.00m	MAR01781.002	Sediment	<5	<5
S27 ES13 12.50-13.00m	MAR01781.003	Sediment	<5	<5
Certified Reference Material BCR-646 (% Recovery)			74	75
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01781
Issue Version 1
Customer Reference S230232 - Ardersier Port - S27

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S27 ES1 6.50-7.00m	MAR01781.001	Sediment	<1	<1	1.31	2.71	2.88	2.26
S27 ES7 9.50-10.00m	MAR01781.002	Sediment	<1	<1	1.21	2.23	2.28	2.02
S27 ES13 12.50-13.00m	MAR01781.003	Sediment	<1	<1	2.66	4.19	4.09	3.55
Certified Reference Material NIST1941b (% Recovery)			72	98	70	65	61	86
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01781
Issue Version 1
Customer Reference S230232 - Ardersier Port - S27

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S27 ES1 6.50-7.00m	MAR01781.001	Sediment	2.32	3.35	3.07	<1	6.45	<1
S27 ES7 9.50-10.00m	MAR01781.002	Sediment	1.61	2.32	2.63	<1	5.00	<1
S27 ES13 12.50-13.00m	MAR01781.003	Sediment	2.60	4.59	4.78	<1	10.4	<1
Certified Reference Material NIST1941b (% Recovery)			86	85	86	128	78	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01781
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S27

			Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
			Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
			Limit of Detection	1	1	1	1	100
			Accreditation	UKAS	UKAS	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**		**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S27 ES1 6.50-7.00m	MAR01781.001	Sediment		1.73	1.02	4.44	8.93	15400
S27 ES7 9.50-10.00m	MAR01781.002	Sediment		1.03	<1	2.60	6.66	5260
S27 ES13 12.50-13.00m	MAR01781.003	Sediment		2.21	1.11	5.90	11.5	4460
Certified Reference Material NIST1941b (% Recovery)				93	61	77	71	100~
QC Blank				<1	<1	<1	<1	<100

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.

*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01781
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S27

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	N*	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S27 ES1 6.50-7.00m	MAR01781.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S27 ES7 9.50-10.00m	MAR01781.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S27 ES13 12.50-13.00m	MAR01781.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			54	104	89	91	98	92	80
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01781
Issue Version 1
Customer Reference S230232 - Ardersier Port - S27

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01781.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01781.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01781.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01781.002-003	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/302	MAR01781.001-003	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (PCB28) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01781.001-003	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01781.001-003	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01781
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S27

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions					
Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01785

Issue Version: 1

Customer: Solmek Ltd, 12-16 Yarm Road, Stockton on Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S13

Date Sampled: 20-Mar-23

Date Samples Received: 23-Mar-23

Test Report Date: 17-Apr-23

Condition of samples: Cold Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01785
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S13

		Units	%	%	%	%	%	N/A
		Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
		Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
		Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S13 ES1 6.50-7.00	MAR01785.001	Sediment	28.0	72.0	0.00	92.69	7.31	NAIIS
S13 ES7 9.50-10.00	MAR01785.002	Sediment	25.2	74.8	0.95	90.62	8.44	NAIIS
S13 ES13 12.50-13.00	MAR01785.003	Sediment	23.9	76.1	0.00	94.52	5.48	NAIIS

* See Report Notes

NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01785
Issue Version 1
Customer Reference S230232 - Ardersier Port - S13

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S13 ES1 6.50-7.00	MAR01785.001	Sediment	2.9	0.39	18.7	10.3	0.23	12.4	5.7	50.6
S13 ES7 9.50-10.00	MAR01785.002	Sediment	2.9	0.31	17.4	11.1	0.23	11.6	5.2	57.1
S13 ES13 12.50-13.00	MAR01785.003	Sediment	2.5	0.24	19.5	10.8	0.27	13.4	3.6	50.3
Certified Reference Material SETOC 768 (% Recovery)			91	107	87	101	89	89	88	89
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01785
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S13

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S13 ES1 6.50-7.00	MAR01785.001	Sediment	<5	<5
S13 ES7 9.50-10.00	MAR01785.002	Sediment	<5	<5
S13 ES13 12.50-13.00	MAR01785.003	Sediment	<1	<1
Certified Reference Material BCR-646 (% Recovery)			73	77
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01785
Issue Version 1
Customer Reference S230232 - Ardersier Port - S13

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	N*	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S13 ES1 6.50-7.00	MAR01785.001	Sediment	<1	<1	2.08	3.51	3.41	4.17
S13 ES7 9.50-10.00	MAR01785.002	Sediment	<1	<1	<1	2.04	2.13	2.26
S13 ES13 12.50-13.00	MAR01785.003	Sediment	<1	<1	<1	<1	<1	<1
Certified Reference Material NIST1941b (% Recovery)			65	97	66	61	63	92
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01785
Issue Version 1
Customer Reference S230232 - Ardersier Port - S13

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S13 ES1 6.50-7.00	MAR01785.001	Sediment	2.86	4.51	4.07	<1	9.29	1.02
S13 ES7 9.50-10.00	MAR01785.002	Sediment	1.91	2.14	2.45	<1	5.37	<1
S13 ES13 12.50-13.00	MAR01785.003	Sediment	<1	<1	<1	<1	1.34	<1
Certified Reference Material NIST1941b (% Recovery)			76	82	91	109	78	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01785
Issue Version 1
Customer Reference S230232 - Ardersier Port - S13

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	N*	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S13 ES1 6.50-7.00	MAR01785.001	Sediment	2.84	2.61	5.88	8.74	7100
S13 ES7 9.50-10.00	MAR01785.002	Sediment	1.78	<1	2.56	5.84	5990
S13 ES13 12.50-13.00	MAR01785.003	Sediment	<1	<1	<1	1.75	4590
Certified Reference Material NIST1941b (% Recovery)			84	57	76	69	91~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01785
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S13

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	N*	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S13 ES1 6.50-7.00	MAR01785.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			54	104	89	91	98	92	80
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01785
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S13

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S13 ES7 9.50-10.00	MAR01785.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S13 ES13 12.50-13.00	MAR01785.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			103	105	128	107	105	102	95
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01785
Issue Version 1
Customer Reference S230232 - Ardersier Port - S13

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01785.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01785.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01785.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01785.001-002	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/302	MAR01785.001	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (PCB28) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01785.001-003	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (BAA, NAPTH) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01785.001-002	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01785.001-002	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01785
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S13

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions

Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01786

Issue Version: 1

Customer: Solmek Ltd, 12-16 Yarm Road, Stockton on Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S14

Date Sampled: 20-Mar-23

Date Samples Received: 23-Mar-23

Test Report Date: 17-Apr-23

Condition of samples: Cold Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01786
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S14

		Units	%	%	%	%	%	N/A
		Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
		Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
		Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S14 ES1 6.50-7.00	MAR01786.001	Sediment	27.7	72.3	0.00	90.67	9.33	NAIIS
S14 ES7 9.50-10.00	MAR01786.002	Sediment	28.2	71.8	2.10	90.10	7.80	NAIIS
S14 ES13 12.50-13.00	MAR01786.003	Sediment	21.0	79.0	0.00	94.90	5.10	NAIIS

* See Report Notes

NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01786
Issue Version 1
Customer Reference S230232 - Ardersier Port - S14

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S14 ES1 6.50-7.00	MAR01786.001	Sediment	2.4	0.20	16.4	12.0	0.24	14.3	5.1	48.3
S14 ES7 9.50-10.00	MAR01786.002	Sediment	4.4	0.13	19.8	11.7	0.17	19.5	5.3	49.9
S14 ES13 12.50-13.00	MAR01786.003	Sediment	3.1	0.19	18.8	11.6	0.22	16.9	3.8	42.6
Certified Reference Material SETOC 768 (% Recovery)			91	107	87	101	89	89	88	89
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01786
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S14

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S14 ES1 6.50-7.00	MAR01786.001	Sediment	<5	9.00
S14 ES7 9.50-10.00	MAR01786.002	Sediment	<5	<5
S14 ES13 12.50-13.00	MAR01786.003	Sediment	<1	<1
Certified Reference Material BCR-646 (% Recovery)			73	77
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01786
Issue Version 1
Customer Reference S230232 - Ardersier Port - S14

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	N*	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S14 ES1 6.50-7.00	MAR01786.001	Sediment	<1	<1	<1	2.89	4.18	5.49
S14 ES7 9.50-10.00	MAR01786.002	Sediment	<1	<1	<1	1.26	1.56	1.50
S14 ES13 12.50-13.00	MAR01786.003	Sediment	<1	<1	<1	<1	<1	<1
Certified Reference Material NIST1941b (% Recovery)			65	97	66	61	63	92
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01786
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S14

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S14 ES1 6.50-7.00	MAR01786.001	Sediment	4.10	6.10	4.38	<1	6.95	<1
S14 ES7 9.50-10.00	MAR01786.002	Sediment	1.74	1.91	1.84	<1	3.18	<1
S14 ES13 12.50-13.00	MAR01786.003	Sediment	<1	<1	<1	<1	1.00	<1
Certified Reference Material NIST1941b (% Recovery)			76	82	91	109	78	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.

*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01786
Issue Version 1
Customer Reference S230232 - Ardersier Port - S14

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	N*	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S14 ES1 6.50-7.00	MAR01786.001	Sediment	3.57	<1	3.21	10.1	11500
S14 ES7 9.50-10.00	MAR01786.002	Sediment	1.14	1.02	1.81	4.45	8890
S14 ES13 12.50-13.00	MAR01786.003	Sediment	<1	<1	<1	1.49	3580
Certified Reference Material NIST1941b (% Recovery)			84	57	76	69	91~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01786
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S14

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S14 ES1 6.50-7.00	MAR01786.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S14 ES7 9.50-10.00	MAR01786.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S14 ES13 12.50-13.00	MAR01786.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			103	105	128	107	105	102	95
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01786
Issue Version 1
Customer Reference S230232 - Ardersier Port - S14

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01786.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01786.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01786.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01786.001-002	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/303/304	MAR01786.001-003	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (BAA, NAPTH) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01786.001-002	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01786.001-002	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01786
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S14

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions

Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01792

Issue Version: 1

Customer: Solmek, 12 Yarm Road, Stockton-on-Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S09

Date Sampled: 22-Mar-23

Date Samples Received: 27-Mar-23

Test Report Date: 19-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01792
Issue Version 1
Customer Reference S230232 - Ardersier Port - S09

			Units	%	%	%	%	%	N/A
			Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
			Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
			Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S09 ES1 6.50-7.00	MAR01792.001	Sediment	27.5	72.5	0.00	84.0	16.0	NAIIS
S09 ES7 9.50-10.00	MAR01792.002	Sediment	22.8	77.2	0.00	93.2	6.78	NAIIS
S09 ES13 12.50-13.00	MAR01792.003	Sediment	26.2	73.8	1.81	91.6	6.63	NAIIS

* See Report Notes
NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01792
Issue Version 1
Customer Reference S230232 - Ardersier Port - S09

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S09 ES1 6.50-7.00	MAR01792.001	Sediment	4.40	<0.04	23.2	21.3	0.04	23.0	12.3	99.9
S09 ES7 9.50-10.00	MAR01792.002	Sediment	3.60	<0.04	19.2	13.0	0.02	20.4	5.30	66.3
S09 ES13 12.50-13.00	MAR01792.003	Sediment	1.90	<0.04	6.30	4.70	<0.01	7.70	1.60	22.2
Certified Reference Material SETOC 768 (% Recovery)			93	80	89	91	89	89	87	95
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01792
Issue Version 1
Customer Reference S230232 - Ardersier Port - S09

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S09 ES1 6.50-7.00	MAR01792.001	Sediment	<5	21.1
S09 ES7 9.50-10.00	MAR01792.002	Sediment	<5	7.26
S09 ES13 12.50-13.00	MAR01792.003	Sediment	<5	<5
Certified Reference Material BCR-646 (% Recovery)			76	81
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01792
Issue Version 1
Customer Reference S230232 - Ardersier Port - S09

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	N*	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S09 ES1 6.50-7.00	MAR01792.001	Sediment	2.89	<1	3.01	21.8	30.1	28.7
S09 ES7 9.50-10.00	MAR01792.002	Sediment	3.64	1.04	2.39	18.5	28.6	27.4
S09 ES13 12.50-13.00	MAR01792.003	Sediment	<1	<1	<1	1.26	1.41	1.68
Certified Reference Material NIST1941b (% Recovery)			65	97	66	61	63	92
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01792
Issue Version 1
Customer Reference S230232 - Ardersier Port - S09

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S09 ES1 6.50-7.00	MAR01792.001	Sediment	23.1	29.0	30.6	4.46	57.6	2.49
S09 ES7 9.50-10.00	MAR01792.002	Sediment	24.2	29.9	28.5	5.12	58.0	2.98
S09 ES13 12.50-13.00	MAR01792.003	Sediment	1.40	1.49	1.80	<1	3.93	<1
Certified Reference Material NIST1941b (% Recovery)			76	82	91	109	78	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01792
Issue Version 1
Customer Reference S230232 - Ardersier Port - S09

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	N*	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S09 ES1 6.50-7.00	MAR01792.001	Sediment	25.7	1.58	28.4	52.4	20500
S09 ES7 9.50-10.00	MAR01792.002	Sediment	26.1	2.91	42.1	50.7	56400
S09 ES13 12.50-13.00	MAR01792.003	Sediment	1.24	<1	2.48	3.89	8540
Certified Reference Material NIST1941b (% Recovery)			84	57	76	69	91~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01792
Issue Version 1
Customer Reference S230232 - Ardersier Port - S09

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S09 ES1 6.50-7.00	MAR01792.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S09 ES7 9.50-10.00	MAR01792.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S09 ES13 12.50-13.00	MAR01792.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			65	99	91	105	89	84	92
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01792
Issue Version 1
Customer Reference S230232 - Ardersier Port - S09

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01792.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01792.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01792.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01792.001-003	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/303/304	MAR01792.001-003	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (BAA, NAPTH) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01792.001-003	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01792.001-003	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01792
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S09

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions

Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01793

Issue Version: 1

Customer: Solmek, 12 Yarm Road, Stockton-on-Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S22

Date Sampled: 21-Mar-23

Date Samples Received: 27-Mar-23

Test Report Date: 19-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01793
Issue Version 1
Customer Reference S230232 - Ardersier Port - S22

		Units	%	%	%	%	%	N/A
		Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
		Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
		Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S22 ES1 6.50-7.00	MAR01793.001	Sediment	32.1	67.9	0.00	87.0	13.0	NAIIS
S22 ES7 9.50-10.00	MAR01793.002	Sediment	27.2	72.8	0.00	91.3	8.71	NAIIS
S22 ES13 12.50-13.00	MAR01793.003	Sediment	22.8	77.2	0.00	93.3	6.75	NAIIS

* See Report Notes
NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01793
Issue Version 1
Customer Reference S230232 - Ardersier Port - S22

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S22 ES1 6.50-7.00	MAR01793.001	Sediment	4.10	<0.04	21.4	10.6	0.02	17.6	7.10	46.9
S22 ES7 9.50-10.00	MAR01793.002	Sediment	3.10	<0.04	17.5	9.90	0.01	20.2	3.70	38.5
S22 ES13 12.50-13.00	MAR01793.003	Sediment	3.20	<0.04	20.0	11.8	<0.01	20.1	4.30	56.2
Certified Reference Material SETOC 768 (% Recovery)			93	80	89	91	89	89	87	95
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01793
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S22

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S22 ES1 6.50-7.00	MAR01793.001	Sediment	<5	<5
S22 ES7 9.50-10.00	MAR01793.002	Sediment	<5	<5
S22 ES13 12.50-13.00	MAR01793.003	Sediment	<1	<1
Certified Reference Material BCR-646 (% Recovery)			76	81
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01793
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S22

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	N*	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S22 ES1 6.50-7.00	MAR01793.001	Sediment	<5	<5	<5	<5	<5	<5
S22 ES7 9.50-10.00	MAR01793.002	Sediment	<1	<1	<1	1.50	1.34	1.56
S22 ES13 12.50-13.00	MAR01793.003	Sediment	<1	<1	<1	<1	<1	<1
Certified Reference Material NIST1941b (% Recovery)			65	97	66	61	63	92
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.

*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01793
Issue Version 1
Customer Reference S230232 - Ardersier Port - S22

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S22 ES1 6.50-7.00	MAR01793.001	Sediment	<5	<5	<5	<5	8.96	<5
S22 ES7 9.50-10.00	MAR01793.002	Sediment	1.43	1.53	1.70	<1	3.95	<1
S22 ES13 12.50-13.00	MAR01793.003	Sediment	<1	<1	<1	<1	<1	<1
Certified Reference Material NIST1941b (% Recovery)			76	82	91	109	78	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01793
Issue Version 1
Customer Reference S230232 - Ardersier Port - S22

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	N*	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S22 ES1 6.50-7.00	MAR01793.001	Sediment	<5	<5	<5	11.8	21700
S22 ES7 9.50-10.00	MAR01793.002	Sediment	1.00	<1	1.41	5.12	6420
S22 ES13 12.50-13.00	MAR01793.003	Sediment	<1	<1	<1	1.60	6640
Certified Reference Material NIST1941b (% Recovery)			84	57	76	69	91~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01793
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S22

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S22 ES1 6.50-7.00	MAR01793.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S22 ES7 9.50-10.00	MAR01793.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S22 ES13 12.50-13.00	MAR01793.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			65	99	91	105	89	84	92
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01793
Issue Version 1
Customer Reference S230232 - Ardersier Port - S22

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01793.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01793.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01793.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01793.001-002	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/303/304	MAR01793.001	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/303/304	MAR01793.001-003	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (BAA, NAPTH) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01793.002	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01793.002	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01793
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S22

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions

Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

SOCOTEC

Test Report ID MAR01794

Issue Version: 1

Customer: Solmek, 12 Yarm Road, Stockton-on-Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S23

Date Sampled: 21-Mar-23

Date Samples Received: 27-Mar-23

Test Report Date: 19-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01794
Issue Version 1
Customer Reference S230232 - Ardersier Port - S23

			Units	%	%	%	%	%	N/A
			Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
			Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
			Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S23 ES1 6.50-7.00	MAR01794.001	Sediment	29.6	70.4	0.00	95.1	4.87	NAIIS
S23 ES7 9.50-10.00	MAR01794.002	Sediment	26.7	73.3	0.00	93.3	6.69	NAIIS
S23 ES13 12.50-13.00	MAR01794.003	Sediment	29.9	70.1	0.00	91.3	8.66	NAIIS

* See Report Notes
NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01794
Issue Version 1
Customer Reference S230232 - Ardersier Port - S23

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S23 ES1 6.50-7.00	MAR01794.001	Sediment	2.80	<0.04	18.6	10.0	0.10	16.6	3.90	44.4
S23 ES7 9.50-10.00	MAR01794.002	Sediment	2.90	<0.04	19.1	11.5	0.04	18.3	4.90	54.5
S23 ES13 12.50-13.00	MAR01794.003	Sediment	2.70	<0.04	16.0	9.60	0.02	14.4	3.90	35.9
Certified Reference Material SETOC 768 (% Recovery)			93	80	89	91	89	89	87	95
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01794
Issue Version 1
Customer Reference S230232 - Ardersier Port - S23

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S23 ES1 6.50-7.00	MAR01794.001	Sediment	<5	<5
S23 ES7 9.50-10.00	MAR01794.002	Sediment	<5	<5
S23 ES13 12.50-13.00	MAR01794.003	Sediment	<5	<5
Certified Reference Material BCR-646 (% Recovery)			76	81
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01794
Issue Version 1
Customer Reference S230232 - Ardersier Port - S23

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	N*	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S23 ES1 6.50-7.00	MAR01794.001	Sediment	<1	<1	<1	1.20	1.22	1.19
S23 ES7 9.50-10.00	MAR01794.002	Sediment	<1	<1	1.10	2.56	3.05	3.07
S23 ES13 12.50-13.00	MAR01794.003	Sediment	1.29	<1	1.27	4.53	5.02	3.64
Certified Reference Material NIST1941b (% Recovery)			65	97	66	61	63	92
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01794
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S23

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S23 ES1 6.50-7.00	MAR01794.001	Sediment	<1	1.41	1.44	<1	3.38	<1
S23 ES7 9.50-10.00	MAR01794.002	Sediment	2.80	3.48	3.11	<1	6.70	<1
S23 ES13 12.50-13.00	MAR01794.003	Sediment	2.80	4.62	4.50	<1	7.72	1.03
Certified Reference Material NIST1941b (% Recovery)			76	82	91	109	78	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.

*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01794
Issue Version 1
Customer Reference S230232 - Ardersier Port - S23

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	N*	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S23 ES1 6.50-7.00	MAR01794.001	Sediment	<1	<1	1.26	3.74	3680
S23 ES7 9.50-10.00	MAR01794.002	Sediment	2.31	<1	3.55	7.57	5590
S23 ES13 12.50-13.00	MAR01794.003	Sediment	2.76	<1	3.92	9.16	5780
Certified Reference Material NIST1941b (% Recovery)			84	57	76	69	91~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01794
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S23

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S23 ES1 6.50-7.00	MAR01794.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S23 ES7 9.50-10.00	MAR01794.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S23 ES13 12.50-13.00	MAR01794.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			65	99	91	105	89	84	92
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01794
Issue Version 1
Customer Reference S230232 - Ardersier Port - S23

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01794.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01794.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01794.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01794.001-003	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/303/304	MAR01794.001-003	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (BAA, NAPTH) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01794.001-003	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01794.001-003	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01794
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S23

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions

Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01795

Issue Version: 1

Customer: Solmek, 12 Yarm Road, Stockton-on-Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S24

Date Sampled: 22-Mar-23

Date Samples Received: 27-Mar-23

Test Report Date: 19-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01795
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S24

		Units	%	%	%	%	%	N/A
		Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
		Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
		Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S24 ES1 6.50-7.00	MAR01795.001	Sediment	23.7	76.3	0.00	97.5	2.53	NAIIS
S24 ES7 9.50-10.00	MAR01795.002	Sediment	28.0	72.0	0.81	95.6	3.62	NAIIS
S24 ES13 12.50-13.00	MAR01795.003	Sediment	20.4	79.6	0.00	94.0	6.00	NAIIS

* See Report Notes

NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01795
Issue Version 1
Customer Reference S230232 - Ardersier Port - S24

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S24 ES1 6.50-7.00	MAR01795.001	Sediment	2.20	<0.04	15.1	10.1	0.01	13.6	3.00	30.8
S24 ES7 9.50-10.00	MAR01795.002	Sediment	2.40	<0.04	15.0	10.1	0.02	15.0	3.70	46.6
S24 ES13 12.50-13.00	MAR01795.003	Sediment	2.70	<0.04	16.8	11.3	0.01	17.2	3.90	46.3
Certified Reference Material SETOC 768 (% Recovery)			93	80	89	91	89	89	87	95
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01795
Issue Version 1
Customer Reference S230232 - Ardersier Port - S24

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S24 ES1 6.50-7.00	MAR01795.001	Sediment	<5	<5
S24 ES7 9.50-10.00	MAR01795.002	Sediment	<5	<5
S24 ES13 12.50-13.00	MAR01795.003	Sediment	<1	<1
Certified Reference Material BCR-646 (% Recovery)			76	81
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01795
Issue Version 1
Customer Reference S230232 - Ardersier Port - S24

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S24 ES1 6.50-7.00	MAR01795.001	Sediment	<1	<1	<1	<1	<1	<1
S24 ES7 9.50-10.00	MAR01795.002	Sediment	1.03	<1	5.26	12.0	10.6	6.64
S24 ES13 12.50-13.00	MAR01795.003	Sediment	<1	<1	1.36	1.87	1.64	1.12
Certified Reference Material NIST1941b (% Recovery)			86	94	73	67	60	83
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01795
Issue Version 1
Customer Reference S230232 - Ardersier Port - S24

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S24 ES1 6.50-7.00	MAR01795.001	Sediment	<1	<1	<1	<1	<1	<1
S24 ES7 9.50-10.00	MAR01795.002	Sediment	5.29	9.65	10.9	<1	30.2	1.18
S24 ES13 12.50-13.00	MAR01795.003	Sediment	1.16	1.74	1.84	<1	5.33	<1
Certified Reference Material NIST1941b (% Recovery)			72	85	85	122	77	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01795
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S24

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	N*	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S24 ES1 6.50-7.00	MAR01795.001	Sediment	<1	<1	<1	1.35	1220
S24 ES7 9.50-10.00	MAR01795.002	Sediment	5.30	<1	12.4	26.3	2330
S24 ES13 12.50-13.00	MAR01795.003	Sediment	<1	<1	2.38	5.39	2870
Certified Reference Material NIST1941b (% Recovery)			67	58	74	69	92~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.

*See report notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01795
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S24

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S24 ES1 6.50-7.00	MAR01795.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S24 ES7 9.50-10.00	MAR01795.002	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
S24 ES13 12.50-13.00	MAR01795.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			65	99	91	105	89	84	92
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01795
Issue Version 1
Customer Reference S230232 - Ardersier Port - S24

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01795.001-003	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01795.001-003	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01795.001-003	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01795.001-002	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/303/304	MAR01795.001-003	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (NAPTH) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01795.002-003	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01795.002-003	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01795
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S24

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions

Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

SOCOTEC

Test Report ID MAR01796

Issue Version: 1

Customer: Solmek, 12 Yarm Road, Stockton-on-Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S28

Date Sampled: 22-Mar-23

Date Samples Received: 27-Mar-23

Test Report Date: 19-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01796
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S28

		Units	%	%	%	%	%	N/A
		Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
		Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
		Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S28 ES3 12.50-13.00	MAR01796.001	Sediment	24.5	75.5	0.00	96.5	3.53	NAIIS

* See Report Notes

NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01796
Issue Version 1
Customer Reference S230232 - Ardersier Port - S28

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S28 ES3 12.50-13.00	MAR01796.001	Sediment	2.90	<0.04	17.3	10.6	0.01	17.6	4.20	47.6
Certified Reference Material SETOC 768 (% Recovery)			93	80	89	91	89	89	87	95
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01796
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S28

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S28 ES3 12.50-13.00	MAR01796.001	Sediment	<5	<5
Certified Reference Material BCR-646 (% Recovery)			76	81
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01796
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S28

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S28 ES3 12.50-13.00	MAR01796.001	Sediment	1.94	<1	4.59	6.73	6.42	4.79
Certified Reference Material NIST1941b (% Recovery)			86	94	73	67	60	83
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.

*See report notes

Certificate of Analysis

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Test Report ID MAR01796
Issue Version 1
Customer Reference S230232 - Ardersier Port - S28

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S28 ES3 12.50-13.00	MAR01796.001	Sediment	3.94	6.17	7.33	<1	19.7	2.39
Certified Reference Material NIST1941b (% Recovery)			72	85	85	122	77	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

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Test Report ID	MAR01796
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S28

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	N*	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S28 ES3 12.50-13.00	MAR01796.001	Sediment	3.57	1.61	9.50	17.1	3210
Certified Reference Material NIST1941b (% Recovery)			67	58	74	69	92~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.

*See report notes

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Test Report ID	MAR01796
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S28

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S28 ES3 12.50-13.00	MAR01796.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			65	99	91	105	89	84	92
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01796
Issue Version 1
Customer Reference S230232 - Ardersier Port - S28

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01796.001	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01796.001	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01796.001	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01796.001	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/303/304	MAR01796.001	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (NAPTH) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01796.001	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01796.001	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01796
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S28

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions

Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01797

Issue Version: 1

Customer: Solmek, 12 Yarm Road, Stockton-on-Tees, TS18 3NA

Customer Reference: S230232 - Ardersier Port - S29

Date Sampled: 22-Mar-23

Date Samples Received: 27-Mar-23

Test Report Date: 19-Apr-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditaion
The results reported relate only to the sample tested
The results apply to the sample as received

[Redacted]

Authorised by: Jane Colbourne

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01797
Issue Version 1
Customer Reference S230232 - Ardersier Port - S29

			Units	%	%	%	%	%	N/A
			Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
			Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
			Accreditation	UKAS	UKAS	N	N	N	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Asbestos**
S29 ES5 12.50-13.00	MAR01797.001	Sediment	18.7	81.3	0.00	92.75	7.25	NAIIS

* See Report Notes
NAIIS - No Asbestos Identified In Sample

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Test Report ID	MAR01797
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S29

		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
S29 ES5 12.50-13.00	MAR01797.001	Sediment	3.3	<0.04	19.7	11.5	0.1	18.4	4.1	60.8
Certified Reference Material SETOC 768 (% Recovery)			93	80	89	91	89	89	87	95
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

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Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01797
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S29

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
S29 ES5 12.50-13.00	MAR01797.001	Sediment	<1	<1
Certified Reference Material BCR-646 (% Recovery)			76	81
QC Blank			<1	<1

* See Report Notes

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Test Report ID MAR01797
Issue Version 1
Customer Reference S230232 - Ardersier Port - S29

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
S29 ES5 12.50-13.00	MAR01797.001	Sediment	<1	<1	<1	<1	<1	<1
Certified Reference Material NIST1941b (% Recovery)			86	94	73	67	60	83
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
*See report notes

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Test Report ID	MAR01797
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S29

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE ***	**DBENZAH**	**FLUORANT**	**FLUORENE**
S29 ES5 12.50-13.00	MAR01797.001	Sediment	1.08	<1	<1	<1	1.05	<1
Certified Reference Material NIST1941b (% Recovery)			72	85	85	122	77	50
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.

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Issue Version	1
Customer Reference	S230232 - Ardersier Port - S29

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	N*	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
S29 ES5 12.50-13.00	MAR01797.001	Sediment	<1	<1	1.11	1.81	8000
Certified Reference Material NIST1941b (% Recovery)			67	58	74	69	92~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries

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Test Report ID	MAR01797
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S29

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
S29 ES5 12.50-13.00	MAR01797.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material NIST1941b (% Recovery)			65	99	91	105	89	84	92
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

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Test Report ID MAR01797
Issue Version 1
Customer Reference S230232 - Ardersier Port - S29

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPMSS*	MAR01797.001	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01797.001	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01797.001	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/303/304	MAR01797.001	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (NAPTH) . These circumstances should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

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Test Report ID	MAR01797
Issue Version	1
Customer Reference	S230232 - Ardersier Port - S29

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions

Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

APPENDIX D:
Notes on Limitations & Contamination Guidance

SOLMEK NOTES ON CONTAMINATION GUIDANCE (REF: VERSION 1/2023)

UK BACKGROUND

Environmental Protection Act 1990: Part 2A Revised Statutory Guidance (April 2012)

This revised document explains how the Local Authority should decide if land, based on a legal interpretation, is contaminated. The document replaces the previous guidance given in Annex 3 of DEFRA Circular 01/2006, issued in accordance with section 78YA of the 1990 Environmental Protection Act.

The main objectives of the Part 2A regime are to *"identify and remove unacceptable risks to human health and the environment" and* to *"seek to ensure that contaminated land is made suitable for its current use".*

Part 2A uses a risk based approach to defining contaminated land whereby the "risk" is interpreted as *"the likelihood that harm, or pollution of water, will occur as a result of contaminants in, on or under the land"* and by *"the scale and seriousness of such harm or pollution if it did occur".*

For a relevant risk to exist a contaminant, pathway and receptor linkage must be present before the land can be considered to be contaminated. The document explains that *"for a risk to exist there must be contaminants present in, on or under the land in a form and quantity that poses a hazard, and one or more pathways by which they might significantly harm people, the environment, or property; or significantly pollute controlled waters."*

A conceptual model is used to develop and communicate the risks associated with a particular site.

To determine if land is contaminated the local authority use various categories from 1 to 4. Categories 1 and 2 include *"land which is capable of being determined as contaminated land on grounds of significant possibility of significant harm to human health."*

Categories 3 and 4 *"encompass land which is not capable of being determined on such grounds".*

PRELIMINARY CONCEPTUAL MODEL

Preliminary Conceptual Models are undertaken in accordance with CIRIA C552. The Preliminary Conceptual Model assesses the consequence and the likelihood of a risk being realised to provide a risk classification, using the tables detailed below.

CONSEQUENCE OF RISK BEING REALISED (Based on C552 CIRIA, 2001)

Classification	Definition	Example
Severe	Short-term (acute) risk to human health, the environment, an element of the development or other aspect with is likely to result in *significant harm*, damage or both.	High concentrations of cyanide on the surface of an informal recreational area. Major spills of contaminants from site into controlled water. High concentrations of explosive gas in the subsurface environment that have a clear unobstructed pathway into buildings.
Moderate	Chronic damage to human health, a plausible chance that an event will occur, although the timeline is not immediate to be in the short-term.	Appreciable concentration of contamination that over the longer-term will cause significant harm i.e. high lead concentration in topsoil. Shallow mine workings that are potentially unstable but may remain in a satisfactory or stable conditions for a number of years.
Mild	Low level pollution of non-sensitive water, a feasible hazardous scenario although the timeline of such occurring can probably be considered in 10's of years.	The effect of high sulphate concentrations on structural concrete. Pollution of non-classified groundwater.
Minor	Harm, although not necessarily significant to human health, or with respect to other aspects of the development, which are considered implausible in terms of occurrence, or will have little consequential impact.	The presence of contaminants at such low concentrations that protective equipment is required during site works. Any damage to structures is minimal and will not be structural in characteristics.

PROBABILITY OF RISK BEING REALISED (C552 CIRIA, 2001)

Classification	Definition
High Likelihood	There is a viable pollutant linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence that the receptor has been harmed or polluted.
Likely	There is a viable pollutant linkage and all elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low Likelihood	There is a viable pollutant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter term.
Unlikely	There is a viable pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

RISK CLASSIFICATION MATRIX (C552 CIRIA, 2001)

Risk = Probability x Consequence		Consequence			
		Severe	Moderate	Mild	Minor
Probability	High likelihood	Very high risk	High risk	Moderate risk	Moderate/low risk
	Likely	High risk	Moderate risk	Moderate/low risk	Low risk
	Low likelihood	Moderate risk	Moderate/low risk	Low risk	Very low risk
	Unlikely	Moderate/low risk	Low risk	Very low risk	Very low risk

HUMAN RECEPTORS

Human exposure to contaminants present in soils can occur via several pathways. Direct exposure pathways include dermal absorption after contact with contaminated ground, inhalation of soil or dust, inhalation of volatised compounds, and inadvertent soil ingestion (or deliberate soil ingestion in the case of some children). Other indirect pathways include human ingestion of plants grown in contaminated soil or contaminated ground or surface water. Contaminants associated with wind blown dust can affect humans on surrounding sites.

VEGETATION

Plants can be affected by soil contamination in a number of ways resulting in growth inhibition, nutrient deficiencies and yellowing of leaves. Contaminants are taken up by plants through the roots and through foliage. Contaminants identified as being highly phytotoxic include boron, cadmium, copper, lead, nickel, and zinc.

To establish if the levels of contaminants present on a site may pose a risk to vegetation the results of the contamination testing are compared to a series of threshold values published in 'Code of Good Agricultural Practice for the Protection of Soil'.

GROUNDWATER AND SURFACE WATER RECEPTORS

The principal pathway by which soil contamination may reach the water environment is through a slow seepage or leaching to groundwater or surface water. The potential for contaminants to migrate along such pathways is dependent on the chemical and physical characteristics of the contaminants and the local hydrogeology. Surface watercourses may also accumulate contamination as contaminated sediments are deposited within the water body.

Where the site investigated overlies major/principal aquifers (and in some cases minor/secondary aquifers depending on certain conditions), groundwater Source Protection Zones and areas in close proximity to groundwater abstractions, contamination test results have been compared with the Water Supply (Water Quality) Regulations 1989 and The Water Supply (Water Quality) Regulations 2000.

Should a surface water receptor, such as a fresh water environment (river, canal, stream, lake etc), or marine environment be considered sensitive in relation to a site, then test results are compared with DEFRA & SEPA Environmental Quality Standards (2004). Many of the Environmental Quality Standards are hardness ($CaCO_3$) depended. Where no hardness values are available, Solmek assume conservative values (of between 0 and 50mg/l).

In the absence of vulnerable ground and surface water environments, Solmek may compare any test results with the Environment Agency Leachate Quality Threshold Values.

DETAILED QUANTITATIVE RISK ASSESSMENT (DQRA)

In line with Environment Agency's guidance document Environment Agency *Land Contamination Risk Management*, which replaced the now-withdrawn *Contaminated Land Report 11 – Model Procedures for the Management of Land Contamination (2004)*, a DQRA for groundwater/human health may be required following a Phase 2 investigation and before the preparation of a Phase 3 Remediation Strategy. For human health DQRA, a site specific assessment criteria is undertaken using CLEA Software Version 1.06. For groundwater DQRA, the Environment Agency Remedial Targets Worksheet Version 3.1 is used.

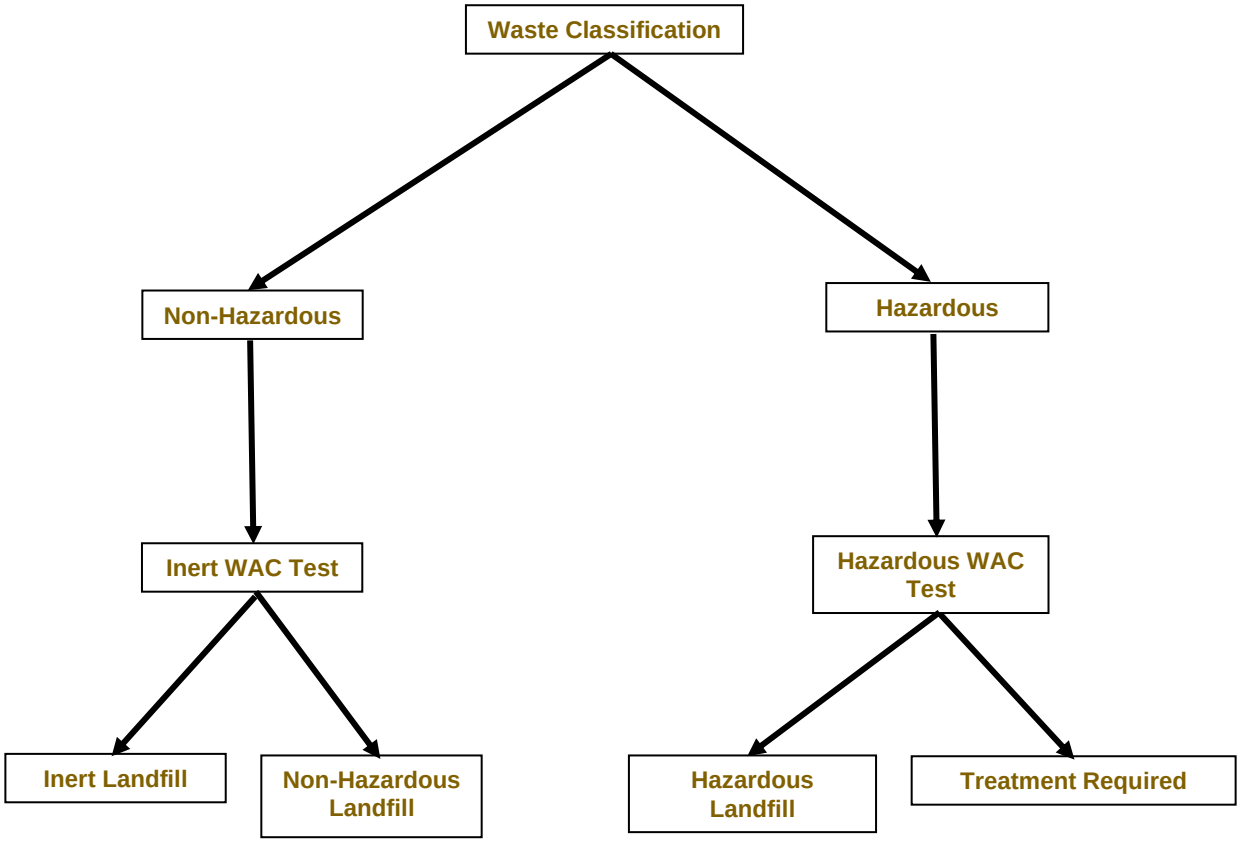
WASTE CLASSIFICATION AND WASTE ACCEPTANCE CRITERIA

During the site strip and construction activities, material may be required to be removed from site. Any such material would require classification, in line with Environment Agency Technical Guidance *Waste Classification: Guidance on the classification and assessment of waste (2015)*. This would classify the material as either Non-Hazardous or Hazardous Waste.

Once the material has been classified, determining the suitable landfill for disposal is governed by landfill directive Waste Acceptance Criteria (WAC) testing, with landfills categorized as Inert Waste, Stable Non-Reactive Hazardous Waste and Hazardous Waste. The WAC testing relates to materials that are to be exported from a site/development to landfill, and do not directly relate to human health specifically. The testing results are generally presented as certificates which can be used by site owners/contractors etc, which should be presented to the accepting waste facility or waste contractor.

If waste classification and/or WAC testing are not undertaken, material taken off site may be subject to WAC testing by the appropriate waste disposal company. The decision on whether or not to accept waste, or whether further testing is required, is at the discretion of the waste disposal company.

The below flow chart provides further information on the waste classification process.



CONSTRUCTION MATERIALS

Materials at risk from possible soil contaminants include inorganic matrices such as cement and concrete and also organic material such as plastics and rubbers. Acid ground conditions and high levels of sulphates can accelerate the corrosion of building materials. Where pH and soluble sulphate analysis has been undertaken, Solmek compare the test results with the guidelines presented within BRE Special Digest 1, 2005 (3rd Edition) 'Concrete in Aggressive Ground'. Plastics and rubbers are generally used for piping and service ducts and are potentially attacked by a range of chemicals, most of which are organic, particularly petroleum based substances. Drinking water supplies can be tainted by substances that can penetrate piping and water companies enforce stringent threshold values.

The levels of potential contaminants should be compared to thresholds supplied in the UK Water Industry Research (UKWIR) publication "Guidance for the selection of Water Supply Pipes to be used in Brownfield Sites" (January 2011). A Brownfield Site is defined in the document as "Land or premises that have not previously been used or developed that may be vacant or derelict". It should be noted that Brownfield sites may not be contaminated. The guidance does not apply to Greenfield Sites however water companies may have their own assessment criteria which should be checked by the developer. The table below outlines the pipe material selection threshold concentrations.

	Pipe Material (Threshold concentrations in mg/kg)					
Parameter group	**PE**	**PVC**	**Barrier pipe (PE-AL-PE)**	**Wrapped Steel**	**Wrapped Ductile Iron**	**Copper**
Extended VOC suite by purge and trap or head space and GC-MS with TIC	0.5	0.125	Pass	Pass	Pass	Pass
+ BTEX + MTBE	0.1	0.03	Pass	Pass	Pass	Pass
SVOCs TIC by purge and trap or head space and GC-MS with TIC (aliphatic and aromatic C5-C10)	2	1.4	Pass	Pass	Pass	Pass
+ Phenols	2	0.4	Pass	Pass	Pass	Pass
+ Cresols and chlorinated phenols	2	0.04	Pass	Pass	Pass	Pass
Mineral oil C11-C20	10	Pass	Pass	Pass	Pass	Pass
Mineral oil C21-C40	500	Pass	Pass	Pass	Pass	Pass
Corrosive (Conductivity, Redox and pH)	Pass	Pass	Pass	Corrosive if pH <7 and conductivity >400µS/cm	Corrosive if pH <5, Eh not neutral and conductivity >400µS/cm	Corrosive if pH <5 or >8 and Eh positive
Specific suite identified as relevant following site investigation						
Ethers	0.5	1	Pass	Pass	Pass	Pass
Nitrobenzene	0.5	0.4	Pass	Pass	Pass	Pass
Ketones	0.5	0.02	Pass	Pass	Pass	Pass
Aldehydes	0.5	0.02	Pass	Pass	Pass	Pass
Amines	Fail	Pass	Pass	Pass	Pass	Pass

REQUIREMENTS OF PARTIES WITHIN THE DEVELOPMENT PROCESS

Interested parties involved in the development process may use the data in different ways and there may be varying views and interpretation of the factual data. Local Authority staff may have a view on contamination and human health and the wider environment. The Environment Agency are concerned principally with the protection of Controlled waters. Building insurers, funders and purchasers may be primarily concerned with issues of potential commercial blight. Purchasers are also not always fully informed, and perceptions on issues associated with risk can affect the decision to purchase. Developers and construction organisations will focus on financial aspects of dealing with the contamination in the context of the development and construction programme.

RISKS & LIABILITIES FROM CONTAMINATION

In simple terms, risks associated with contamination may be considered in terms of 1) statutory risks and 2) development related risks. If contamination is severe or forms a potential hazard based on its potential to affect groundwater, surface water or human health, a statutory risk may be present, and as such, if the risk is not reduced, criminal proceedings may be instigated by a government body or local authority.

If the contamination is less severe or not considered to be mobile, it may be considered a commercial liability which could, in theory remain untreated, but which may at a later date affect the value of the property, or, with changing legislation, become a statutory risk. Commercial liabilities could give rise to civil proceedings by third parties if there are grounds for action.

♣Solmek conditions of offer, notes on limitations & basis for contract (ref: version1/2023)

These conditions accompany our tender and supercede any previous conditions issued. Solmek will prepare a report solely for the use of the Client (the party invoiced) and its agent(s). No reliance should be placed on the contents of this report, in whole or in part by 3rd parties. The report, its content and format and associated data are copyright, and the property of Solmek. Photocopying of part or all of the contents, transfer or reproduction of any kind is forbidden without written permission from Solmek. A charge may be levied against such approval, the same to be made at the discretion of Solmek.

Solmek cannot be held liable and do not warrant, or otherwise guarantee the validity of information provided by third parties and subsequently used in our reports. Solmek are not responsible for the action negligent of otherwise of subcontractors or third parties.

Site investigation is a process of sampling. The scope and size of an investigation may be considered proportional to levels of confidence regarding the ground and groundwater conditions. The exploratory holes undertaken investigate only a small volume of the ground in relation to the overall size of the site, and can only provide a general indication of site conditions. The opinions provided and recommendations given in this report are based on the ground conditions as encountered within each of the exploratory holes. There may be different ground conditions elsewhere on the site which have not been identified by this investigation and which therefore have not been taken into account in this report. Reports are generally subject to the comments of the local authority and Environment Agency. The comments made on groundwater conditions are based on observations made at the time that site work was carried out. It should be noted that mobile contamination, ground gas levels and groundwater levels may vary owing to seasonal, tidal and/or weather related effects. Solmek cannot be held liable for any unrecorded or unforeseen obstructions between exploratory boreholes and trial pits. This includes instances where previous structures on the site (buried man made structures) or the presence of boulder clay (cobbles and/or boulder obstructions) have been anticipated. All types of piling operations should make allowance for obstructions within the construction budget to accommodate this. Unrecorded ancient mining may occur anywhere where seams that have been worked and influence the rock and soil above. Dissolution cavities can occur where gypsum or chalk is present. Rotary drilling is the recommended technique to prove the integrity of the rock.

Where the scope of the investigation is limited via access to information, time constraints, equipment limitations, testing, interpretation or by the client or his agents budgetary constraints, elements not set out in the proposal and excluded from the report are deemed to be omitted from the scope of the investigation.

Desk studies are generally prepared in accordance with RICS guidelines. Environmental site investigations are generally undertaken as 'exploratory investigations' in accordance with the definitions provided in paragraph 5.4 of BS 10175:2011 in order to confirm the conceptual assumptions. You are advised to familiarize yourself with the typical scope of such an investigation. No pumping of water will be undertaken unless a licence or facilities/equipment have been arranged by others.

Where the type, number or/and depth of exploratory hole is specified by others, Solmek cannot and will not be responsible for any subsequent shortfall or inadequacy in data, and any consequent shortfall in interpretation of environmental and geotechnical aspects which may be required at a later date in order to facilitate the design of permanent or temporary works.

All information acquired by Solmek in the course of investigation is the property of Solmek, and, only also becomes the joint property of the Client only on the complete settlement of all invoices relating to the project. Solmek reserve the right to use the information in commercial tendering and marketing, unless the Client expressly wishes otherwise in writing. The quoted rates do not include VAT, and payment terms are 30 days from dispatch of invoice from our offices. Quotes are subject to a site visit.

We have allowed for 1 mobilisation and normal working hours unless otherwise stated. The scope of the investigation may be reviewed following the desk study and/or fieldwork. The presence or otherwise of Japanese Knotweed or other invasive plants can be difficult to identify especially during winter months. If Japanese Knotweed or other invasive species are suspect, it should be confirmed by an ecologist. We have not allowed for acquiring services information, and cannot be responsible for damage to underground services or pipes not shown to us or not clearly shown on plans. Costs incurred will be passed on to you, and in commissioning Solmek you understand and accept that you/your agent have a contractual relationship with Solmek & you accept this. Our rates assume unobstructed, reasonably level and firm access to the exploratory positions and adequate clear working areas and headroom. We have priced on the basis that you or your client have the necessary permissions, wayleaves and approvals to access land. All boreholes and pits are backfilled with arisings except where gas monitoring pipes are installed with stopcock covers. Solmek are not responsible for any uneven surfaces as a result of siteworks and rutting and backfilled excavations may require re-levelling and/or making good by others after fieldwork is complete, and Solmek has not allowed for this. No price has been provided or requested for a return visit to remove pipework and covers. Hourly rates apply to consultancy only and do not include expenses unless otherwise shown. If warranties are required, legal costs incurred will be passed on to you assuming Solmek agree to complete such warranties, modified or otherwise and you understand and agree to pay all costs.

We reserve the right to pursue full payment of the invoice prior to release of any information including reports. We advise you/your client that we may elect to pursue our statutory rights under late payment legislation, and will apply 8% to the base rate for unreasonably late payments. Solmek are exempt from the CIS Scheme. Solmek offer to undertake work only in strict accordance with conditions covered by our current insurances, which are available for inspection. Solmek are not responsible for acts, negligent or otherwise of subcontractors and as a matter of policy cannot indemnify any other parties. Professional indemnity Insurance is limited to ten times the invoice net total except where stated otherwise by Solmek. Solmek give notice that consequential loss as a direct or indirect result of Solmek's activities or omission of the same are excluded.